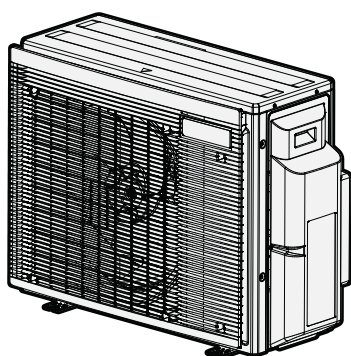




Installation manual

R32 Split series



4MWXM52A2V1B9

Installation manual
R32 Split series

English


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1 About the documentation


1.1 About this document

 **WARNING**


Make sure installation, servicing, maintenance, repair and applied materials follow the instructions from Daikin (including all documents listed in “Documentation set”) and, in addition, comply with applicable legislation and are performed by qualified persons only. In Europe and areas where IEC standards apply, EN/IEC 60335-2-40 is the applicable standard.

Target audience

Authorised installers

 **INFORMATION**

This appliance is intended to be used by expert or trained users in shops, in light industry, and on farms, or for commercial and household use by lay persons.

 **INFORMATION**

This document only describes installation instructions specific to the outdoor unit. For installation of the indoor unit (mounting the indoor unit, connecting the refrigerant piping to the indoor unit, connecting the electrical wiring to the indoor unit ...), see the installation manual of the indoor unit.

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 outdoor unit)
- **Outdoor unit installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the outdoor unit)
- **Installer reference guide:**
 - Preparation of the installation, reference data, ...
 - Format: Digital files on <https://www.daikin.eu>. Use the search function 🔍 to find your model.

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.

Scan the QR code below to find the full documentation set and more information about your product on Daikin website.



The original documentation is written in English. All other languages are translations.

Technical engineering data

- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).

- The **full set** of latest technical data is available on the Daikin Business Portal (authentication required).

2 Specific installer safety instructions

Always observe the following safety instructions and regulations.

Unit installation (see "4 Unit installation" ▶ 6))



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.

Installation site (see "4.1 Preparing the installation site" ▶ 6))



CAUTION

- Check if the installation location can support the unit's weight. Poor installation is hazardous. It can also cause vibrations or unusual operating noise.
- Provide sufficient service space.
- Do NOT install the unit so that it is in contact with a ceiling or a wall, as this may cause vibrations.



WARNING

The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (e.g. open flames, an operating gas appliance, or an operating electric heater). The room size shall be as specified in the General safety precaution.

Piping installation (see "5 Piping installation" ▶ 8))



CAUTION

Piping and joints of a split system shall be made with permanent joints when inside an occupied space except joints directly connecting the piping to the indoor units.



CAUTION

- No brazing or welding on site for units with R32 refrigerant charge during shipment.
- During installation of the refrigeration system, joining of parts with at least one part charged shall be performed taking into account the following requirements: inside occupied spaces non-permanent joints are NOT allowed for R32 refrigerant except for site made joints directly connecting the indoor unit to piping. Site made joints directly connecting piping to indoor units shall be of non-permanent type.



CAUTION

Do NOT connect the embedded branch piping and the outdoor unit when only carrying out piping work without connecting the indoor unit in order to add another indoor unit later.



WARNING

Connect the refrigerant piping securely before running the compressor. If the refrigerant piping is NOT connected and the stop valve is open when the compressor is run, air will be sucked in. This will cause abnormal pressure in the refrigeration cycle, which may result in equipment damage and even injury.



CAUTION

- Incomplete flaring may cause refrigerant gas leakage.
- Do NOT re-use flares. Use new flares to prevent refrigerant gas leakage.
- Use flare nuts that are included with the unit. Using different flare nuts may cause refrigerant gas leakage.



CAUTION

Do NOT open the valves before flaring is complete. This would cause refrigerant gas leakage.



DANGER: RISK OF EXPLOSION

Do NOT open the stop valves before the vacuum drying is finished.

Charging refrigerant (see "6 Charging refrigerant" ▶ 11))



A2L WARNING: MILDLY FLAMMABLE MATERIAL

The refrigerant inside this unit is mildly flammable.



WARNING

- The refrigerant inside the unit is mildly flammable, but normally does NOT leak. If the refrigerant leaks in the room and comes in contact with fire from a burner, a heater, or a cooker, this may result in fire, or the formation of a harmful gas.
- Turn OFF any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.
- Do NOT use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.



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.



WARNING

NEVER directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.

Electrical installation (see "7 Electrical installation" ▶ 12))



WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the applicable 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

Use an all-pole disconnection type breaker with at least 3 mm between the contact point gaps that provides full disconnection under overvoltage category III.

3 About the box

WARNING

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

WARNING

Do **NOT** connect the power supply to the indoor unit. This could result in electrical shock or fire.

WARNING

- Do **NOT** use locally purchased electrical parts inside the product.
- Do **NOT** branch the power supply for the drain pump, etc. from the terminal block. This could result in electrical shock or fire.

WARNING

Keep the interconnection wiring away from copper pipes without thermal insulation as such pipes will be very hot.

DANGER: RISK OF ELECTROCUTION

All electrical parts (including thermistors) are powered by the power supply. Do **NOT** touch them with bare hands.

DANGER: RISK OF ELECTROCUTION

Disconnect the power supply for more than 10 minutes, and measure the voltage at the terminals of main circuit capacitors or electrical components before servicing. The voltage **MUST** be less than 50 V DC before you can touch electrical components. For the location of the terminals, see the wiring diagram.

Finishing the outdoor unit installation (see "8 Finishing the outdoor unit installation" [p 13])

DANGER: RISK OF ELECTROCUTION

- Make sure that the system is earthed properly.
- Turn **OFF** the power supply before servicing.
- Install the switch box cover before turning **ON** the power supply.

Maintenance and service (see "9 Maintenance and service" [p 14])

DANGER: RISK OF ELECTROCUTION

DANGER: RISK OF BURNING/SCALDING

WARNING

- Before carrying out any maintenance or repair activity, **ALWAYS** switch off the circuit breaker on the supply panel, remove the fuses or open the protection devices of the unit.
- Do **NOT** touch live parts for 10 minutes after the power supply is turned off because of high voltage risk.
- Please note that some sections of the electric component box are hot.
- Make sure you do **NOT** touch a conductive section.
- Do **NOT** rinse the unit. This may cause electric shocks or fire.

DANGER: RISK OF ELECTROCUTION

- Use this compressor on a grounded system only.
- Turn the power off before servicing the compressor.
- Reattach the switch box cover and service lid after servicing.

CAUTION

ALWAYS wear safety glasses and protective gloves.

DANGER: RISK OF EXPLOSION

- Use a pipe cutter to remove the compressor.
- Do **NOT** use the brazing torch.
- Use approved refrigerants and lubricants only.

DANGER: RISK OF BURNING/SCALDING

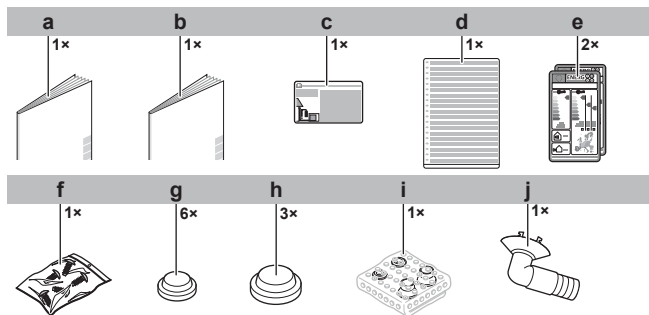
Do **NOT** touch the compressor with bare hands.

3 About the box

3.1 Outdoor unit

3.1.1 To remove the accessories from the outdoor unit

Make sure you have all following accessories delivered with the unit:



- a Outdoor unit installation manual
- b General safety precautions
- c Fluorinated greenhouse gases label
- d Multilingual fluorinated greenhouse gases label
- e Energy label
- f Screw bag. The screws will be used for fixing the electrical wire anchor bands.
- g Drain cap (small)
- h Drain cap (large)
- i Reducer assembly
- j Drain socket

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.

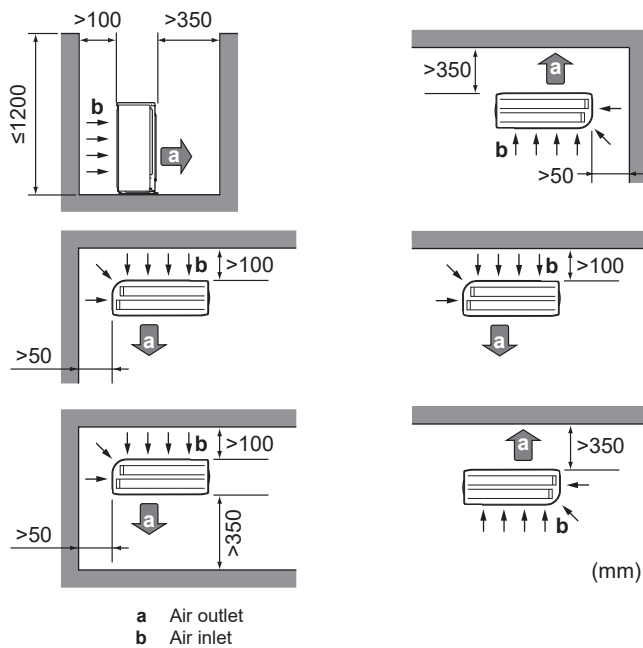
4.1 Preparing the installation site

WARNING

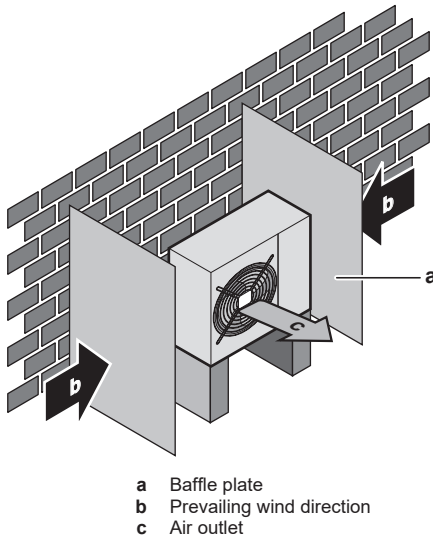
The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (e.g. open flames, an operating gas appliance, or an operating electric heater). The room size shall be as specified in the General safety precaution.

4.1.1 Installation site requirements of the outdoor unit

Mind the following spacing guidelines:



Allow 300 mm of work space below the ceiling surface and 250 mm for piping and electrical servicing.



- a Baffle plate
- b Prevailing wind direction
- c Air outlet

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.

i INFORMATION

The sound pressure level is less than 70 dBA.

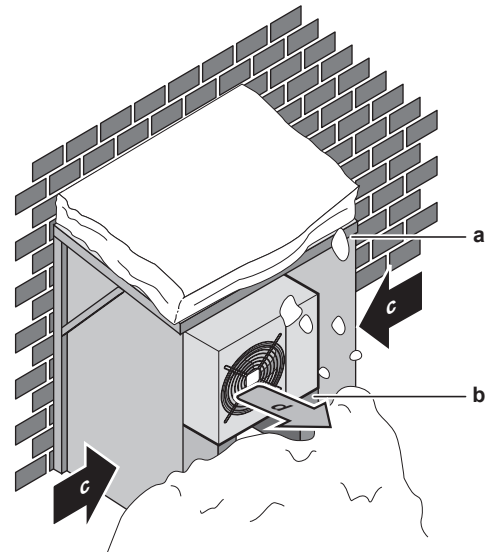
The outdoor unit is designed for outdoor installation only, and for ambient temperatures within the following ranges (unless otherwise specified in the operation manual of the connected indoor unit):

DX operation range	
Cooling mode	Heating mode
-10~46°C DB	-15~24°C DB

DHW operation range
-15~42°C DB

4.1.2 Additional installation site requirements of the outdoor unit in cold climates

Protect the outdoor unit against direct snowfall and take care that the outdoor unit is NEVER snowed up.



- a Snow cover or shed
- b Pedestal
- c Prevailing wind direction
- d Air outlet

It is recommended to provide at least 150 mm of free space below the unit (300 mm for heavy snowfall areas). Additionally, make sure the unit is positioned at least 100 mm above the maximum expected level of snow. If necessary, construct a pedestal. See "4.2 Mounting the outdoor unit" [p 7] for more details.

In heavy snowfall areas it is very important to select an installation site where the snow will NOT affect the unit. If lateral snowfall is possible, make sure that the heat exchanger coil is NOT affected by the snow. If necessary, install a snow cover or shed and a pedestal.

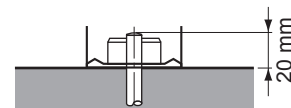
4.2 Mounting the outdoor unit

4.2.1 To provide the installation structure

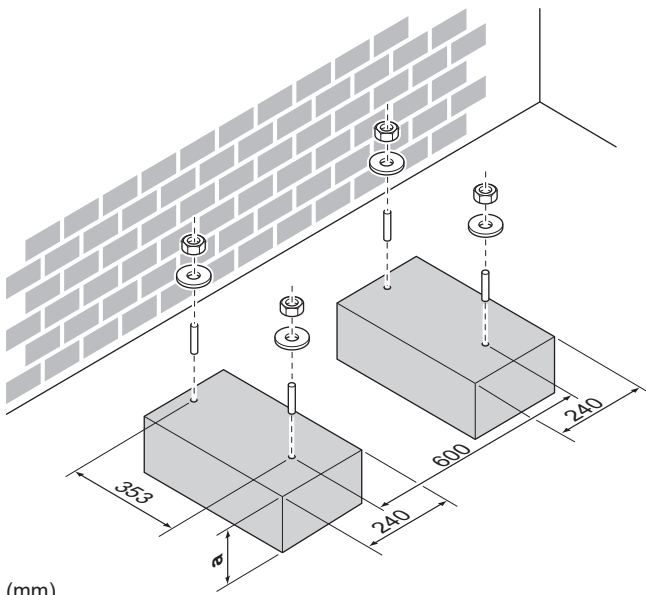
Use a vibration-proof rubber (field supply) in cases where vibrations may be transmitted to the building.

The unit may be installed directly on a concrete veranda or another solid surface as long as it provides proper drainage.

Prepare 4 sets of M8 or M10 anchor bolts, nuts and washers (field supply).



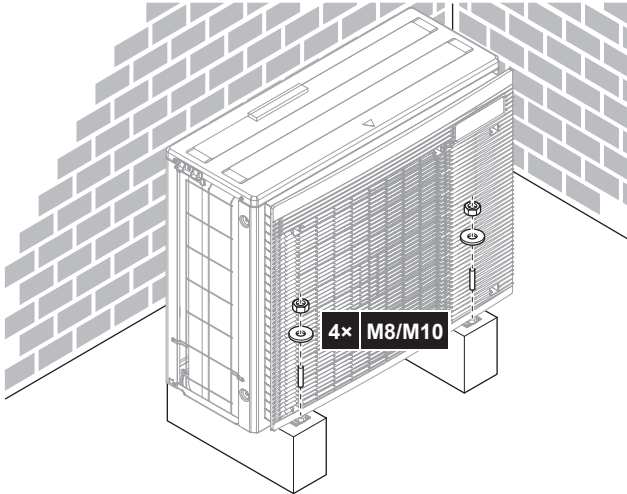
5 Piping installation



(mm)

a 100 mm above expected level of snow

4.2.2 To install the outdoor unit



4.2.3 To provide drainage

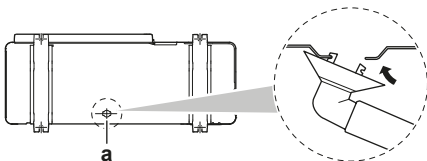
NOTICE

In cold areas, do NOT use a drain socket, hose and caps (large, small) with the outdoor unit. Take adequate measures so that the evacuated condensate CANNOT freeze.

NOTICE

If the drain holes of the outdoor unit are blocked up by a mounting base or floor surface, place additional foot bases ≤ 30 mm under the outdoor unit's feet.

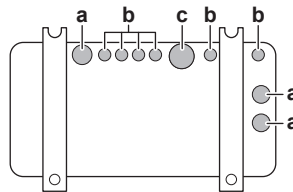
- Use a drain socket for drainage if necessary.



a Drain hole

To close the drain holes and attach the drain socket

- Install drain caps (accessory f) and (accessory g). Make sure the edges of the drain caps close off the holes completely.
- Install the drain socket.



- a Drain hole. Install a drain cap (large).
- b Drain hole. Install a drain cap (small).
- c Drain hole for drain socket

5 Piping installation

5.1 Preparing refrigerant piping

5.1.1 Refrigerant piping requirements



CAUTION

Piping and joints of a split system shall be made with permanent joints when inside an occupied space except joints directly connecting the piping to the indoor units.



NOTICE

The piping and other pressure-containing parts shall be suitable for refrigerant. Use phosphoric acid deoxidised seamless copper for refrigerant piping.

- Foreign materials inside pipes (including oils for fabrication) must be ≤ 30 mg/10 m.

Refrigerant piping diameter

Liquid piping	Gas piping
4x $\varnothing 6.4$ mm (1/4")	2x $\varnothing 9.5$ mm (3/8")
	2x $\varnothing 12.7$ mm (1/2")



INFORMATION

Usage of reducers might be required based on the indoor unit. See "5.2.1 Connections between outdoor and indoor unit using reducers" [p. 9] for more information.

Refrigerant piping material

- Piping material:** phosphoric acid deoxidised seamless copper
- Flare connections:** Only use annealed material.
- Piping temper grade and thickness:**

Outer diameter (\varnothing)	Temper grade	Thickness (t) ^(a)	
6.4 mm (1/4")	Annealed (O)	≥ 0.8 mm	
9.5 mm (3/8")			
12.7 mm (1/2")			

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

5.1.2 Refrigerant piping insulation

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

Pipe outer diameter (Ø _p)	Insulation inner diameter (Ø _i)	Insulation thickness (t)
6.4 mm (1/4")	8~10 mm	≥10 mm
9.5 mm (3/8")	10~14 mm	≥13 mm
12.7 mm (1/2")	14~16 mm	≥13 mm



If the temperature is higher than 30°C and the humidity is higher than RH 80%, the thickness of the insulation materials should be at least 20 mm to prevent condensation on the surface of the insulation.

Use separate thermal insulation pipes for the gas and liquid refrigerant piping.

5.1.3 Refrigerant piping length and height difference

The shorter the refrigerant piping, the better the performance of the system.

The piping length and height differences must comply with the following requirements.

Shortest allowable length per room is 3 m.

Refrigerant piping length to each indoor unit	Refrigerant piping total length
≤25 m	≤50 m

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

5.2 Connecting the refrigerant piping



DANGER: RISK OF BURNING/SCALDING



CAUTION

- No brazing or welding on site for units with R32 refrigerant charge during shipment.
- During installation of the refrigeration system, joining of parts with at least one part charged shall be performed taking into account the following requirements: inside occupied spaces non-permanent joints are NOT allowed for R32 refrigerant except for site made joints directly connecting the indoor unit to piping. Site made joints directly connecting piping to indoor units shall be of non-permanent type.



CAUTION

Do NOT connect the embedded branch piping and the outdoor unit when only carrying out piping work without connecting the indoor unit in order to add another indoor unit later.

5.2.1 Connections between outdoor and indoor unit using reducers

Total indoor air conditioning units capacity class that can be connected to this outdoor unit

≤9.0 kW



INFORMATION

For this outdoor unit, there are the following connection options:

- DHW tank and a maximum of 3 indoor units (DX)
- DHW tank only
- 2~3 indoor units (DX) only (1 indoor unit connection is NOT allowed, except for connection with FBA60 or FBA71).

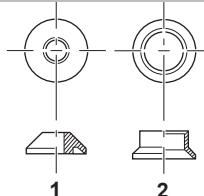
Port	Dimensions	Class	Reducer
A	Liquid Ø6.4 mm Gas Ø9.5 mm	15, 20, 25, 35, (42) ^(a)	—
B+C	Liquid Ø6.4 mm Gas Ø12.7 mm	15, 20, 25, 35, (42) ^(a)	1+2 (accessory)
		42, 50, 60	—
		71 ^(b)	ASYCPIR
To tank	Liquid Ø6.4 mm Gas Ø9.5 mm	90, 120	—

^(a) Only in case of connection with FTXM42R, FTXM42A, FTXA42C

^(b) Only for connection with FBA71A9. Use option ASYCPIR for liquid (Ø9.5 mm→Ø6.4 mm) and gas (Ø15.9 mm→Ø12.7 mm) piping.

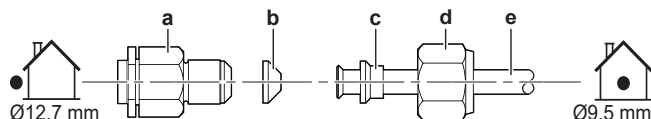
Reducer type:

Ø12.7 mm → Ø9.5 mm



Connection examples:

- Connecting a Ø9.5 mm inter unit pipe to a Ø12.7 mm gas pipe connection port on the outdoor unit



- a Connection port (on the outdoor unit)
- b Reducer 1
- c Reducer 2
- d Flare nut (on the outdoor unit)
- e Inter-unit piping



NOTICE

To prevent gas leakage, apply refrigeration oil to both sides of reducer 1 (b). Use refrigeration oil for R32 (FW68DA).

5 Piping installation

Flare nut for (mm)	Tightening torque (N·m)
Ø6.4	15~17
Ø9.5	33~39
Ø12.7	50~60

! NOTICE

Use an appropriate wrench to avoid damaging the connection thread by overtightening the flare nut. Be careful NOT to overtighten the nut, or the smaller pipe may be damaged (about 2/3~1× the normal torque).

5.2.2 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.

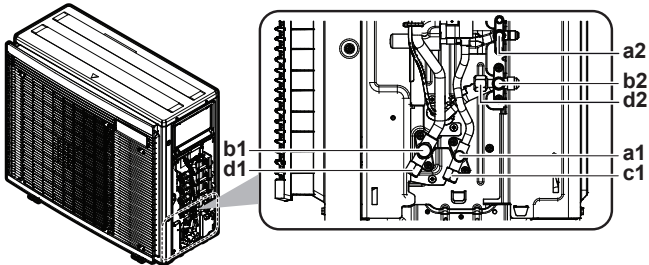
! WARNING

Connect the refrigerant piping securely before running the compressor. If the refrigerant piping is NOT connected and the stop valve is open when the compressor is run, air will be sucked in. This will cause abnormal pressure in the refrigeration cycle, which may result in equipment damage and even injury.

! NOTICE

- Use the flare nut fixed to the main unit.
- To prevent gas leakage, apply refrigeration oil only to the inside of the flare. Use refrigeration oil for R32 (Example: FW68DA).
- Do NOT reuse joints.

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



To air-conditioning unit:

- a1 Liquid stop valve
- b1 Gas stop valve
- c1 Liquid service port
- d1 Gas service port

To DHW tank:

- a2 Liquid stop valve
- b2 Gas stop valve
- d2 Gas service port

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

! NOTICE

It is recommended that the refrigerant piping between indoor and outdoor unit is installed in a ducting or the refrigerant piping is wrapped with finishing tape.

5.3 Checking the refrigerant piping

5.3.1 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.

5.3.2 To perform vacuum drying



DANGER: RISK OF EXPLOSION

Do NOT open the stop valves before the vacuum drying is finished.

! NOTICE

Connect the vacuum pump to **both** the service ports of the gas stop valves.

- 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.

6 Charging refrigerant

6.1 About the refrigerant

This product contains fluorinated greenhouse gases. Do NOT vent gases into the atmosphere.

Refrigerant type: R32

Global warming potential (GWP) value: 675

Periodical inspections for refrigerant leaks may be required depending on the applicable legislation. Contact your installer for more information.



WARNING: MILDLY FLAMMABLE MATERIAL

The refrigerant inside this unit is mildly flammable.



WARNING

- The refrigerant inside the unit is mildly flammable, but normally does NOT leak. If the refrigerant leaks in the room and comes in contact with fire from a burner, a heater, or a cooker, this may result in fire, or the formation of a harmful gas.
- Turn OFF any combustible heating devices, ventilate the room, and contact the dealer where you purchased the unit.
- Do NOT use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.



WARNING

The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (e.g. open flames, an operating gas appliance, or an operating electric heater). The room size shall be as specified in the General safety precaution.



WARNING

- Do NOT pierce or burn refrigerant cycle parts.
- Do NOT use cleaning materials or means to accelerate the defrosting process other than those recommended by the manufacturer.
- Be aware that the refrigerant inside the system is odourless.



WARNING

NEVER directly touch any accidental leaking refrigerant. This could result in severe wounds caused by frostbite.



NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO₂ equivalent.

Formula to calculate the quantity in CO₂ equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg]/1000

Contact your installer for more information.

6.2 To determine the additional refrigerant amount

If the total liquid piping length is...	Then...
≤30 m	Do NOT add additional refrigerant.

If the total liquid piping length is...	Then...
>30 m	$R = (\text{total length (m) of liquid piping} - 30 \text{ m}) \times 0.020$ $R = \text{Additional charge (kg) (rounded in units of 0.1 kg)}$



INFORMATION

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

- Maximum allowable refrigerant charge amount:** 2.6 kg

6.3 To determine the complete recharge amount



INFORMATION

If a complete recharge is necessary, the total refrigerant charge is: the factory refrigerant charge (see unit name plate) + the determined additional amount.

6.4 To charge additional refrigerant



WARNING

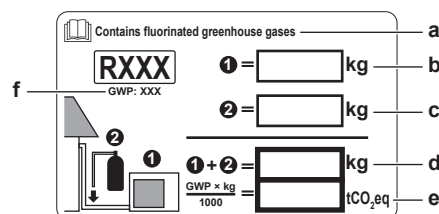
- Only use R32 as refrigerant. Other substances may cause explosions and accidents.
- R32 contains fluorinated greenhouse gases. Its global warming potential (GWP) value is 675. Do NOT vent these gases into the atmosphere.
- When charging refrigerant, ALWAYS use protective gloves and safety glasses.

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

- Connect the refrigerant cylinder to the service port.
- Charge the additional refrigerant amount.
- Open the gas stop valve.

6.5 To fix the fluorinated greenhouse gases label

- Fill in the label as follows:



- 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**.
- Factory refrigerant charge: see unit name plate
- Additional refrigerant amount charged
- Total refrigerant charge
- Quantity of fluorinated greenhouse gases** of the total refrigerant charge expressed as tonnes CO₂ equivalent.
- GWP = Global Warming Potential

7 Electrical installation

NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO₂ equivalent.

Formula to calculate the quantity in CO₂ equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000

Use the GWP value mentioned on the refrigerant charge label.

- Fix the label on the inside of the outdoor unit near the gas and liquid stop valves.

6.6 To check for refrigerant leaks after charging

INFORMATION

Applicable **ONLY** for combination with indoor units CVXM-A9, FVXM-A9.

All field made refrigerant joints must be tested for tightness.

No leak shall be detected with a test method that has a sensitivity of 5 grams refrigerant per year or better, at a pressure of at least 0.25 times the maximum working pressure (see "PS High" on the unit name plate).

In case a leak is detected, recover the refrigerant and repair the joint(s).

Then:

- perform the leak tests see "[5.3.1 To check for leaks](#)" [▶ 10].
- charge refrigerant.
- check for refrigerant leaks after charging (see above).

7 Electrical installation

DANGER: RISK OF ELECTROCUTION

WARNING

ALWAYS use multicore cable for power supply cables.

WARNING

Use an all-pole disconnection type breaker with at least 3 mm between the contact point gaps that provides full disconnection under overvoltage category III.

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** connect the power supply to the indoor unit. This could result in electrical shock or fire.

WARNING

- Do **NOT** use locally purchased electrical parts inside the product.
- Do **NOT** branch the power supply for the drain pump, etc. from the terminal block. This could result in electrical shock or fire.

WARNING

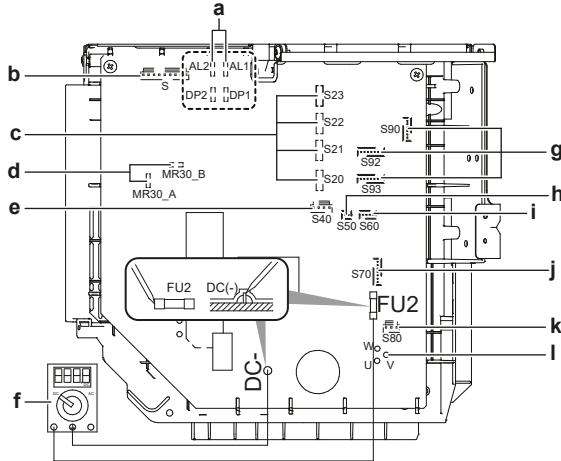
Keep the interconnection wiring away from copper pipes without thermal insulation as such pipes will be very hot.

DANGER: RISK OF ELECTROCUTION

All electrical parts (including thermistors) are powered by the power supply. Do **NOT** touch them with bare hands.

DANGER: RISK OF ELECTROCUTION

Disconnect the power supply for more than 10 minutes, and measure the voltage at the terminals of main circuit capacitors or electrical components before servicing. The voltage **MUST** be less than 50 V DC before you can touch electrical components. For the location of the terminals, see the wiring diagram.



- a AL1, AL2, DP1, DP2: solenoid valve lead wire connectors
- b S: terminal strip lead wire connector
- c S20~S22 (room A, B, C) + S23 (TO TANK): electronic expansion valve coil lead wire connector,
- d MR30_A, MR30_B - suspend lead wire connectors
- e S40: thermal overload relay lead wire and high pressure switch connector
- f Multimeter (DC voltage range)
- g S90, S92, S93: thermistor lead wire connector
- h S50: suspend lead wire connector
- i S60: pressure sensor connector
- j S70: fan motor lead wire connector
- k S80: 4-way valve lead wire connector
- l W, V, U: Compressor lead wire connector

7.1 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		
Power supply cable	Voltage	220~240 V
	Current	16.3 A
	Phase	1~
	Frequency	50 Hz
	Wire size	MUST comply with national wiring regulation 3-core cable Wire size based on the current, but not less than 2.5 mm ²

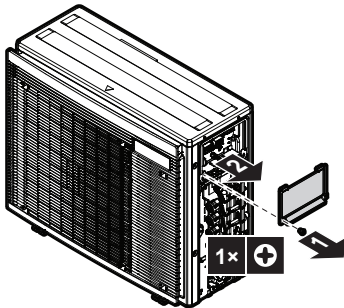
8 Finishing the outdoor unit installation

Component		
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 circuit breaker		20 A
Earth leakage circuit breaker / residual current circuit breaker		MUST comply with national wiring regulation

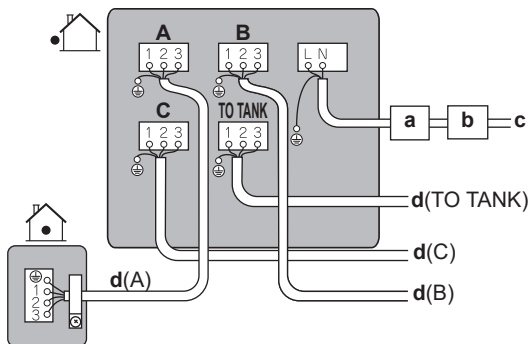
Electrical equipment must comply with EN/IEC 61000-3-12, the European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase.

7.2 To connect the electrical wiring to the outdoor unit

- 1 Remove the switch box cover (1 screw).

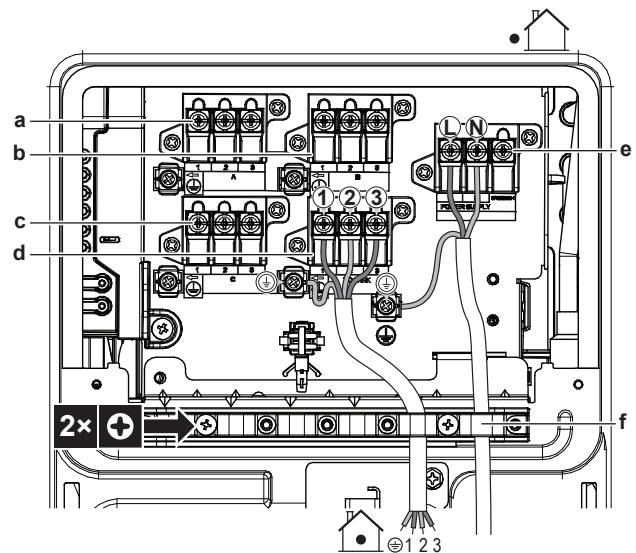


- 2 Connect the wires between the indoor and outdoor units so that the terminal numbers match. Make sure to match the symbols for piping and wiring.
- 3 Make sure to connect correct wiring to correct room.



- A** Terminal for room A
B Terminal for room B
C Terminal for room C
TO TANK Terminal for DHW tank
a Circuit breaker
b Residual current device
c Power supply wire
d Interconnection wire for room (A, B, C, TO TANK)

- 4 Tighten the terminal screws securely using a Phillips screwdriver.
- 5 Check that the wires do NOT disconnect by pulling them lightly.
- 6 Firmly secure the wire retainer to avoid external stress on wire terminations.
- 7 Pass the wiring through the cutout on the bottom of the protection plate.
- 8 Make sure that the electrical wiring does NOT make contact with the gas piping.



- a** Terminal for indoor unit A
b Terminal for indoor unit B
c Terminal for indoor unit C
d Terminal for DHW tank
e Power supply terminal
f Wire retainer

- 9 Reattach the switch box cover and the service cover.

8 Finishing the outdoor unit installation

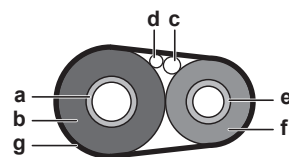
8.1 To finish the outdoor unit installation



DANGER: RISK OF ELECTROCUTION

- Make sure that the system is earthed properly.
- Turn OFF the power supply before servicing.
- Install the switch box cover before turning ON the power supply.

- 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.

9 Maintenance and service

9 Maintenance and service

NOTICE

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

The general maintenance/inspection checklist is complementary to the instructions in this chapter and can be used as a guideline and reporting template during maintenance.

NOTICE

Maintenance **MUST** be done by an authorised installer or service agent.

We recommend performing maintenance at least once a year. However, applicable legislation might require shorter maintenance intervals.

NOTICE

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO₂ equivalent.

Formula to calculate the quantity in CO₂ equivalent tonnes: GWP value of the refrigerant × total refrigerant charge [in kg] / 1000

10 Configuration

INFORMATION

Following field settings are applicable only for direct expansion indoor units (DX). For the DHW tank field setting, refer to the installation manual of the DHW tank.

10.1 About standby electricity saving function

INFORMATION

This function is available only for the indoor units listed below.

The standby electricity saving function:

- turns OFF the power supply to the outdoor unit and,
- turns ON the standby electricity saving mode on the indoor unit.

The standby electricity saving function works with following units:


FTXM, FTXJ, FVXM, FTXA, CTXA, CTXM, CVXM, EKHWT

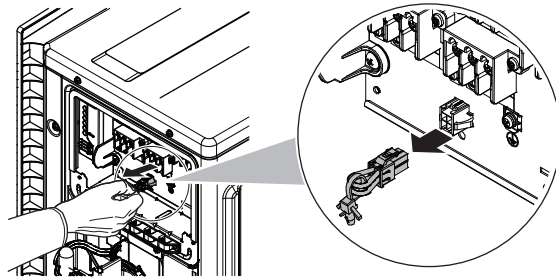
If another indoor unit is used, the connector for standby electric saving **MUST** be plugged in.

The standby electricity saving function is turned OFF before shipping.

10.1.1 To turn ON standby electricity saving function

Prerequisite: The main power supply **MUST** be turned OFF.

- 1 Remove the service cover.
- 2 Disconnect the selective standby electricity saving connector.



- 3 Turn ON the main power supply.

10.2 About priority room function

INFORMATION

- The priority room function requires initial settings to be made during the installation of the unit. Ask the customer in which rooms he plans to use this function and make the necessary settings during installation.
- The priority room setting is only applicable for an air conditioner indoor unit and only one room can be set.

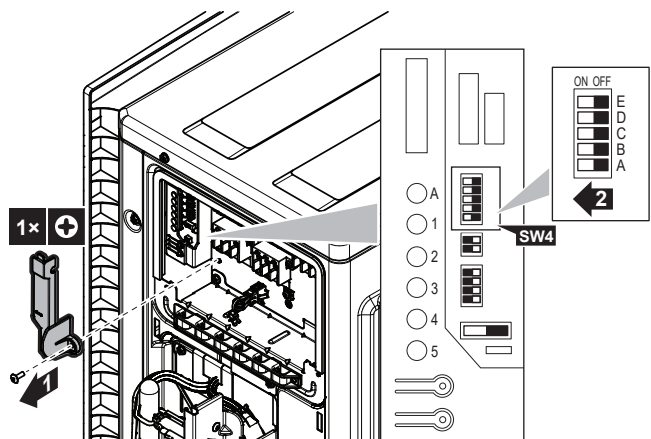
The indoor unit for which the priority room setting is applied takes priority in the following cases:

- **Operation mode priority:** If the priority room function is set on an indoor unit, all other indoor units enter the standby mode.
- **Priority during high-power operation:** If the indoor unit on which the priority room function is set operates at high power, the other indoor units will run with reduced capabilities.
- **Quiet operation priority:** If the indoor unit on which the priority room function is set to quiet operation, the outdoor unit will also run quietly.

Ask the customer in which rooms he plans to use this function and make the necessary settings during installation. Setting it in the guest rooms is convenient.

10.2.1 To set the priority room function

- 1 Remove the switch cover on the service PCB.
- 2 Set the switch (SW4) for the indoor unit for which you want to activate the priority room function to ON.



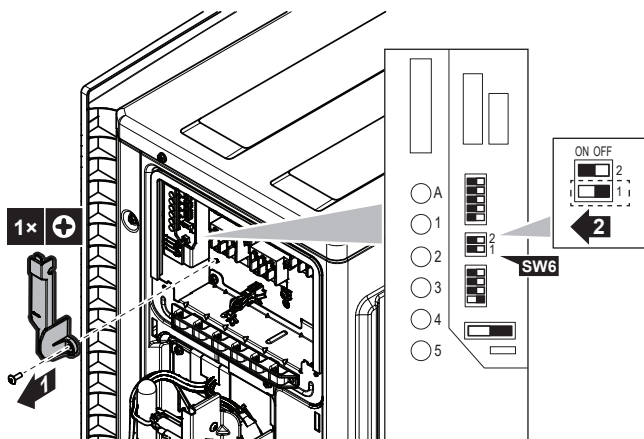
- 3 Reset the power.

10.3 About night quiet mode

The night quiet mode function makes the outdoor unit run more quietly at nighttime. This will reduce the cooling capacity of the unit. Explain Night quiet mode to the customer and confirm if customer wants to use this mode.

10.3.1 To turn ON the night quiet mode

- 1 Remove the switch cover on the service PCB.



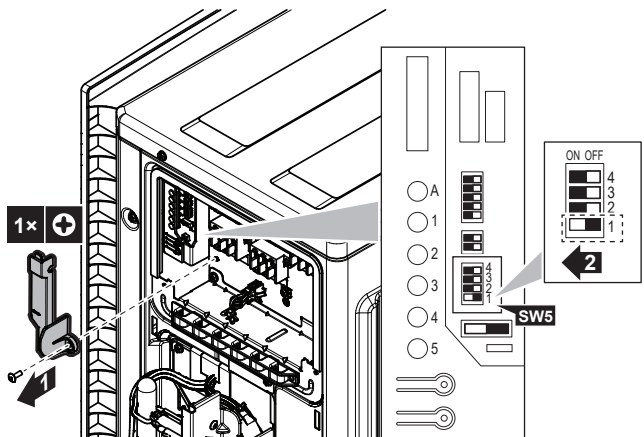
- 2 Set the night quiet mode switch (SW6-1) to ON.

10.4 About heat mode lock

Heat mode lock limits the unit to heat operation.

10.4.1 To turn ON heat mode lock

- 1 Remove the switch cover on the service PCB.
- 2 Set the heat mode lock switch (SW5-1) to ON.



11 Commissioning



NOTICE

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

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



NOTICE

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

11.1 Checklist before commissioning

- 1 After the installation of the unit, check the items listed below.

- 2 Close the unit.
- 3 Power up the unit.

<input type="checkbox"/>	The indoor unit is properly mounted.
<input type="checkbox"/>	The outdoor unit is properly mounted.
<input type="checkbox"/>	The system is properly earthed and the earth terminals are tightened.
<input type="checkbox"/>	The power supply voltage matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are NO loose connections or damaged electrical components in the switch box.
<input type="checkbox"/>	There are NO damaged components or squeezed pipes on the inside of the indoor and outdoor units.
<input type="checkbox"/>	There are NO refrigerant leaks .
<input type="checkbox"/>	The refrigerant pipes (gas and liquid) are thermally insulated.
<input type="checkbox"/>	The correct pipe size is installed and the pipes are properly insulated.
<input type="checkbox"/>	The stop valves (gas and liquid) on the outdoor unit are fully open.
<input type="checkbox"/>	Drainage Make sure drainage flows smoothly. Possible consequence: Condensate water might drip.
<input type="checkbox"/>	The indoor unit receives the signals of the user interface .
<input type="checkbox"/>	The specified wires are used for the interconnection cable .
<input type="checkbox"/>	The fuses, circuit breakers , or locally installed protection devices are installed according to this document, and have NOT been bypassed.
<input type="checkbox"/>	Check if marks (room A~C and TO TANK) on the wiring and piping match for each connected unit.
<input type="checkbox"/>	Check if the priority room setting is NOT set for 2 or more rooms. Keep in mind that the DHW tank for Multi shall NOT be selected as the priority room.

11.2 Checklist during commissioning

<input type="checkbox"/>	To perform a wiring check.
<input type="checkbox"/>	To perform an air purge .
<input type="checkbox"/>	To perform a test run .

11.3 Trial operation and testing

<input type="checkbox"/>	Before starting the test run, measure the voltage at the primary side of the safety breaker .
<input type="checkbox"/>	The piping and wiring work match.
<input type="checkbox"/>	The stop valves (gas and liquid) on the outdoor unit are fully open.

Initialization of the Multi system can take several minutes depending on the number of indoor units and options used.

12 Disposal

11.3.1 About wiring error check

i INFORMATION

This function is available only for the air-conditioning indoor units. DHW tank wiring MUST be checked manually, automatic correction is NOT possible.

The wiring error check function will check and automatically correct any wiring errors. This is useful for checking wiring that CANNOT be checked directly, such as underground wiring.

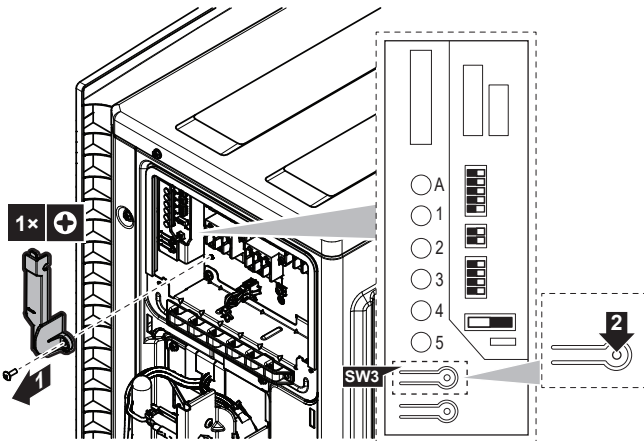
This function CANNOT be used within 3 minutes after activating the safety breaker or when the outside air temperature is $\leq 5^{\circ}\text{C}$ and if water temperature in DHW tank is $\geq 20^{\circ}\text{C}$.

To perform a wiring error check

i INFORMATION

You only have to perform a wiring error check if you are not sure that the electrical wiring and piping is connected correctly.

- 1 Remove the service PCB switch cover.



- 2 Press shortly the wiring error check switch (SW3) on the outdoor unit service PCB.

Result: The service monitor LEDs indicate whether correction is possible or not. For details about how to read the LED display, refer to the service manual.

Result: Wiring errors will be corrected after 15-20 minutes. If automatic correction is not possible, check the indoor unit wiring and piping in the usual way.

i INFORMATION

- The number of LEDs displayed depends on the number of rooms.
- The wiring error check function will NOT work if outside temperature is $\leq 5^{\circ}\text{C}$ and if water temperature in DHW tank is $\geq 20^{\circ}\text{C}$.
- After wiring error check operation is completed, LED indication will continue until normal operation starts.
- Follow the product diagnosis procedures. For details of product error diagnosis refer to service manual.

Status of LEDs:

- All LEDs flash: automatic correction is NOT possible.
- LEDs flash alternately: automatic correction is completed.
- One or more LEDs are permanently on: abnormal stop (follow the diagnosis procedure on the back of the right side plate and refer to service manual).

11.3.2 To perform a test run

i INFORMATION

For DHW tank test run procedure, refer to installation manual of DHW tank unit.

i INFORMATION

If the unit runs into an error during commissioning, see the service manual for the detailed troubleshooting guidelines.

Prerequisite: Power supply MUST be in the specified range.

Prerequisite: Test run operation may be done in cooling or heating mode.

Prerequisite: Test run should be done in accordance with the operation manual of the indoor unit to make sure that all functions and parts are working properly.

- 1 In cooling mode, select the lowest programmable temperature. In heating mode, select the highest programmable temperature.
- 2 Measure the temperature at the indoor unit inlet and outlet after running the unit for about 20 minutes. The difference should be more than 8°C (cooling) or 20°C (heating).
- 3 First check operation of each unit individually, then check simultaneous operation of all indoor units. Check both heating and cooling operation.
- 4 When test run is finished, set the temperature to a normal level. In cooling mode: $26\sim 28^{\circ}\text{C}$, in heating mode: $20\sim 24^{\circ}\text{C}$.

i INFORMATION

- Test run can be disabled if necessary.
- After the unit is turned OFF, it cannot be started again for 3 minutes.
- When the test run is started in the heat mode right after turning the safety breaker on, in some cases no air will be output for about 15 minutes in order to protect the unit.
- During cooling operation, frost may form on the gas stop valve or other parts. This is normal.

i INFORMATION

- Even if the unit is turned OFF, it consumes electricity.
- When the power turns back on after a power break, the previously selected mode will be resumed.

11.4 Starting up the outdoor unit

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

12 Disposal

! NOTICE

Do NOT try to dismantle the system yourself: dismantling of the system, treatment of the refrigerant, oil and other parts MUST comply with applicable legislation. Units MUST be treated at a specialised treatment facility for reuse, recycling and recovery.

i INFORMATION

To protect the environment, make sure to perform an automatic pump down operation when relocating or dismantling the unit. For the pump down procedure, refer to the service manual or the installer reference guide.

13 Technical data


















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

13.1 Wiring diagram

The wiring diagram is delivered with the unit, located inside of the outdoor unit (bottom side of the top plate).

13.1.1 Unified wiring diagram legend

For applied parts and numbering, refer to the wiring diagram on the unit. Part numbering is by Arabic numbers in ascending order for each part and is represented in the overview below by "*" in the part code.

Symbol	Meaning	Symbol	Meaning
	Circuit breaker		Protective earth
			Protective earth (screw)
	Connector		Rectifier
	Earth		Relay connector
	Field wiring		Short-circuit connector
	Fuse		Terminal
	Indoor unit		Terminal strip
	Outdoor unit		Wire clamp
	Residual current device		

Symbol	Colour	Symbol	Colour
BLK	Black	ORG	Orange
BLU	Blue	PNK	Pink
BRN	Brown	PRP, PPL	Purple
GRN	Green	RED	Red
GRY	Grey	WHT	White
SKY BLU	Sky blue	YLW	Yellow

Symbol	Meaning
A*P	Printed circuit board
BS*	Pushbutton ON/OFF, operation switch
BZ, H*O	Buzzer
C*	Capacitor
AC*, CN*, E*, HA*, HE*, HL*, HN*, HR*, MR*_A, MR*_B, S*, U, V, W, X*A, K*_R_*, NE	Connection, connector
D*, V*D	Diode
DB*	Diode bridge
DS*	DIP switch
E*H	Heater
FU*, F*U, (for characteristics, refer to PCB inside your unit)	Fuse
FG*	Connector (frame ground)
H*	Harness

Symbol	Meaning
H*P, LED*, V*L	Pilot lamp, light emitting diode
HAP	Light emitting diode (service monitor green)
HIGH VOLTAGE	High voltage
IES	Intelligent eye sensor
IPM*	Intelligent power module
K*R, KCR, KFR, KHuR, K*M	Magnetic relay
L	Live
L*	Coil
L*R	Reactor
M*	Stepper motor
M*C	Compressor motor
M*F	Fan motor
M*P	Drain pump motor
M*S	Swing motor
MR*, MRCW*, MRM*, MRN*	Magnetic relay
N	Neutral
n=*, N=*	Number of passes through ferrite core
PAM	Pulse-amplitude modulation
PCB*	Printed circuit board
PM*	Power module
PS	Switching power supply
PTC*	PTC thermistor
Q*	Insulated gate bipolar transistor (IGBT)
Q*C	Circuit breaker
Q*DI, KLM	Earth leak circuit breaker
Q*L	Overload protector
Q*M	Thermo switch
Q*R	Residual current device
R*	Resistor
R*T	Thermistor
RC	Receiver
S*C	Limit switch
S*L	Float switch
S*NG	Refrigerant leak detector
S*NPH	Pressure sensor (high)
S*NPL	Pressure sensor (low)
S*PH, HPS*	Pressure switch (high)
S*PL	Pressure switch (low)
S*T	Thermostat
S*RH	Humidity sensor
S*W, SW*	Operation switch
SA*, F1S	Surge arrester
SR*, WLU	Signal receiver
SS*	Selector switch
SHEET METAL	Terminal strip fixed plate
T*R	Transformer
TC, TRC	Transmitter
V*, R*V	Varistor
V*R	Diode bridge, Insulated-gate bipolar transistor (IGBT) power module
WRC	Wireless remote controller

13 Technical data

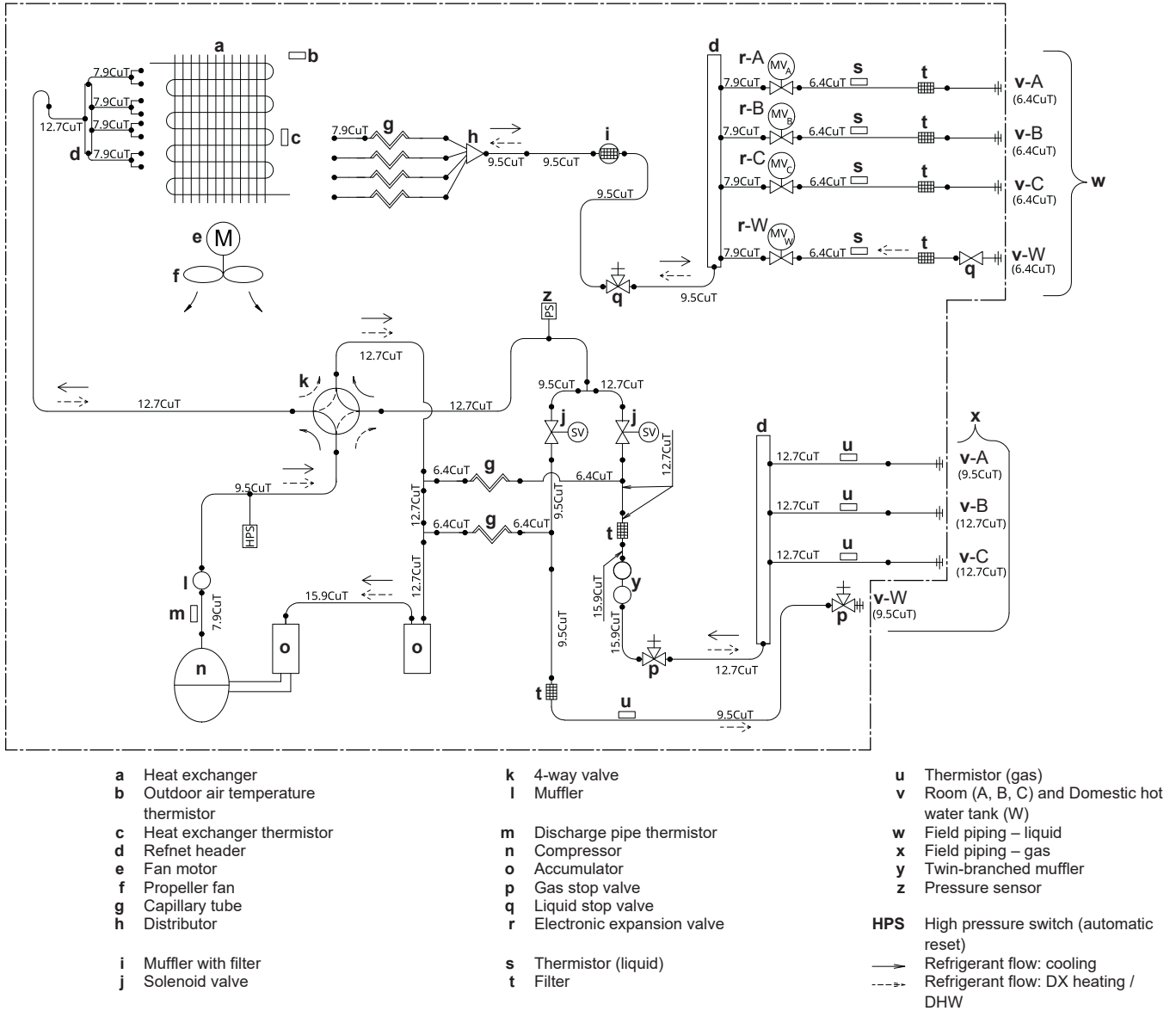
Symbol	Meaning
X*	Terminal
X*M	Terminal strip (block)
Y*E	Electronic expansion valve coil
Y*R, Y*S	Reversing solenoid valve coil
Z*C	Ferrite core
ZF, Z*F	Noise filter

13.2 Piping diagram: Outdoor unit

Component PED category classification:

- High pressure switches: category IV
- Compressor: category II
- Accumulator: category II
- Other components: refer to PED article 4, paragraph 3

4MWXM52







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