LG

Life's Good

ENGLISH

ESPAÑOL

PORTUGUESE

INSTALLATION MANUAL
AIR CONDITIONER

- 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.

TYPE : Ceilling Concealed Duct

www.lg.com

P/NO : MFL61971212

CONTENTS

Safety Precautions

To prevent the injury of 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. |

■ The meanings of the symbols used in this manual are as shown below.

🚫	**Be sure not to do.**
❗	**Be sure to follow the instruction.**

⚠ WARNING

■ Installation

Always perform grounding.	**Don't use a power cord, a plug or a loose socket which is damaged.**	**For installation of the product, always contact the service center or a professional installation agency.**
• Otherwise, it may cause electrical shock.	• Otherwise, it may cause a fire or electrical shock.	• Otherwise, it may cause a fire, electrical shock, explosion or injury.
Securely attach the electrical part cover to the indoor unit and the service panel to the outdoor unit.	**Always install an air leakage breaker and a dedicated switching board.**	**Do not keep or use flammable gases or combustibles near the air conditioner.**
• If the electrical part cover of the indoor unit and the service panel of the outdoor unit are not attached securely, it could result in a fire or electric shock due to dust, water, etc.	• No installation may cause a fire and electrical shock.	• Otherwise, it may cause a fire or the failure of product.

Ensure that an installation frame of the outdoor unit is not damaged due to use for a long time.	**Do not disassemble or repair the product randomly.**
• It may cause injury or an accident.	• It will cause a fire or electrical shock.

Do not install the product at a place that there is concern of falling down.	Use caution when unpacking and installing.
• Otherwise, it may result in personal injury.	• Sharp edges may cause injury.

■ Operation

Do not share the outlet with other appliances.	Do not use the damaged power cord.	Do not modify or extend the power cord randomly.
• It will cause an electric shock or a fire due to heat generation.	• Otherwise, it may cause a fire or electrical shock.	• Otherwise, it may cause a fire or electrical shock.

Take care so that the power cord may not be pulled during operation.	Unplug the unit if strange sounds, smell, or smoke comes from it.	Keep the flames away.
• Otherwise, it may cause a fire or electrical shock.	• Otherwise, it may cause electrical shock or a fire.	• Otherwise, it may cause a fire.

Take the power plug out if necessary, holding the head of the plug and do not touch it with wet hands.	Do not use the power cord near the heating tools.	Do not open the suction inlet of the indoor/outdoor unit during operation.
• Otherwise, it may cause a fire or electrical shock.	• Otherwise, it may cause a fire and electrical shock.	• Otherwise, it may electrical shock and failure.

Do not allow water to run into electrical parts.	Hold the plug by the head when taking it out.	Never touch the metal parts of the unit when removing the filter.
• Otherwise, it may cause the failure of machine or electrical shock.	• It may cause electric shock and damage.	• They are sharp and may cause injury.

Do not step on the indoor/outdoor unit and do not put anything on it.	Do not place a heavy object on the power cord.
• It may cause an injury through dropping of the unit or falling down.	• Otherwise, it may cause a fire or electrical shock.

When the product is submerged into water, always contact the service center.	Take care so that children may not step on the outdoor unit.
• Otherwise, it may cause a fire or electrical shock.	• Otherwise, children may be seriously injured due to falling down.

⚠ CAUTION
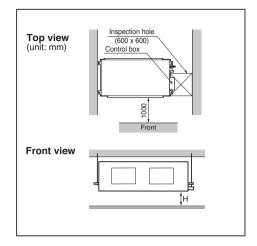
■ Installation

Install the drain hose to ensure that drain can be securely done.

• Otherwise, it may cause water leakage.

Install the product so that the noise or hot wind from the outdoor unit may not cause any damage to the neighbors.

• Otherwise, it may cause dispute with the neighbors.

Always inspect gas leakage after the installation and repair of product.

• Otherwise, it may cause the failure of product.

Keep level parallel in installing the product.

• Otherwise, it may cause vibration or water leakage.

■ Operation

Avoid excessive cooling and perform ventilation sometimes.

• Otherwise, it may do harm to your health.

Use a soft cloth to clean. Do not use wax, thinner, or a strong detergent.

• The appearance of the air conditioner may deteriorate, change color, or develop surface flaws.

Do not use an appliance for special purposes such as preserving animals vegetables, precision machine, or art articles.

• Otherwise, it may damage your properties.

Do not place obstacles around the flow inlet or outlet.

• Otherwise, it may cause the failure of appliance or an accident.

Installation Places

Indoor unit

• 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 allow easy water drainage.(Suitable dimension "H" is necessary to get a slope to drain as figure.)

• 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

Top view
(unit: mm)

Inspection hole
(600 x 600)
Control box

1000

Front

Front view

H

The indoor unit installation

Installation of Unit

Install the unit above the ceiling correctly.
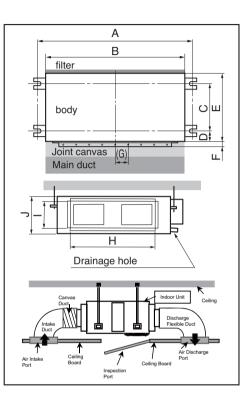
CASE 1

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 / Capacity	A	B	C	D	E	F	(G)	H	I	J
18/24 K	932	882	355	46	450	30	87	750	163	260
36 K	1232	1182	355	45.5	450	30	87	830	186	298
48/60 K	1290	1230	447	56	590	30	120	1006	294	380

Drainage hole
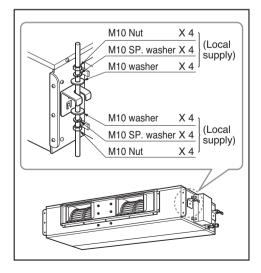
CASE 2

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

POSITION OF CONSOLE BOLT
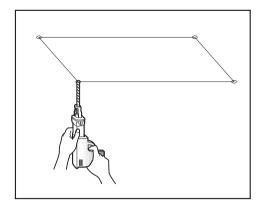
· A place where the unit will be leveled and that can support the weight of the unit.
· A place where the unit can withstand its vibration.
· A place where service can be easily performed.
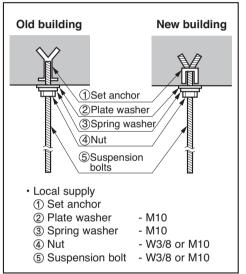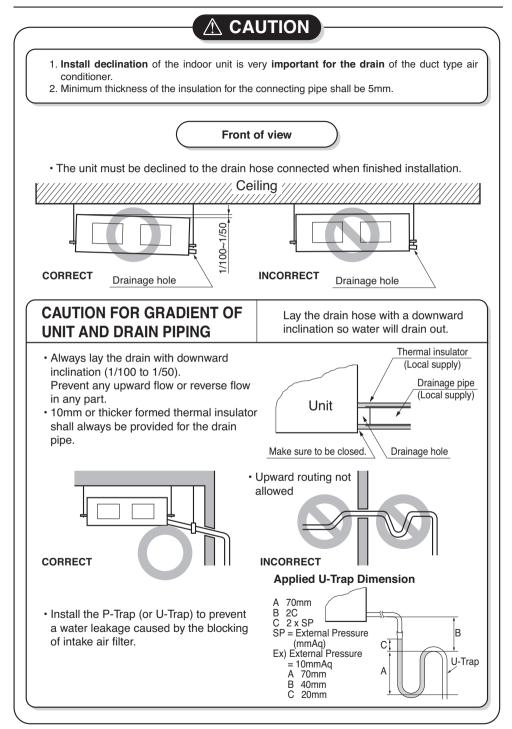
• Select and mark the position for fixing bolts.
• Drill the hole for set anchor on the face of ceiling.

• 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.

⚠ **CAUTION:** Tighten the nut and bolt top revent unit falling.

Old building   **New building**

①Set anchor
②Plate washer
③Spring washer
④Nut
⑤Suspension bolts

• Local supply
  ① Set anchor
  ② Plate washer   - M10
  ③ Spring washer   - M10
  ④ Nut   - W3/8 or M10
  ⑤ Suspension bolt   - W3/8 or M10

⚠ 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 5mm.

Front of view

• The unit must be declined to the drain hose connected when finished installation.

Ceiling

1/100~1/50

CORRECT   Drainage hole

INCORRECT   Drainage hole

CAUTION FOR GRADIENT OF UNIT AND DRAIN PIPING	Lay the drain hose with a downward inclination so water will drain out.

• Always lay the drain with downward inclination (1/100 to 1/50).
  Prevent any upward flow or reverse flow in any part.
• 10mm or thicker formed thermal insulator shall always be provided for the drain pipe.

Thermal insulator (Local supply)

Drainage pipe (Local supply)

Unit

Make sure to be closed.   Drainage hole

• Upward routing not allowed

CORRECT

INCORRECT

Applied U-Trap Dimension

A 70mm
B 2C
C 2 x SP
SP = External Pressure (mmAq)
Ex) External Pressure = 10mmAq
   A 70mm
   B 40mm
   C 20mm

• Install the P-Trap (or U-Trap) to prevent a water leakage caused by the blocking of intake air filter.

A
B
C
U-Trap

Indoor Unit 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.
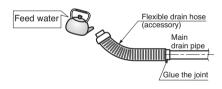
Piping material: Polyvinyl chloride pipe VP-25 and pipe fittings

· Be sure to execute heat insulation on the drain piping.
· Install the drain raising pipes at a right angle to the indoor unit and no more than 300mm from the unit.

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

Drain test

· 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.
· When the test is complete, connect the flexible drain hose to the drain port on the indoor unit.
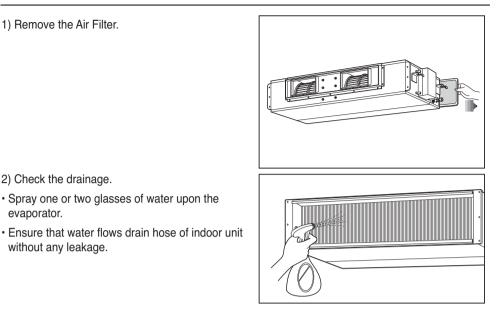
1) Remove the Air Filter.

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.
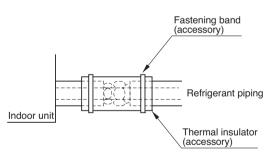
Heat insulation

1. Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance (over 120°C).

2. Precautions in high humidity circumstance:
   This air conditioner has been tested according to the "KS Standard Conditions with Mist" and confirmed that there is not any default. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 23°C), water drops are liable to fall. In this case, add heat insulation material according to the following procedure:
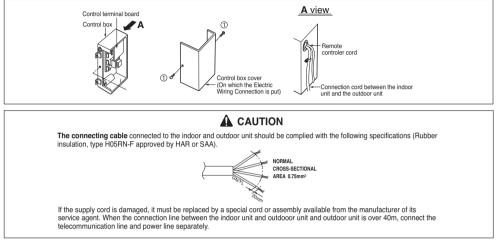
• Heat insulation material to be prepared... Adiabatic glass wool with thickness 10 to 20mm.

• Stick glass wool on all air conditioners that are located in ceiling atmosphere.

Fastening band (accessory)

Refrigerant piping

Indoor unit

Thermal insulator (accessory)

Wiring Connection

· Open the control box cover and connect the Remote controller cord and Indoor power wires.
· Remove the control box cover for electrical connection between the indoor and outdoor unit.
  (Remove screws ①.)
· Use the cord clamper to fix the cord.


```
Control terminal board                                          A view
Control box        A
                                                                        Remote
                           ①                                            controler cord
                     ①
                            Control box cover                    Connection cord between the indoor
                            (On which the Electric               unit and the outdoor unit
                            Wiring Connection is put)
```

⚠ CAUTION

The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).

NORMAL
CROSS-SECTIONAL
AREA 0.75mm²

If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent. When the connection line between the indoor unit and outdooor unit and outdoor unit is over 40m, connect the telecommunication line and power line separately.

◆ Precautions when laying power wiring

Use round pressure terminals for connections to the power terminal block.

Round pressure terminal   Power wire

When none are available, follow the instructions below.

· Do not connect wiring of different thicknesses to the power terminal block. (Slack in the power wiring may cause abnormal heat.)
· When connecting wiring which is the same thickness, do as shown in the figure below.
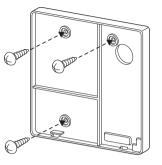

· For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
· Use an appropriate screwdriver for tightening the terinal screws. A screwdriver with a small head will strip the head and make proper tighterning impossible.
· Over-tightening the terminal screws may break them.

Remote Controller Installation

1. Please fix tightly using provided screw after placing remote controller setup board on the place where you like to setup.

- Please set it up not to bend because poor setup could take place if setup board bends.
  Please set up remote controller board fit to the reclamation box if there is a reclamation box.

- Install the product so as not to make a gap with the wall side and to prevent shaking after the installation.
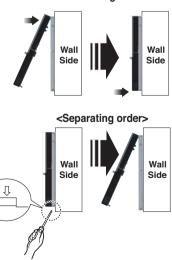
2. Can set up Wired remote controller cable into three directions.

- Setup direction: the surface of wall reclamation, upper, right

- If setting up remote controller cable into upper and right side, please set up after removing remote controller cable guide groove.

❋ Remove guide groove with long nose.

① **Reclamation to the surface of the wall**
② **Upper part guide groove**
③ **Right part guide groove**

<Wire guide grooves>

3. Please fix remote controller upper part into the setup board attached to the surface of the wall, as the picture below, and then, connect with setup board by pressing lower part.

- Please connect not to make a gap at the remote controller and setup board's upper and lower, right and left part.

- Before assembly with the installation board, arrange the Cable not to interfere with circuit parts.

<Connecting order>

Wall Side   Wall Side

When separating remote controller from setup board, as the picture below, after inserting into the lower separating hole using screw driver and then, spinning clockwise, remote controller is separated.
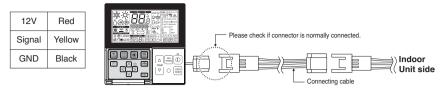
- There are two separating holes. Please individually separate one at a time.

- Please be careful not to damage the inside components when separating.

<Separating order>

Wall Side   Wall Side

4. Please connect indoor unit and remote controller using connection cable.

12V	Red
Signal	Yellow
GND	Black

Please check if connector is normally connected.

Indoor Unit side

Connecting cable

5. Please use extension cable if the distance between wired remote controller and indoor unit is more than 10m.

⚠ 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.
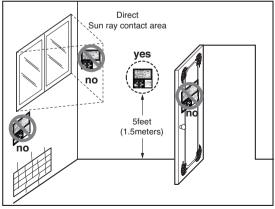
Wired remote controller installation

• 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.)

Direct
Sun ray contact area

yes

no

no

no

5feet
(1.5meters)

Fig.1 Typical locations for remote controller
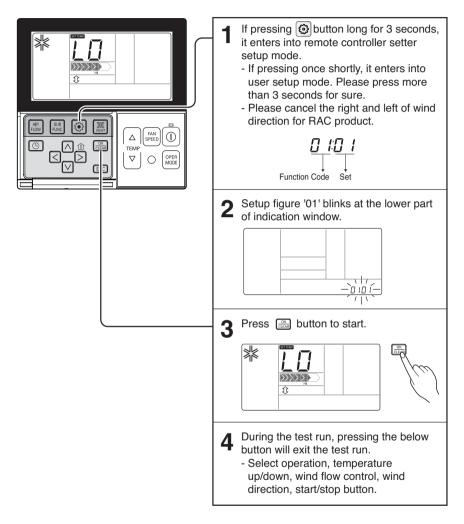
Optional Operation

Installer Setting -Test Run Mode
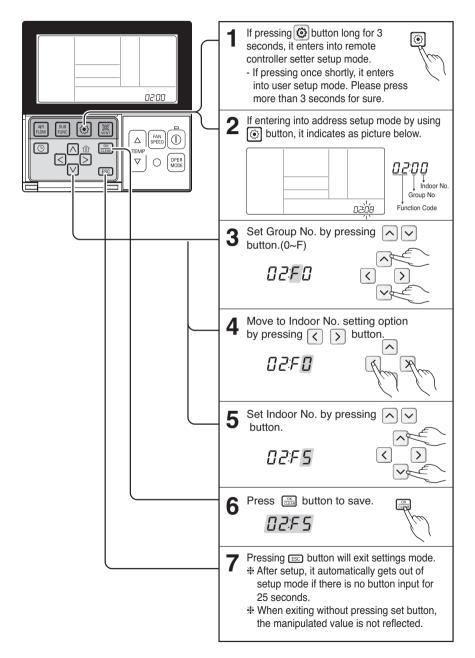
After installing the product, you must run a Test Run mode.

For details related to this operation, refer to the product manual.

1 If pressing ⚙ button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.
- Please cancel the right and left of wind direction for RAC product.

01:01

Function Code   Set

2 Setup figure '01' blinks at the lower part of indication window.

3 Press [OK CLEAR] button to start.

4 During the test run, pressing the below button will exit the test run.
- Select operation, temperature up/down, wind flow control, wind direction, start/stop button.

Installer Setting - Setting Address of Central Control

It's the function to use for connecting central control.
Please refer to central controller manual for the details

1 If pressing ⚙ button long for 3 seconds, it enters into remote controller setter setup mode.
 - If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

2 If entering into address setup mode by using ⚙ button, it indicates as picture below.

02:00

Indoor No.
Group No
Function Code

02:08

3 Set Group No. by pressing ∧ ∨ button.(0~F)

02:F0

4 Move to Indoor No. setting option by pressing < > button.

02:F0

5 Set Indoor No. by pressing ∧ ∨ button.

02:F5

6 Press OK/CLEAR button to save.

02:F5

7 Pressing ESC button will exit settings mode.
❋ After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
❋ When exiting without pressing set button, the manipulated value is not reflected.

Installer Setting -Thermistor

This is the function to select the temperature sensor to judge the room temperature.

1 If pressing [⚙] button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

2 If moving to room temperature perception sensor selection menu by pressing [⚙] button, it indicates as picture below.

3 Set Thermistor value by pressing [∧] [∨] button. (01: Remote Controller, 02: Indoor, 03: 2TH)

04.01

Function Code   Thermistor setting

4 Press [OK CLEAR] button to save.

04.01

5 Pressing [ESC] button will exit settings mode.
※ After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
※ When exiting without pressing set button, the manipulated value is not reflected.

<Thermistor Table>

Temperature sensor selection			Function
01	Remote controller		Operation in remote controller temperature sensor
02	Indoor unit		Operation in indoor unit temperature sensor
03	2TH	Cooling	Operation of higher temperature by comparing indoor unit's and wired remote controller's temperature. (There are products that operate at a lower temperature.)
		Heating	Operation of lower temperature by comparing indoor unit's and wired remote controller's temperature.

※ The function of 2TH has different operation characteristics according to the product.

Installer Setting-Group Setting

It is a function for settings in group control, or 2-remote controller control.

1	If pressing ⚙ button long for 3 seconds, it enters into remote controller setter setup mode. - If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.
2	If pressing ⚙ button repeatedly, it moves to master/slave selection menu as picture below. *07:--*
3	Select Master/ Slave by pressing ∧ ∨ button. (00: Slave, 01: Master) *07:01* Function Code Master/Slave value
4	Press OK/CLEAR button to save. *07:01*
5	Pressing ESC button will exit settings mode. ✻ After setup, it automatically gets out of setup mode if there is no button input for 25 seconds. ✻ When exiting without pressing set button, the manipulated value is not reflected.

Remote controller	Function
Master	Indoor unit operates based on master remote controller at group control. (Master is set when delivering from the warehouse.)
Slave	Setup all remote controllers except one master remote controller to slave at group control

✻ Refer to the 'group control' part for details

• When controlling in groups, basic operation settings, airflow strength weak/medium/strong, lock setting of the remote controller, time settings, and other functions may be restricted.

Installer Setting-Dry Contact Mode Setting

Dry contact function is the function that is possible to use only when dry contact equipment is separately purchased/setup.

1 If pressing ⚙ button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

2 If pressing ⚙ button repeatedly, it moves to remote controller dry contact mode setup menu as picture below.

3 Select Dry contact setting by pressing button.
(00 : Automatic, 01 : manual)

09:01

Function Code → Dry Contact setting value

4 Press OK/CLEAR button to save.

09:01

5 Pressing ESC button will exit settings mode.
❄ After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
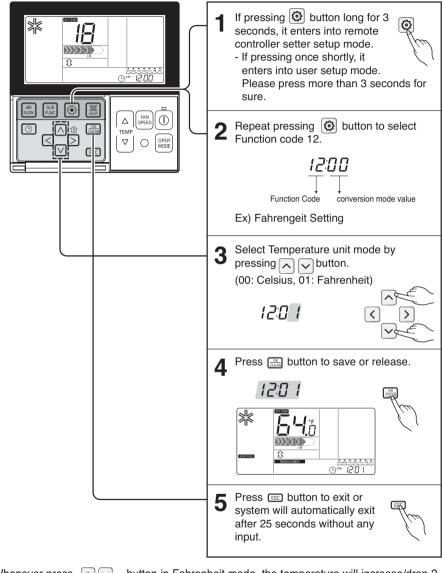❄ When exiting without pressing set button, the manipulated value is not reflected.

▶ What is Dry Contact?
Like hotel card key and body perception sensor, it is the signal of the point of contact when using air-conditioner by interlocking.

· Please refer to dry contact manual for more details.

Installer Setting-Celsius / Fahrenheit Switching
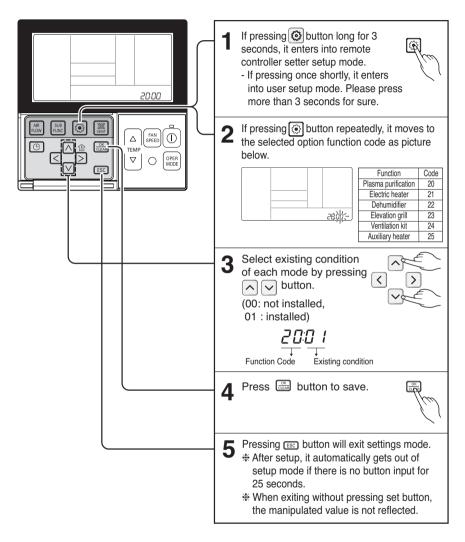
This function is used for switching the display between Celsius and Fahrenheit.
(Optimized only for U.S.A)

1 If pressing ⚙ button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

2 Repeat pressing ⚙ button to select Function code 12.

12:00

Function Code   conversion mode value

Ex) Fahrengeit Setting

3 Select Temperature unit mode by pressing ∧ ∨ button.
(00: Celsius, 01: Fahrenheit)

12:01

4 Press OK/CLEAR button to save or release.

12:01

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

❋ Whenever press ∧ ∨ button in Fahrenheit mode, the temperature will increase/drop 2 degrees.

Installer Setting -Optional Function Setting

Setting feature for indoor unit when air cleaning / heater / humidifier / Up/down grill / Ventilation KIT /Auxiliary Heater is newly installed, or installed unit is removed.

1 If pressing ⚙ button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

2 If pressing ⚙ button repeatedly, it moves to the selected option function code as picture below.

Function	Code
Plasma purification	20
Electric heater	21
Dehumidifier	22
Elevation grill	23
Ventilation kit	24
Auxiliary heater	25

3 Select existing condition of each mode by pressing ⋀ ⋁ button.
(00: not installed,
01 : installed)

2001

Function Code   Existing condition

4 Press OK/CLEAR button to save.

5 Pressing ESC button will exit settings mode.
✷ After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
✷ When exiting without pressing set button, the manipulated value is not reflected.
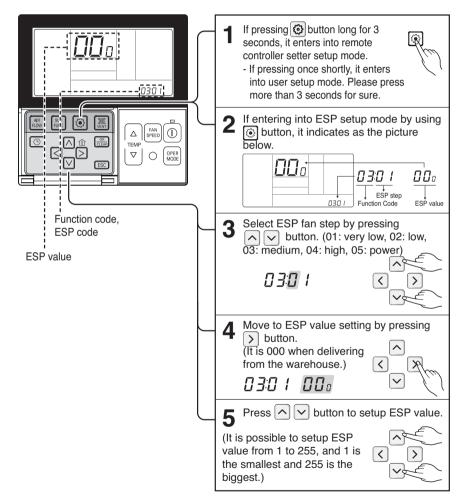
How to Set E.S.P?

Installer Setting -E.S.P.

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.

> ・**If you set ESP incorrectly, the air conditioner may malfunction.**
> ・**This setting must be carried out by a certificated-technician.**

Function code,
ESP code

ESP value

1 If pressing ⚙ button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

2 If entering into ESP setup mode by using ⚙ button, it indicates as the picture below.

ESP step
Function Code   ESP value

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

4 Move to ESP value setting by pressing > button.
(It is 000 when delivering from the warehouse.)

5 Press ∧ ∨ button to setup ESP value.
(It is possible to setup ESP value from 1 to 255, and 1 is the smallest and 255 is the biggest.)

※ When setting ESP value on the product without very weak wind or power wind function, it may not work.
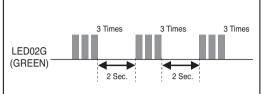
Capacity	Step	C.M.M	Static Pressure(mmAq)					
			2.5	4	5	6	8	10
			Setting Value					
18K	HIGH	16.5	115	125	130	135	145	-
	MID	14.5	108	118	123	128	140	-
	LOW	13	102	112	117	122	134	-
24K	HIGH	18	121	131	137	142	150	-
	MID	16.5	115	125	130	135	145	-
	LOW	14	106	116	121	125	139	-
36K	HIGH	32	-	130	134	138	145	152
	MID	29	-	123	127	131	138	146
	LOW	26.5	-	117	120	126	133	141
48K	HIGH	40	-	-	-	97	104	110
	MID	35	-	-	-	92	99	106
	LOW	30	-	-	-	88	96	103
60K	HIGH	49	-	-	-	116	119	123
	MID	45	-	-	-	111	116	120
	LOW	40	-	-	-	106	111	115

❈ ABNH42GRLA2 / ABNH48GRLA2
  As far as possible do not set ESP 82,83

Self-diagnosis Function

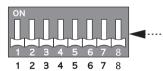**Indoor Unit Error**

Ex) Error 03 (Remote controller error)

Error Code	Description	LED 1 (Red)	LED 2 (Green)	Indoor status
01	Indoor Room sensor error	0	1time ◑	OFF
02	Indoor in-pipe sensor error	0	2times ◑	OFF
03	Remote controller error	0	3times ◑	OFF
04	Drain pump error	0	4times ◑	OFF
05	Communication error indoor and outdoor	0	5times ◑	OFF
06	Indoor out-pipe sensor error	0	6times ◑	OFF
09	EEPROM error (indoor)	0	9times ◑	OFF
10	BLDC motor fan lock (indoor)	1time ◑	0	OFF

❉ Because remote controller turn off when occur ERROR in simultaneous operation system, it should check LED blinks of outdoor in order to confirm error code.

❉ Repeatedly after LED1 is turned on and off as the Error code number of tens digit, LED2 is turned on and off as the Error code number of single-digit.

Dip Switch Setting

	Function	Description	Setting Off	Setting On	Default
SW3	Group Control	Selection of Master or Slave	Master	Slave	Off
SW4	Dry Contact Mode	Selection of Dry Contact Mode	Wired/Wireless remote controller Selection of Manual or Auto operation Mode	Auto	Off
SW5	Installation	Fan continuous operation	Continuous operation Removal	Working	Off