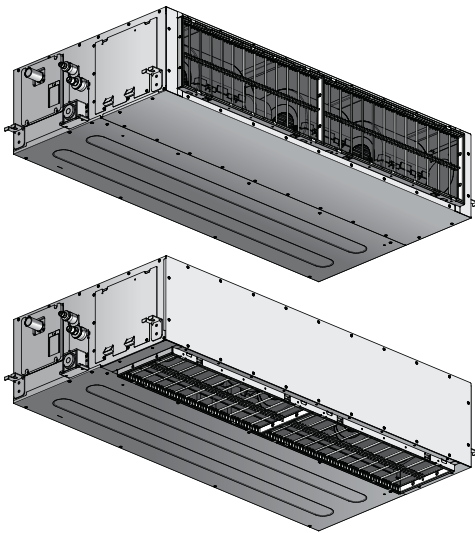


DAIKIN

Installation and operation manual

Split system air conditioners



FDA125A5VEB

Installation and operation manual
Split system air conditioners

English

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DAIKIN



Shigeki Morita
Director
Ostend, 1st of August 2017

DAIKIN EUROPE N.V.
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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 + end users



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 and operation manual:

- Installation and operation instructions
- Format: Paper (in the box of the indoor unit)

▪ Installer and user reference guide:

- Preparation of the installation, good practices, reference data,...
- Detailed step-by-step instructions and background information for basic and advanced usage
- 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.

2 About the box

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).

For the installer

2 About the box

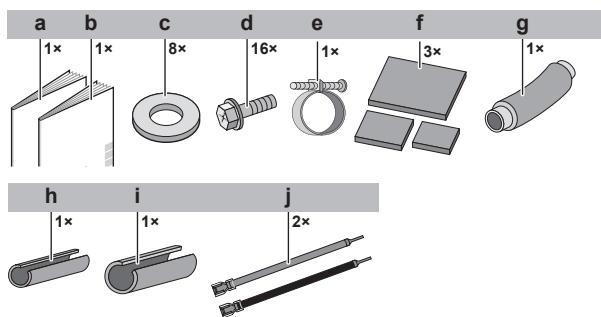
2.1 Indoor unit



WARNING: FLAMMABLE MATERIAL

The R32 refrigerant (if applicable) in this unit is mildly flammable.¹

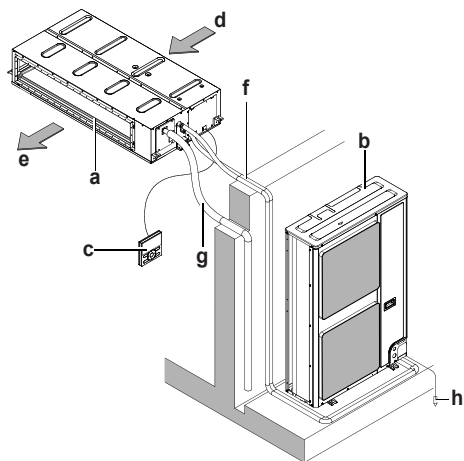
2.1.1 To remove the accessories from the indoor unit



- a Installation manual and operation manual
- b General safety precautions
- c Washers for hanger bracket
- d Screws for duct flanges
- e Metal clamp
- f Sealing pads: Large (drain pipe), medium 1 (gas pipe), medium 2 (liquid pipe)
- g Drain hose
- h Insulation piece: Small (liquid pipe)
- i Insulation piece: Large (gas pipe)
- j Wire for common power supply

3 About the units and options

3.1 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 Preparation

4.1 Preparing installation site

- Provide sufficient space around the unit for servicing and air circulation.
- Choose the installation location with sufficient place 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.

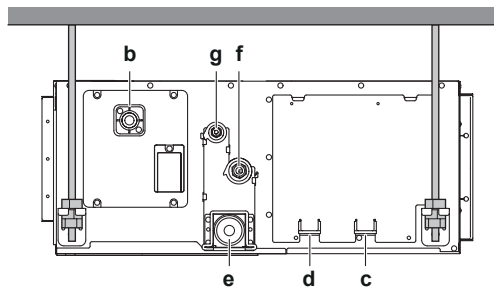
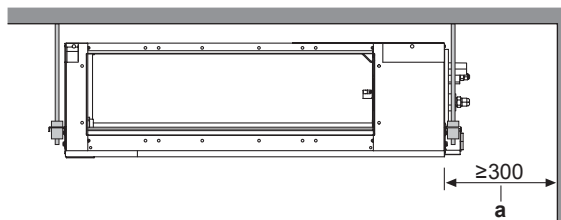
4.1.1 Installation site requirements of the indoor unit



INFORMATION

The sound pressure level is less than 70 dBA.

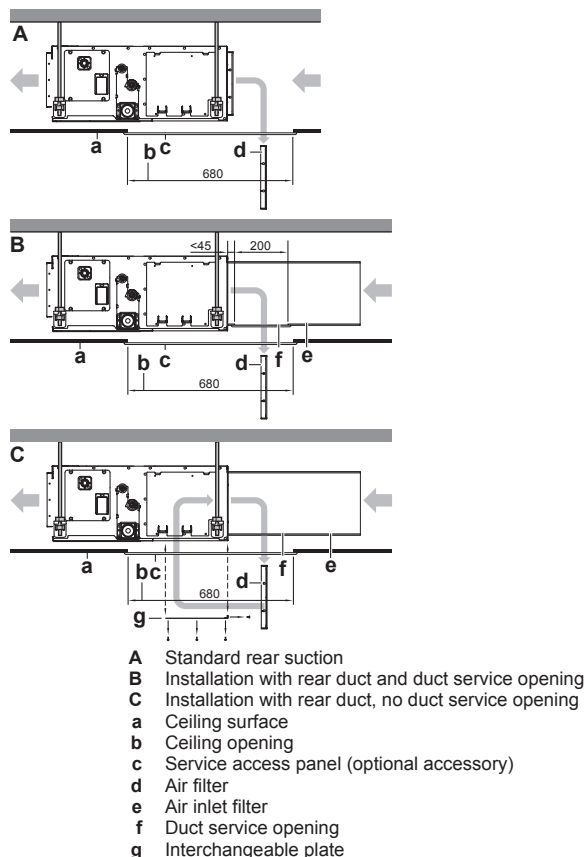
- Use **suspension bolts** for installation.
- Spacing.** Mind the following requirements:



- 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

⁽¹⁾ Only for appliances using R32 refrigerant. Refer to the outdoor unit specifications for the type of refrigerant to be used.

Installation options:



4.2 Preparing refrigerant piping

4.2.1 Refrigerant piping requirements

Refrigerant piping diameter

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

L1 liquid piping	Ø9.5 mm
L1 gas piping	Ø15.9 mm

Refrigerant piping material

- Piping material:** Phosphoric acid deoxidised seamless copper.
- Piping temper grade and thickness:**

Outer diameter (Ø)	Temper grade	Thickness (t) ^(a)	
9.5 mm (3/8")	Annealed (O)	≥0.8 mm	
15.9 mm (5/8")	Annealed (O)		

(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.

- Flare connections:** Only use annealed material.

4.2.2 Refrigerant piping insulation

Pipe outer diameter (Ø _p)	Insulation inner diameter (Ø _i)	Insulation thickness (t)
9.5 mm (3/8")	10~14 mm	≥13 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.

Ambient temperature	Humidity	Minimum thickness
≤30°C	75% to 80% RH	15 mm
>30°C	≥80% RH	20 mm

4.3 Preparing electrical wiring

4.3.1 About preparing electrical wiring



WARNING

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



WARNING

ALWAYS use multicore cable for power supply cables.

5 Installation

5.1 Mounting the indoor unit

5.1.1 Precautions when mounting the indoor unit



INFORMATION

Also read the precautions and requirements in the following chapters:

- General safety precautions
- Preparation

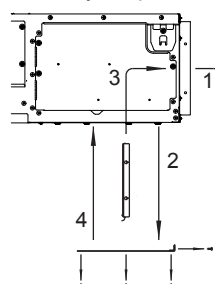
5.1.2 Guidelines when installing the indoor unit



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.

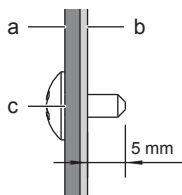


- Remove the air filter(s) from the outside of the unit.
- Remove the interchangeable plate.
- Install the air filter(s) on the inside of the unit.

5 Installation

4 Reinstall the interchangeable plate.

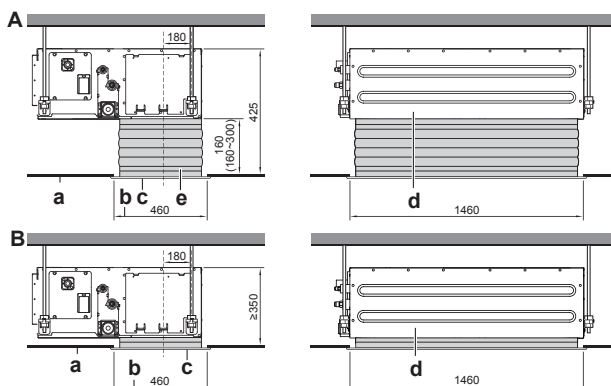
- When installing an air inlet duct, select fixing screws that stick out 5 mm on the inside of the flange to protect the air filter from damage during maintenance of the filter.



- 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:

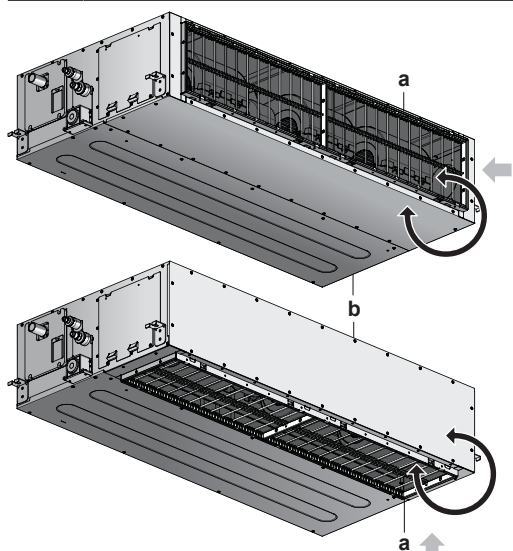


- A Mounting the air inlet with a canvas connection
- B Mounting the air inlet panel directly
- a Ceiling surface
- b Ceiling opening
- c Air inlet panel (optional accessory)
- d Indoor unit (back side)
- e Canvas connection for air inlet panel (optional accessory)



NOTICE

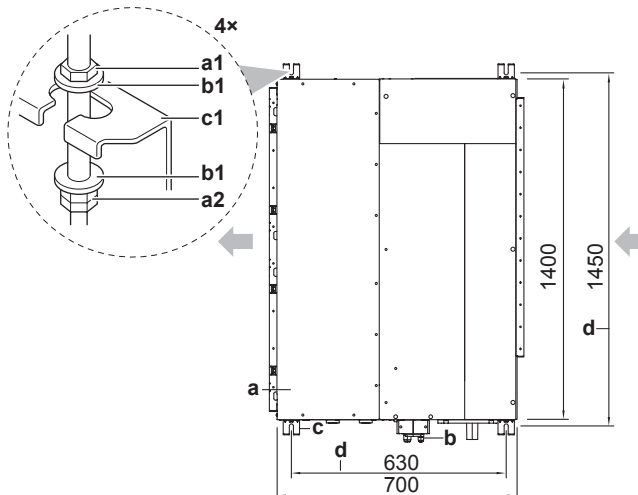
The unit can be used with bottom suction by replacing the interchangeable plate by the air filter holding plate.



- 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:



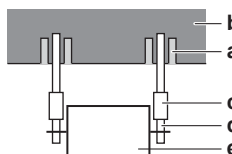
- a1 Nut (field supply)
- a2 Double nut (field supply)
- b1 Washer (accessories)
- c1 Hanger bracket (attached to the unit)
- a Indoor unit
- b Pipe
- c Hanger bracket pitch (suspension)
- d Suspension bolt spacing



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.

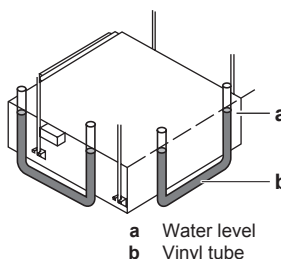
Installation example:



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

Install the unit temporarily.

- Attach the hanger bracket to the suspension bolt.
 - Fix it securely.
- Level.** Make sure the unit is level at all four corners using a level or a water-filled vinyl tube.



7 Tighten the upper nut.



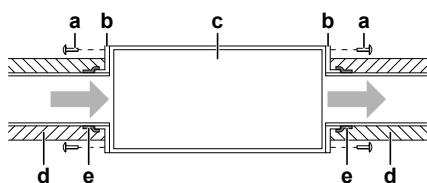
NOTICE

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.

5.1.3 Guidelines when installing the ducting

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 $\geq 50\%$ (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.

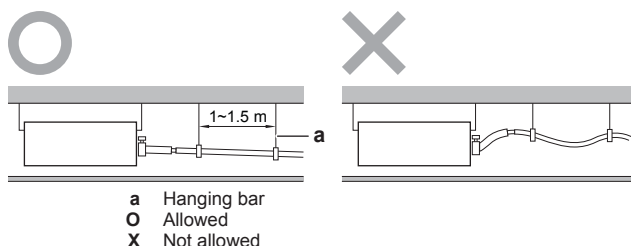
5.1.4 Guidelines when installing the drain piping

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

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

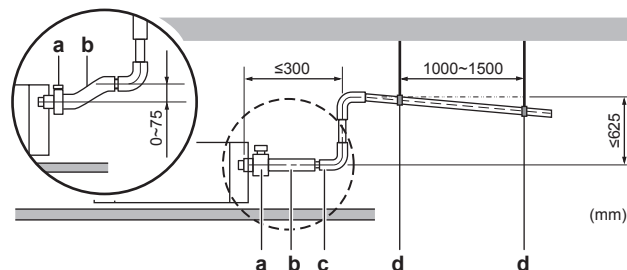
General guidelines

- **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.



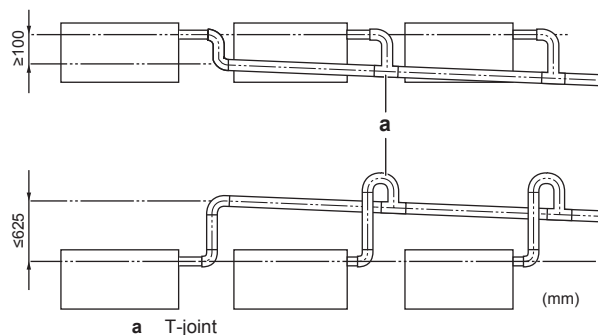
- **Condensation.** Take measures against condensation. Insulate the complete drain piping in the building.

- **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

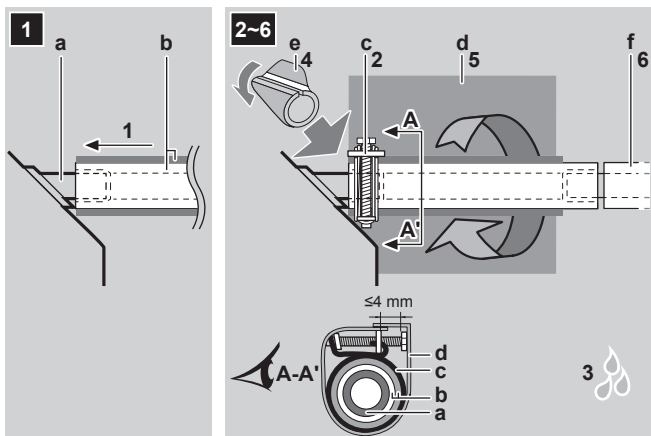


NOTICE

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).
- 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.

5 Installation



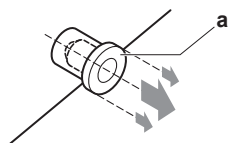
- a Drain pipe connection (attached to the unit)
- b Drain hose (accessory)
- c Metal clamp (accessory)
- d Large sealing pad (accessory)
- e Insulation piece (drain pipe) (accessory)
- f Drain piping (field supply)

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.

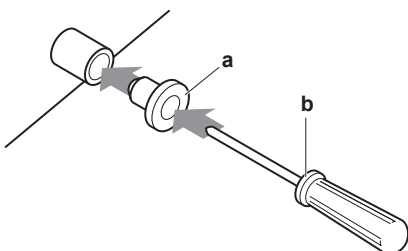
Pull out the plug.

- Do NOT wiggle the plug up and down.



Push in the plug.

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



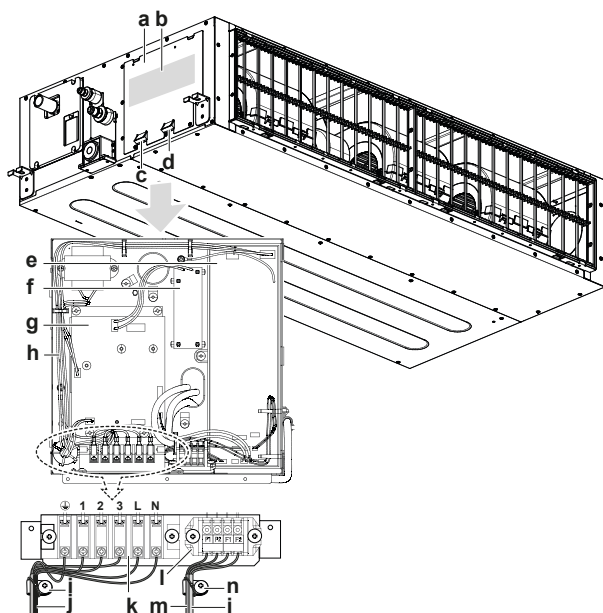
- a Drain plug
- b Phillips screwdriver

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.

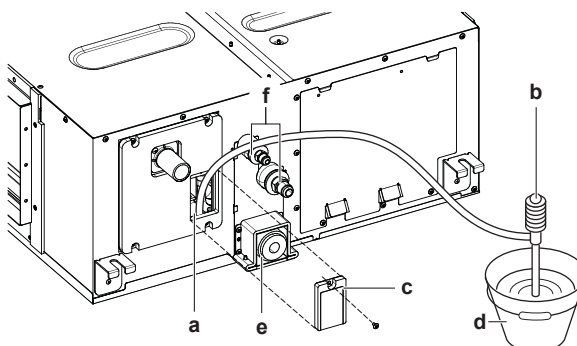
When electrical wiring is not finished yet

- 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 Wiring diagram
- c Power supply wiring port
- d Transmission wiring port
- e Indoor PCB 2
- f Indoor PCB 3
- g Indoor PCB 1
- h Switch box
- i Plastic clamp
- j Power supply wiring
- k Power supply terminal board
- l Terminal board for unit transmission wiring
- m User interface wiring
- n Transmission wiring between units

- 5 Turn ON the power.
- 6 Start cooling operation (see To perform a test run).
- 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 To perform a test run).
- 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).

5.2 Connecting the refrigerant piping



DANGER: RISK OF BURNING

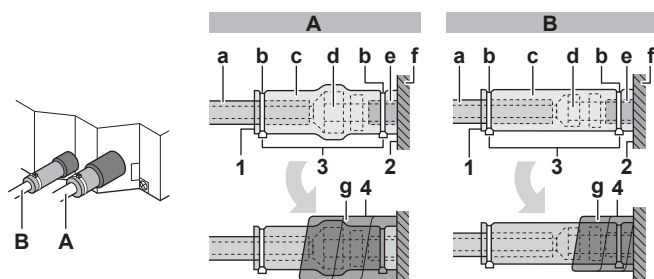
5.2.1 To connect the refrigerant piping to the indoor unit



WARNING: FLAMMABLE MATERIAL

The R32 refrigerant (if applicable) in this unit is mildly flammable.¹

- **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.

5.3 Connecting the electrical wiring



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.

5.3.1 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.

5.3.2 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.

5.3.3 Guidelines when connecting the electrical wiring

5.3.4 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 wiring 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.

⁽¹⁾ Only for appliances using R32 refrigerant. Refer to the outdoor unit specifications for the type of refrigerant to be used.

5 Installation

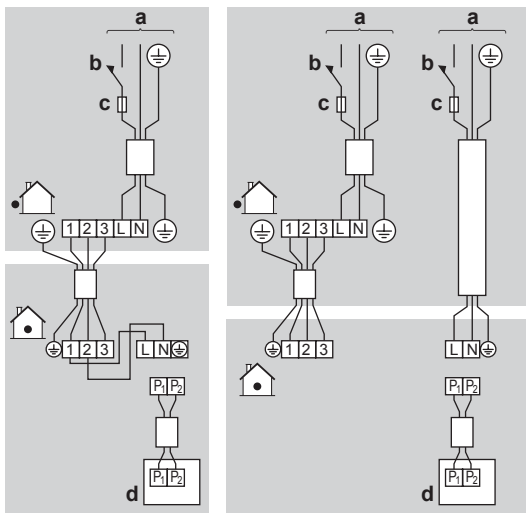


WARNING

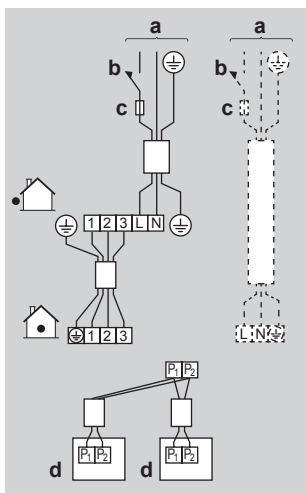
Provide adequate measures to prevent that the unit can be used as a shelter by small animals. Small animals that make contact with electrical parts can cause malfunctions, smoke or fire.

5 Reattach the service cover.

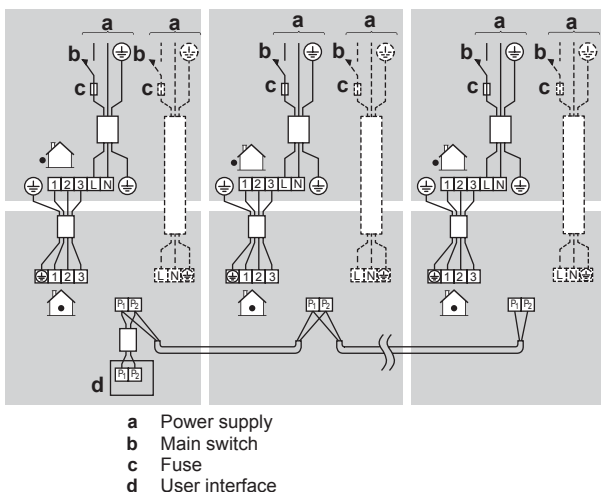
• When using 1 user interface with 1 indoor unit.



• When using 2 user interfaces²



• When using group control²

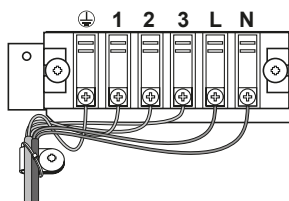


⁽²⁾ Dashed line represents separate power supply.

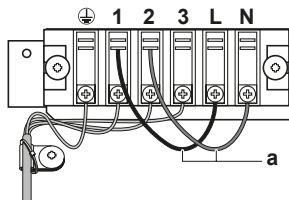
- **Master unit:** Be sure to connect the wiring when combining with a simultaneously operating multi-type in group control.
- **EN/IEC 61000-3-12** provided that the short-circuit power S_{sc} is greater than or equal to the minimum S_{sc} value at the interface point between the user's supply and the 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.

To comply with EN/IEC 61000-3-12, following rules must be considered:

- In case of combination of units 2x FDA125A + RZQ250, use separate power supplies.



- Otherwise, refer to the table with S_{sc} values for FDA125A on the extranet.
- If the S_{sc} value is NOT mentioned in the table for the used combination, use the common power supply wire delivered with the unit.
- If the S_{sc} value is mentioned in the table, both the common power supply wire or a separate power supply can be used, but a separate power supply is preferred.



a Wire for common power supply (accessory)



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.

5.3.5 Specifications of standard wiring components

Component		FDA125A
Power supply cable	MCA ^(a)	2.1 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 mm ² and applicable for 220~240 V
User interface cable		Vinyl cord with 0.75 to 1.25 mm ² sheath or cables (2 core wires) Maximum 500 m

Component	FDA125A
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 Configuration

6.1 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

To set airflow automatic adjustment

- When the air conditioning unit is running in fan operation mode:
 - Stop the air conditioning unit.
 - 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.			03
Possible consequence: The operation lamp will light up and the unit will start the fan operation for airflow automatic adjustment.			
Operation stops after 1 to 8 minutes.			02
Possible consequence: Setting is finished and the operation lamp will be off.			

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.

M	C1	C2	External static pressure
13 (23)	6	01	40
		02	50
		03	60
		04	70
		05	80
		06	90
		07	100
		08	110
		09	120
		10	130
		11	140
		12	150
		13	160
		14	180
		15	200

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".

7 Commissioning



NOTICE

NEVER operate the unit without thermistors and/or pressure sensors/switches. Burning of the compressor might result.

7.1 Checklist before commissioning

Do NOT operate the system before the following checks are OK:

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

⁽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

7 Commissioning

<input type="checkbox"/>	The system is properly earthed and the earth terminals are tightened.
<input type="checkbox"/>	The fuses or locally installed protection devices are installed according to this document, and have not been bypassed.
<input type="checkbox"/>	The power supply voltage matches the voltage on the identification label of the unit.
<input type="checkbox"/>	There are NO loose connections or damaged electrical components in the switch box.
<input type="checkbox"/>	The insulation resistance of the compressor is OK.
<input type="checkbox"/>	There are NO damaged components or squeezed pipes on the inside of the indoor and outdoor units.
<input type="checkbox"/>	There are NO refrigerant leaks .
<input type="checkbox"/>	The correct pipe size is installed and the pipes are properly insulated.
<input type="checkbox"/>	The stop valves (gas and liquid) on the outdoor unit are fully open.

7.2 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.

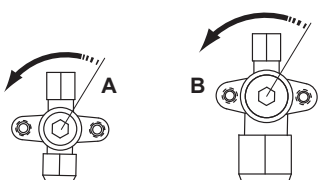
NOTICE

Do not interrupt the test run.

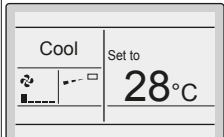

INFORMATION


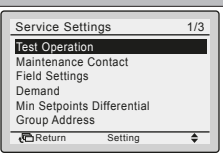

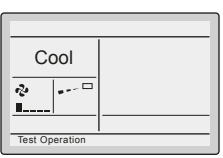

Backlight. To perform an ON/OFF action on the user interface, the backlight does not need to be lit. For any other action, it needs to be lit first. The backlight is lit for ± 30 seconds when you press a button.

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.


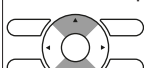
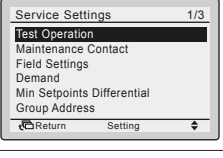

2 Start the test run

#	Action	Result
1	Go to the home menu. 	
2	Press at least 4 seconds. 	The Service Settings menu is displayed.

#	Action	Result
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.

7.3 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)	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> The stop valves are closed. The air inlet or air outlet is blocked.
E7	<p>There is a missing phase in case of three-phase power supply units.</p> <p>Note: Operation will be impossible. Turn OFF the power, recheck the wiring, and switch two of the three electrical wires.</p>
L4	The air inlet or air outlet is blocked.
U0	The stop valves are closed.

Error code	Possible cause
U2	<ul style="list-style-type: none"> 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.

8 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 on the url as earlier described 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 in relation to maintaining the unit.

9 Disposal



NOTICE





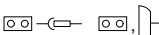











Do not try to dismantle the system yourself: the dismantling of the system, treatment of the refrigerant, oil and other parts must comply with applicable legislation. Units must be treated at a specialised treatment facility for reuse, recycling and recovery.

10 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).

10 Technical data

10.1 Wiring diagram

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

For the user

11 About the system



INFORMATION

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



INFORMATION

The sound pressure level is less than 70 dBA.



WARNING: FLAMMABLE MATERIAL

The R32 refrigerant (if applicable) in this unit is mildly flammable.¹



WARNING

- Do not modify, disassemble, remove, reinstall or repair the unit yourself as incorrect dismantling or installation may cause an electric shock or fire. Contact your dealer.
- In case of accidental refrigerant leaks, make sure there are no naked flames. The refrigerant itself is entirely safe and non-toxic. R410A is a non-combustible refrigerant, and R32 is a mildly flammable refrigerant, but they will generate a toxic gas when they accidentally leak into a room where combustible air from fan heaters, gas cookers, etc. is present. Always have qualified service personnel confirm that the point of leakage has been repaired or corrected before resuming operation.



WARNING

Ask your dealer to install and reinstall the air conditioner. Incomplete installation may result in a water leakage, electric shock, and fire.



NOTICE

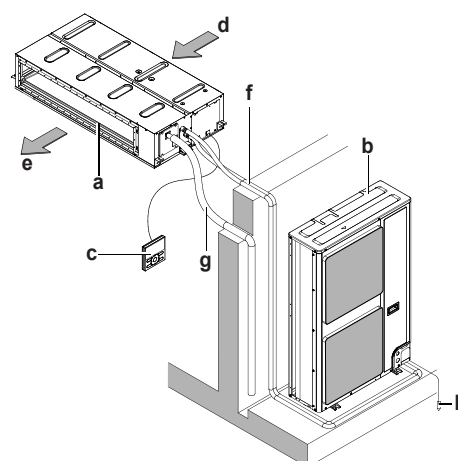
Improper installation or attachment of equipment or accessories could result in electric shock, short-circuit, leaks, fire or other damage to the equipment. Only use accessories, optional equipment and spare parts made or approved by Daikin.

11.1 Components



INFORMATION

The following illustration is an example and might NOT match your system layout.



- a Indoor unit
- b Outdoor unit
- c User interface
- d Air inlet
- e Air outlet
- f Refrigerant piping and electric wiring
- g Drain pipe
- h Earth wire to ground outdoor unit to prevent electric shocks.



CAUTION

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



CAUTION

Never touch the internal parts of the controller.

Do not remove the front panel. Some parts inside are dangerous to touch and appliance problems may happen. For checking and adjusting the internal parts, contact your dealer.



NOTICE

Do not wipe the controller operation panel with benzine, thinner, chemical dust cloth, etc. The panel may get discoloured or the coating peeled off. If it is heavily dirty, soak a cloth in water-diluted neutral detergent, squeeze it well and wipe the panel clean. Wipe it with another dry cloth.



NOTICE

Never press the button of the user interface with a hard, pointed object. The user interface may be damaged.



NOTICE

Never pull or twist the electric wire of the user interface. It may cause the unit to malfunction.

⁽¹⁾ Only for appliances using R32 refrigerant. Refer to the outdoor unit specifications for the type of refrigerant to be used.

12 User interface

12 User interface



CAUTION

Never touch the internal parts of the controller.

Do not remove the front panel. Some parts inside are dangerous to touch and appliance problems may happen. For checking and adjusting the internal parts, contact your dealer.

This operation manual will give a non-exhaustive overview of the main functions of the system.

For more information about the user interface, see the operation manual of the installed user interface.

13 Operation

13.1 Operation range

For combination with R410A outdoor unit, refer to the following table:

Outdoor units		Cooling	Heating
RR125	Outdoor temperature	-15~46°C DB	—
	Indoor temperature	18~37°C DB 12~28°C WB	—
RQ125	Outdoor temperature	-5~46°C DB	-9~21°C DB -10~15°C WB
	Indoor temperature	18~37°C DB 12~28°C WB	10~27°C DB
RZQG125	Outdoor temperature	-15~50°C DB	-19~21°C DB -20~15.5°C WB
	Indoor temperature	18~37°C DB 12~28°C WB	10~27°C DB
RZQSG125	Outdoor temperature	-15~46°C DB	-14~21°C DB -15~15.5°C WB
	Indoor temperature	20~37°C DB 14~28°C WB	10~27°C DB
RZQ250	Outdoor temperature	-5~46°C DB	-14~21°C DB -15~15°C WB
	Indoor temperature	20~37°C DB 14~28°C WB	10~27°C DB
Indoor humidity		≤80% ^(a)	

For combination with R32 outdoor unit, refer to the following table:

Outdoor units		Cooling	Heating
RZAG125	Outdoor temperature	-20~52°C DB	-19.5~21°C DB -20~15.5°C WB
	Indoor temperature	18~37°C DB 12~28°C WB	10~27°C DB
RZASG125	Outdoor temperature	-15~46°C DB	-14~21°C DB -15~15.5°C WB
	Indoor temperature	20~37°C DB 14~28°C WB	10~27°C DB
Indoor humidity		≤80% ^(a)	

- (a) To avoid condensation and water dripping out of the unit. If the temperature or the humidity is beyond these conditions, safety devices may be put in action and the air conditioner may not operate.

13.2 Operation procedure

- Turn on the power at least 6 hours before operating the unit in order to ensure smoother operation. As soon as the power is turned on, the user interface display appears.
- If there was a power failure during operation, the system automatically restarts immediately after the power supply is recovered.
- The setting temperature range of the user interface is described in chapter "Operation range".
- If you select a function which is not available, the message NOT AVAILABLE appears on the user interface.
- Read the documentation carefully before operating the user interface to ensure the best possible performance.

14 Maintenance and service

14.1 Overview: Maintenance and service

The installer has to perform a yearly maintenance.

About the refrigerant

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

Refrigerant type: R32

Global warming potential (GWP) value: 675

Refrigerant type: R410A

Global warming potential (GWP) value: 2087.5



NOTICE

In Europe, the **greenhouse gas emissions** of the total refrigerant charge in the system (expressed as tonnes CO₂-equivalent) is used to determine the maintenance intervals. Follow the applicable legislation.

Formula to calculate the greenhouse gas emissions:
GWP value of the refrigerant × Total refrigerant charge [in kg] / 1000

Please contact your installer for more information.



WARNING

R410A is a non-combustible refrigerant, and R32 is a mildly flammable refrigerant; they normally don't leak. If the refrigerant leaks in the room and comes in contact with fire from a burner, a heater, or a cooker, this may result in a fire (in case of R32), or the formation of a harmful gas.

Turn off any combustible heating devices, ventilate the room, and contact the dealer from where you purchased the unit.

Do not use the unit until a service person confirms that the part from which the refrigerant leaked has been repaired.



WARNING

- 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.



NOTICE

Maintenance must be done by an authorised installer or service agent.

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



CAUTION

Before accessing terminal devices, make sure to interrupt all power supply.



DANGER: RISK OF ELECTROCUTION

To clean the air conditioner or air filter, be sure to stop operation and turn all power supplies off. Otherwise, an electric shock and injury may result.



WARNING

To prevent electric shocks or fire:

- Do NOT rinse the unit.
- Do NOT operate the unit with wet hands.
- Do NOT place any objects containing water on the unit.



CAUTION

After a long use, check the unit stand and fitting for damage. If damaged, the unit may fall and result in injury.



CAUTION

Do not touch the heat exchanger fins. These fins are sharp and could result in cutting injuries.



NOTICE

When cleaning the heat exchanger, make sure to remove the switch box and fan motor. Water or detergent might deteriorate the insulation of electronic components and result in burnout of these components.



WARNING

Be careful with ladders when working in high places.



NOTICE

- Do NOT use gasoline, benzene, thinner polishing powder or liquid insecticide. **Possible consequence:** Discoloration and deformation.
- Do NOT use water or air of 50°C or higher. **Possible consequence:** Discoloration and deformation.
- Do NOT scrub firmly when washing the blade with water. **Possible consequence:** The surface sealing peels off.

Clean with a soft cloth. If it is difficult to remove stains, use water or neutral detergent.

14.2 Cleaning the air filter, suction grille, air outlet and outside panels

14.2.1 To clean the air outlet and outside panels



WARNING

Do NOT let the indoor unit get wet. **Possible consequence:** Electric shock or fire.

14 Maintenance and service

14.2.2 To clean the air filter

When to clean the air filter:

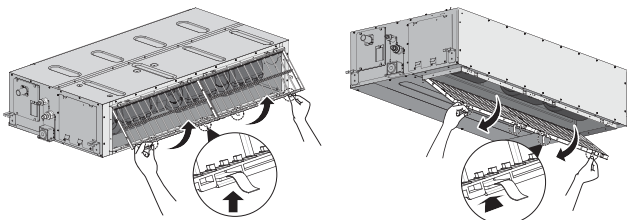
- Rule of thumb: Clean every 6 months. If the air in the room is extremely contaminated, increase the cleaning frequency.
- Depending on the settings, the user interface can display the **TIME TO CLEAN AIR FILTER** notification. Clean the air filter when the notification is displayed.
- If the dirt becomes impossible to clean, change the air filter (= optional equipment).

How to clean the air filter:

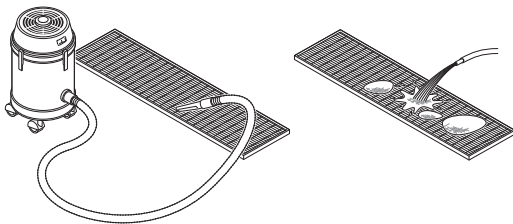
- 1 Remove the air filters by pulling their cloth upward (in case of rear suction) or backward (in case of bottom suction).

rear suction

bottom suction



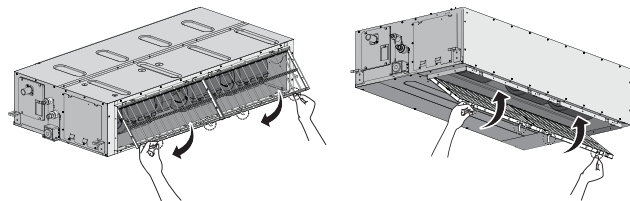
- 2 Clean the air filter. Use a vacuum cleaner or wash with water. If the air filter is very dirty, use a soft brush and neutral detergent.



- 3 Dry the air filter in the shadow.
- 4 Reattach the air filter. Align the 2 hanger brackets and push the 2 clips in their place and pull the cloth if necessary.

rear suction

bottom suction



- 5 Confirm that 4 hangers are fixed.
- 6 In case of bottom suction, close the air inlet grille.
- 7 Turn ON the power.
- 8 Press the **FILTER SIGN RESET** button.

Result: The **TIME TO CLEAN AIR FILTER** notification disappears from the user interface.

14.3 Maintenance before a long stop period

E.g., at the end of the season.

- Let the indoor units run in fan only operation for about half a day in order to dry the interior of the units.
- Turn off the power. The user interface display disappears. When the main power is turned on, the air conditioner will use some power, even if it is not operating.
- Clean air filters and casings of indoor units. Contact your installer or maintenance person to clean air filters and casings of the indoor unit. Maintenance tips and procedures for cleaning are provided in the installation/operation manuals of dedicated indoor units. Make sure to install cleaned air filters back in the same position.
- Remove the batteries from the user interface.

14.4 Maintenance after a long stop period

E.g., at the beginning of the season.

- Check and remove everything that might be blocking inlet and outlet vents of indoor units and outdoor units.
- Check if the earth is connected properly.
- Check if there is somewhere a broken wire. Contact your dealer in case of problems.
- Clean air filters and casings of indoor units. Contact your installer or maintenance person to clean air filters and casings of the indoor unit. Maintenance tips and procedures for cleaning are provided in the installation/operation manuals of dedicated indoor units. Make sure to install cleaned air filters back in the same position.
- Turn on the power at least 6 hours before operating the unit in order to ensure smoother operation. As soon as the power is turned on, the user interface display appears.

15 Troubleshooting

If one of the following malfunctions occur, take the measures shown below and contact your dealer.



WARNING

Stop operation and shut off the power if anything unusual occurs (burning smells etc.).

Leaving the unit running under such circumstances may cause breakage, electric shock or fire. Contact your dealer.

The system must be repaired by a qualified service person:

Malfunction	Measure
If a safety device such as a fuse, a breaker or an earth leakage breaker frequently actuates or the ON/OFF switch does not properly work.	Turn off the main power switch.
If water leaks from the unit.	Stop the operation.
The operation switch does not work well.	Turn off the power.
If the user interface display indicates the unit number, the operation lamp flashes and the malfunction code appears.	Notify your installer and report the malfunction code.

If the system does not properly operate except for the above mentioned cases and none of the above mentioned malfunctions is evident, investigate the system according to the following procedures.

Malfunction	Measure
If the system does not operate at all.	<ul style="list-style-type: none"> Check if there is no power failure. Wait until power is restored. If a power failure occurs during operation, the system automatically restarts immediately after power is restored. Check if no fuse has blown or breaker is activated. Change the fuse or reset the breaker if necessary.
The system stops immediately after starting operation.	<ul style="list-style-type: none"> Check if air inlet or outlet of outdoor or indoor unit is not blocked by obstacles. Remove any obstacles and make sure the air can flow freely. Check if the air filter is clogged. Contact your dealer to clean the air filter.

Malfunction	Measure
The system operates but cooling or heating is insufficient.	<ul style="list-style-type: none"> Check if air inlet or outlet of outdoor or indoor unit is not blocked by obstacles. Remove any obstacles and make sure the air can flow freely. Check if the air filter is clogged. Contact your dealer to clean the air filter (refer to "Maintenance" in the indoor unit manual). Check the temperature setting. Refer to the manual of the user interface. Check if the fan speed setting is set to low speed. Refer to the manual of the user interface. Check if the air flow angle is proper. Refer to the manual of the user interface. Check for open doors or windows. Close doors and windows to prevent wind from coming in. Check if direct sunlight enters the room. Use curtains or blinds. Check if there are too many occupants in the room during cooling operation. Check if the heat source of the room is excessive. If the heat source of the room is excessive (when cooling). Cooling effect decreases if heat gain of the room is too large.
Operation stops suddenly. (Operation lamp blinks.)	<ul style="list-style-type: none"> Check if the air filter is clogged. Contact your dealer to clean the air filter (refer to "Maintenance" in the indoor unit manual). Check if air inlet or outlet of outdoor or indoor unit is not blocked by obstacles. Remove any obstacles, turn the breaker OFF and back ON. If the lamp still blinks, contact your dealer. Check if all indoor units connected to outdoor unit in the multi-system are operating in the same mode.
An abnormal function happens during operation.	<ul style="list-style-type: none"> The air conditioner may malfunction because of lightning or radio waves. Turn the breaker OFF and back ON.

If after checking all above items, it is impossible to fix the problem yourself, contact your installer and state the symptoms, the complete model name of the unit (with manufacturing number if possible) and the installation date (possibly listed on the warranty card).


15.1 Symptoms that are NOT system malfunctions

The following symptoms are NOT system malfunctions:

15.1.1 Symptom: The system does not operate

- The air conditioner does not start immediately after the ON/OFF button on the user interface is pressed. If the operation lamp lights, the air conditioner is in normal condition. It does not restart immediately because one of its safety devices actuates to prevent the air conditioner from being overloaded. The air conditioner will turn on again automatically after 3 minutes.
- The air conditioner does not start immediately after the power supply is turned on. Wait 1 minute until the microcomputer is prepared for operation.

16 Relocation

- The air conditioner does not restart immediately when the temperature setting button is returned to its former position after pushing. It does not restart immediately because one of its safety devices actuates to prevent the air conditioner from being overloaded. The air conditioner will turn on again automatically after 3 minutes.
- The outdoor unit has stopped. This is because the room temperature has reached the set temperature. The unit switches to fan operation. "  (external control icon) is displayed on the user interface and the actual operation is different from the user interface setting. For multi-split models, the microcomputer executes the following control depending on the operation mode of other indoor units.
- The fan speed is different from the setting. Pressing the fan speed control button does not change the fan speed. When the room temperature reaches the set temperature in heating mode or the unit's maximum capacity is reached, the outdoor unit will stop operation and the indoor unit will operate in fan only mode (low fan speed). In case of multi-split, the indoor unit alternately operates in fan stop mode and fan only mode (LL= low fan speed). This is to prevent the cool air from being blown directly onto anyone present in the room.

15.1.2 Symptom: Air blow direction is not as specified

Actual air blow direction is not as shown on the user interface. Automatic swing setting does not work.

Refer to the manual of the user interface.

15.1.3 Symptom: White mist comes out of a unit (Indoor unit)

- When humidity is high during cooling operation (in oily and dusty places). If the interior of an indoor unit is extremely contaminated, the temperature distribution inside a room becomes uneven. It is necessary to clean the interior of the indoor unit. Ask your dealer for details on cleaning the unit. This operation requires a qualified service person.
- When the air conditioner is changed over to heating operation after defrost operation. Moisture generated by defrost becomes steam and exits.

15.1.4 Symptom: Noise of air conditioners (indoor unit)

- A "ringing" sound is heard after the unit is started. This sound is generated by the temperature regulator working. It will quiet down after about a minute.
- A continuous low "hissing" sound is heard when the system is in cooling or defrost operation. This is the sound of refrigerant gas flowing through both indoor and outdoor units.
- A hissing sound which is heard at the start or immediately after stopping operation or defrost operation. This is the noise of refrigerant caused by flow stop or flow change.
- A "squeaking" sound is heard when the system is in operation or after the stop of operation. Expansion and contraction of plastic parts caused by temperature change makes this noise.

15.1.5 Symptom: Dust comes out of the unit

When the unit is used for the first time in a long time. This is because dust has gotten into the unit.

15.1.6 Symptom: The units can give off odours

The unit can absorb the smell of rooms, furniture, cigarettes, etc., and then emit it again.

15.1.7 Symptom: The display shows "88"

This is the case immediately after the main power supply switch is turned on and means that the user interface is in normal condition. This continues for 1 minute.

15.1.8 Symptom: The operation stopped suddenly (Operation lamp is on)

The air conditioner may stop for system protection due to large voltage fluctuation. It automatically resumes operation after about 3 minutes.

15.1.9 Symptom: The outdoor fan rotates while the air conditioner is not in operation

- **After operation has stopped.** The outdoor fan continues to rotate for another 30 seconds for system protection.
- **While the air conditioner is not in operation.** When the outdoor temperature is very high, the outdoor fan starts to rotate for system protection.

15.1.10 Symptom: The heating operation stops suddenly and a flowing sound is heard

The system is removing frost on the outdoor unit. You should wait for about 3 to 8 minutes.

16 Relocation

Contact your dealer for removing and reinstalling the total unit. Moving units requires technical expertise.

17 Disposal

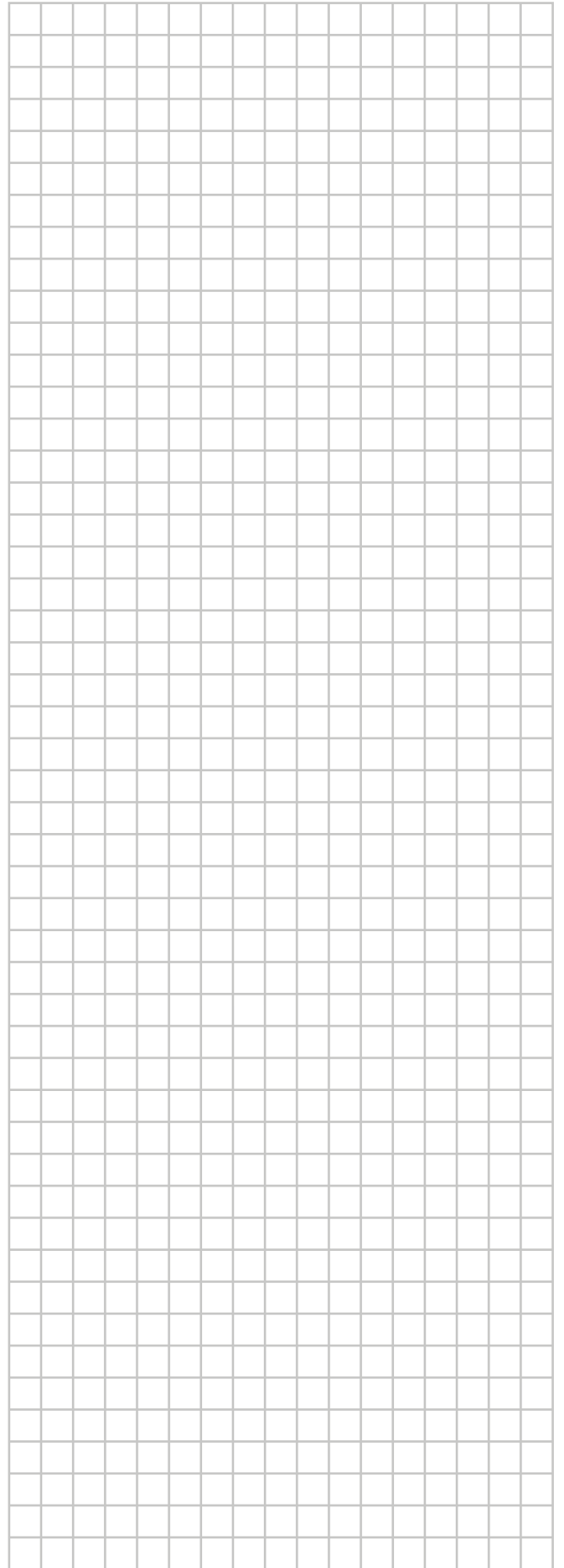
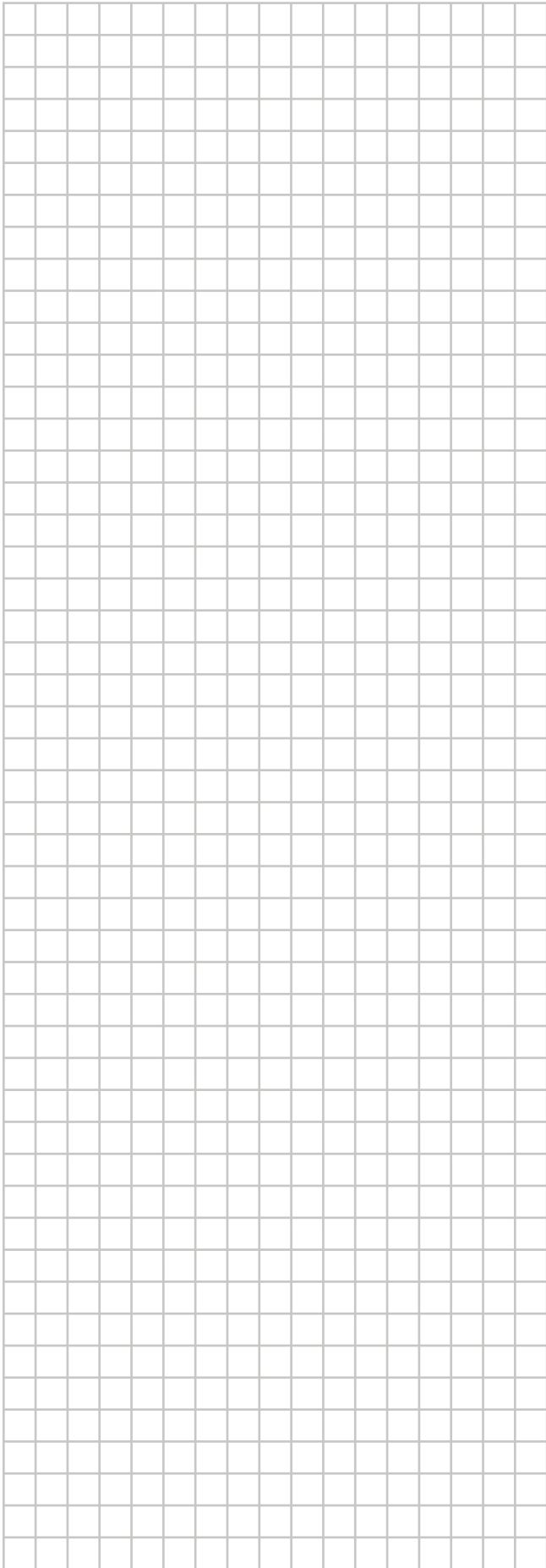
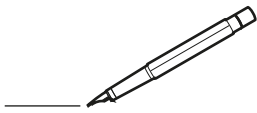


NOTICE

Do not try to dismantle the system yourself: the 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.







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