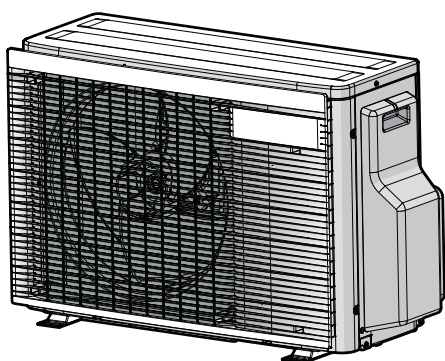




# Installation manual



## R32 Split series



**2MXM40A2V1B9**  
**2MXM50A2V1B8**

Installation manual  
R32 Split series

**English**



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## 1 About the documentation

### 1.1 Product code

2MXM40A2, 2MXM50A2

### 1.2 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.



#### INFORMATION

Make sure that the user has the printed documentation and ask him/her to keep it for future reference.

#### 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.

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

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

2MXM-A9



2MXM-A8





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).

## 2 Specific installer safety instructions

Always observe the following safety instructions and regulations.

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



#### 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" ▶ 4)



#### 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" ▶ 6)



#### 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" ▶ 8)



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" ▶ 9)



#### 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

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.



### 3 About the box



#### 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.

Finishing the outdoor unit installation (see "[8 Finishing the outdoor unit installation](#)" [p 11])



#### 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.

Commissioning (see "[10 Commissioning](#)" [p 12])



#### CAUTION

Do NOT perform the test operation while working on the indoor unit(s).

When performing the test operation, NOT ONLY the outdoor unit, but the connected indoor unit will operate as well. Working on an indoor unit while performing a test operation is dangerous.



#### CAUTION

Do NOT insert fingers, rods or other objects into the air inlet or outlet. Do NOT remove the fan guard. When the fan is rotating at high speed, it will cause injury.

Maintenance and service (see "[11 Maintenance and service](#)" [p 13])



#### DANGER: RISK OF ELECTROCUTION



#### DANGER: RISK OF BURNING/SCALDING



#### 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.



#### 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

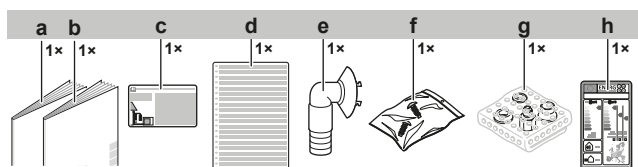
Do NOT touch the compressor with bare hands.

## 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 Drain socket
- f Screw bag (for fixing wire retainer)
- g Reducer assembly
- h Energy label

## 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

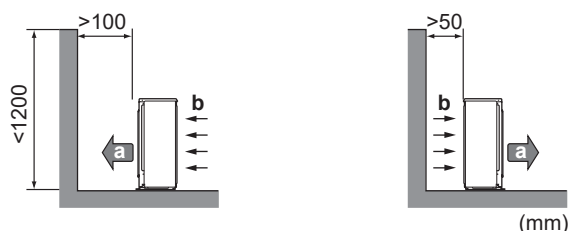
The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated room without continuously operating ignition sources (e.g. open flames, an operating gas appliance, or an operating electric heater). The room size shall be as specified in the General safety precaution.

#### 4.1.1 Installation site requirements of the outdoor unit

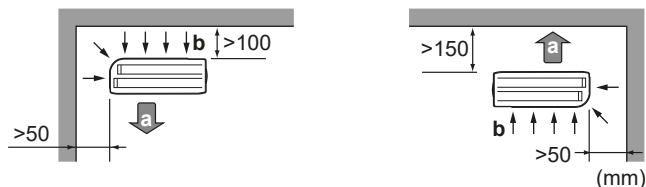
Mind the following spacing guidelines:

- Wall facing 1 side:

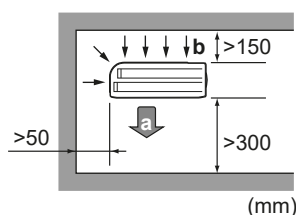




- Wall facing 2 sides:

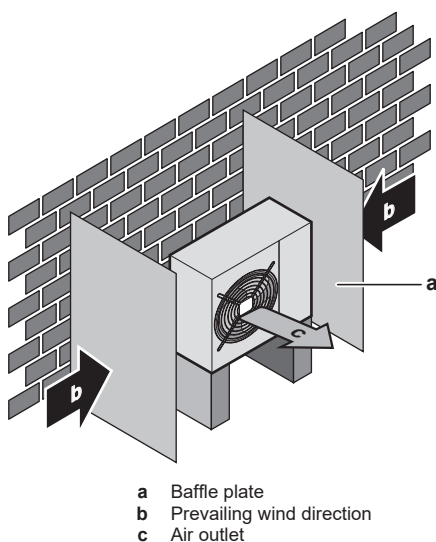


- Wall facing 3 sides:



- a Air outlet
- b Air inlet

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.



## INFORMATION

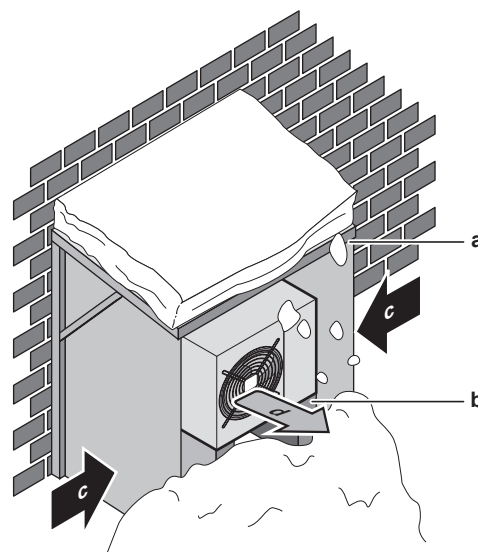
The sound pressure level is less than 70 dBA.

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):

	Cooling mode	Heating mode
2MXM-A9	-10~46°C DB	-15~24°C DB
2MXM-A8	-10~50°C DB	-20~24°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. 5] 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.

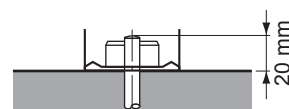
## 4.2 Mounting the outdoor unit

### 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.

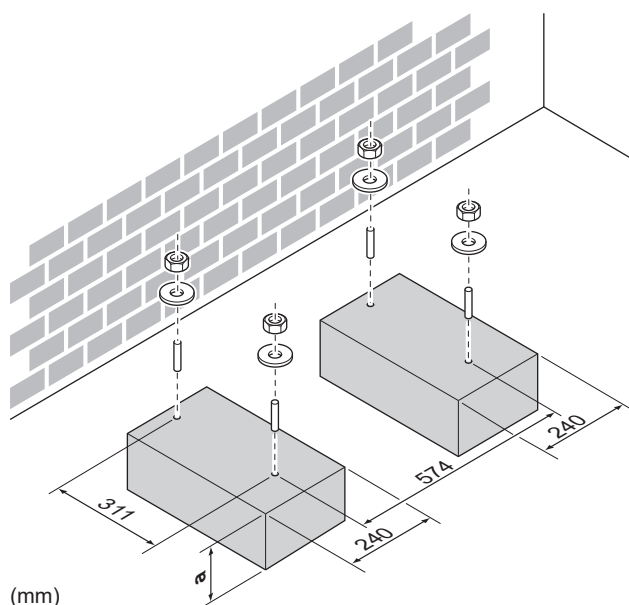
The unit may be installed directly on a concrete veranda or another solid surface as long as it provides proper drainage.

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



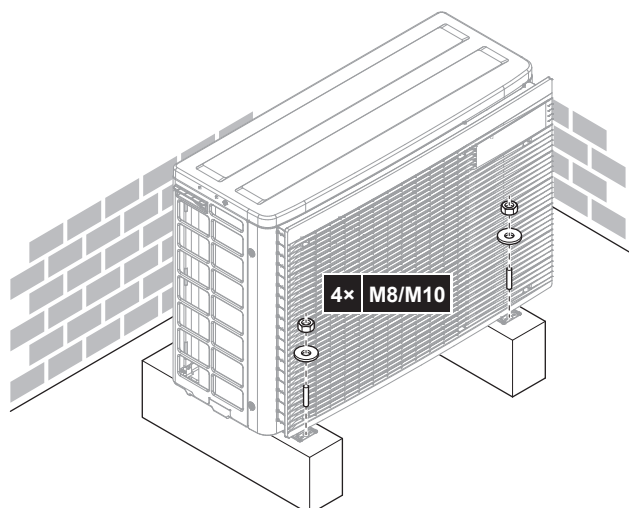


## 5 Piping installation



a 100 mm above expected level of snow

### 4.2.2 To install the outdoor unit



### 4.2.3 To provide drainage



#### NOTICE

If the unit is installed in a cold climate, take adequate measures so that the evacuated condensate CANNOT freeze.



#### NOTICE

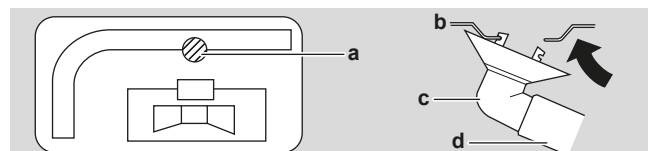
If the drain holes of the outdoor unit are blocked up by a mounting base or floor surface, place additional foot bases ≤30 mm under the outdoor unit's feet.



#### INFORMATION

For information on the available options, contact your dealer.

- 1 Use a drain plug for drainage.
- 2 Use a Ø16 mm hose (field supply).



- a Drain port
- b Bottom frame
- c Drain plug
- d Hose (field supply)

## 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

Class 40	
Liquid piping	2× Ø6.4 mm (1/4")
Gas piping	2× Ø9.5 mm (3/8")
Class 50	
Liquid piping	2× Ø6.4 mm (1/4")
Gas piping	1× Ø9.5 mm (3/8") 1× Ø12.7 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" [▶ 7] 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 (Ø)	Temper grade	Thickness (t) <sup>(a)</sup>	
6.4 mm (1/4")	Annealed (O)	≥0.8 mm	
9.5 mm (3/8")			
12.7 mm (1/2")			

<sup>(a)</sup> 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 <sub>p</sub> )	Insulation inner diameter (Ø <sub>i</sub> )	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	≤20 m
Refrigerant piping total length	≤30 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 unit capacity class that can be connected to this outdoor unit:

Outdoor unit	Total indoor unit capacity class
2MXM40	≤6.0 kW
2MXM50	≤8.5 kW



### INFORMATION

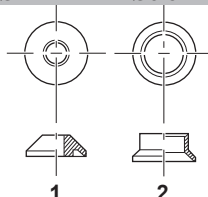
It is NOT possible to connect only 1 indoor unit. Connect at least 2 indoor units.

Port	Class	Reducer
<b>2MXM40</b>		
A (Ø9.5 mm)	15, 20, 25, 35	—
B (Ø9.5 mm)	15, 20, 25, 35	—
<b>2MXM50</b>		
A (Ø9.5 mm)	15, 20, 25, 35, (42) <sup>(a)</sup>	—
	42	OPTIONAL ACCESSORY
B (Ø12.7 mm)	15, 20, 25, 35, (42) <sup>(a)</sup>	1+2
	42, 50	—

<sup>(a)</sup> Only in case of connection with FTXM42R, FTXM42A, FTXA42C

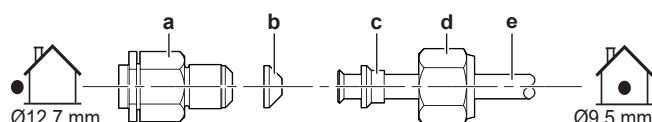
Reducer type:

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).

Flare nut for (mm)	Tightening torque (N·m)
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.



## 6 Charging refrigerant

- **Piping protection.** Protect the field piping against physical damage.



### WARNING

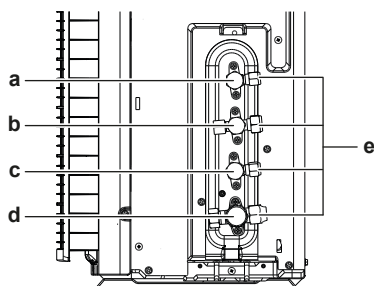
Connect the refrigerant piping securely before running the compressor. If the refrigerant piping is NOT connected and the stop valve is open when the compressor is run, air will be sucked in. This will cause abnormal pressure in the refrigeration cycle, which may result in equipment damage and even injury.



### 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, SUNISO Oil).
- Do NOT reuse joints.

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



- a Liquid stop valve (room A)
- b Gas stop valve (room A)
- c Liquid stop valve (room B)
- d Gas stop valve (room B)
- e 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) or higher (depending on local legislation) 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 CO<sub>2</sub> equivalent.

**Formula to calculate the quantity in CO<sub>2</sub> 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...
≤20 m	Do NOT add additional refrigerant.
>20 m	$R = (\text{total length (m) of liquid piping} - 20 \text{ m}) \times 0.020$ $R = \text{Additional charge (kg) (rounded in units of 0.1 kg)}$

**INFORMATION**

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

## 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.

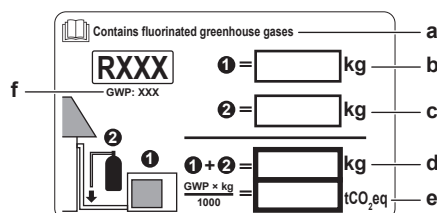
**Prerequisite:** Before charging refrigerant, make sure the refrigerant piping is connected and checked (leak test and vacuum drying).

- 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 CO<sub>2</sub> equivalent.
- GWP = Global Warming Potential

**NOTICE**

Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO<sub>2</sub> equivalent.

**Formula to calculate the quantity in CO<sub>2</sub> 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 refrigerant piping joints for leaks after charging refrigerant

### Tightness test of field-made refrigerant joints indoors

- Use a leakage test method with a minimum sensitivity of 5 g of refrigerant/year. Test leaks using a pressure of at least 0.25 times the maximum working pressure (see "PS High" on the unit nameplate).

### If a leak is detected

- Recover the refrigerant, repair the joint, and repeat the test.
- Perform the leak tests see "5.3.1 To check for leaks" [p. 8].
- Charge refrigerant.
- Check for refrigerant leaks after charging (see above).

## 7 Electrical installation

**DANGER: RISK OF ELECTROCUTION****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.



## 7 Electrical installation



### 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.

## 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.

Power supply	
Voltage	220~240 V
Frequency	50 Hz
Phase	1~
Current	2MXM40: 9.8 A 2MXM50: 13.3 A

Components	
Power supply cable	MUST comply with national wiring regulation 3-core cable Wire size based on the current, but not less than 2.5 mm <sup>2</sup>
Interconnection cable (indoor↔outdoor)	Only use harmonised wire providing double insulation and suitable for applicable voltage 4-core cable Minimum size 1.5 mm <sup>2</sup>
Recommended circuit breaker	16 A

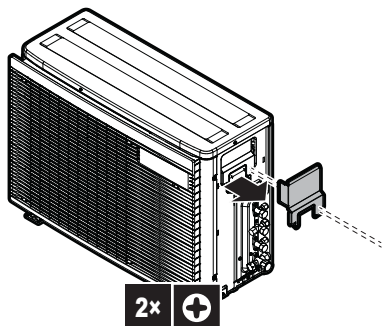
### Components

Earth leakage circuit breaker / residual current circuit breaker

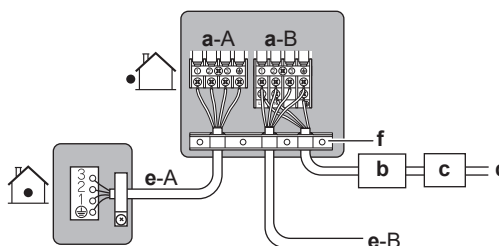
MUST comply with national wiring regulation

## 7.2 To connect the electrical wiring to the outdoor unit

- Remove the switch box cover (2 screws).

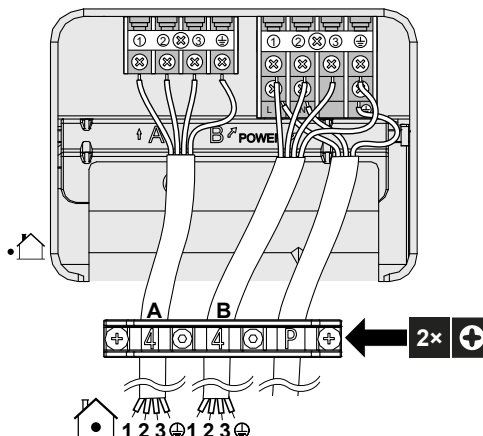


- Connect the wires between the indoor and outdoor units so that the terminal numbers match. Make sure to match the symbols for piping and wiring.
- Make sure to connect correct wiring to correct room (A to A, B to B).



- a Terminal for room (A, B)
- b Circuit breaker
- c Residual current device
- d Power supply wire
- e Interconnection wire for room (A, B)
- f Wire retainer

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





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

## 8 Finishing the outdoor unit installation

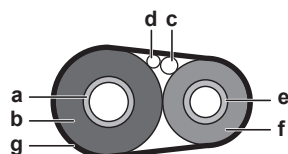
### 8.1 To finish the outdoor unit installation



#### **DANGER: RISK OF ELECTROCUTION**

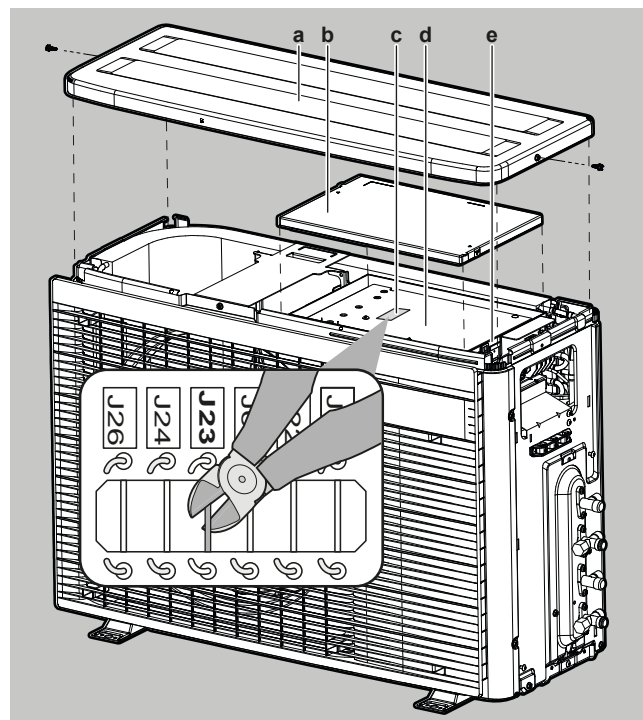
- Make sure that the system is earthed properly.
- Turn OFF the power supply before servicing.
- Install the switch box cover before turning ON the power supply.

- 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.



- a Top plate
- b Electric box cover
- c PCB jumpers
- d PCB
- e Electric box

- 4 Reinstall the electric box cover and the top plate in reverse order and turn on the main power supply.

## 9 Configuration

### 9.1 About ECONO mode prohibition setting

This setting disables the input control signal from the user interface. Use this setting when you wish to block reception of input controls (cooling/heating) from indoor unit user interfaces.

#### 9.1.1 To turn ON ECONO mode prohibition setting

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

- 1 Remove the top plate of the outdoor unit (2 screws on sides)
- 2 Remove the electric box cover by sliding it. Be careful not to bend the electric box hook.
- 3 Cut the jumper (J23).

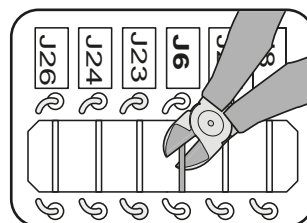
### 9.2 About night quiet mode

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.

#### 9.2.1 To turn ON the night quiet mode

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

- 1 Remove the top plate and the electric box cover of the outdoor unit (see "9.1.1 To turn ON ECONO mode prohibition setting" ▶ 11)
- 2 Cut the jumper J6.



- 3 Reinstall the top plate and the electric box cover.



#### **CAUTION**

When reinstalling the electric box cover, be careful not to pinch the fan motor lead wire.

### 9.3 About heat mode lock

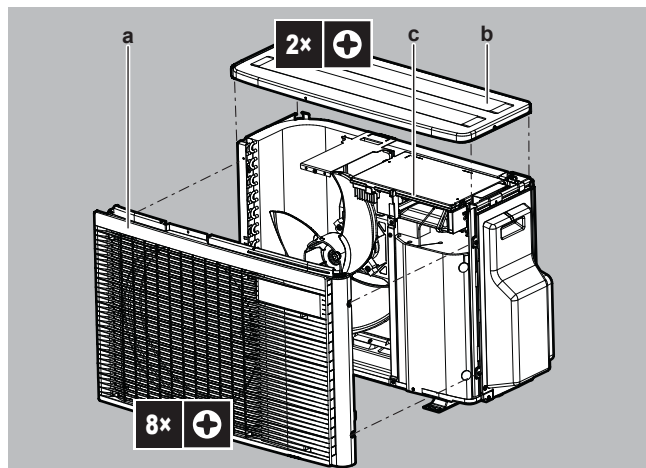
Heat mode lock limits the unit to heat operation.



## 10 Commissioning

### 9.3.1 To turn ON heat mode lock

- 1 Remove the top plate (2 screws) and the front plate (8 screws).
- 2 To set heat mode lock remove the S99 connector.
- 3 To reset the heat pump mode (cooling/heating), plug the connector back.



- a Front plate  
b Top plate  
c S99 connector

Mode	S99 connector
Heat pump (cooling, heating)	Connected
Heating only	Disconnected

- 4 Reinstall the top plate and the front plate.



#### INFORMATION

Forced operation is also available in heating mode.

### 9.4 About standby electricity saving function

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:

2MXM40, 2MXM50	CTXA, CTXM, CVXM, FTXM, FTXP, FTXJ, FVXM

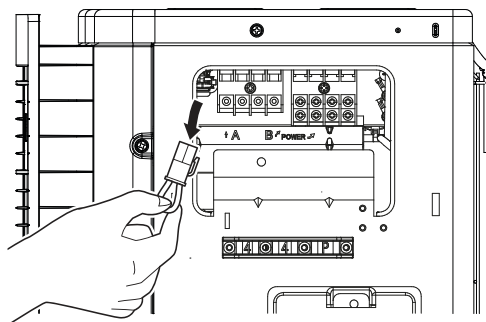
If another indoor unit is used, the connector for standby electric saving **MUST** be plugged in.

The standby electricity saving function is turned OFF before shipping.

#### 9.4.1 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 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.

### 10.1 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 <b>indoor unit</b> is properly mounted.
<input type="checkbox"/>	The <b>outdoor unit</b> is properly mounted.
<input type="checkbox"/>	The system is properly <b>earthed</b> and the earth terminals are tightened.
<input type="checkbox"/>	The <b>power supply voltage</b> matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are <b>NO loose connections</b> or damaged electrical components in the switch box.
<input type="checkbox"/>	There are <b>NO damaged components</b> or <b>squeezed pipes</b> on the inside of the indoor and outdoor units.
<input type="checkbox"/>	There are <b>NO refrigerant leaks</b> .
<input type="checkbox"/>	The <b>refrigerant pipes</b> (gas and liquid) are thermally insulated.
<input type="checkbox"/>	The correct pipe size is installed and the <b>pipes</b> are properly insulated.
<input type="checkbox"/>	The <b>stop valves</b> (gas and liquid) on the outdoor unit are fully open.
<input type="checkbox"/>	<b>Drainage</b> Make sure drainage flows smoothly. <b>Possible consequence:</b> Condensate water might drip.
<input type="checkbox"/>	The indoor unit receives the signals of the <b>user interface</b> .
<input type="checkbox"/>	The specified wires are used for the <b>interconnection cable</b> .



<input type="checkbox"/>	The <b>fuses, circuit breakers</b> , or locally installed protection devices are installed according to this document, and have NOT been bypassed.
<input type="checkbox"/>	Check if marks (room A and B) on the wiring and piping match for each indoor unit.
<input type="checkbox"/>	Check if the priority room setting is set for 2 or more rooms. Keep in mind that the DHW generator for Multi or the Hybrid for Multi shall not be selected as the priority room.

## 10.2 Checklist during commissioning

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

## 10.3 Trial operation and testing

<input type="checkbox"/>	Before starting the test run, measure the voltage at the primary side of the <b>safety breaker</b> .
<input type="checkbox"/>	The <b>piping and wiring work</b> match.
<input type="checkbox"/>	The <b>stop valves</b> (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.

### 10.3.1 To perform a test run



#### 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 15°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: 26~28°C, in heating mode: 20~24°C.



#### INFORMATION

- Test run can be disabled if necessary.
- After the unit is turned OFF, it cannot be started again for 3 minutes.
- During cooling operation, frost may form on the gas stop valve or other parts. This is normal.



#### 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 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

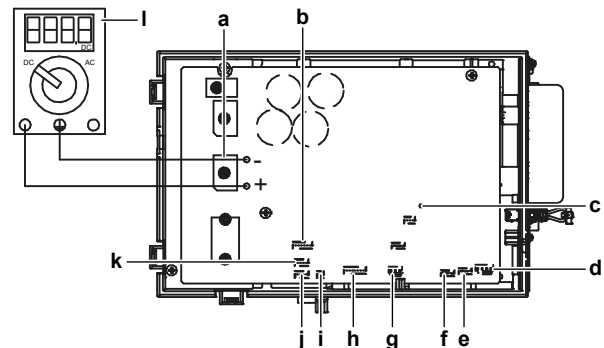
Applicable legislation on **fluorinated greenhouse gases** requires that the refrigerant charge of the unit is indicated both in weight and CO<sub>2</sub> equivalent.

**Formula to calculate the quantity in CO<sub>2</sub> equivalent tonnes:** GWP value of the refrigerant × total refrigerant charge [in kg] / 1000



#### 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 DB1 diode bridge
- b S90 thermistor lead wire
- c LED A
- d S40 thermal overload relay lead wire
- e S20 (white) room A electronic expansion valve coil
- f S21 (red) room B electronic expansion valve coil
- g S80 (white) 4-way valve lead wire connector
- h S70 fan motor lead wire
- i S99 heating lock
- j S91 (red) liquid thermistor lead wire
- k S92 (white) gas thermistor lead wire
- l Multimeter (DC voltage range)

# 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.



## 13 Technical data



### 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 the 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
			Noiseless earth
	Connection		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		Heater

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

Symbol	Meaning
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
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



Symbol	Meaning
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
X*	Terminal
X*M	Terminal strip (block)
Y*E	Electronic expansion valve coil

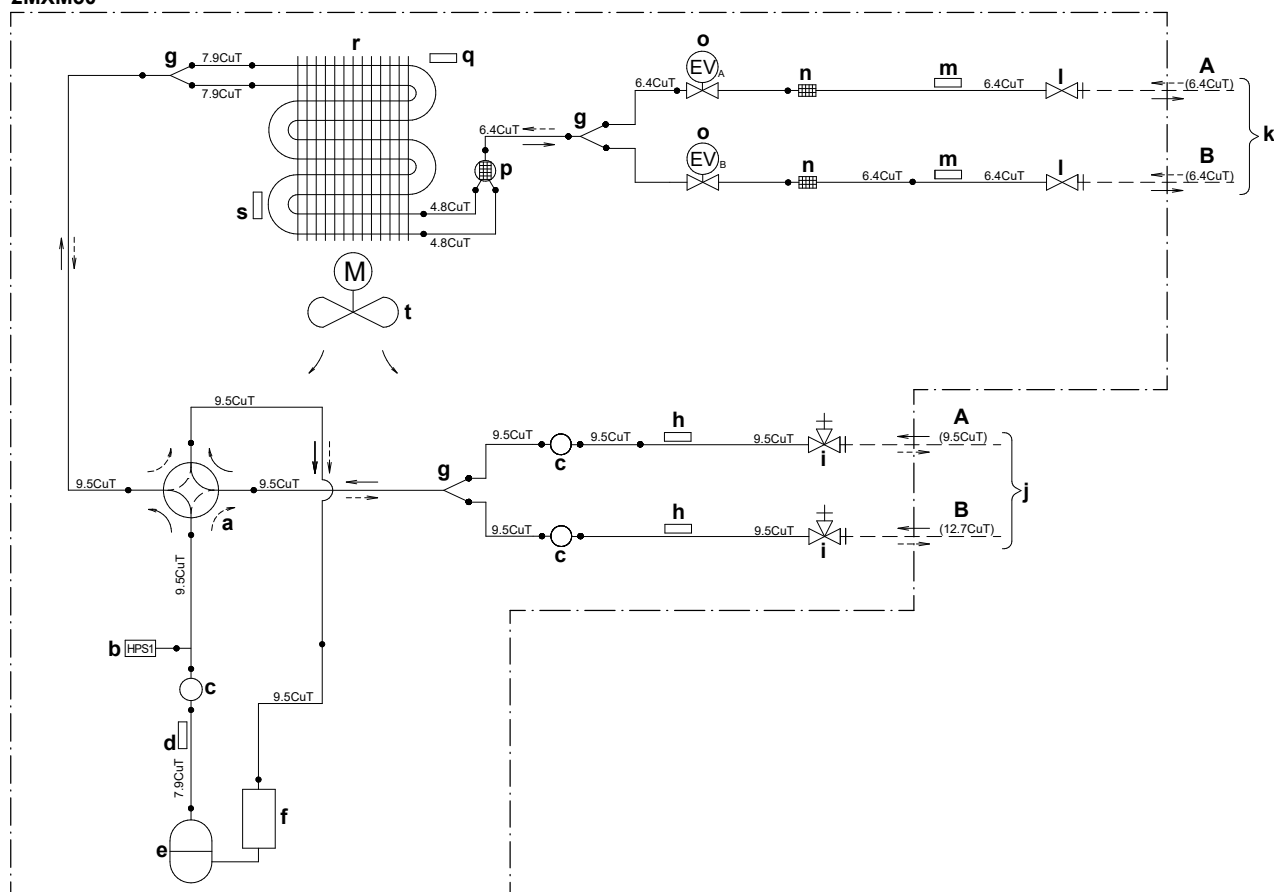
Symbol	Meaning
Y*R, Y*S	Reversing solenoid valve coil
Z*C	Ferrite core
ZF, Z*F	Noise filter

## 13.2 Piping diagram: Outdoor unit

Component PED category classification:

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

### 2MXM50



- A** Room A  
**B** Room B  
**a** 4-way valve ON: heating  
**b** High pressure switch with automatic reset  
**c** Muffler  
**d** Discharge pipe thermistor  
**e** Compressor  
**f** Accumulator  
**g** Branch pipe  
**h** Thermistor (gas)  
**i** Gas stop valve  
**j** Field piping (gas)

- k** Field piping (liquid)  
**l** Liquid stop valve  
**m** Thermistor (liquid)  
**n** Filter  
**o** Motor-operated valve  
**p** Muffler  
**q** Outdoor air temperature thermistor  
**r** Heat exchanger  
**M** Fan motor  
 → Refrigerant flow: cooling  
 --- Refrigerant flow: heating





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