



Installation manual

Split system air conditioners

FDXM25F3V1B
FDXM35F3V1B
FDXM50F3V1B
FDXM60F3V1B

Installation manual
Split system air conditioners

English

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1 About the documentation

1.1 About this document



INFORMATION

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

Target audience

Authorised installers



INFORMATION

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

Documentation set

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

- **General safety precautions:**
 - Safety instructions that you must read before installing
 - Format: Paper (in the box of the outdoor unit)
- **Indoor unit installation manual:**
 - Installation instructions
 - Format: Paper (in the box of the outdoor 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.

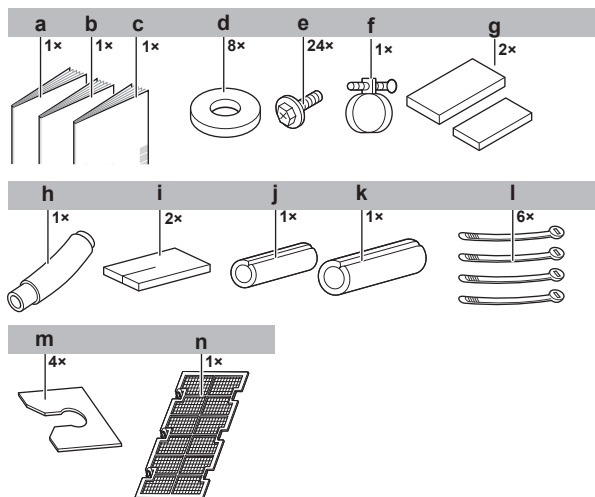
Technical engineering data

- 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 About the box

2.1 Indoor unit

2.1.1 To remove the accessories from the indoor unit

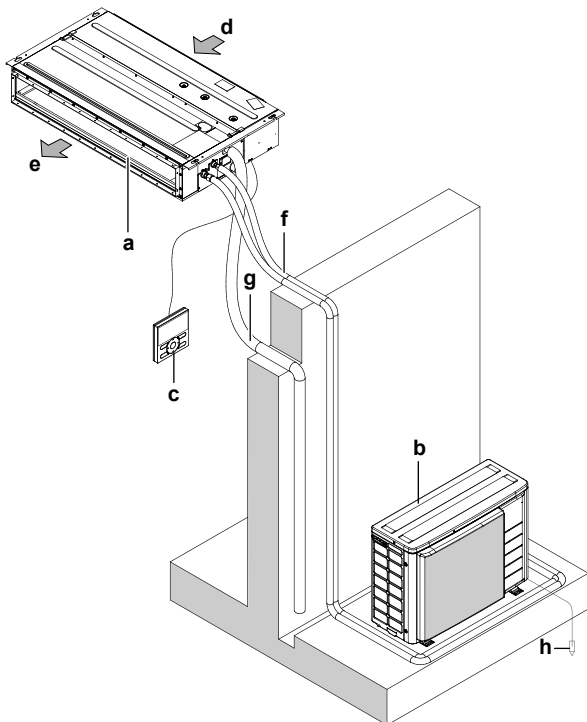


- a Installation manual
- b Operation manual
- c General safety precautions
- d Washers for hanger bracket
- e Screws for duct flanges
- f Metal clamp
- g Sealing pads: small and large
- h Drain hose
- i Sealing material
- j Insulation piece: Small (liquid pipe)
- k Insulation piece: Large (gas pipe)
- l Tie wraps
- m Washer fixing plate
- n Air filter

3 About the units and options

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

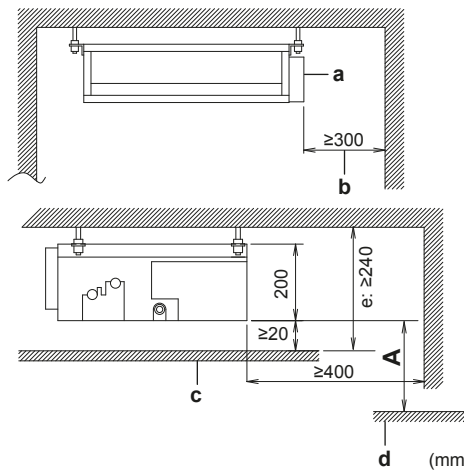
Do NOT install the air conditioner at any place where flammable gas may leak out. If the gas leaks out and stays around the air conditioner, a fire may break out.

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 Minimum distance to the floor:**
2.7 m to avoid accidental touching.
2.5 m in case the fan is covered (e.g. false ceiling, grille, ...)
- a Control box
- b Maintenance space
- c Ceiling
- d Floor surface
- e Select the dimension to ensure downward slope of at least 1/100

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:

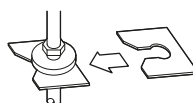
- General safety precautions
- Preparation

5.1.2 Guidelines when installing the indoor unit

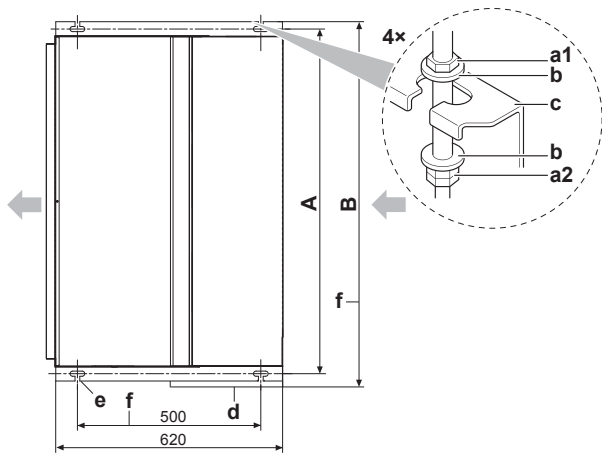
INFORMATION

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.

- **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.
 - For existing ceilings, use anchors.
 - For new ceilings, use sunken inserts, sunken anchors or other field supplied parts.
- **Suspension bolts.** Use W3/8 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:

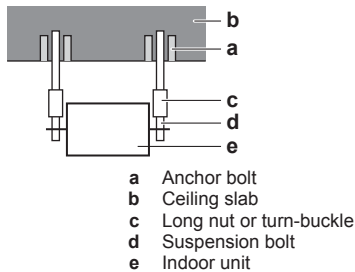


Class	A (mm)	B (mm)
FDXM25+35	740	790
FDXM50+60	1140	1190

- a1 Nut (field supply)
- a2 Double nut (field supply)
- b Washer (accessories)
- c Hanger bracket
- d Control box
- e Suspension bolt pitch
- f Overall dimension

- **External static pressure.** Refer to technical documentation to ensure that the unit's external static pressure is not exceeded.
- **Ceiling opening.** (Ceiling with opening for installation)
 - 1 Pass all pipes and wiring through the unit's piping and wiring holes.
 - 2 Make sure that the ceiling is level.

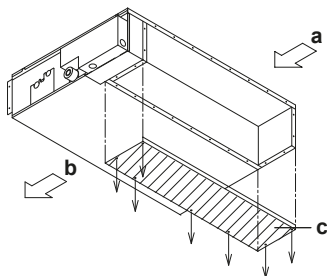
▪ **Installation example:**



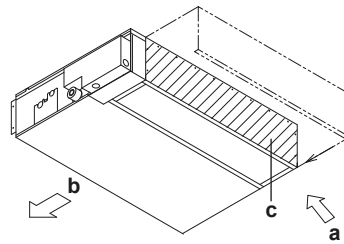
- a Anchor bolt
- b Ceiling slab
- c Long nut or turn-buckle
- d Suspension bolt
- e Indoor unit

- **Install suction cover and air filter (accessory)** In case of bottom suction:

- 3 Remove the suction cover.



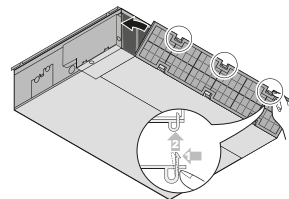
- 4 Reattach the removed suction cover.



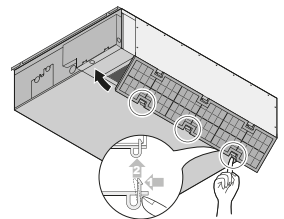
- a Air inlet
- b Air outlet
- c Suction cover

- 5 Attach the air filter (accessory) by pushing down the hooks (2 hooks for 25+35 type, 3 hooks for 50+60 type).

rear suction



bottom suction

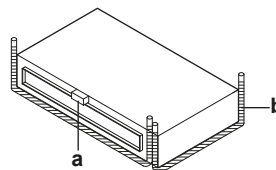


- **Install the unit temporarily.**

- 6 Attach the hanger bracket to the suspension bolt.

- 7 Fix the unit securely.

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



- a Level
- b Vinyl tube

- 8 Tighten the upper nut.



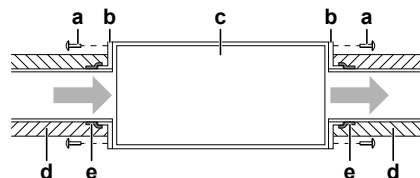
NOTICE

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.

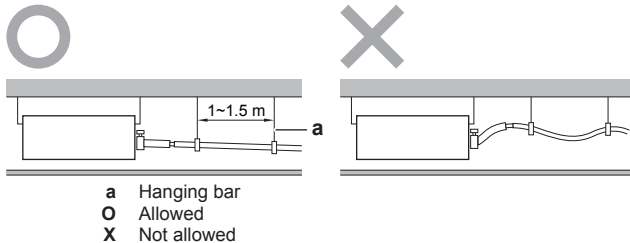
5 Installation

- **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

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 20 mm nominal diameter and 26 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.



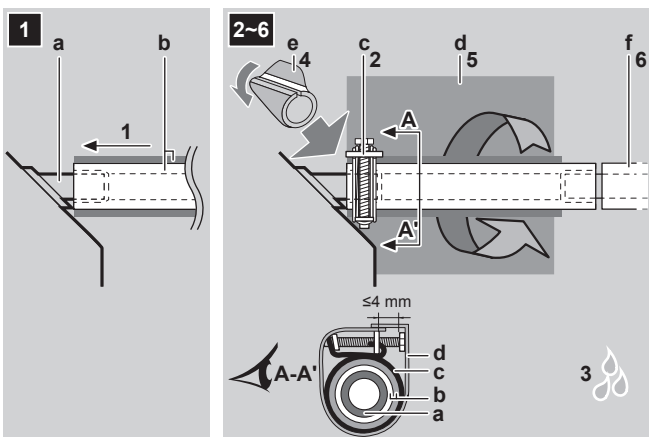
- **Condensation.** Take measures against condensation. Insulate the complete drain piping in the building.

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.



- a Drain pipe connection (attached to the unit)
 b Drain hose (accessory)
 c Metal clamp (accessory)
 d Large sealing pad (accessory)

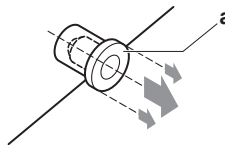
- e Insulation piece (drain pipe) (accessory)
 f Drain piping (field supply)

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.

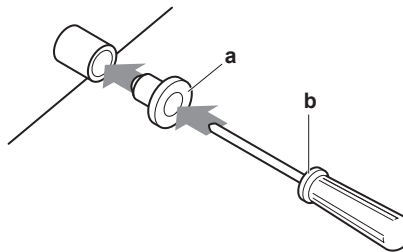
Pull out the plug.

- Do NOT wiggle the plug up and down.



Push in the plug.

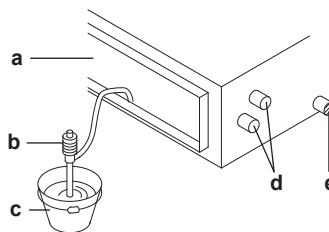
- Set the plug and push it in using a Phillips screwdriver.



- a Drain plug
 b Phillips screwdriver

To check for water leaks

Gradually pour approximately 1 l of water in the drain pan, and check for water leaks.



- a Air outlet
 b Portable pump
 c Bucket
 d Refrigerant pipes
 e Drain outlet

5.2 Connecting the refrigerant piping

DANGER: RISK OF BURNING

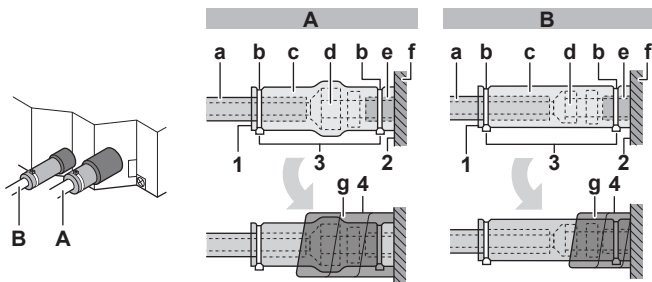
5.2.1 To connect the refrigerant piping to the indoor unit

WARNING: FLAMMABLE MATERIAL

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

(a) 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.

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 To connect the electrical wiring on the indoor unit

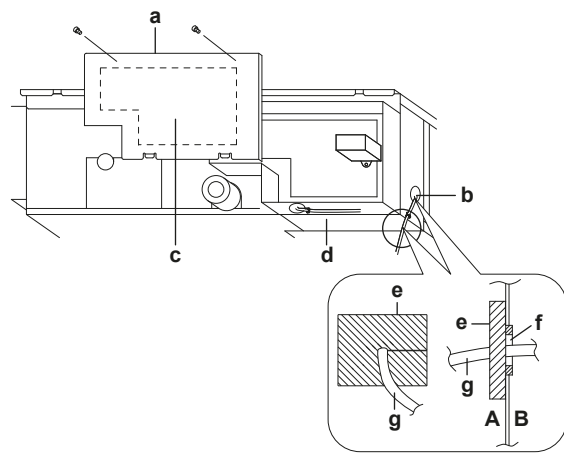
It is important to keep the power supply and the transmission wiring separated from each other. In order to avoid any electrical interference the distance between both wiring should always be at least 50 mm.



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.



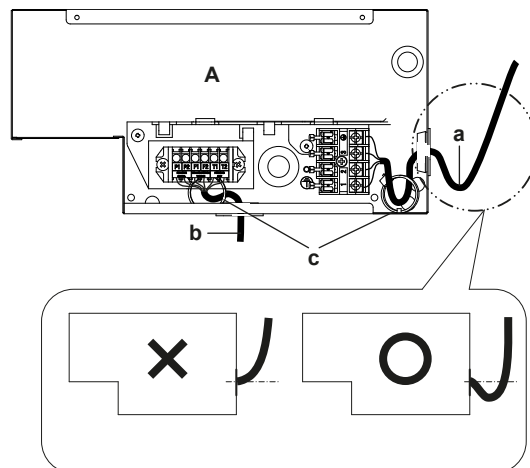
- A** Outside the unit
B Inside the unit
a Control box cover
b Connection of interconnection cable (including earth)
c Wiring diagram
d Connection of user interface wiring
e Sealing material (accessory)
f Opening for cables
g Wire

- 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 Wrap the cables with the sealing material (accessory) to prevent water from entering the unit. Seal all gaps to prevent small animals from entering the system.



WARNING

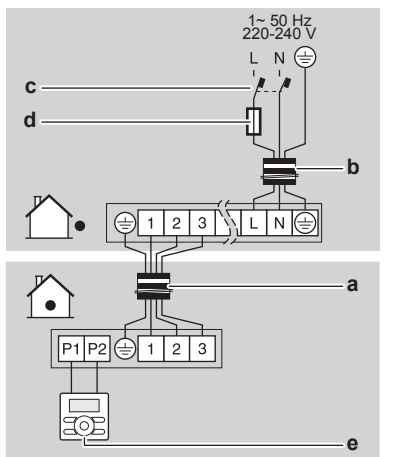
Provide adequate measures to prevent that the unit can be used as a shelter by small animals. Small animals that make contact with electrical parts can cause malfunctions, smoke or fire.



- A** Indoor PC board (ASSY)
a Power supply and earth wiring
b Transmission and user interface wiring
c Clamps

- 5 Reattach the service cover.

6 Configuration



- a Interconnection cable
- b Power supply cable
- c Earth leakage circuit breaker
- d Fuse
- e User interface

5.3.2 Specifications of standard wiring components

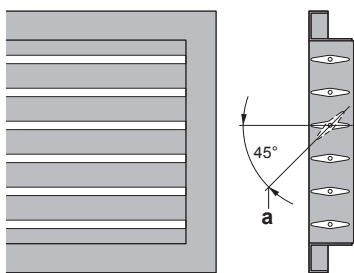
Component	Specification
Interconnection cable (indoor↔outdoor)	Minimum cable section of 2.5 mm ² and applicable for 230 V
User interface cable	Vinyl cords with 0.75 to 1.25 mm ² sheath or cables (2-core wires) Maximum 500 m

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.** See the technical documentation for the range of the external static pressure setting.
- **For heat pump.** If users experience cold feet during the heating function, adjust the discharge grille as shown below.



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 .
<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

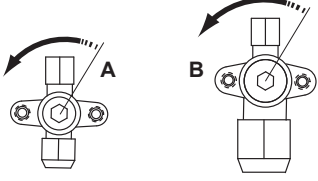
Do not interrupt the test run.



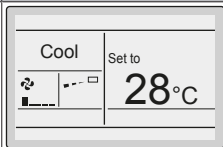
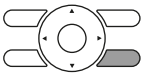
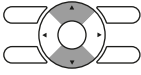
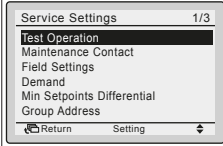
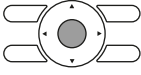
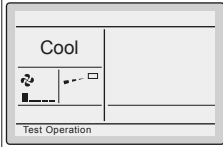

INFORMATION

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.

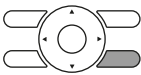
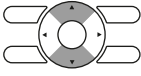
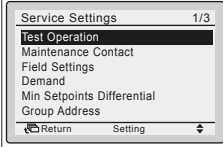
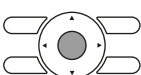
#	Action
1	Open the liquid stop valve (A) and gas stop valve (B) by removing the stem cap and turning counterclockwise with a hex wrench until it stops. 
2	Close the service cover to prevent electric shocks.
3	Turn ON power for at least 6 hours before starting operation to protect the compressor.
4	On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





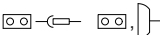











Error code	Possible cause
E7	There is a missing phase in case of three-phase power supply units. Note: Operation will be impossible. Turn OFF the power, recheck the wiring, and switch two of the three electrical wires.
L4	The air inlet or air outlet is blocked.
U0	The stop valves are closed.
U2	<ul style="list-style-type: 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.

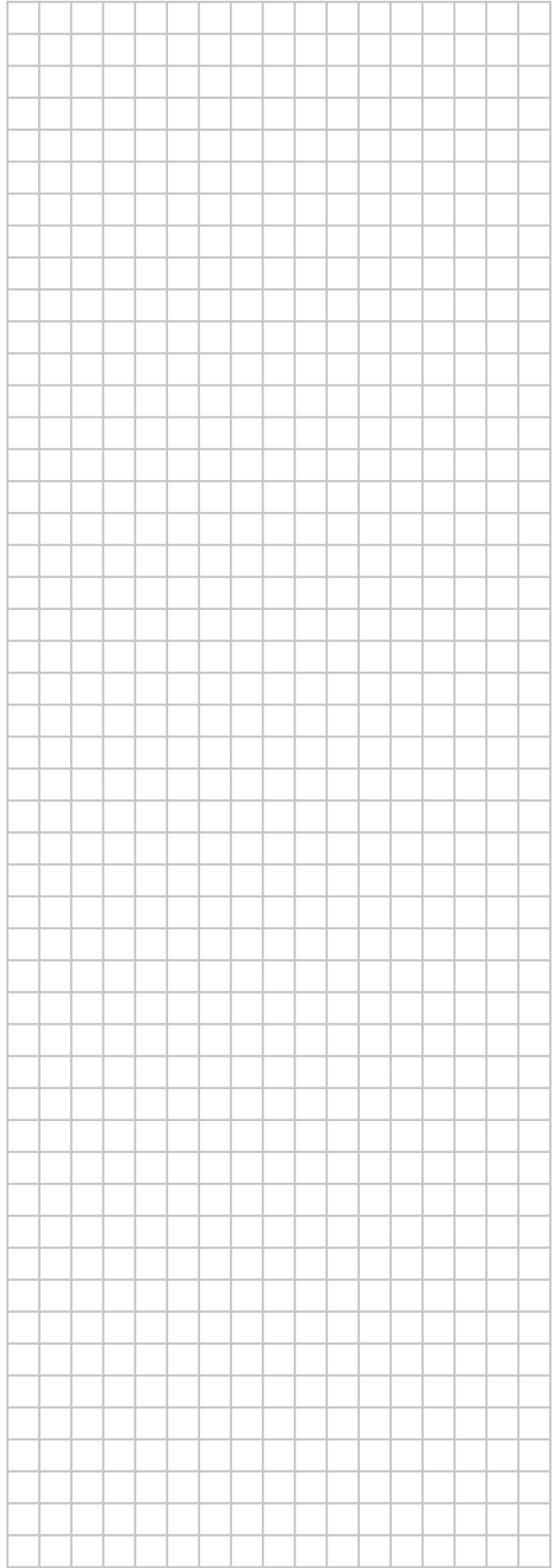
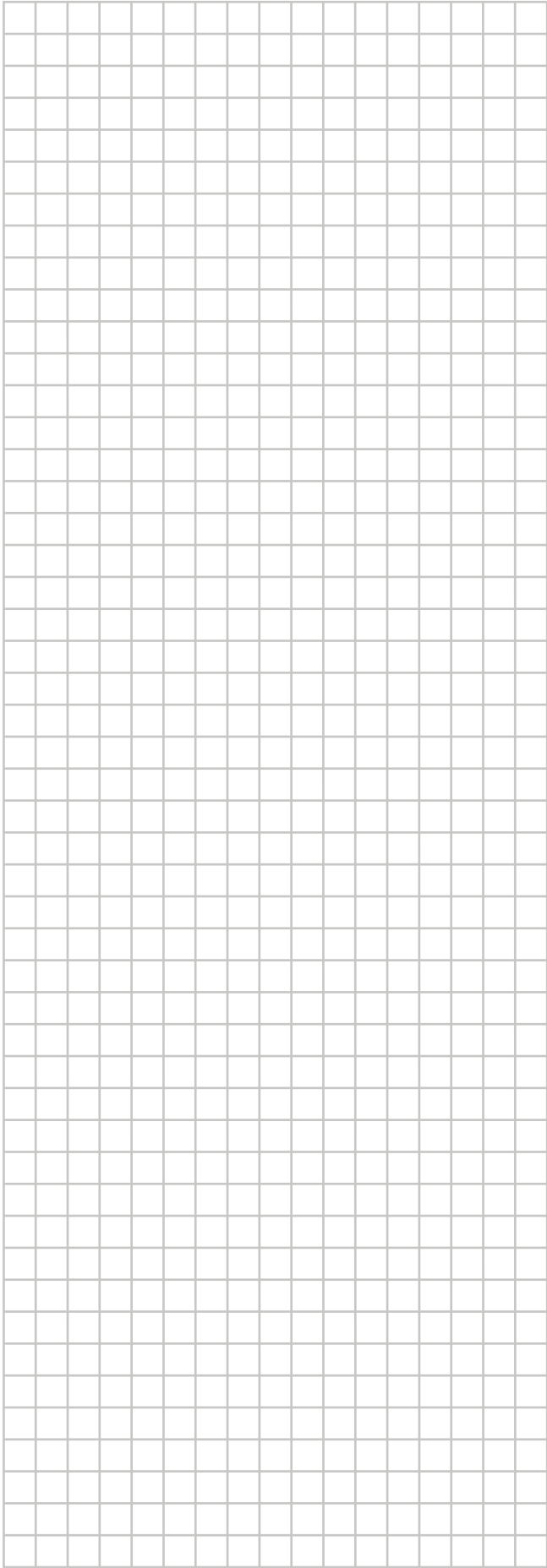
8 Technical data

- 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).

8 Technical data

8.1 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, FL* (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



ERC



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