



website <http://www.lgservice.com>

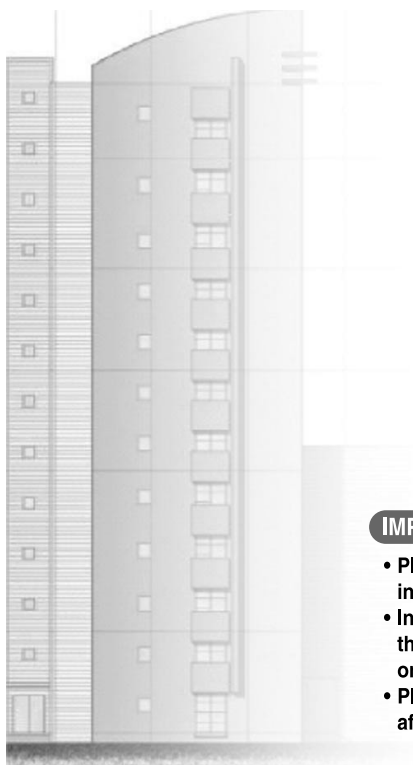
LG

MULTI V[™] System

Indoor Unit (2 Series)

INSTALLATION MANUAL

Type: Ceiling Concealed Duct - Low Static



IMPORTANT

- Please read this installation manual completely before installing the product.
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only.
- Please retain this installation manual for future reference after reading it thoroughly.

TABLE OF CONTENTS

Installation Requirements	Required Parts	Required Tools
Safety Precautions 3		
Introduction 6		
Installation		
Selection of the best location 7	☐ Four type "A" screws ☐ Connecting cable	☐ Level gauge ☐ Screw driver ☐ Electric drill ☐ Hole core drill
Ceiling opening dimension and hanging bolt location 8	☐ Pipes: Gas side Liquid side (Refer to Product Data) ☐ Insulation materials ☐ Additional drain pipe	☐ Flaring tool set ☐ Specified torque wrenches (different depending on model No.) ☐ Spanner Half union
Indoor Unit Installation.....9		
Wiring Connection 9		☐ A glass of water ☐ Screw driver
Part name and functions 10		☐ Hexagonal wrench ☐ Gas-leak detector ☐ Vacuum pump ☐ Gauge manifold
Checking the Drainage.....11		
Installation of Wired Remote Controller 15		☐ Owner's manual ☐ Thermometer
Optional Operation of Wired Remote Controller 17		
How to Set E.S.P? 18		

Safety Precautions

- To prevent injury to the user or other people and property damage, the following instructions must be followed.
- Be sure to read before installing the air conditioner.
 - Be sure to observe the cautions specified here as they include important items related to safety.
 - Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.



WARNING This symbol indicates the possibility of death or serious injury.



CAUTION This symbol indicates the possibility of injury or damage to properties only.

- Meanings of symbols used in this manual are as shown below.



Be sure not to do.



Be sure to follow the instruction.



WARNING

■ Installation

Do not use a defective or underrated circuit breaker. Use this appliance on a dedicated circuit.

- There is risk of fire or electric shock.

For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center.

- Do not disassemble or repair the product. There is risk of fire or electric shock.

Always ground the product.

- There is risk of fire or electric shock.

Install the panel and the cover of control box securely.

- There is risk of fire or electric shock.

Always install a dedicated circuit and breaker.

- Improper wiring or installation may cause fire or electric shock.

Use the correctly rated breaker or fuse.

- There is risk of fire or electric shock.

Do not modify or extend the power cable.

- There is risk of fire or electric shock.

Do not let the air conditioner run for a long time when the humidity is very high and a door or a window is left open.

- Moisture may condense and wet or damage furniture.

Be cautious when unpacking and installing the product.

- Sharp edges could cause injury. Be especially careful of the case edges and the fins on the condenser and evaporator.

For installation, always contact the dealer or an Authorized Service Center.

- There is risk of fire, electric shock, explosion, or injury.

Do not install the product on a defective installation stand.

- It may cause injury, accident, or damage to the product.

Be sure the installation area does not deteriorate with age.

- If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and personal injury.

■ Operation

Do not store or use flammable gas or combustibles near the product.

- There is risk of fire or failure of product.

 CAUTION**■ Installation**

Always check for gas (refrigerant) leakage after installation or repair of product.

- Low refrigerant levels may cause failure of product.

Install the drain hose to ensure that water is drained away properly.

- A bad connection may cause water leakage.

Keep level even when installing the product.

- To avoid vibration or water leakage.

Do not install the product where the noise or hot air from the outdoor unit could damage the neighborhoods.

- It may cause a problem for your neighbors.

Use two or more people to lift and transport the product.

- Avoid personal injury.

Do not install the product where it will be exposed to sea wind (salt spray) directly.

- It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient operation.

If you eat the liquid from the batteries, brush your teeth and see doctor. Do not use the remote if the batteries have leaked.

- The chemicals in batteries could cause burns or other health hazards.

Introduction

Symbols Used in this Manual



This symbol alerts you to the risk of electric shock.



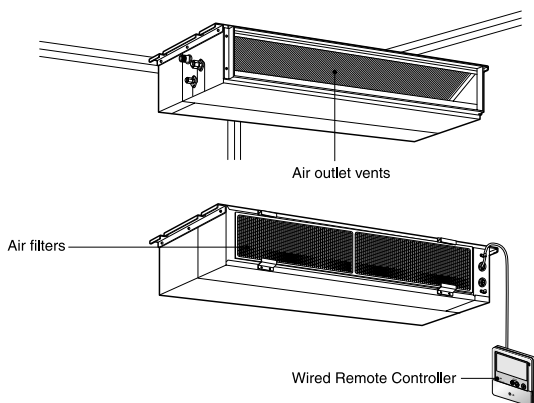
This symbol alerts you to hazards that could cause harm to the air conditioner.

NOTICE

This symbol indicates special notes.

Features

Low static Duct type



Installation

Selection of the best location

Indoor unit

Install the air conditioner in the location that satisfies the following conditions.

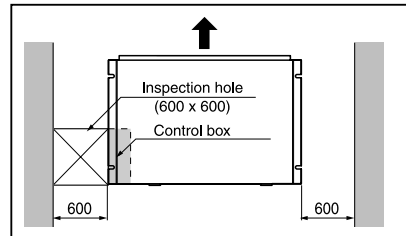
- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good .
- There should not be any heat source or steam near the unit

Confirm the positional relationship between the unit and suspension bolts.

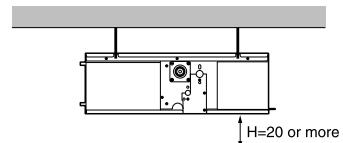
- Installation the ceiling opening to clean the filter or service under the product.

(Length: mm)

Capacity(Btu/h)	A	B
09/12/15k	600	900
18/24k	600	1100

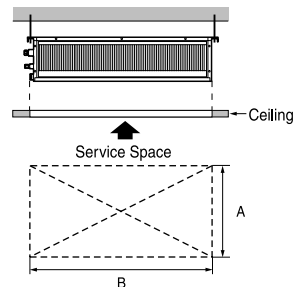
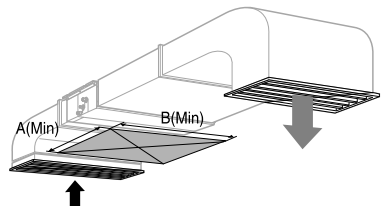


Side view (unit: mm)



- Suitable dimension "H" is necessary to get a slooe to drain as aiven in the fiaure

Low static Duct type



[Inspection Hole Standard]

Number of Inspection hole	Distance between False ceiling & Actual ceiling	Remarks
1	More than 100cm	Sufficient space in the ceiling for servicing.
2	20cm to 100cm	Insufficient space. Difficult for servicing
Hole size should be more than the size of IDU.	Less than 20cm	Minimum height for motor replacement.

Ceiling dimension and hanging bolt location

Installation of Unit

Install the unit above the ceiling correctly.

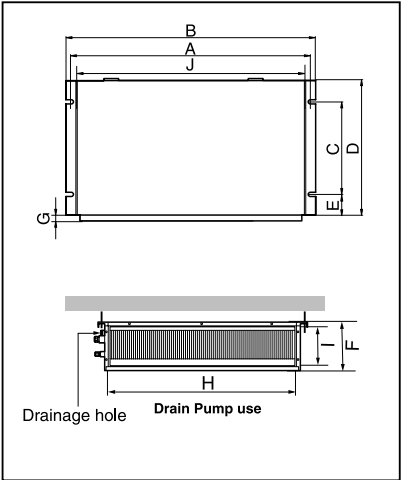
CASE 1

POSITION OF SUSPENSION BOLT

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Apply a filter Accessory at air return hole.

(Unit:mm)

Dimension	A	B	C	D	E	F	G	H	I	J
Capacity(Btu/h)										
09/12/15k BTU/h	850	900	383	575	93	190	21	795	163	820
18/24k BTU/h	1130	1180	383	575	93	190	21	1065	163	1100

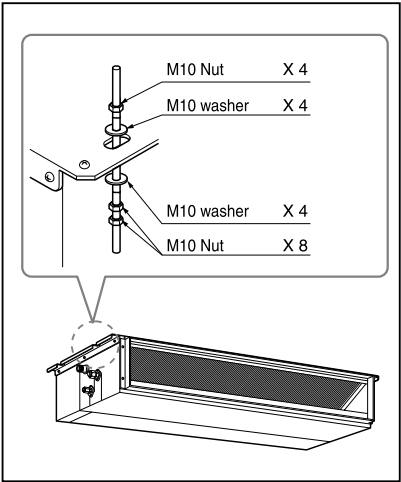


CASE 2

- Install the unit leaning to a drainage hole side as a figure for easy water drainage.

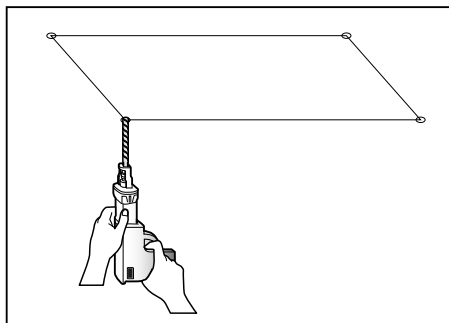
POSITION OF CONSOLE BOLT

- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.



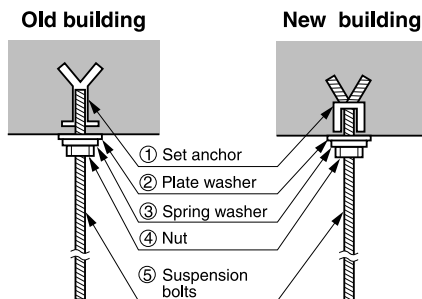
Indoor Unit Installation

- Select and mark the position for fixing bolts.
- Drill the hole for set anchor on the face of ceiling.



CAUTION : Tighten the nut and bolt to prevent unit falling.

- Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the set anchor firmly.
- Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.

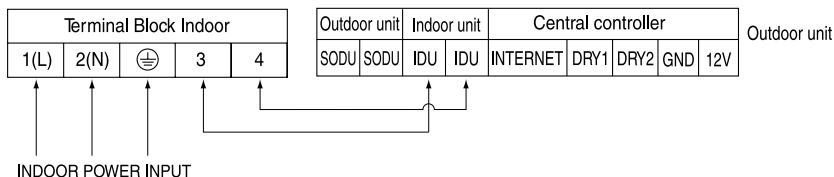


Wiring Connection

Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

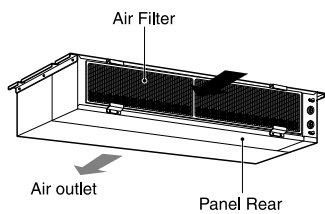
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.

B1/B2 Series

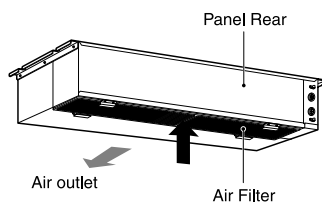


WARNING : Make sure that the screws of the terminal are free from looseness.

Part name and functions



- Low static duct type in case of suction from back side.



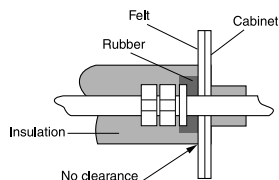
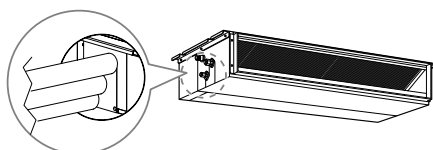
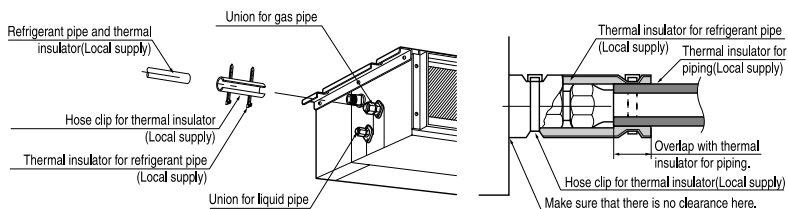
- Low static duct type in case of suction from bottom side.

INSULATION, OTHERS

Insulate the joint and tubes completely.

THERMAL INSULATION

All thermal insulation must comply with local requirement.

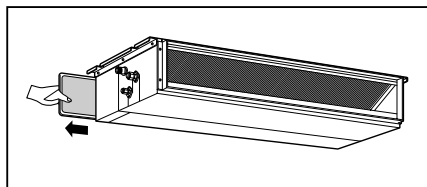
INDOOR UNIT**TEST AND CHECK**

■ After all workings are finished, check the working and operation.

- Air distribution Is the air circulation good?
- Drain Is the drainage smoothly and no sweating?
- Gas leakage Is the piping connection correctly?
- Wiring Is the wiring connection correctly?
- Lock-bolt Is the lock-bolt of compressor loosened?
- Insulation Is the unit fully insulated?
- Ground Is the unit safely grounded?

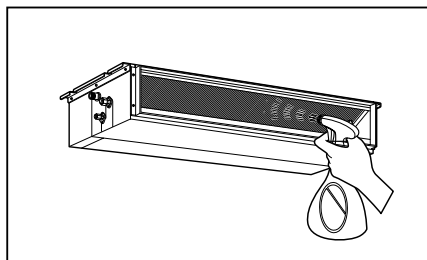
Checking the Drainage

1. Remove the Air Filter.



2. Check the drainage.

- Spray one or two glasses of water upon the evaporator.
- Ensure that water flows drain hose of indoor unit without any leakage.

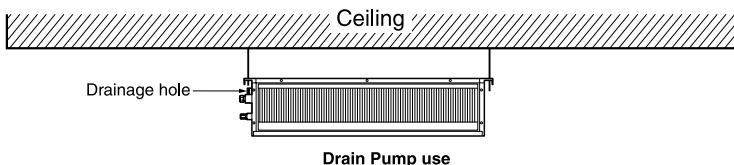


CAUTION

1. **Install declination** of the indoor unit is very **important for the drain** of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe shall be 19mm.

Front of view

- The unit must be horizontal or declined to the drain hose connected when finished installation.



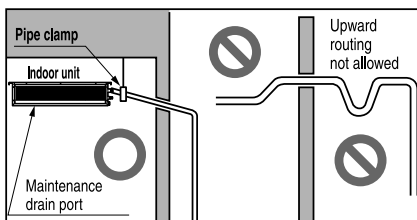
Drain Piping

- Drain piping must have down-slope (1/50 to 1/100); be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- The outside diameter of the drain connection on the indoor unit is 32mm.

Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings

- Be sure to install heat insulation on the drain piping.

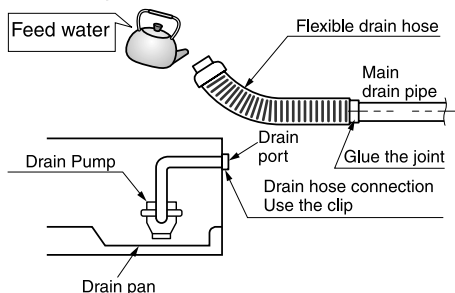
Heat insulation material: Polyethylene foam with thickness more than 8 mm.



Drain test

The air conditioner uses a drain pump to drain water.

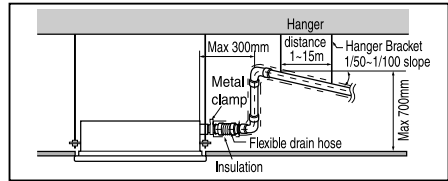
Use the following procedure to test the drain pump operation:



- Connect the main drain pipe to the exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain pump for normal operating and noise when electrical wiring is complete.
- When the test is complete, connect the flexible drain hose to the drain port on the indoor unit.



CAUTION : The supplied flexible drain hose should not be curved, neither screwed. The curved or screwed hose may cause a leakage of water.



CAUTION:

After the confirmation of the above conditions, prepare the wiring as follows:

- 1) Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control box cover.
- 2) Provide a circuit breaker switch between power source and the unit.
- 3) The screws which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could give rise to burn-out of the wires.)
- 4) Specification of power source
- 5) Confirm that electrical capacity is sufficient.
- 6) Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- 7) Confirm that the cable thickness is as specified in the power sources specification. (Particularly note the relation between cable length and thickness.)
- 8) Never fail to equip a leakage breaker where it is wet or moist.
- 9) The following troubles would be caused by voltage drop-down.
 - Vibration of a magnetic switch, damage on the contact point, fuse breaking, disturbance by the normal function of an overload protection device.
 - Proper starting power is not given to the compressor.

HAND OVER

Teach the customer the operation and maintenance procedures, using the operation manual. (air filter cleaning, temperature control, etc.)

Standard Accessories

Name	Drain hose	Clamp metal	Washer for hanging bracket	Clamp (Tie Wrap)	Insulation for fitting	(Other)
Quantity	1 EA	2 EA	8 EA	4 EA	1 SET	
Shape					 for gas pipe for liquid pipe	• Owner's manual • Installation manual

WIRED REMOTE CONTROLLER INSTALLATION

- Since the room temperature sensor is in the remote controller, the remote controller box should be installed in a place away from direct sunlight, high humidity and direct supply of cold air to maintain proper space temperature. Install the remote controller about 5ft(1.5m) above the floor in an area with good air circulation at an average temperature.

Do not install the remote controller where it can be affected by:

- Drafts, or dead spots behind doors and in corners.
- Hot or cold air from ducts.
- Radiant heat from sun or appliances.
- Concealed pipes and chimneys.
- Uncontrolled areas such as an outside wall behind the remote controller.
- This remote controller is equipped with a seven segment LED display. For proper display of the remote controller LED's, the remote controller should be installed properly as shown in Fig.1.
(The standard height is 1.2~1.5 m from floor level.)

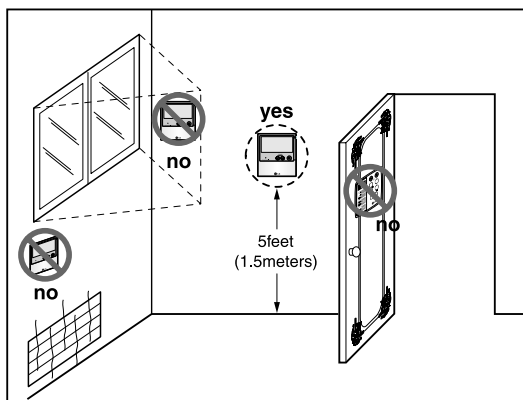
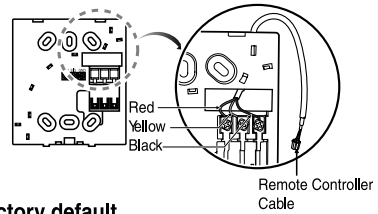


Fig.1 Typical locations for remote controller

Installation of Wired Remote Controller

1. Connect the wired remote controller cable to the wired remote controller installation board as shown in the right picture.

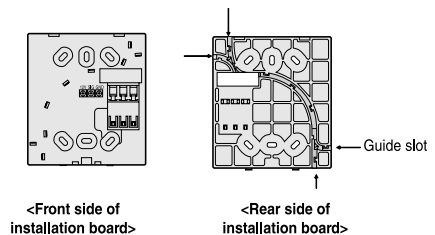
12V	Red wire
SIG	Yellow wire
GND	Black wire



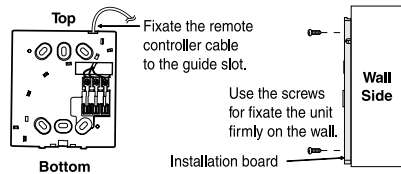
- * The wired remote controller cable is connected as factory default.

2. After fixing the cable to the guide slot, attach the wired remote controller installation board at the desired location.

- Before fixing the wired remote controller cable to the guide slot, remove any clogged part of the case in the direction to install before the installation.

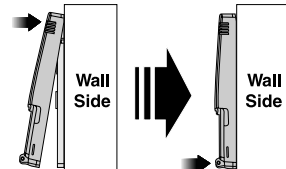


3. After locating the wired remote controller installation board at the desired location, screw the unit firmly. (When there is a buried box, install the wired remote controller board to fit the buried box.)

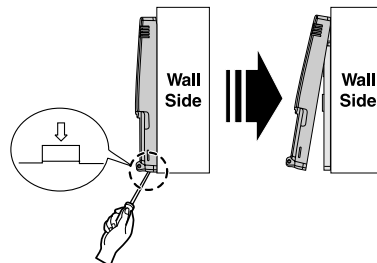


- Use the screw provided.

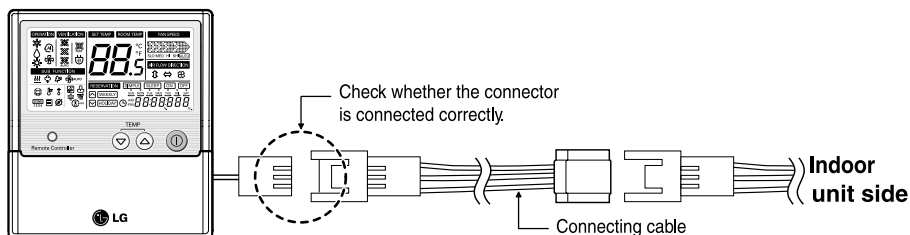
4. After fixing the top part of the wired remote controller to the installation board as shown in beside picture, press the bottom part to assemble the controller to its board.



When disassemble the wired remote controller from the installation board, use the driver as shown in the right picture and insert it into the hole with the arrow. And when you pull the driver in the front direction, the wired remote controller will be separated.



5. Use the connecting cable to connect the indoor unit and the wired remote controller.



6. When the distance between the wired remote controller and the indoor unit is 10m and above, use the extension cable.

⚠ CAUTION

When installing the wired remote controller, do not bury it in the wall.

(It can cause damage in the temperature sensor.)

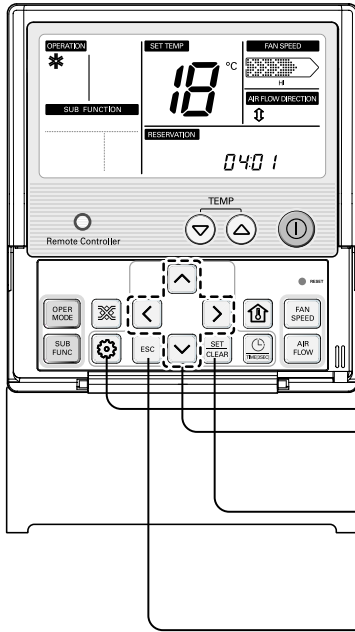
Do not install the cable to be 50m or above.

(It can cause communication error.)

- When installing the extension cable, check the connecting direction of the connector of the remote controller side and the product side for correct installation.
- If you install the extension cable in the opposite direction, the connector will not be connected.
- Specification of extension cable: 2547 1007 22# 2 core 3 shield 5 or above.

Optional Operation of Wired Remote Controller

Two Thermistor System



1. Press button for 4 seconds to enter the installer setting mode until timer segment display "01:01".



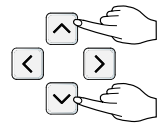
2. Repeat pressing button to select Function code 04.

04:01

Function Code Thermistor setting

3. Set Thermistor mode by pressing

button
(01: Remote Controller,
02: Indoor, 03: 2TH)



4. Press button to save or release



5. Press button to exit or system will automatically exit after 25 seconds without any input.



* Therefore system will use value that sensed from indoor unit or remote controller

Temperature sensor location		Function
01	Remote controller	Operation in remote controller Temperature sensor
02	Indoor unit	Operation in indoor unit temperature sensor
03	2-Thermistor	Operation in lower temperature after comparing the temperature between the indoor unit and remote controller

* If you want to know more Optional Operation, please refer to Wired Remote Controller Manual.

How to Set E.S.P?

What is an E.S.P function?

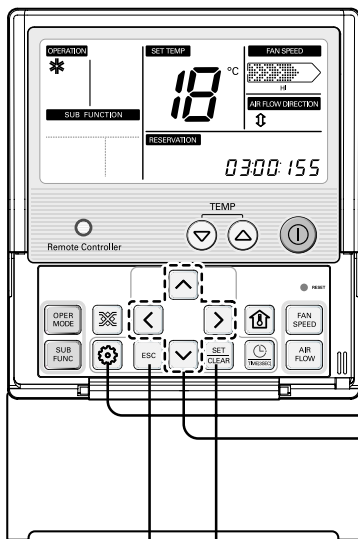
This is the function that decides the strength of the wind for each wind level and because this function is to make the installation easier, please do not use this function when using the remote controller.

⚠ CAUTION

If you set ESP incorrectly, the air conditioner may malfunction.

This setting must be carried out by a certificated-technician.

This function is using for only Duct product



1. Press  button for 4 seconds to enter the installer setting mode until timer segment display "01:01".

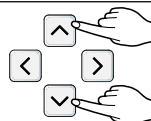


2. Repeat pressing Function Setting key to select Function code 03.

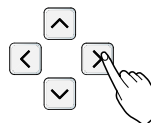
03:00:155

Function Code ESP step ESP value

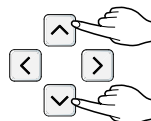
3. Set ESP step by pressing   button (01: very low, 02: low, 03: medium, 04: high, 05: power).



4. Move to ESP setting by pressing  button.



5. Press   button to select ESP value(0~255).



6. Press  button to save or release



7. Press  button to exit or the system will automatically exit after 25 seconds without any input



* Weak and Power setting is not available for some products.

* Because the ESP value is already appropriately set when manufactured from the factory, it is recommended that you do not change the ESP value.

JRNU09GB1G2, JRNU12GB1G2, JRNU15GB1G2

(Unit: CMM)

Setting Value	Static Pressure(mmAq(Pa))				
	0(0)	1(10)	2(20)	3(30)	4(40)
60	6.02	2.25	0.61	-	-
65	6.95	3.32	0.73	0.54	0.48
70	7.69	5.16	1.19	0.65	0.56
75	8.46	6.93	2.42	0.77	0.63
80	9.5	7.37	3.4	0.87	0.72
85	10.35	8.72	5.33	1.35	0.88
90	10.81	9.66	6.75	3.15	0.98
95	11.57	10.31	8.56	4.73	1.03
100	12.58	11.22	9.75	7.46	2.31
105	13.31	12.27	10.89	8.64	5.01
110	14.2	13.24	12.15	10.49	7.7
115	14.82	13.92	12.64	11.16	9.48

JRNU18GB2G2, JRNU24GB2G2

(Unit: CMM)

Setting Value	Static Pressure(mmAq(Pa))				
	0(0)	1(10)	2(20)	3(30)	4(40)
65	10.07	6.9	0.82	-	-
70	11.39	8.49	2.2	-	-
75	12.01	9.79	4.2	-	-
80	13.21	11.03	5.92	0.92	-
85	14.24	12.36	9.41	2.1	-
90	15.04	13.34	10.8	5.29	1.01
95	16.02	14.63	12.5	7.59	1.34
100	17.11	15.56	13.66	11.53	5.35
105	17.99	16.53	15.17	12.35	7.67
110	19.04	17.71	16.22	14.23	10.45
115	19.77	18.62	17.1	15.23	13.25
120	20.94	19.92	18.56	16.98	14.66
125	21.97	20.56	19.25	17.68	16.06
130	22.83	21.98	20.75	19.32	17.73

Note :

1. The above table shows the correlation between the air rates and E.S.P.

