

Installer reference guide

Daikin room air conditioner

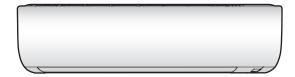


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1 About the documentation

1.1 About this document



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.

Documentation set

This document is part of a documentation set. The complete set consists of:

- General safety precautions:
 - Safety instructions that you MUST read before installing
 - Format: Paper (in the box of the indoor unit)
- Indoor unit installation manual:
 - Installation instructions
 - Format: Paper (in the box of the indoor unit)
- Installer reference guide:
 - Preparation of the installation, good practices, reference data,...
 - Format: Digital files on http://www.daikineurope.com/support-and-manuals/ product-information/

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

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 website (publicly accessible).
- The **full set** of latest technical data is available on the (authentication required).



2 General safety precautions

2.1 For the installer

2.1.1 General

If you are NOT sure how to install or operate the unit, contact your dealer.



DANGER: RISK OF BURNING/SCALDING

- Do NOT touch the refrigerant piping, water piping or internal parts during and immediately after operation. It could be too hot or too cold. Give it time to return to normal temperature. If you MUST touch it, wear protective gloves.
- Do NOT touch any accidental leaking refrigerant.



WARNING

Improper installation or attachment of equipment or accessories could result in electrical shock, short-circuit, leaks, fire or other damage to the equipment. ONLY use accessories, optional equipment and spare parts made or approved by .



WARNING

Make sure installation, testing and applied materials comply with applicable legislation (on top of the instructions described in the documentation).



CAUTION

Wear adequate personal protective equipment (protective gloves, safety glasses,...) when installing, maintaining or servicing the system.



WARNING

Tear apart and throw away plastic packaging bags so that nobody, especially children, can play with them. Possible risk: suffocation.



WARNING

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



CAUTION

Do NOT touch the air inlet or aluminium fins of the unit.



CAUTION

- Do NOT place any objects or equipment on top of the unit.
- Do NOT sit, climb or stand on the unit.

In accordance with the applicable legislation, it might be necessary to provide a logbook with the product containing at least: information on maintenance, repair work, results of tests, stand-by periods,...

Also, at least, following information MUST be provided at an accessible place at the product:



- Instructions for shutting down the system in case of an emergency
- Name and address of fire department, police and hospital
- Name, address and day and night telephone numbers for obtaining service

In Europe, EN378 provides the necessary guidance for this logbook.

2.1.2 Installation site

- Provide sufficient space around the unit for servicing and air circulation.
- Make sure the installation site withstands the weight and vibration of the unit.
- Make sure the area is well ventilated. Do NOT block any ventilation openings.
- Make sure the unit is level.

Do NOT install the unit in the following places:

- In potentially explosive atmospheres.
- In places where there is machinery that emits electromagnetic waves. Electromagnetic waves may disturb the control system, and cause malfunction of the equipment.
- In places where there is a risk of fire due to the leakage of flammable gases (example: thinner or gasoline), carbon fibre, ignitable dust.
- In places where corrosive gas (example: sulphurous acid gas) is produced. Corrosion of copper pipes or soldered parts may cause the refrigerant to leak.

Instructions for equipment using R32 refrigerant



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

The appliance shall be stored so as to prevent mechanical damage and in a wellventilated room without continuously operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater) and have a room size as specified below.



WARNING

Make sure installation, servicing, maintenance and repair comply with instructions from and with applicable legislation and are executed ONLY by authorised persons.





If one or more rooms are connected to the unit using a duct system, make sure:

- there are no operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater) in case the floor area is less than the minimum floor area A (m²).
- no auxiliary devices, which may be a potential ignition source, are installed in the duct work (example: hot surfaces with a temperature exceeding 700°C and electric switching device);
- only auxiliary devices approved by the manufacturer are used in the duct work;
- air inlet AND outlet are connected directly to the same room by ducting. Do NOT use spaces such as a false ceiling as a duct for the air inlet or outlet.



NOTICE

- Precautions shall be taken to avoid excessive vibration or pulsation to refrigeration piping.
- Protection devices, piping and fittings shall be protected as far as possible against adverse environmental effects.
- Provision shall be made for expansion and contraction of long runs of piping.
- Piping in refrigerating systems shall be designed and installed such as to minimise the likelihood of hydraulic shock damaging the system.
- The indoor equipment and pipes shall be securely mounted and guarded such that accidental rupture of equipment or pipes cannot occur from events such as moving furniture or reconstruction activities.



CAUTION

Do NOT use potential sources of ignition in searching for or detection of refrigerant leaks.



NOTICE

- Do NOT re-use joints and copper gaskets which have been used already.
- Joints made in installation between parts of refrigerant system shall be accessible for maintenance purposes.

Installation space requirements



WARNING

If appliances contain R32 refrigerant, the floor area of the room in which the appliances are installed, operated and stored MUST be larger than the minimum floor area defined in table below A (m²). This applies to:

- Indoor units without a refrigerant leakage sensor; in case of indoor units with refrigerant leakage sensor, consult the installation manual
- Outdoor units installed or stored indoors (e.g. winter garden, garage, machinery room)



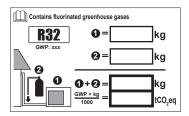
NOTICE

- Pipework shall be protected from physical damage.
- Installation of pipework shall be kept to a minimum.

To determine the minimum floor area

1 Determine the total refrigerant charge in the system (= factory refrigerant charge **0** + **2** additional refrigerant amount charged).

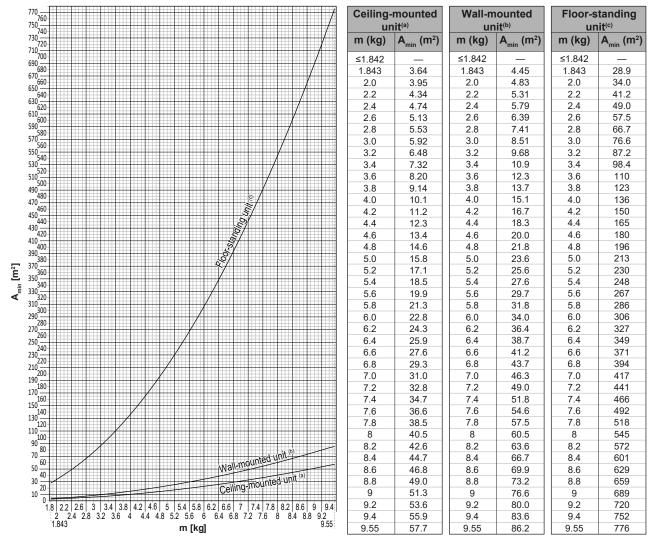




- Determine which graph or table to use.
 - For indoor units: Is the unit ceiling-mounted, wall-mounted or floor-
 - For outdoor units installed or stored indoors, this depends on the installation height:

If the installation height is	Then use the graph or table for
<1.8 m	Floor-standing units
1.8≤x<2.2 m	Wall-mounted units
≥2.2 m	Ceiling-mounted units

Use the graph or table to determine the minimum floor area.



m Total refrigerant charge in the system

Minimum floor area

- (a) (= Ceiling-mounted unit)
- (= Wall-mounted unit) (b)
- (= Floor-standing unit)



2.1.3 Refrigerant — in case of R410A or R32

If applicable. See the installation manual or installer reference guide of your application for more information.



NOTICE

Make sure refrigerant piping installation complies with applicable legislation. In Europe, EN378 is the applicable standard.



NOTICE

Make sure the field piping and connections are NOT subjected to stress.



WARNING

During tests, NEVER pressurise the product with a pressure higher than the maximum allowable pressure (as indicated on the nameplate of the unit).



WARNING

Take sufficient precautions in case of refrigerant leakage. If refrigerant gas leaks, ventilate the area immediately. Possible risks:

- Excessive refrigerant concentrations in a closed room can lead to oxygen deficiency.
- Toxic gas might be produced if refrigerant gas comes into contact with fire.



DANGER: RISK OF EXPLOSION

Pump down – Refrigerant leakage. If you want to pump down the system, and there is a leak in the refrigerant circuit:

- Do NOT use the unit's automatic pump down function, with which you can collect all refrigerant from the system into the outdoor unit. Self-combustion and explosion of the compressor because of air going into the operating compressor.
- Use a separate recovery system so that the unit's compressor does NOT have to operate.



WARNING

ALWAYS recover the refrigerant. Do NOT release them directly into the environment. Use a vacuum pump to evacuate the installation.



NOTICE

After all the piping has been connected, make sure there is no gas leak. Use nitrogen to perform a gas leak detection.



NOTICE

- To avoid compressor breakdown, do NOT charge more than the specified amount of refrigerant.
- When the refrigerant system is to be opened, refrigerant MUST be treated according to the applicable legislation.





Make sure there is no oxygen in the system. Refrigerant may ONLY be charged after performing the leak test and the vacuum drying.

Self-combustion and explosion of the compressor because of oxygen going into the operating compressor.

- In case recharge is required, see the nameplate of the unit. It states the type of refrigerant and necessary amount.
- The unit is factory charged with refrigerant and depending on pipe sizes and pipe lengths some systems require additional charging of refrigerant.
- ONLY use tools exclusively for the refrigerant type used in the system, this to ensure pressure resistance and prevent foreign materials from entering into the system.
- Charge the liquid refrigerant as follows:

If	Then
A siphon tube is present	Charge with the cylinder upright.
(i.e., the cylinder is marked with "Liquid filling siphon attached")	
A siphon tube is NOT present	Charge with the cylinder upside down.

- Open refrigerant cylinders slowly.
- Charge the refrigerant in liquid form. Adding it in gas form may prevent normal operation.



CAUTION

When the refrigerant charging procedure is done or when pausing, close the valve of the refrigerant tank immediately. If the valve is NOT closed immediately, remaining pressure might charge additional refrigerant. Incorrect refrigerant amount.

2.1.4 Brine

If applicable. See the installation manual or installer reference guide of your application for more information.



WARNING

The selection of the brine MUST be in accordance with the applicable legislation.



WARNING

Take sufficient precautions in case of brine leakage. If brine leaks, ventilate the area immediately and contact your local dealer.





The ambient temperature inside the unit can get much higher than that of the room, e.g. 70°C. In case of a brine leak, hot parts inside the unit can create a hazardous situation.



WARNING

The use and installation of the application MUST comply with the safety and environmental precautions specified in the applicable legislation.

2.1.5 Water

If applicable. See the installation manual or installer reference guide of your application for more information.



NOTICE

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

2.1.6 Electrical



DANGER: RISK OF ELECTROCUTION

- Turn OFF all power supply before removing the switch box cover, connecting electrical wiring or touching electrical parts.
- 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.
- Do NOT touch electrical components with wet hands.
- Do NOT leave the unit unattended when the service cover is removed.



WARNING

If NOT factory installed, a main switch or other means for disconnection, having a contact separation in all poles providing full disconnection under overvoltage category III condition, MUST be installed in the fixed wiring.

DAIKIN



- ONLY use copper wires.
- Make sure the field wiring complies with the applicable legislation.
- All field wiring MUST be performed in accordance with the wiring diagram supplied with the product.
- NEVER squeeze bundled cables and make sure they do NOT come in contact with the piping and sharp edges. Make sure no external pressure is applied to the terminal connections.
- Make sure to install earth wiring. Do NOT earth the unit to a utility pipe, surge absorber, or telephone earth. Incomplete earth may cause electrical shock.
- Make sure to use a dedicated power circuit. NEVER use a power supply shared by another appliance.
- Make sure to install the required fuses or circuit breakers.
- Make sure to install an earth leakage protector. Failure to do so may cause electrical shock or fire.
- When installing the earth leakage protector, make sure it is compatible with the inverter (resistant to high frequency electric noise) to avoid unnecessary opening of the earth leakage protector.



CAUTION

- When connecting the power supply: connect the earth cable first, before making the current-carrying connections.
- When disconnecting the power supply: disconnect the current-carrying cables first, before separating the earth connection.
- The length of the conductors between the power supply stress relief and the terminal block itself MUST be as such that the current-carrying wires are tautened before the earth wire is in case the power supply is pulled loose from the stress relief.



NOTICE

Precautions when laying power wiring:











- Do NOT connect wiring of different thicknesses to the power terminal block (slack) in the power wiring may cause abnormal heat).
- When connecting wiring which is the same thickness, do as shown in the figure above.
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will damage the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.



WARNING

- After finishing the electrical work, confirm that each electrical component and terminal inside the electrical components box is connected securely.
- Make sure all covers are closed before starting up the unit.





NOTICE

ONLY applicable if the power supply is three-phase, and the compressor has an ON/ OFF starting method.

If there exists the possibility of reversed phase after a momentary black out and the power goes ON and OFF while the product is operating, attach a reversed phase protection circuit locally. Running the product in reversed phase can break the compressor and other parts.



3 Specific installer safety instructions

Always observe the following safety instructions and regulations.

Unit installation (see "6 Unit installation" [▶ 19])



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.



WARNING

The appliance shall be stored so as to prevent mechanical damage and in a wellventilated 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.



CAUTION

For walls containing a metal frame or a metal board, use a wall embedded pipe and wall cover in the feed-through hole to prevent possible heat, electrical shock, or fire.

Piping installation (see Piping installation)



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.



DANGER: RISK OF BURNING/SCALDING



NOTICE

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



NOTICE

- Do NOT use mineral oil on flared part.
- NEVER install a drier to this R32 unit to guarantee its lifetime. The drying material may dissolve and damage the system.



NOTICE

- 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.

Electrical installation (see "7 Electrical installation" [▶ 28])



DANGER: RISK OF ELECTROCUTION





ALWAYS use multicore cable for power supply cables.



WARNING

- All wiring MUST be performed by an authorised electrician and MUST comply with the applicable legislation.
- Make electrical connections to the fixed wiring.
- All components procured on-site and all electrical construction MUST comply with the applicable legislation.



WARNING

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



WARNING

Use an all-pole disconnection type breaker with at least 3 mm between the contact point gaps that provide 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.



4 About the box

4.1 Overview: About the box

This chapter describes what you have to do after the box with the indoor unit is delivered on-site.

It contains information about:

- Unpacking and handling the unit
- Removing the accessories from the unit

Keep the following in mind:

- At delivery, the unit MUST be checked for damage. Any damage MUST be reported immediately to the claims agent of the carrier.
- Bring the packed unit as close as possible to its final installation position to prevent damage during transport.
- When handling the unit, take into account the following:
 - Fragile, handle the unit with care.
 - **11** Keep the unit upright in order to avoid damage.
- Prepare the path along which you want to bring the unit inside in advance.

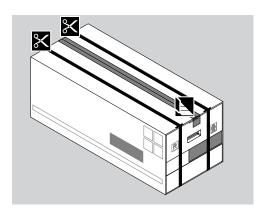
4.2 Indoor unit



INFORMATION

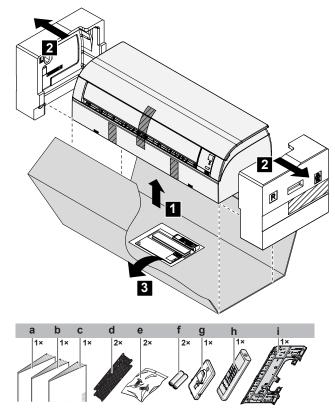
The following figures are just examples and may NOT completely match your system

4.2.1 To unpack the indoor unit





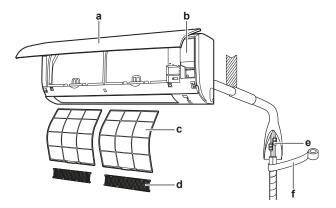
4.2.2 To remove the accessories from the indoor unit



- a Installation manual
- **b** Operation manual
- **c** General safety precautions
- **d** Titanium apatite deodorising filter (only for and)
- e Indoor unit fixing screw (M4×12L). Refer to To fix the unit on the mounting plate.
- **f** Dry battery AAA.LR03 (alkaline) for user interface
- **g** User interface holder
- **h** User interface
- i Mounting plate

5 About the unit

5.1 System layout



- Indoor unit
- Service lid
- **c** Air filter
- **d** Titanium apatite deodorising and silver particle filter (only for)
- e Refrigerant piping, drain hose and interconnection cable
- f Insulation tape

5.2 Operation range

Use the system in the following temperature and humidity ranges for safe and effective operation.

Operation mode	Operation range
Cooling ^{(a)(b)}	■ Outdoor temperature: −10~48°C DB
	■ Indoor temperature: 18~32°C DB
	■ Indoor humidity: ≤80%
Heating ^(a)	■ Outdoor temperature: −15~24°C DB
	■ Indoor temperature: 10~30°C DB
Drying ^(a)	■ Outdoor temperature: −10~48°C DB
	■ Indoor temperature: 18~32°C DB
	■ Indoor humidity: ≤80%

 $^{^{(}a)}$ A safety device might stop the operation of the system if the unit runs outside its



⁽b) Condensation and water dripping might occur if the unit runs outside its operation range.

6 Unit installation

In this chapter

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6.1 Preparing the installation site

Choose an installation location with sufficient space for carrying the unit in and out of the site.

Do NOT install the unit in places often used as work place. In case of construction works (e.g. grinding works) where a lot of dust is created, the unit MUST be covered.



WARNING

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

6.1.1 Installation site requirements of the indoor unit



INFORMATION

Also read the precautions and requirements in the "2 General safety precautions" [▶5].



INFORMATION

The sound pressure level is less than 70 dBA.

- Air flow. Make sure nothing blocks the air flow.
- **Drainage.** Make sure condensation water can be evacuated properly.
- **Wall insulation**. When conditions in the wall exceed 30°C and a relative humidity of 80%, or when fresh air is inducted into the wall, then additional insulation is required (minimum 10 mm thickness, polyethylene foam).
- Wall strength. Check whether the wall or the floor is strong enough to support the weight of the unit. If there is a risk, reinforce the wall or the floor before installing the unit.



Install power cables at least 1 metre away from televisions or radios to prevent interference. Depending on the radio waves, a distance of 3 metres may NOT be sufficient.

- Choose a location where the operation noise or the hot/cold air discharged from the unit will not disturb anyone.
- Fluorescent lights. When installing a wireless remote control (user interface) in a room with fluorescent lights, mind the following to avoid interference:
 - Install the wireless remote control (user interface) as close as possible to the indoor unit.
 - Install the indoor unit as far as possible from the fluorescent lights.

It is NOT recommended to install the unit in the following places because it may shorten the life of the unit:

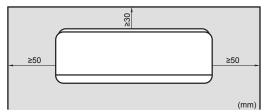
- Where the voltage fluctuates a lot
- In vehicles or vessels
- Where acidic or alkaline vapour is present
- In places where a mineral oil mist, spray or vapour may be present in the atmosphere. Plastic parts may deteriorate and fall off or cause water leakage.
- In places where the unit would be in the path of direct sunlight.
- Sound sensitive areas (e.g. near a bedroom), so that the operation noise will cause no trouble.



NOTICE

Do NOT place objects below the indoor and/or outdoor unit that may get wet. Otherwise condensation on the unit or refrigerant pipes, air filter dirt or drain blockage may cause dripping, and objects under the unit may get dirty or damaged.

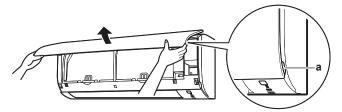
• Spacing. Install the unit at least 1.8 m from the floor and keep the following requirements in mind for distances from the walls and the ceiling:



6.2 Opening the indoor unit

6.2.1 To remove the front panel

1 Hold the front panel by the panel tabs on both sides and open it.



a Panel tabs



2 Remove the front panel by sliding it to the left or the right and pulling it toward you.

Result: The front panel shaft on 1 side will be disconnected.

3 Disconnect the front panel shaft on the other side in the same manner.



Front panel shaft

6.2.2 To re-install the front panel

- **1** Attach the front panel. Align the shafts with the slots and push them all the way in.
- **2** Close the front panel slowly; press at both sides and at the centre.

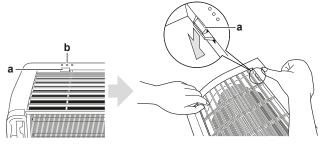
6.2.3 To remove the front grille



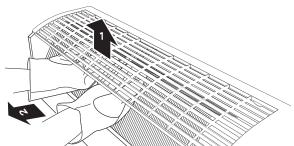
CAUTION

Wear adequate personal protective equipment (protective gloves, safety glasses,...) when installing, maintaining or servicing the system.

- 1 Remove the front panel to remove the air filter.
- **2** Remove 3 screws from the front grille.
- **3** Push down the 3 upper hooks marked with a symbol with 3 circles.



- **a** Upper hook
- **b** Symbol with 3 circles
- **4** We recommend opening the flap before removing the front grille.
- **5** Place both hands under the centre of the front grille, push it up and then toward you.

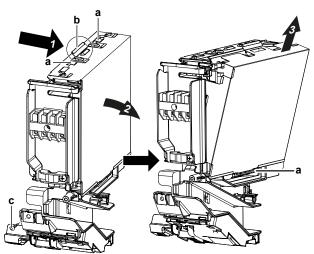


6.2.4 To re-install the front grille

- 1 Install the front grille and firmly engage the 3 upper hooks.
- Install the air filter and then mount the front panel.

6.2.5 To remove the electrical wiring box cover

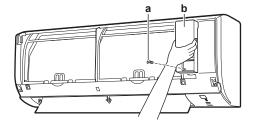
- 1 Remove the front grille.
- **2** Remove 1 screw from the electrical wiring box.
- **3** Open the electrical wiring box cover by pulling the protruding part on the top of the cover.
- Unhook the tab on the bottom and remove the electrical wiring box cover.



- Protruding part on the top of the cover

6.2.6 To open the service cover

- 1 Remove 1 screw from the service cover.
- Pull out the service cover horizontally away from the unit.



- Service cover screw
- Service cover

6.3 Installing the indoor unit

6.3.1 Precautions when installing the indoor unit



INFORMATION

Also read the precautions and requirements in the following chapters:

- General safety precautions
- Preparation

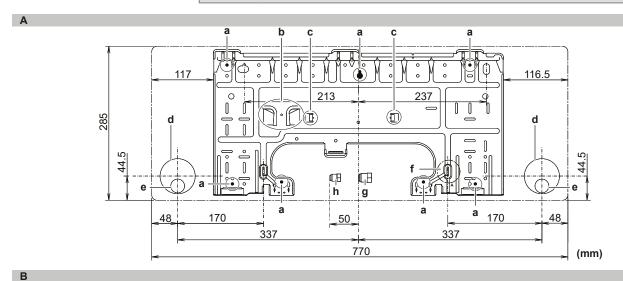
6.3.2 To install the mounting plate

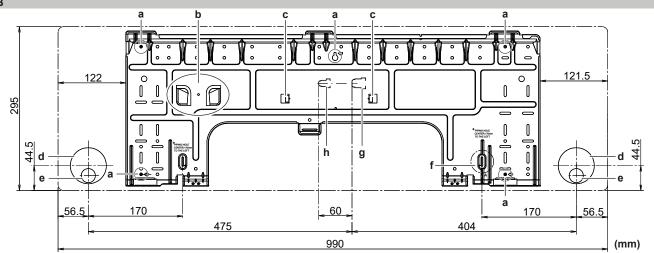
- 1 Install the mounting plate temporarily.
- 2 Level the mounting plate.
- 3 Mark the centres of the drilling points on the wall using a tape measure. Position the end of tape measure at symbol "▷".
- **4** Finish the installation by securing the mounting plate on the wall using M4×25L screws (field supply).



INFORMATION

The removed pipe port cover can be kept in the mounting plate pocket.





A Mounting plate for class 20~35

- **B** Mounting plate for class 50~71
- Recommended mounting plate fixing spots
- **b** Pocket for the pipe port cover
- c Tabs for placing a spirit level
- **d** Through-the-wall hole Ø65 mm
- Drain hose position
- **f** Position for the tape measure at symbol "⊳"
- **g** Gas pipe end
- h Liquid pipe end

6.3.3 To drill a wall hole



CAUTION

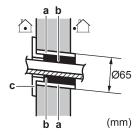
For walls containing a metal frame or a metal board, use a wall embedded pipe and wall cover in the feed-through hole to prevent possible heat, electrical shock, or fire.



NOTICE

Be sure to seal the gaps around the pipes with sealing material (field supply), in order to prevent water leakage.

- Bore a 65 mm large feed-through hole in the wall with a downward slope towards the outside.
- 2 Insert a wall embedded pipe into the hole.
- Insert a wall cover into the wall pipe.



- a Wall embedded pipe
- Putty
- c Wall hole cover
- After completing wiring, refrigerant piping and drain piping, do NOT forget to seal the gap with putty.

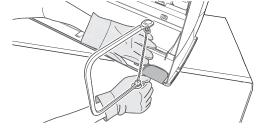
6.3.4 To remove the pipe port cover



INFORMATION

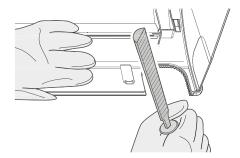
To connect the piping on right-side, right-bottom, left-side or left-bottom, the pipe port cover MUST be removed.

Cut off the pipe port cover from inside the front grille using a coping saw.



2 Remove any burrs along the cut section using a half round needle file.







NOTICE

Do NOT use nippers to remove the pipe port cover, as this would damage the front grille.

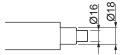
6.3.5 To provide drainage

Make sure condensation water can be evacuated properly. This involves:

- General guidelines
- Connecting the drain piping to the indoor unit
- Checking for water leaks

General guidelines

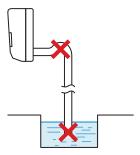
- Pipe length. Keep drain piping as short as possible.
- **Pipe size.** If drain hose extension or embedded drain piping is required, use appropriate parts that match the hose front end.



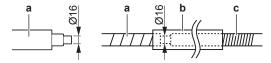


NOTICE

- Install the drain hose with a downward slope.
- Traps are NOT permitted.
- Do NOT put the end of the hose in water.



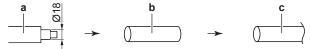
• **Drain hose extension.** To extend the drain hose, use a field supplied hose with inner Ø16 mm. Do NOT forget to use a heat insulation tube on the indoor section of the extension hose.



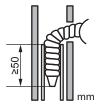
- a Drain hose supplied with the indoor unit
- **b** Heat insulation tube (field supply)
- c Extension drain hose



 Ridgid polyvinyl chloride pipe. When connecting a ridgid polyvinyl chloride pipe (nominal Ø13 mm) directly to the drain hose as with embedded piping work, use a field supplied drain socket (nominal Ø13 mm).



- a Drain hose supplied with the indoor unit
- Drain socket with nominal Ø13 mm (field supply)
- Ridgid polyvinyl chloride pipe (field supply)
- Condensation. Take measures against condensation. Insulate the complete drain piping in the building.
 - Insert the drain hose in the drain pipe as shown in the following figure, so it will NOT be pulled out of the drain pipe.



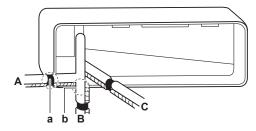
To connect the piping on right side, right-back, or right-bottom



INFORMATION

The factory default is right-side piping. For left-side piping, remove the piping from the right side and install it on the left side.

- 1 Attach the drain hose with adhesive vinyl tape to the bottom of the refrigerant pipes.
- Wrap the drain hose and the refrigerant pipes together using insulation tape.



- Right-side piping
- Right-bottom piping
- C Right-back piping
- Remove the pipe port cover here for right side piping
- **b** Remove the pipe port cover here for right-bottom piping

To connect the piping on left side, left-back, or left-bottom



INFORMATION

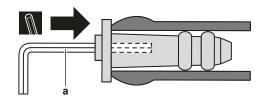
The factory default is right-side piping. For left-side piping, remove the piping from the right side and install it on the left side.

- Remove the insulation fixing screw on the right side and remove the drain
- Remove the drain plug on the left side and attach it to the right side.

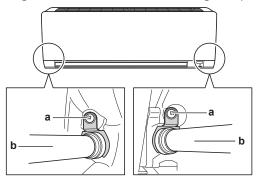


NOTICE

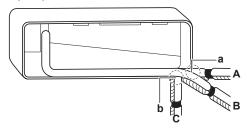
Do NOT apply lubricating oil (refrigerant oil) to the drain plug when inserting it. The drain plug may deteriorate and cause drain leakage from the plug.



- **a** 4 mm hexagonal wrench
- 3 Insert the drain hose on the left side and do not forget to tighten it with the fixing screw; otherwise water leakage may occur.



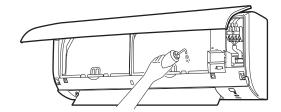
- a Insulation fixing screw
- b Drain hose
- **4** Attach the drain hose to the refrigerant piping bottom side using adhesive vinyl tape.



- A Left-side piping
- **B** Left-back piping
- **C** Left-bottom piping
- **a** Remove the pipe port cover here for left-side piping
- **b** Remove the pipe port cover here for left-bottom piping

To check for water leaks

- 1 Remove the air filters.
- **2** Gradually pour approximately 1 l of water in the drain pan, and check for water leaks.





7 Electrical installation

7.1 Preparing electrical wiring

7.1.1 About preparing electrical wiring



INFORMATION

Also read the precautions and requirements in the "2 General safety precautions" [> 5].



WARNING

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



WARNING

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

7.2 Connecting the electrical wiring

7.2.1 About connecting the electrical wiring

Typical workflow

Connecting the electrical wiring typically consists of the following stages:

- 1 Making sure the power supply system complies with the electrical specifications of the units.
- Connecting the electrical wiring to the outdoor unit.
- Connecting the electrical wiring to the indoor unit.
- Connecting the main power supply.



7.2.2 Precautions when connecting the electrical wiring



INFORMATION

Also read the precautions and requirements in the following chapters:

- General safety precautions
- Preparation



DANGER: RISK OF ELECTROCUTION



WARNING

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

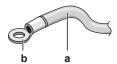
Keep the interconnection wiring away from copper pipes without thermal insulation as such pipes will be very hot.

7.2.3 Guidelines when connecting the electrical wiring

Keep the following in mind:

• If stranded conductor wires are used, install a round crimp-style terminal on the end of the wire. Place the round crimp-style terminal on the wire up to the covered part and fasten the terminal with the appropriate tool.





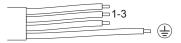
- **a** Stranded conductor wire
- **b** Round crimp-style terminal
- Use the following methods for installing wires:

Wire type	Installation method
Single-core wire	tA C AA' a a
	a Curled single-core wire
	b Screw
	c Flat washer
Stranded conductor wire with round crimp-style terminal	a bc B X
	a Terminal
	b Screw
	c Flat washer
	✓ Allowed
	× NOT allowed

Tightening torques

Item	Tightening torque (N•m)
M4 ()	1.2
M4 (earth)	

• The earth wire between the wire retainer and the terminal must be longer than the other wires.



7.2.4 Specifications of standard wiring components

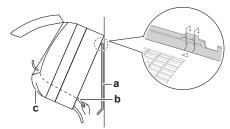
Component	
Interconnection cable (indoor↔outdoor)	4-core cable 1.5 mm ² ~2.5 mm ² and applicable for 220~240 V
	H05RN-F (60245 IEC 57)

7.2.5 To connect the electrical wiring to the indoor unit

Electrical work should be carried out in accordance with the installation manual and the national electrical wiring rules or code of practice.



1 Set the indoor unit on the mounting plate hooks. Use the " Δ " marks as a guide.



- a Mounting plate (accessory)
- **b** Interconnection cable
- c Wire guide
- 2 Open the front panel, and then the service cover. Refer to Opening the unit.
- **3** Pass the interconnection cable from the outdoor unit through the feed-through wall hole, through the back of the indoor unit and through the front side

In case the interconnection cable was stripped in advance, cover the ends with insulating tape.

4 Bend the end of the cable up.



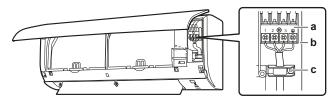
NOTICE

- Be sure to keep the power line and transmission line apart from each other.
 Transmission wiring and power supply wiring may cross, but may NOT run parallel.
- In order to avoid any electrical interference the distance between both wirings should ALWAYS be at least 50 mm.



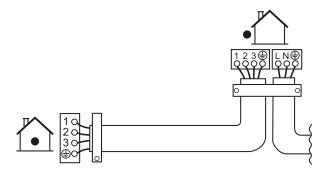
WARNING

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

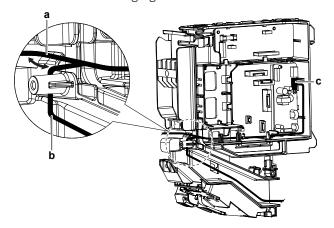


- a Terminal block
- **b** Electrical component block
- c Cable clamp
- **5** Strip the wire ends approximately 15 mm.
- **6** Match wire colours with terminal numbers on the indoor unit terminal blocks and firmly screw the wires to the corresponding terminals.
- **7** Connect the earth wire to the corresponding terminal.
- **8** Firmly fix the wires with the terminal screws.
- **9** Pull the wires to make sure that they are securely attached, then retain the wires with the wire retainer.
- **10** Shape the wires so that the service cover fits securely, then close the service cover.





- 7.2.6 To connect optional accessories (wired user interface, central user interface, wireless adapter, etc.)
 - 1 Remove the electrical wiring box cover.
 - 2 Attach the connection cable to the connector and pull the wire harness as shown in the following figure.



- **a** wire harness routing for wireless adapter
- wire harness routing for other applications
- **c** connector
- Put the electrical wiring box cover back and pull the wire harness around it as shown in the previous figure.

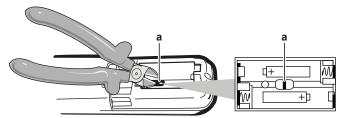


8 Configuration

8.1 To set a different channel of the indoor unit infrared signal receiver

In case 2 indoor units are installed in 1 room, different addresses for 2 user interfaces can be set.

- 1 Remove the batteries from the user interface.
- 2 Cut the address jumper.



a Address jumper



NOTICE

Be careful NOT to damage any of the surrounding parts when cutting the address jumper.

3 Turn the power supply on.

Result: The flap of the indoor unit will open and close to set the reference position.



INFORMATION

- For and units, the following setting MUST be completed within 5 minutes after the power supply is turned on.
- In case you could NOT complete the setting in time, turn the power supply off and wait at least 1 minute before turning the power supply back on.
- 4 Press simultaneously:

Model	Buttons
	TEMP, TEMP and OFF
	MODE, TEMP and TEMP

5 Press:

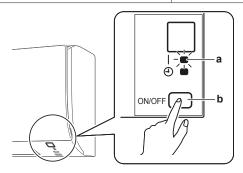
Model	Button
	TEMP
	MODE

6 Select:

Model	Symbol
	8
	7-

7 Press:

Model	Button
	⊘ FAN



- operation indicator
- **b** Indoor unit switch
- **8** Press the indoor unit switch while the operation indicator is blinking.

Jumper	Address
Factory setting	1
After cutting with nippers	2



INFORMATION

If the setting could NOT be completed while the operation lamp was blinking, repeat the setting process from the beginning.

9 When the setting is complete, press:

Model	Button	
	Keep FAN pressed for about 5 seconds.	

The user interface will return to the previous screen.



9 Commissioning

9.1 Overview: Commissioning

This chapter describes what you have to do and know to commission the system after it is installed.

Typical workflow

Commissioning typically consists of the following stages:

- 1 Checking the "Checklist before commissioning".
- 2 Performing a test run for the system.

9.2 Checklist before commissioning

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

3	Power	up	the	unit.

You read the complete installation instructions, as described in the installer reference guide.
The indoor units are properly mounted.
The outdoor unit is properly mounted.
Air inlet/outlet
Check that the air inlet and outlet of the unit is NOT obstructed by paper sheets, cardboard, or any other material.
There are NO missing phases or reversed phases.
The refrigerant pipes (gas and liquid) are thermally insulated.
Drainage
Make sure drainage flows smoothly.
Condensate water might drip.
The system is properly earthed and the earth terminals are tightened.
The fuses or locally installed protection devices are installed according to this document, and have NOT been bypassed.
The power supply voltage matches the voltage on the identification label of the unit.
The specified wires are used for the interconnection cable .
The indoor unit receives the signals of the user interface .
There are NO loose connections or damaged electrical components in the switch box.
The insulation resistance of the compressor is OK.
There are NO damaged components or squeezed pipes on the inside of the indoor and outdoor units.
There are NO refrigerant leaks.



The correct pipe size is installed and the pipes are properly insulated.
The stop valves (gas and liquid) on the outdoor unit are fully open.

9.3 To perform a test run

Prerequisite: Power supply MUST be in the specified range.

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

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

- In cooling mode, select the lowest programmable temperature. In heating mode, select the highest programmable temperature. Test run can be disabled if necessary.
- 2 When the test run is finished, set the temperature to a normal level. In cooling mode: 26~28°C, in heating mode: 20~24°C.
- **3** The system stops operating 3 minutes after the unit is turned OFF.

9.3.1 To perform a test run in winter season

When operating the air conditioner in **Cooling** mode in winter, set it to test run operation using the following method.

For and units

- 1 Press TEMP. TEMP. and OFF simultaneously.
- 2 Press TEMP
- 3 Select 7.
- 4 Press FAN
- Press COOL to switch the system on.

Result: Test run operation will stop automatically after about 30 minutes.

6 To stop operation, press OFF.

For and units

- **1** Press to switch the system on.
- 2 Press the centre of TEMP, TEMP, and MODE simultaneously.
- Press (MODE) twice.

Result: 7" will appear on the display. Test run operation is selected. Test run operation will stop automatically after about 30 minutes.

To stop operation, press.



INFORMATION

Some of the functions CANNOT be used in the test run operation mode.

If a power failure occurs during operation, the system automatically restarts immediately after power is restored.



10 Hand-over to the user

Once the test run is finished and the unit operates properly, please make sure the following is clear for the user:

- Make sure that the user has the printed documentation and ask him/her to keep it for future reference. Inform the user that he can find the complete documentation at the URL mentioned earlier in this manual.
- Explain the user how to properly operate the system and what to do in case of problems.
- Show the user what to do for the maintenance of the unit.



11 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.



12 Technical data

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

12.1 Wiring diagram

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

12.1.1 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
þ			
	-		
-	Connection		Protective earth (screw)
□□-< □□,	Connector	A	Rectifier
Ť	Earth	-(Relay connector
== ====================================	Field wiring		Short-circuit connector
	Fuse	-0-	Terminal
INDOOR	Indoor unit		Terminal strip
OUTDOOR	Outdoor unit	0 •	Wire clamp
	Residual current device		

Symbol	Colour	Symbol	Colour
	Black		Orange
	Blue		Pink
	Brown	,	Purple
	Green		Red
	Grey		White
	Sky blue		Yellow

Symbol	Meaning
	Printed circuit board
	Pushbutton ON/OFF, operation switch
,	Buzzer



Symbol	Meaning
	Capacitor
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Connection, connector
,	Diode
	Diode bridge
	DIP switch
	Heater
, , (for characteristics, refer to PCB inside your unit)	Fuse
	Connector (frame ground)
	Harness
,,	Pilot lamp, light emitting diode
	Light emitting diode (service monitor green)
	High voltage
	Intelligent eye sensor
	Intelligent power module
,,,,	Magnetic relay
	Live
	Coil
	Reactor
	Stepper motor
	Compressor motor
	Fan motor
	Drain pump motor
	Swing motor
,,,	Magnetic relay
	Neutral
,	Number of passes through ferrite core
	Pulse-amplitude modulation
	Printed circuit board
	Power module
	Switching power supply
	PTC thermistor
	Insulated gate bipolar transistor ()
	Circuit breaker
,	Earth leak circuit breaker
	Overload protector
	Thermo switch



Symbol	Meaning
	Residual current device
	Resistor
	Thermistor
	Receiver
	Limit switch
	Float switch
	Refrigerant leak detector
	Pressure sensor (high)
	Pressure sensor (low)
,	Pressure switch (high)
	Pressure switch (low)
	Thermostat
	Humidity sensor
,	Operation switch
,	Surge arrester
,	Signal receiver
	Selector switch
	Terminal strip fixed plate
	Transformer
,	Transmitter
,	Varistor
	Diode bridge, Insulated-gate bipolar transistor () power module
	Wireless remote controller
	Terminal
	Terminal strip (block)
	Electronic expansion valve coil
,	Reversing solenoid valve coil
	Ferrite core
,	Noise filter

13 Glossary

Dealer

Sales distributor for the product.

Authorised installer

Technical skilled person who is qualified to install the product.

User

Person who is owner of the product and/or operates the product.

Applicable legislation

All international, European, national and local directives, laws, regulations and/or codes that are relevant and applicable for a certain product or domain.

Service company

Qualified company which can perform or coordinate the required service to the product.

Installation manual

Instruction manual specified for a certain product or application, explaining how to install, configure and maintain it.

Operation manual

Instruction manual specified for a certain product or application, explaining how to operate it.

Maintenance instructions

Instruction manual specified for a certain product or application, which explains (if relevant) how to install, configure, operate and/or maintain the product or application.

Accessories

Labels, manuals, information sheets and equipment that are delivered with the product and that need to be installed according to the instructions in the accompanying documentation.

Optional equipment

Equipment made or approved by that can be combined with the product according to the instructions in the accompanying documentation.

Field supply

Equipment NOT made by that can be combined with the product according to the instructions in the accompanying documentation.







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