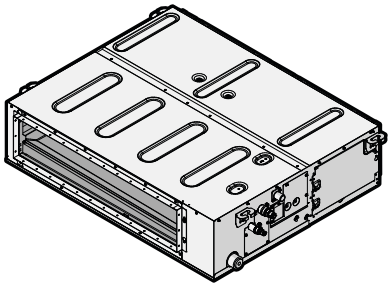
DAIKIN

Installer reference guide

Split system air conditioners



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ADEA60A2VEB
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ADEA100A2VEB
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Installer reference guide
Split system air conditioners

English

Table of Contents

1 General safety precautions

1.1 About the documentation

- The original documentation is written in English. All other languages are translations.
- The precautions described in this document cover very important topics, follow them carefully.
- The installation of the system, and all activities described in the installation manual and the installer reference guide MUST be performed by an authorised installer.

1.1.1 Meaning of warnings and symbols

DANGER
Indicates a situation that results in death or serious injury.

DANGER: RISK OF ELECTROCUTION
Indicates a situation that could result in electrocution.

DANGER: RISK OF BURNING
Indicates a situation that could result in burning because of extreme hot or cold temperatures.

DANGER: RISK OF EXPLOSION
Indicates a situation that could result in explosion.

WARNING
Indicates a situation that could result in death or serious injury.

WARNING: FLAMMABLE MATERIAL

CAUTION
Indicates a situation that could result in minor or moderate injury.

NOTICE
Indicates a situation that could result in equipment or property damage.

INFORMATION
Indicates useful tips or additional information.

Symbol	Explanation
	Before installation, read the installation and operation manual, and the wiring instruction sheet.
	Before performing maintenance and service tasks, read the service manual.
	For more information, see the installer and user reference guide.

1.2 For the installer

1.2.1 General

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

NOTICE

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

WARNING

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

DANGER: RISK OF BURNING

- 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

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.

NOTICE

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

NOTICE

Works executed on the outdoor unit are best done under dry weather conditions to avoid water ingress.

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.

1.2.2 Installation site

- Provide sufficient space around the unit for servicing and air circulation.
- Make sure the installation site withstands the unit's weight and vibration.
- 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

If applicable.

WARNING

- Do NOT pierce or burn.
- Do NOT use means to accelerate the defrosting process or to clean the equipment, other than those recommended by the manufacturer.
- Be aware that R32 refrigerant does NOT contain an odour.

WARNING

The appliance shall be stored so as to prevent mechanical damage and in a well-ventilated 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.

NOTICE

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

WARNING

Make sure installation, servicing, maintenance and repair comply with instructions from Daikin and with applicable legislation (for example national gas regulation) and are executed only by authorised persons.

Installation space requirements

NOTICE

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

1 General safety precautions

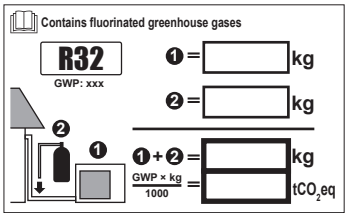
WARNING

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 (m^2). 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)
- Pipework in unventilated spaces

To determine the minimum floor area

1 Determine the total refrigerant charge in the system (= factory refrigerant charge ❶ + ❷ additional refrigerant amount charged).

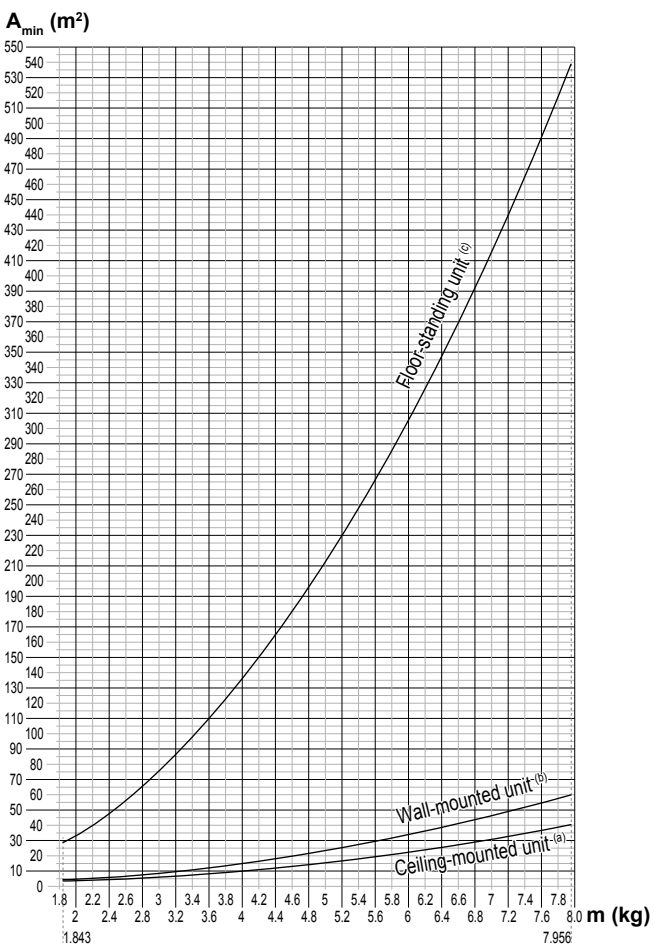


2 Determine which graph or table to use.

- For indoor units: Is the unit ceiling-mounted, wall-mounted or floor-standing?
- For outdoor units installed or stored indoors, and field piping in unventilated spaces, 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

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



Ceiling-mounted unit(a)	
m (kg)	A_{min} (m^2)
≤1.842	—
1.843	3.64
2.0	3.95
2.2	4.34
2.4	4.74
2.6	5.13
2.8	5.53
3.0	5.92
3.2	6.48
3.4	7.32
3.6	8.20
3.8	9.14
4.0	10.1
4.2	11.2
4.4	12.3
4.6	13.4
4.8	14.6
5.0	15.8
5.2	17.1
5.4	18.5
5.6	19.9
5.8	21.3
6.0	22.8
6.2	24.3
6.4	25.9
6.6	27.6
6.8	29.3
7.0	31.0
7.2	32.8
7.4	34.7
7.6	36.6
7.8	38.5
7.956	40.1

Wall-mounted unit(b)	
m (kg)	A_{min} (m^2)
≤1.842	—
1.843	4.45
2.0	4.83
2.2	5.31
2.4	5.79
2.6	6.39
2.8	7.41
3.0	8.51
3.2	9.68
3.4	10.9
3.6	12.3
3.8	13.7
4.0	15.1
4.2	16.7
4.4	18.3
4.6	20.0
4.8	21.8
5.0	23.6
5.2	25.6
5.4	27.6
5.6	29.7
5.8	31.8
6.0	34.0
6.2	36.4
6.4	38.7
6.6	41.2
6.8	43.7
7.0	46.3
7.2	49.0
7.4	51.8
7.6	54.6
7.8	57.5
7.956	59.9

Floor-standing unit(c)	
m (kg)	A_{min} (m^2)
≤1.842	—
1.843	28.9
2.0	34.0
2.2	41.2
2.4	49.0
2.6	57.5
2.8	66.7
3.0	76.6
3.2	87.2
3.4	98.4
3.6	110
3.8	123
4.0	136
4.2	150
4.4	165
4.6	180
4.8	196
5.0	213
5.2	230
5.4	248
5.6	267
5.8	286
6.0	306
6.2	327
6.4	349
6.6	371
6.8	394
7.0	417
7.2	441
7.4	466
7.6	492
7.8	518
7.956	539

m Total refrigerant charge in the system
A_{min} Minimum floor area
(a) Ceiling-mounted unit (= Ceiling-mounted unit)
(b) Wall-mounted unit (= Wall-mounted unit)

(c) Floor-standing unit (= Floor-standing unit)

1.2.3 Refrigerant

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 pressurize 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 may 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. **Possible consequence:** 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.

WARNING

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

- In case re-charge is required, refer to 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 (i.e., the cylinder is marked with "Liquid filling siphon attached")	Charge with the cylinder upright. 
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. **Possible consequence:** Incorrect refrigerant amount.

1.2.4 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.

WARNING

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.

1.2.5 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 98/83 EC.

1.2.6 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 1 minute, 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.

WARNING

- 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 electric 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, the earth connection must be made before the current-carrying connections are established. When disconnecting the power supply, the current-carrying connections must be separated before the earth connection is. 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.

2 About the documentation

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

2.2 Installer reference guide at a glance

Chapter	Description
General safety precautions	Safety instructions that you MUST read before installing
About the documentation	What documentation exists for the installer
About the box	How to unpack the units and remove their accessories
About the units and options	▪ System layout ▪ Combining units and options
Preparation	What to do and know before going on-site
Installation	What to do and know to install the system
Configuration	What to do and know to configure the system after it is installed
Commissioning	What to do and know to commission the system after it is configured
Hand-over to the user	What to give and explain to the user
Disposal	How to dispose of the system
Technical data	Specifications of the system
Glossary	Definition of terms

3 About the box

3.1 Overview: About the box

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

Keep the following in mind:

- At delivery, the unit MUST be checked for damage. Any damage MUST be reported immediately to the carrier's claims agent.
- Bring the packed unit as close as possible to its final installation position to prevent damage during transport.
- Prepare the path along which you want to bring the unit inside in advance.

3.2 Indoor unit

WARNING: FLAMMABLE MATERIAL

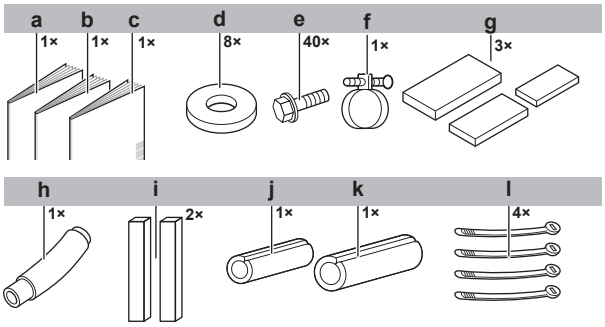
The R32 refrigerant (if applicable) in this unit is mildly flammable. Refer to the outdoor unit specifications for the type of refrigerant to be used.

3.2.1 To unpack and handle the unit

Use a sling of soft material or protective plates together with a rope when lifting the unit. This to avoid damage or scratches to the unit.

Lift the unit by holding on to the hanger brackets without exerting any pressure on other parts, especially on refrigerant piping, drain piping and other resin parts.

3.2.2 To remove the accessories from the indoor unit



a Installation manual
b Operation manual
c General safety precautions
d Washers for hanger bracket
e Screws for duct flanges
f Metal clamp
g Sealing pads: Large (drain pipe), medium 1 (gas pipe), medium 2 (liquid pipe)
h Drain hose
i Long sealing
j Insulation piece: Small (liquid pipe)
k Insulation piece: Large (gas pipe)
l Tie wraps

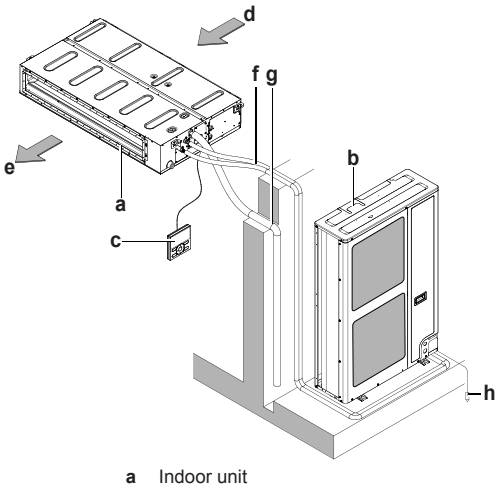
4 About the units and options

4.1 Overview: About the units and options

This chapter contains information about:

- Identifying the indoor unit
- Combining outdoor and indoor units
- Combining the indoor unit with options
- Combining outdoor and indoor units
- Combining the indoor unit with options

4.2 System layout



a Indoor unit

b Outdoor unit
c User interface
d Suction air
e Discharge air
f Refrigerant piping + interconnection cable
g Drain pipe
h Earth wiring

4.3 Combining units and options

4.3.1 Possible options for the indoor unit

Make sure you have the following mandatory options:

- User interface: Wired or wireless
- Air inlet panel and canvas connection for the air inlet panel (in case of bottom suction).

5 Preparation

5.1 Overview: Preparation

This chapter describes what you have to do and know before going on-site.

It contains information about:

- Preparing the installation site
- Preparing the refrigerant piping
- Preparing the electrical wiring

5.2 Preparing the installation site

- Provide sufficient space around the unit for servicing and air circulation.
- Choose the installation location with sufficient space for carrying the unit in and out of the site.

WARNING

Do NOT install the air conditioner at any place where flammable gas may leak out. If the gas leaks out and stays around the air conditioner, a fire may break out.

5.2.1 Installation site requirements of the indoor unit

INFORMATION

Also read the following requirements:

- General installation site requirements. See the "General safety precautions" chapter.
- Refrigerant piping requirements (length, height difference). See further in this "Preparation" chapter.

INFORMATION

The sound pressure level is less than 70 dBA.

NOTICE

The equipment described in this manual may cause electronic noise generated from radio-frequency energy. The equipment complies to specifications that are designed to provide reasonable protection against such interference. However, there is no guarantee that interference will not occur in a particular installation.

It is therefore recommended to install the equipment and electric wires keeping proper distances away from stereo equipment, personal computers, etc.

- **Fluorescent lights**. When installing a wireless user interface in a room with fluorescent lights, mind the following to avoid interference:
  - Install the wireless user interface as close as possible to the indoor unit.
  - Install the indoor unit as far as possible from the fluorescent lights.
- Take care that in the event of a water leak, water cannot cause any damage to the installation space and surroundings.
- Choose a location where the hot/cold air discharged from the unit or the operation noise, will NOT disturb anyone.

WARNING

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

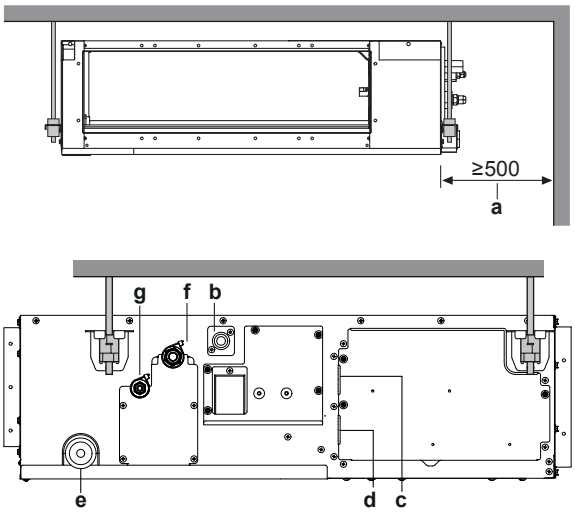
- **Air flow.** Make sure nothing blocks the air flow.
- **Drainage.** Make sure condensation water can be evacuated properly.
- **Ceiling insulation**. When conditions in the ceiling exceed 30°C and a relative humidity of 80%, or when fresh air is inducted into the ceiling, then additional insulation is required (minimum 10 mm thickness, polyethylene foam).
- **Protective guards.** Make sure to install protective guards on the suction and discharge side to prevent somebody from touching the fan blades or heat exchanger.

Do NOT install the unit in the following places:

- 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.

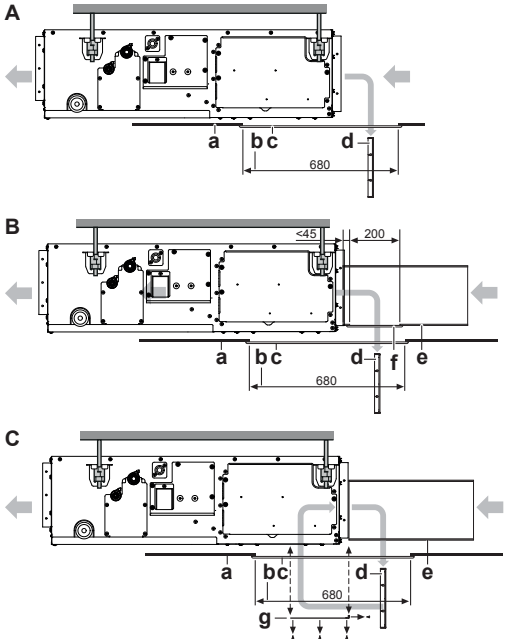
It is NOT recommended to install the unit in the following places because it may shorten the life of the unit:

- Where the voltage fluctuates a lot
- In vehicles or vessels
- Where acidic or alkaline vapour is present
- Use **suspension bolts** for installation.
- **Spacing**. Mind the following requirements:



a Service space
b Drain pipe
c Power supply wiring port
d Transmission wiring port
e Maintenance drain outlet
f Gas pipe
g Liquid pipe

- **Installation options:**



A Standard rear suction
B Installation with rear duct and duct service opening
C Installation with rear duct, no duct service opening
a Ceiling surface
b Ceiling opening
c Service access panel (optional accessory)
d Air filter
e Air inlet filter
f Duct service opening
g Interchangeable plate

5.3 Preparing refrigerant piping

5.3.1 Refrigerant piping requirements

INFORMATION

Also read the precautions and requirements in the "General safety precautions" chapter.

Refrigerant piping diameter

Use the same diameters as the connections on the outdoor units:

Class	L1 liquid piping	L1 gas piping
35	Ø6.4	Ø9.5
50+60	Ø6.4	Ø12.7
71~140	Ø9.5	Ø15.9

Refrigerant piping material

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

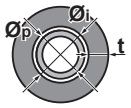
Outer diameter (Ø)	Temper grade	Thickness (t)[a]	
6.4 mm (1/4")	Annealed (O)	≥0.8 mm	
9.5 mm (3/8")			
12.7 mm (1/2")			
15.9 mm (5/8")			

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

5.3.2 Refrigerant piping insulation

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

Pipe outer diameter ($Ø_p$)	Insulation inner diameter ($Ø_i$)	Insulation thickness (t)
6.4 mm (1/4")	8~10 mm	≥10 mm
9.5 mm (3/8")	10~14 mm	≥13 mm
12.7 mm (1/2")	14~16 mm	≥10 mm
15.9 mm (5/8")	16~20 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.

5.4 Preparing electrical wiring

5.4.1 About preparing electrical wiring

INFORMATION

Also read the precautions and requirements in the "General safety precautions" chapter.

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

- 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.

6 Installation

6.1 Overview: Installation

This chapter describes what you have to do and know on-site to install the system.

Typical workflow

Installation typically consists of the following stages:

1 Mounting the outdoor unit.
2 Mounting the indoor unit.
3 Connecting the refrigerant piping.
4 Checking the refrigerant piping.
5 Charging refrigerant.
6 Connecting the electrical wiring.
7 Finishing the outdoor installation.
8 Finishing the indoor installation.

INFORMATION

This chapter only describes installation instructions specific to the indoor unit. For the other instructions, see:

- The installation manual of the outdoor unit
- The installation manual of the user interface
- The installation manual of the optional accessories

6.2 Mounting the indoor unit

6.2.1 Precautions when mounting the indoor unit

INFORMATION

Also read the precautions and requirements in the following chapters:

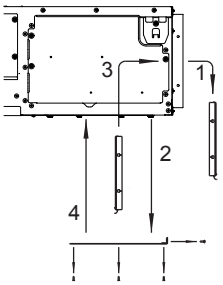
- General safety precautions
- Preparation

6.2.2 Guidelines when installing the indoor unit

INFORMATION

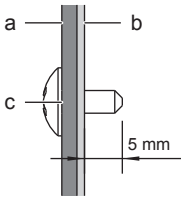
Optional equipment. When installing optional equipment, also read the installation manual of the optional equipment. Depending on the field conditions, it might be easier to install the optional equipment first.

- **In case of installation with duct, but no duct service opening.** Modify the position of the air filters.



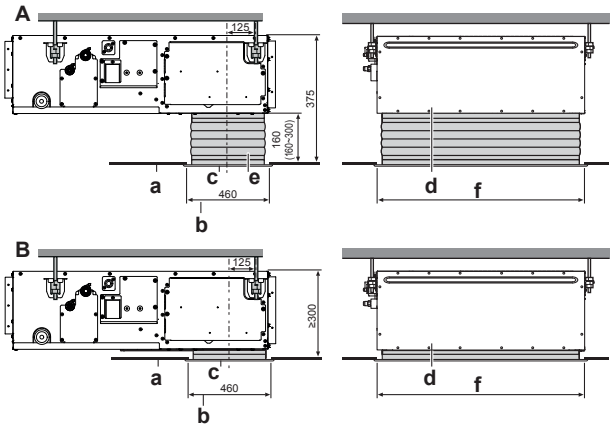
1 Remove the air filter(s) from the outside of the unit.
2 Remove the interchangeable plate.
3 Install the air filter(s) on the inside of the unit.
4 Reinstall the interchangeable plate.

- When installing an air inlet duct, select fixing screws that stick out 5 mm on the inside of the flange to protect the air filter from damage during maintenance of the filter.



a Air inlet duct
b Inside of the flange
c Fixing screw

- **Ceiling strength**. Check whether the ceiling is strong enough to support the weight of the unit. If there is a risk, reinforce the ceiling before installing the unit.
- **Installation options**:

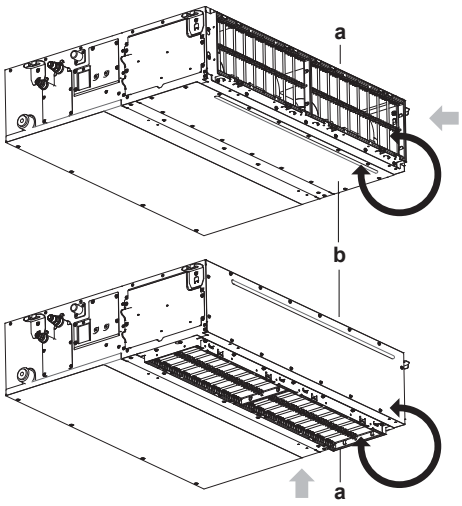


Class	f (mm)
35+50	760
60+71	1060
100~140	1460

A Mounting the air inlet with a canvas connection
B Mounting the air inlet panel directly
a Ceiling surface
b Ceiling opening
c Air inlet panel (optional accessory)
d Indoor unit (back side)
e Canvas connection for air inlet panel (optional accessory)

NOTICE

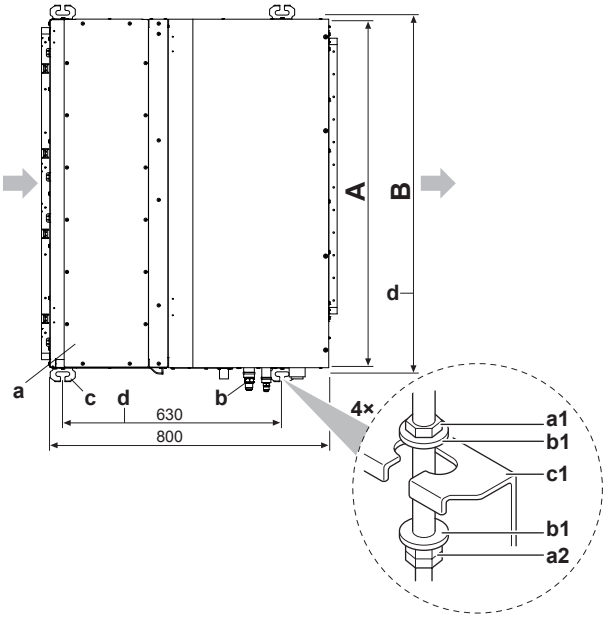
The unit can be used with bottom suction by replacing the interchangeable plate by the air filter holding plate.



a Air filter holding plate with air filter(s)

b Interchangeable plate

- **Suspension bolts.** Use M10 suspension bolts for installation. Attach the hanger bracket to the suspension bolt. Fix it securely using a nut and washer from the upper and lower sides of the hanger bracket.
- **Ceiling opening size.** Make sure the ceiling opening is within the following limits:



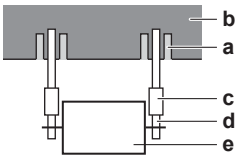
Class	A (mm)	B (mm)
35+50	700	738
60+71	1000	1038
100~140	1400	1438

a1 Nut (field supply)
a2 Double nut (field supply)
b1 Washer (accessories)
c1 Hanger bracket (attached to the unit)
a Indoor unit
b Pipe
c Hanger bracket pitch (suspension)
d Suspension bolt spacing

INFORMATION

- The fan speed of the indoor unit is preset to ensure the standard external static pressure.
- To set a higher or lower external static pressure, reset the initial setting with the user interface.

- **Installation example:**



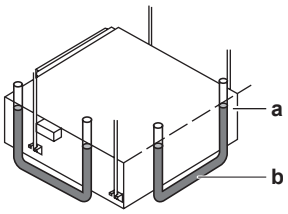
a Anchor
b Ceiling slab
c Long nut or turn-buckle
d Suspension bolt
e Indoor unit

- **Install the unit temporarily.**

5 Attach the hanger bracket to the suspension bolt.

6 Fix it securely.

- **Level**. Make sure the unit is level at all four corners using a level or a water-filled vinyl tube.



a Water level
b Vinyl tube

7 Tighten the upper nut.

NOTICE

Do NOT install the unit tilted. **Possible consequence:** If the unit is tilted against the direction of the condensate flow (the drain piping side is raised), the float switch might malfunction and cause water to drip.

6.2.3 Guidelines when installing the ducting

WARNING

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

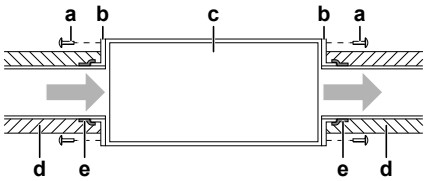
- there are no operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater) in case the floor area is less than A_{min} specified in the General safety precautions;
- no auxiliary devices, which may be a potential ignition source, are installed in the 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;
- an air inlet or outlet is connected directly with a room by ducting. Do NOT use spaces such as a false ceiling as a duct for the air inlet or outlet.

WARNING

Do NOT install operating ignition sources (example: open flames, an operating gas appliance or an operating electric heater) in the duct work.

The ducting is to be field supplied.

- **Air inlet side.** Attach the duct and intake-side flange (field supply). For connecting the flange, use 7 accessory screws.



a Connection screw (accessory)
b Flange (field supply)
c Main unit
d Insulation (field supply)
e Aluminium tape (field supply)

- **Filter.** Be sure to attach an air filter inside the air passage on the intake side. Use an air filter with dust collecting efficiency ≥50% (gravimetric method). The included filter is not used when the intake duct is attached.
- **Air outlet side.** Connect the duct according to the inside dimension of the outlet-side flange.
- **Air leaks.** Wind aluminium tape around the intake side flange and duct connection. Make sure there are no air leaks at any other connection.
- **Insulation.** Insulate the duct to prevent condensation from forming. Use glass wool or polyethylene foam 25 mm thick.

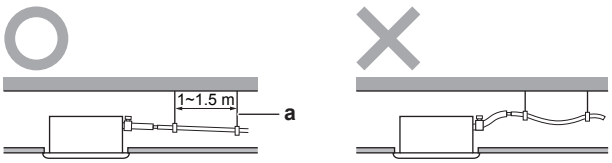
6.2.4 Guidelines when installing the drain piping

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

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

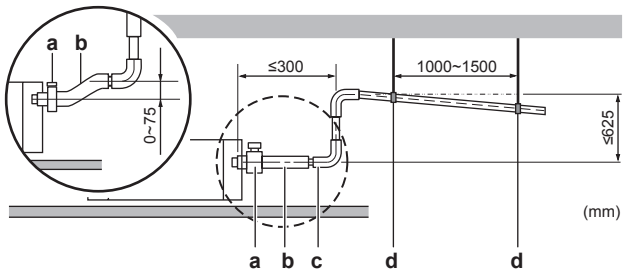
General guidelines

- **Drain pump.** For this "high lift type", the drainage sounds will be reduced when the drain pump is installed in a higher location. Recommended height is 300 mm.
- **Pipe length.** Keep drain piping as short as possible.
- **Pipe size.** Keep the pipe size equal to or greater than that of the connecting pipe (vinyl pipe of 25 mm nominal diameter and 32 mm outer diameter).
- **Slope.** Make sure the drain piping slopes down (at least 1/100) to prevent air from being trapped in the piping. Use hanging bars as shown.



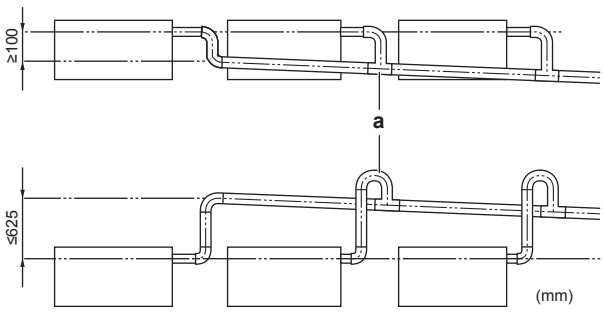
a Hanging bar
O Allowed
X Not allowed

- **Condensation.** Take measures against condensation. Insulate the complete drain piping in the building.
- **Rising piping**. If necessary to make the slope possible, you can install rising piping.
  - Drain hose inclination: 0~75 mm to avoid stress on the piping and to avoid air bubbles.
  - Rising piping: ≤300 mm from the unit, ≤625 mm perpendicular to the unit.



a Metal clamp (accessory)
b Drain hose (accessory)
c Rising drain piping (vinyl pipe of 25 mm nominal diameter and 32 mm outer diameter) (field supply)
d Hanging bars (field supply)

- **Combining drain pipes.** You can combine drain pipes. Make sure to use drain pipes and T-joints with the correct gauge for the operating capacity of the units.



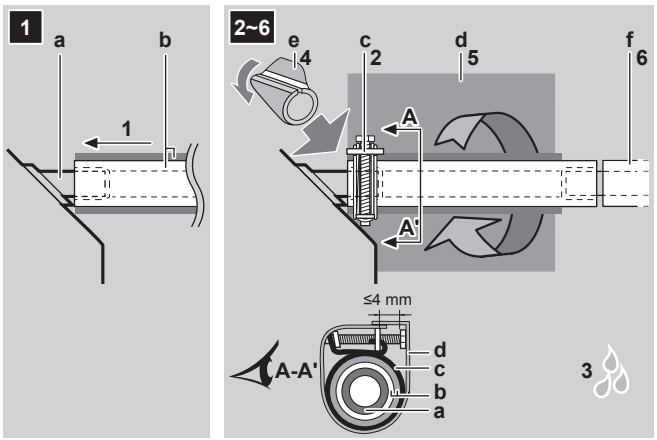
a T-joint

To connect the drain piping to the indoor unit

NOTICE

Incorrect connection of the drain hose might cause leaks, and damage the installation space and surroundings.

1. Push the drain hose as far as possible over the drain pipe connection.
2. Tighten the metal clamp until the screw head is less than 4 mm from the metal clamp part.
3. Check for water leaks (see "To check for water leaks" on page 13).
4. Install the insulation piece (drain pipe).
5. Wind the large sealing pad (= insulation) around the metal clamp and drain hose, and fix it with cable ties.
6. Connect the drain piping to the drain hose.



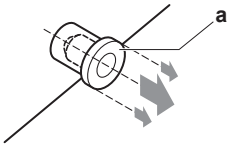
a Drain pipe connection (attached to the unit)
b Drain hose (accessory)
c Metal clamp (accessory)
d Large sealing pad (accessory)
e Insulation piece (drain pipe) (accessory)
f Drain piping (field supply)

NOTICE

- Do NOT remove the drain pipe plug. Water might leak out.
- Use the drain outlet only to discharge the water if the drain pump is not used or before maintenance.
- Insert and remove the drain plug gently. Excessive force may deform the drain socket of the drain pan.

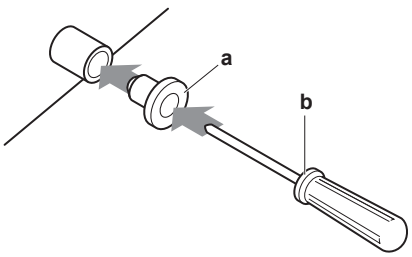
Pull out the plug.

- Do NOT wiggle the plug up and down.



Push in the plug.

- Set the plug and push it in using a Phillips screwdriver.



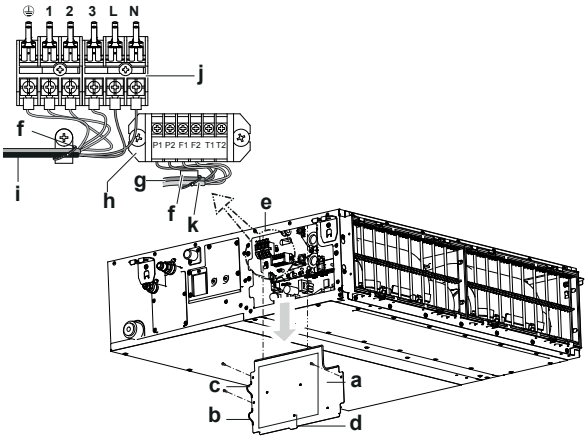
a Drain plug
b Phillips screwdriver

To check for water leaks

The procedure differs depending on whether electrical wiring is already finished. When electrical wiring is not finished yet, you need to temporarily connect the user interface and power supply to the unit.

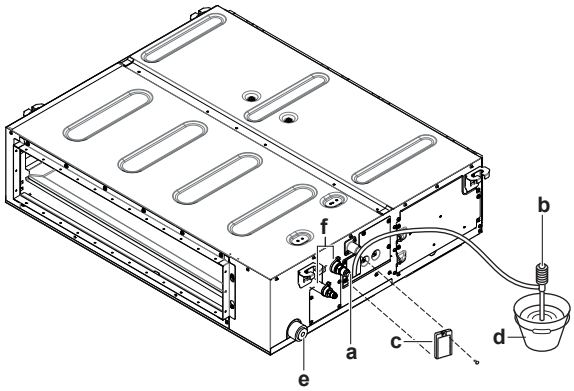
When electrical wiring is not finished yet

1 Temporarily connect electrical wiring.
2 Remove the switch box cover (a).
3 Connect the single-phase power supply (50 Hz, 230 V) to connections No. 1 and No. 2 on the terminal block for power supply and earth.
4 Reattach the switch box cover (a).



a Switch box cover
b Transmission wiring port
c Power supply wiring port
d Wiring diagram
e Switch box
f Plastic clamp
g User interface wiring
h Terminal board for unit transmission wiring
i Power supply wiring
j Power supply terminal board
k Transmission wiring between units

5 Turn ON the power.
6 Start cooling operation (see "8.3 To perform a test run" on page 19).
7 Gradually pour approximately 1 l of water through the air discharge outlet, and check for leaks.



a Water inlet
b Portable pump
c Water inlet cover
d Bucket (adding water through water inlet)
e Drain outlet for maintenance
f Refrigerant pipes

8 Turn OFF the power.
9 Disconnect the electrical wiring.
10 Remove the control box cover.
11 Disconnect the power supply and earth.
12 Reattach the control box cover.

When electrical wiring is finished already

1 Start cooling operation (see "8.3 To perform a test run" on page 19).
2 Gradually pour approximately 1 l of water through the air discharge outlet, and check for leaks (see "When electrical wiring is not finished yet" on page 13).

6.3 Connecting the refrigerant piping

6.3.1 About connecting the refrigerant piping

Before connecting the refrigerant piping

Make sure the outdoor and indoor unit are mounted.

Typical workflow

Connecting the refrigerant piping involves:

- Connecting the refrigerant piping to the outdoor unit
- Connecting the refrigerant piping to the indoor unit
- Insulating the refrigerant piping
- Keeping in mind the guidelines for:
  - Pipe bending
  - Flaring pipe ends
  - Brazing
  - Using the stop valves

6.3.2 Precautions when connecting the refrigerant piping

INFORMATION

Also read the precautions and requirements in the following chapters:

- General safety precautions
- Preparation

DANGER: RISK OF BURNING

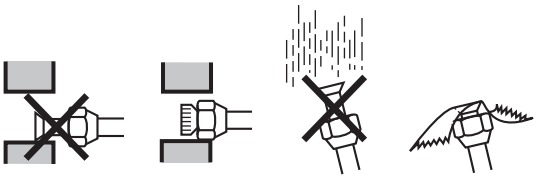
CAUTION

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

NOTICE

Take the following precautions on refrigerant piping into account:

- Avoid anything but the designated refrigerant to get mixed into the refrigerant cycle (e.g. air).
- Only use R32 or R410A when adding refrigerant. Refer to the outdoor unit specifications for the type of refrigerant to be used.
- Only use installation tools (e.g. manifold gauge set) that are exclusively used for R32 or R410A installations to withstand the pressure and to prevent foreign materials (e.g. mineral oils and moisture) from mixing into the system.
- Install the piping so that the flare is NOT subjected to mechanical stress.
- Protect the piping as described in the following table to prevent dirt, liquid or dust from entering the piping.
- Use caution when passing copper tubes through walls (see figure below).



Unit	Installation period	Protection method
Outdoor unit	>1 month	Pinch the pipe
	<1 month	Pinch or tape the pipe
Indoor unit	Regardless of the period	

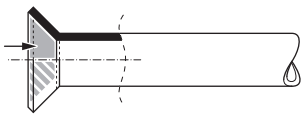
INFORMATION

Do NOT open the refrigerant stop valve before checking the refrigerant piping. When you need to charge additional refrigerant it is recommended to open the refrigerant stop valve after charging.

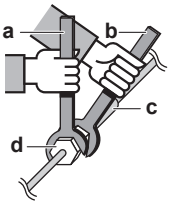
6.3.3 Guidelines when connecting the refrigerant piping

Take the following guidelines into account when connecting pipes:

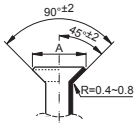
- Coat the flare inner surface with ether oil or ester oil when connecting a flare nut. Tighten 3 or 4 turns by hand, before tightening firmly.



- ALWAYS use 2 wrenches together when loosening a flare nut.
- ALWAYS use a spanner and torque wrench together to tighten the flare nut when connecting the piping. This to prevent nut cracking and leaks.



a Torque wrench
b Spanner
c Piping union
d Flare nut

Piping size (mm)	Tightening torque (N•m)	Flare dimensions (A) (mm)	Flare shape (mm)
Ø6.4	15~17	8.7~9.1	
Ø9.5	33~39	12.8~13.2	
Ø12.7	50~60	16.2~16.6	
Ø15.9	63~75	19.3~19.7	

6.3.4 Pipe bending guidelines

Use a pipe bender for bending. All pipe bends should be as gentle as possible (bending radius should be 30~40 mm or larger).

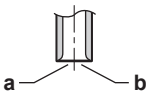
6.3.5 To flare the pipe end

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.

1 Cut the pipe end with a pipe cutter.

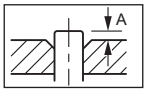
2 Remove burrs with the cut surface facing down so that the chips do NOT enter the pipe.



a Cut exactly at right angles.
b Remove burrs.

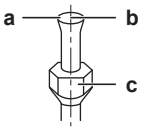
3 Remove the flare nut from the stop valve and put the flare nut on the pipe.

4 Flare the pipe. Set exactly at the position as shown in the following figure.



	Flare tool for R410A or R32 (clutch type)	Conventional flare tool	
		Clutch type (Ridgid-type)	Wing nut type (Imperial-type)
A	0~0.5 mm	1.0~1.5 mm	1.5~2.0 mm

5 Check that the flaring is properly made.



a Flare's inner surface MUST be flawless.
b The pipe end MUST be evenly flared in a perfect circle.
c Make sure the flare nut is fitted.

6.3.6 To connect the refrigerant piping to the indoor unit

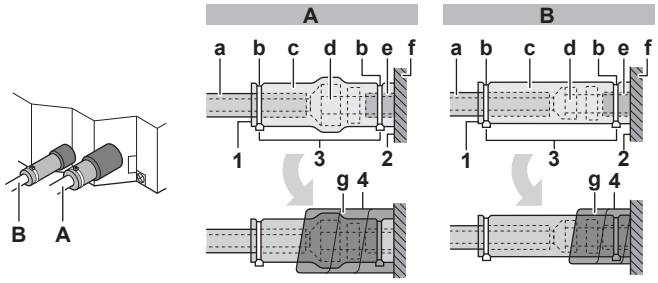
CAUTION

Install the refrigerating piping or components in a position where they are unlikely to be exposed to any substance which may corrode components containing refrigerant, unless the components are constructed of materials that are inherently resistant to corrosion or are suitably protected against corrosion.

WARNING: FLAMMABLE MATERIAL

The R32 refrigerant (if applicable) in this unit is mildly flammable. Refer to the outdoor unit specifications for the type of refrigerant to be used.

- **Pipe length**. Keep refrigerant piping as short as possible.
- **Flare connections**. Connect refrigerant piping to the unit using flare connections.
- **Insulation**. Insulate the refrigerant piping on the indoor unit as follows:



A Gas piping
B Liquid piping

a Insulation material (field supply)
b Cable tie (accessory)
c Insulation pieces: Large (gas pipe), small (liquid pipe) (accessories)
d Flare nut (attached to the unit)
e Refrigerant pipe connection (attached to the unit)
f Unit
g Sealing pads: Medium 1 (gas pipe), medium 2 (liquid pipe) (accessories)

1 Turn up the seams of the insulation pieces.
2 Attach to the base of the unit.
3 Tighten the cable ties on the insulation pieces.
4 Wrap the sealing pad from the base of the unit to the top of the flare nut.

NOTICE

Make sure to insulate all refrigerant piping. Any exposed piping might cause condensation.

6.3.7 To check for leaks

NOTICE

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

NOTICE

Make sure to use a recommended bubble test solution from your wholesaler. Do not use soap water, which may cause cracking of flare nuts (soap water may contain salt, which absorbs moisture that will freeze when the piping gets cold), and/or lead to corrosion of flared joints (soap water may contain ammonia which causes a corrosive effect between the brass flare nut and the copper flare).

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

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

3 Discharge all nitrogen gas.

6.4 Connecting the electrical wiring

6.4.1 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.
2 Connecting the electrical wiring to the outdoor unit.
3 Connecting the electrical wiring to the indoor unit.
4 Connecting the main power supply.

6.4.2 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

ALWAYS use multicore cable for power supply cables.

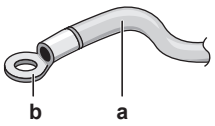
WARNING

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

6.4.3 Guidelines when connecting the electrical wiring

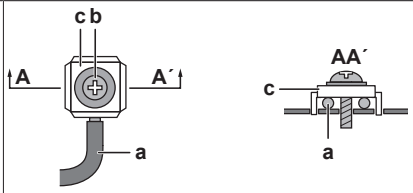
Keep the following in mind:

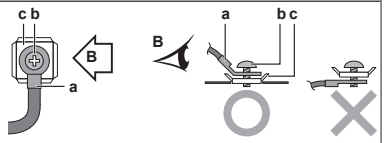
- If stranded conductor wires are used, install a round crimp-style terminal on the end of the wire. Place the round crimp-style terminal on the wire up to the covered part and fasten the terminal with the appropriate tool.



a Stranded conductor wire
b Round crimp-style terminal

- Use the following methods for installing wires:

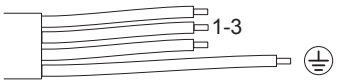
Wire type	Installation method
Single-core wire	 **a** Curled single-core wire **b** Screw **c** Flat washer

Wire type	Installation method
Stranded conductor wire with round crimp-style terminal	 **a** Terminal **b** Screw **c** Flat washer **O** Allowed **X** NOT allowed

Tightening torques

Wiring	Screw size	Tightening torque (N•m)
Interconnection cable (indoor↔outdoor)	M4	1.18~1.44
User interface cable	M3.5	0.79~0.97

- If single-core wires are used, be sure to curl the end of the lead. Improper work may cause heat or fire.
- The earth wire between the wire retainer and the terminal must be longer than the other wires.



6.4.4 Specifications of standard wiring components

Component		Class			
		35+50	60+71	100	125+140
Power supply cable	MCA(a)	1.4 A	1.3 A	3.5 A	3.9 A
	Voltage	220~240 V			
	Phase	1~			
	Frequency	50/60 Hz			
	Wire sizes	Must comply with applicable legislation			
Interconnection cable		Minimum cable section of 2.5 mm² and applicable for 220~240 V			
User interface cable		Vinyl cord with 0.75 to 1.25 mm² sheath or cables (2 core wires) Maximum 500 m			
Recommended field fuse		16 A			
Earth leakage circuit breaker		Must comply with applicable legislation			

(a) MCA=Minimum circuit ampacity. Stated values are maximum values (see electrical data of combination with indoor units for exact values).

6.4.5 To connect the electrical wiring on the indoor unit

NOTICE

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

It is important to keep the power supply and the transmission wiring separated from each other. In order to avoid any electrical interference the distance between both wirings should ALWAYS be at least 50 mm.

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.

1 Remove the service cover.

2 **User interface cable**: Route the cable through the frame, connect the cable to the terminal block, and fix the cable with a cable tie.

3 **Interconnection cable** (indoor↔outdoor): Route the cable through the frame, connect the cable to the terminal block (make sure the numbers match with the numbers on the outdoor unit, and connect the earth wire), and fix the cable with a cable tie.

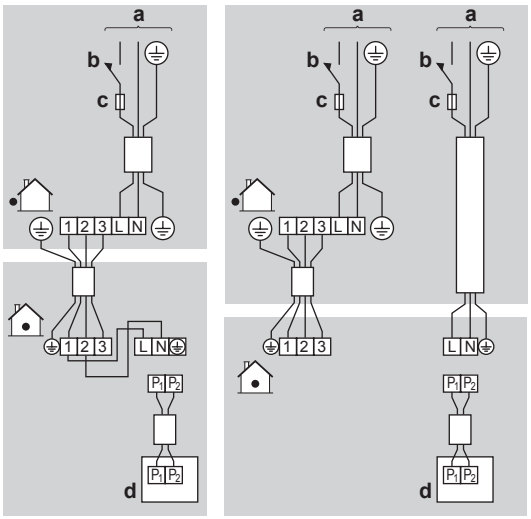
4 Divide the small sealing (accessory) and wrap it around the cables to prevent water from entering the unit. Seal all gaps to prevent small animals from entering the system.

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.

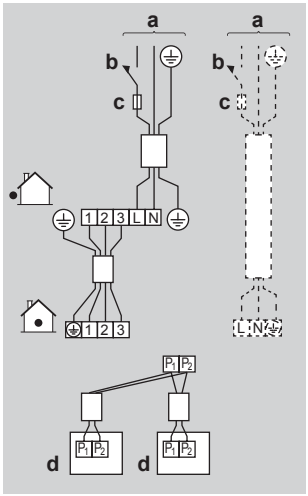
5 Reattach the service cover.

- **When using 1 user interface with 1 indoor unit.**

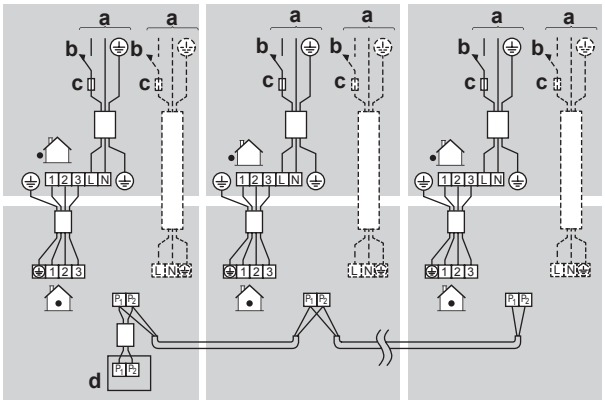


- **When using 2 user interfaces**[2]

(2) Dashed line represents separate power supply.



- **When using group control**[2]



a Power supply
b Main switch
c Fuse
d User interface

- **Master unit:** Be sure to connect the wiring when combining with a simultaneously operating multi-type in group control.
- Use a separate power only in case of following combination:

1×FBA35A + RXS35L or RXM35M
2×FBA60A + RR100/125B or RQ100/125B
2×FBA71A + RR100/125B or RQ100/125B
4×FBA50A + RZQ200C
3×FBA60A + RZQ200C
3×FBA71A + RZQ200C
2×FBA100A + RZQ200C
4×FBA60A + RZQ200C
2×FBA125A + RZQ200C

- **EN/IEC 61000-3-12** provided that the short-circuit power S_{sc} is greater than or equal to the minimum S_{sc} value at the interface point between the user's supply and the public system.
  - EN/IEC 61000-3-12 = European/International Technical Standard setting the limits for harmonic currents produced by equipment connected to public low-voltage systems with input current >16 A and ≤75 A per phase.
  - It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power S_{sc} greater than or equal to the minimum S_{sc} value.
- Ensure that equipment is connected only to a supply with a short-circuit power S_{sc} greater than or equal to S_{sc} in table below.

Combination	FBA35A	FBA50A	FBA60A	FBA71A
RZAG71M	2 (—)	—	—	1 (—)
RZQG71L				
RZAG100M	3 (2.31)	2 (1.30)	—	—
RZQG100L				
RZAG125M	4 (3.33)	3 (2.32)	2 (2.05)	—
RZQG125L				
RZAG140M	4 (3.33)	3 (2.32)	—	2 (2.05)
RZQG140L				
RZASG71M	2 (1.10)	—	—	1 (1.22)
RZQSG71L				
RZASG100M	2 (1.65)	2 (—)	—	—
RZQSG100L				
RZASG125M	4 (3.33)	3 (2.32)	2 (2.05)	—
RZQSG125L				
RZASG140M	4 (3.33)	3 (2.32)	—	2 (2.05)
RZQSG140L				

Combination	FBA100A	FBA125A	FBA140A
RZAG71M	—	—	—
RZQG71L			
RZAG100M	1 (0.73)	—	—
RZQG100L			
RZAG125M	—	1 (0.74)	—
RZQG125L			
RZAG140M	—	—	1 (0.74)
RZQG140L			
RZASG71M	—	—	—
RZQSG71L			
RZASG100M	1 (—)	—	—
RZQSG100L			
RZASG125M	—	1 (0.74)	—
RZQSG125L			
RZASG140M	—	—	1 (0.74)
RZQSG140L			

INFORMATION

In case of group control it is not necessary to assign an address to the indoor unit. The address is automatically set when the power is activated.

7 Configuration

7.1 Field settings

Make the following field settings so that they correspond with the actual installation setup and with the needs of the user:

- External static pressure setting using:
  - Airflow automatic adjustment setting
  - User interface
- Time to clean air filter

(2) Dashed line represents separate power supply.

To set airflow automatic adjustment

- When the air conditioning unit is running in fan operation mode:

1 Stop the air conditioning unit.

2 Set second code number to 03.

Setting content:	Then[3]		
	M	C1	C2
Airflow adjustment is OFF	11(21)	7	01
Press ON/OFF to return to normal operating mode. **Possible consequence:** The operation lamp will light up and the unit will start the fan operation for airflow automatic adjustment.			03
Operation stops after 1 to 8 minutes. **Possible consequence:** Setting is finished and the operation lamp will be off.			02

If there is no change after airflow adjustment, perform the setting again.

User interface

Check the indoor unit setting: the second code number of mode 11(21) must be set to 01.

Change the second code number according to the external static pressure of the duct to be connected as in table below.

External static pressure[3]									
M	C1	C2	Class						
			35	50	60	71	100	125	140
13(23)	6	01	30	30	30	30	40	50	50
		02	—	—	—	—	—	—	—
		03	30	30	30	30	—	—	—
		04	40	40	40	40	40	—	—
		05	50	50	50	50	50	50	50
		06	60	60	60	60	60	60	60
		07	70	70	70	70	70	70	70
		08	80	80	80	80	80	80	80
		09	90	90	90	90	90	90	90
		10	100	100	100	100	100	100	100
		11	110	110	110	110	110	110	110
		12	120	120	120	120	120	120	120
		13	130	130	130	130	130	130	130
		14	140	140	140	140	140	140	140
		15	150	150	150	150	150	150	150

Time to clean air filter

This setting must correspond with the air contamination in the room. It determines the interval at which the **TIME TO CLEAN AIR FILTER** notification is displayed on the user interface. When using a wireless user interface, you must also set the address (see the installation manual of the user interface).

If you want an interval of… (air contamination)	Then[3]		
	M	C1	C2
±2500 h (light)	10(20)	0	01
±1250 h (heavy)			02
No notification		3	02

- **2 user interfaces:** When using 2 user interfaces, one must be set to "MAIN" and the other to "SUB".

8 Commissioning

8.1 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.

8.2 Checklist before commissioning

After the installation of the unit, first check the following items. Once all below checks are fulfilled, the unit MUST be closed, ONLY then can the unit be powered up.

☐	You read the complete installation instructions, as described in the **installer reference guide**.
☐	The **indoor units** are properly mounted.
☐	In case a wireless user interface is used: The **indoor unit decoration panel** with infrared receiver is installed.
☐	The **outdoor unit** is properly mounted.
☐	There are NO **missing phases** or **reversed phases**.
☐	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.
☐	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.

(3) Field settings are defined as follows:

- **M**: Mode number – **First number**: for group of units – **Number between brackets**: for individual unit
- **C1**: First code number
- **C2**: Second code number
- ▬: Default

8.3 To perform a test run

This task is only applicable when using the BRC1E52 or BRC1E53 user interface. When using any other user interface, see the installation manual or service manual of the user interface.

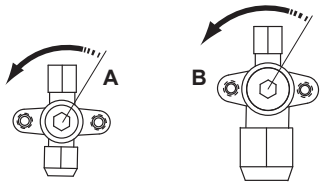
NOTICE

Do not interrupt the test run.

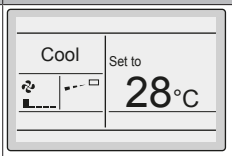
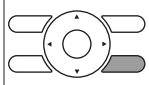
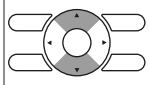
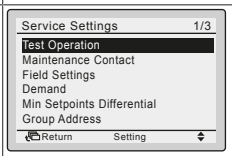
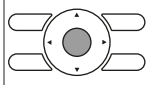
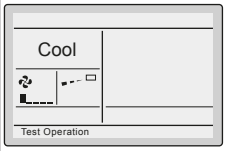
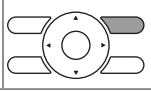
INFORMATION

Backlight. To perform an ON/OFF action on the user interface, the backlight does not need to be lit. For any other action, it needs to be lit first. The backlight is lit for ±30 seconds when you press a button.

1 Perform introductory steps.

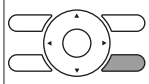
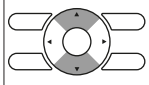
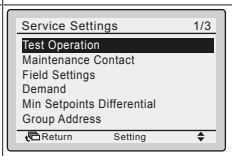
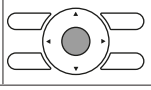
#	Action
1	Open the liquid stop valve (A) and gas stop valve (B) by removing the stem cap and turning counterclockwise with a hex wrench until it stops. 
2	Close the service cover to prevent electric shocks.
3	Turn ON power for at least 6 hours before starting operation to protect the compressor.
4	On the user interface, set the unit to cooling operation mode.

2 Start the test run

#	Action	Result
1	Go to the home menu.	
2	Press at least 4 seconds. 	The Service Settings menu is displayed.
3	Select Test Operation. 	
4	Press. 	Test Operation is displayed on the home menu. 
5	Press within 10 seconds. 	Test run starts.

3 Check operation for 3 minutes.

4 Stop the test run.

#	Action	Result
1	Press at least 4 seconds. 	The Service Settings menu is displayed.
2	Select Test Operation. 	
3	Press. 	The unit returns to normal operation, and the home menu is displayed.

8.4 Error codes when performing a test run

If the installation of the outdoor unit has NOT been done correctly, the following error codes may be displayed on the user interface:

Error code	Possible cause
Nothing displayed (the currently set temperature is not displayed)	▪ The wiring is disconnected or there is a wiring error (between power supply and outdoor unit, between outdoor unit and indoor units, between indoor unit and user interface). ▪ The fuse on the outdoor or indoor unit PCB has blown.
E3, E4 or L8	▪ The stop valves are closed. ▪ The air inlet or air outlet is blocked.
E7	There is a missing phase in case of three-phase power supply units. **Note:** Operation will be impossible. Turn OFF the power, recheck the wiring, and switch two of the three electrical wires.
L4	The air inlet or air outlet is blocked.
U0	The stop valves are closed.
U2	▪ There is a voltage imbalance. ▪ There is a missing phase in case of three-phase power supply units. **Note:** Operation will be impossible. Turn OFF the power, recheck the wiring, and switch two of the three electrical wires.
U4 or UF	The inter-unit branch wiring is not correct.
UA	The outdoor and indoor unit are incompatible.

9 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.

10 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.

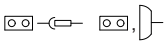
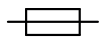
11 Technical data

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

11.1 Wiring diagram

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 symbol "*" in the part code.

	: CIRCUIT BREAKER		: PROTECTIVE 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

BLK : BLACK	GRN : GREEN	PNK : PINK	WHT : WHITE
BLU : BLUE	GRY : GREY	PRP, PPL : PURPLE	YLW : YELLOW
BRN : BROWN	ORG : ORANGE	RED : RED	

A*P	: PRINTED CIRCUIT BOARD	PS	: SWITCHING POWER SUPPLY
BS*	: PUSHBUTTON ON/OFF, OPERATION SWITCH	PTC*	: THERMISTOR PTC
BZ, H*O	: BUZZER	Q*	: INSULATED GATE BIPOLAR TRANSISTOR (IGBT)
C*	: CAPACITOR		
AC*, CN*, E*, HA*, HE*, HL*, HN*, HR*, MR*_A, MR*_B, S*, U, V, W, X*A, K*R_*	: CONNECTION, CONNECTOR	Q*DI	: EARTH LEAK CIRCUIT BREAKER
		Q*L	: OVERLOAD PROTECTOR
		Q*M	: THERMO SWITCH
D*, V*D	: DIODE	R*	: RESISTOR
DB*	: DIODE BRIDGE	R*T	: THERMISTOR
DS*	: DIP SWITCH	RC	: RECEIVER
E*H	: HEATER	S*C	: LIMIT SWITCH
F*U, FU* (FOR CHARACTERISTICS, REFER TO PCB INSIDE YOUR UNIT)	: FUSE	S*L	: FLOAT SWITCH
		S*NPH	: PRESSURE SENSOR (HIGH)
FG*	: CONNECTOR (FRAME GROUND)	S*NPL	: PRESSURE SENSOR (LOW)
H*	: HARNESS	S*PH, HPS*	: PRESSURE SWITCH (HIGH)
H*P, LED*, V*L	: PILOT LAMP, LIGHT EMITTING DIODE	S*PL	: PRESSURE SWITCH (LOW)
HAP	: LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)	S*T	: THERMOSTAT
HIGH VOLTAGE	: HIGH VOLTAGE	S*RH	: HUMIDITY SENSOR
IES	: INTELLIGENT EYE SENSOR	S*W, SW*	: OPERATION SWITCH
IPM*	: INTELLIGENT POWER MODULE	SA*, F1S	: SURGE ARRESTOR
K*R, KCR, KFR, KHuR, K*M	: MAGNETIC RELAY	SR*, WLU	: SIGNAL RECEIVER
L	: LIVE	SS*	: SELECTOR SWITCH
L*	: COIL	SHEET METAL	: TERMINAL STRIP FIXED PLATE
L*R	: REACTOR	T*R	: TRANSFORMER
M*	: STEPPER MOTOR	TC, TRC	: TRANSMITTER
M*C	: COMPRESSOR MOTOR	V*, R*V	: VARISTOR
M*F	: FAN MOTOR	V*R	: DIODE BRIDGE
M*P	: DRAIN PUMP MOTOR	WRC	: WIRELESS REMOTE CONTROLLER
M*S	: SWING MOTOR	X*	: TERMINAL
MR*, MRCW*, MRM*, MRN*	: MAGNETIC RELAY	X*M	: TERMINAL STRIP (BLOCK)
N	: NEUTRAL	Y*E	: ELECTRONIC EXPANSION VALVE COIL
n=*, N=*	: NUMBER OF PASSES THROUGH FERRITE CORE	Y*R, Y*S	: REVERSING SOLENOID VALVE COIL
PAM	: PULSE-AMPLITUDE MODULATION	Z*C	: FERRITE CORE
PCB*	: PRINTED CIRCUIT BOARD	ZF, Z*F	: NOISE FILTER
PM*	: POWER MODULE		

12 Glossary

Dealer

Sales distributor for the product.

Authorized installer

Technical skilled person who is qualified to install the product.

User

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

12 Glossary

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 Daikin that can be combined with the product according to the instructions in the accompanying documentation.

Field supply

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

EAC

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