

# 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: Multi V FRESH AIR INTAKE UNIT**



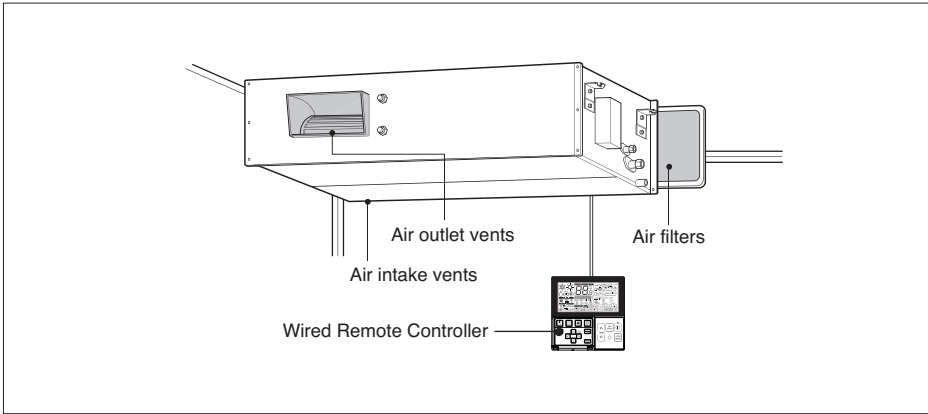
P/NO : MFL68464401

[www.lg.com](http://www.lg.com)





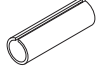

# TABLE OF CONTENTS

<i>Installation Requirements</i>	<i>Required Parts</i>	<i>Required Tools</i>
<b>Features</b> .....3		
<b>Safety Precautions</b> .....4		
<b>Installation</b>		
Installation Limit .....7	<input type="checkbox"/> Four type "A" screws <input type="checkbox"/> Connecting cable	<input type="checkbox"/> Level gauge <input type="checkbox"/> Screw driver <input type="checkbox"/> Electric drill <input type="checkbox"/> Hole core drill
Selection the best location ....9		
Ceiling opening dimension and hanging bolt location ....10	<input type="checkbox"/> Pipes: Gas side Liquid side (Refer to Product Data) <input type="checkbox"/> Insulation materials <input type="checkbox"/> Additional drain pipe	<input type="checkbox"/> Flaring tool set <input type="checkbox"/> Specified torque wrenches (different depending on model No.) <input type="checkbox"/> Spanner .....Half union
Indoor Unit Installation .....11		
Wiring Connection .....11		<input type="checkbox"/> A glass of water <input type="checkbox"/> Screw driver
Check the Drainage.....12		<input type="checkbox"/> Hexagonal wrench <input type="checkbox"/> Gas-leak detector <input type="checkbox"/> Vacuum pump <input type="checkbox"/> Gauge manifold
Installation of Wired Remote ConTroller .....15		<input type="checkbox"/> Owner's manual <input type="checkbox"/> Thermometer
Name and function of wired remote controller(Optional) .18		
Dip Switch Setting of Indoor unit PCB.....19		
Group Control Setting.....20		
<b>How to Set E.S.P?</b> .....25		
<b>Outlet Ait Temp &amp; Air flow rate</b> .....27		

# Features



## Standard Accessories


Name	Drain hose	Clamp metal	Washer for hanging basket	Clamp (Tie Wrap)	Insulation for fitting	Others
Quantity	1 EA	2 EA	8 EA	4 EA	1 SET	
Shape					 for gas pipe   for liquid pipe	<ul style="list-style-type: none"> <li>• Owner's manual</li> <li>• Installation manual</li> </ul>

# 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.

	<b>Be sure not to do.</b>
	<b>Be sure to follow the instruction.</b>

## **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.

**Use a vacuum pump or Inert (nitrogen) gas when do leakage test or air purge. Do not compress air or Oxygen and do not use Flammable gases. Otherwise, it may cause fire or explosion.**

- There is the risk of death, injury, fire or explosion.

## ■ 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.

# Installation

## Installation Limit

**!** Read completely, then follow step by step.

### 1. Fresh Air Intake Unit Combination

No	Connection Condition	Combination
1	Only Fresh Air Intake Unit installation	1) The total capacity of Fresh Air Intake Unit should be 50~100% of outdoor unit. 2) The max quantity of Fresh Air Intake unit is 2 Units.
2	Mixture Installation with standard indoor units and Fresh Intake Units	1) The total capacity of indoor units (standard Indoor Unit + Fresh Air Intake Unit) should be 50~100% of outdoor unit. 2) The total capacity of Fresh Air Intake Units should be less than 30% the total capacity of indoor units.

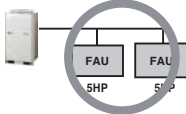
**!** **CAUTION** : Failure to comply with the above connection conditions for installation, it can cause cooling & heating capacity down.

### 2. Connection of the Outdoor Unit

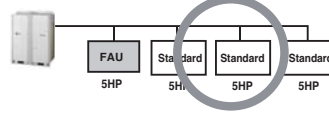
It is possible to connect Heat Pump Models.

It is not possible to connect Heat Recovery Models.

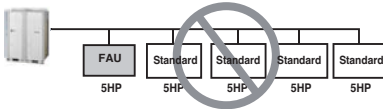
<Only Fresh Air Intake Unit install>  
Outdoor : 10HP



<Mixture Install>  
Outdoor : 20HP



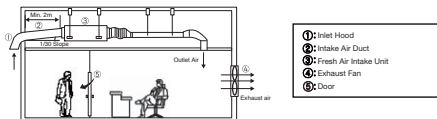
<Wrong Install>  
Outdoor : 20HP



\* FAU : Fresh Air Intake Unit  
Standard: Standard Indoor Unit

▶ The total capacity of indoor units exceed 100% of outdoor unit

### 3. Installation of intake air duct



- ① Inlet Hood
- ② Intake Air Duct
- ③ Fresh Air Intake Unit
- ④ Exhaust Fan
- ⑤ Door

**① Inlet Hood**

Inlet Hood should be installed such that no water enter inside the unit

**② Intake Air Duct**

The Intake Air Duct must have down-slope about 1/30.  
The length of Intake Air Duct should be longer than 2m.

**③ Fresh Air Intake Unit**

If wired remote controller is not connected, it will display strange value to the room temperature

**④ Exhaust Fan**

Fresh Air Intake Unit will make room the positive pressure.  
Exhaust fan should be installed to maintain the room pressure.

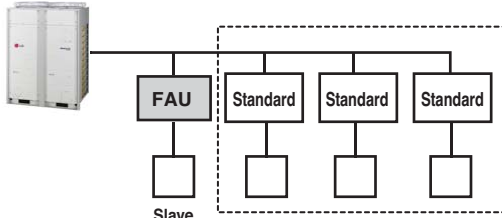
**⑤ Door**

It would be possible to raise in the room air pressure because of Fresh Air Intake Unit.  
In that case, the door could hurt someone in front of door.  
So be careful of the positive pressure to design the door.

#### 4. The Control System

**1) In case of connecting with Standard indoor units, Standard indoor unit should be a master unit.**

Separate Fresh Air Intake Unit with Standard indoor units  
Set only one of Standard indoor units to Master,



\* FAU : Fresh Air Intake Unit  
Standard: Standard Indoor Unit

**2) In case of using central remote controller, mixture of indoor units and Fresh Air Intake Unit in same zone is not possible.**

Separate Fresh Air Intake Unit zone with Standard indoor units zone.



#### 5. Cycle check and SVC

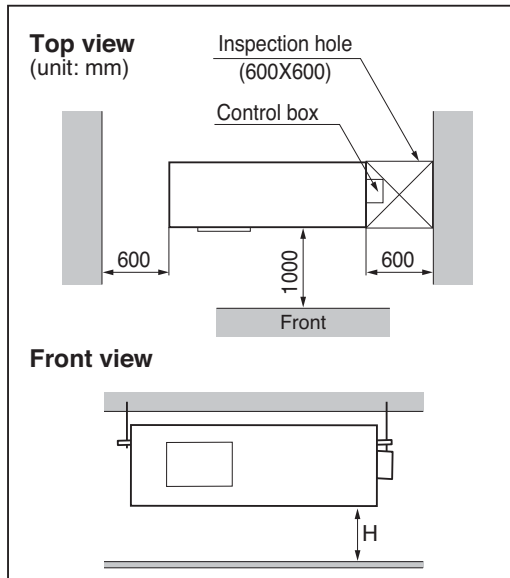
For Fresh Intake Unit cycle check and SVC, LG MV 5.8 or later version should be used.



## Selection of the best location

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 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.



**CAUTION** : In case that the unit is installed near the sea, the installation parts may be corroded by salt, The installation parts (and the unit) should be taken appropriate anti-corrosion measures.

### [Inspection Hole Standard]

Number of Inspection hole	Distance between False ceiling & Actual ceiling	Remarks
1	More than 1000mm	Sufficient space in the ceiling for servicing.
2	20cm to 1000mm	Insufficient space. Difficult for servicing
Hole size should be more than the size of IDU.	Less than 200mm	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.

(Unit:mm)

Dimension Capacity(Btu/h)	A	B	C	D	E	F	(G)	H	I
BR Chassis (48k)	1282	1230	477	56	590	30	120	1006	294

(Unit:mm)

Dimension Capacity(Btu/h)	A	B	C	D	E	F	G	H	I	J	K	L
B8 Chassis (76/96k)	1680	1565	1160	330	460	580	700	1400	1635	390	445	15

#### 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.

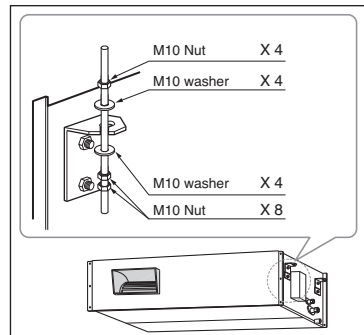
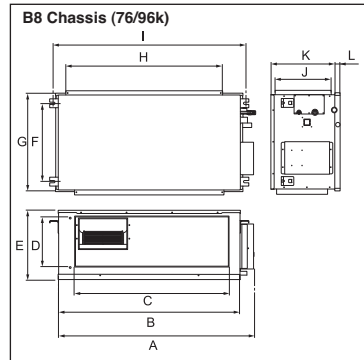
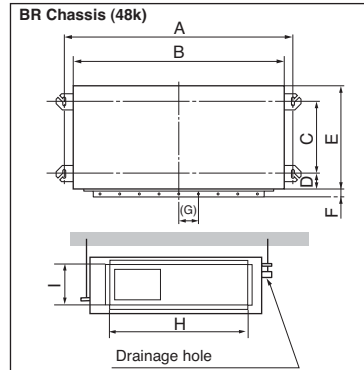
#### NOTICE

Thoroughly study the following installation locations:

- In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the fan, the fin of the heat exchanger, resulting in heat exchange reduction, spraying, dispersing of water drops, etc.

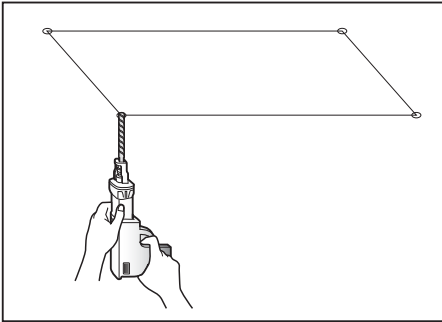
In these cases, take the following actions:

- Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
  - Make enough distance from a cooking room to install the air conditioner in such a place where it may not suck in oil steam.
- Avoid installing air conditioner in such circumstances where cutting oil mist or iron powder is in suspension in factories, etc.
  - Avoid places where inflammable gas is generated, flows in, is stored or vented.
  - Avoid places where sulfurous acid gas or corrosive gas is generated.
  - Avoid places near high frequency generators.



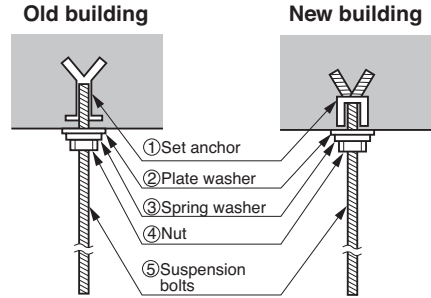
## Indoor Unit Installation

- 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.

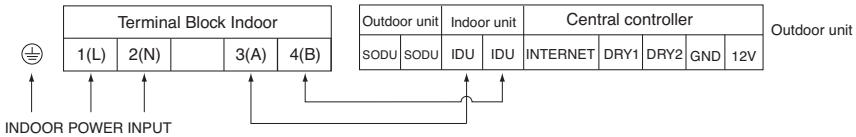


## Wiring Connection

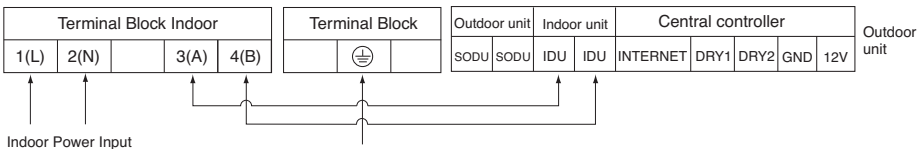
Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

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

### BR Chassis (48k)



### B8 Chassis (76/96k)



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

### Clamping of cables

- 1) Arrange 2 power cables on the control panel.
- 2) First, fasten the steel clamp with a screw to the inner boss of control panel.
- 3) For the cooling model, fix the other side of the clamp with a screw strongly. For the heat pump model, put the 0.75mm<sup>2</sup> cable (thinner cable) on the clamp and tighten it with a plastic clamp to the other boss of the control panel.

**CAUTION**

The Power cord connected to the unit should be selected according to the following specifications .

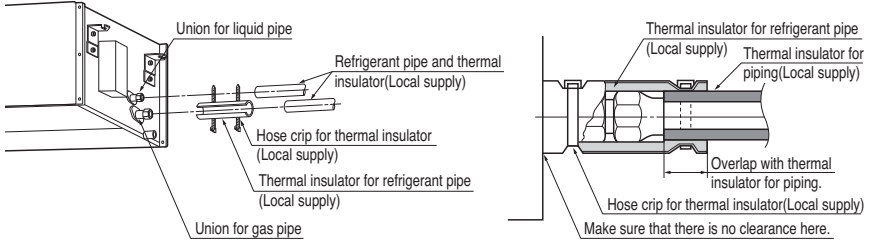
**INSULATION, OTHERS**

Insulate the joint and tubes completely.

**THERMAL INSULATION**

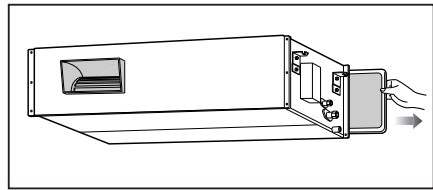
All thermal insulation must comply with local requirement.

**INDOOR UNIT**



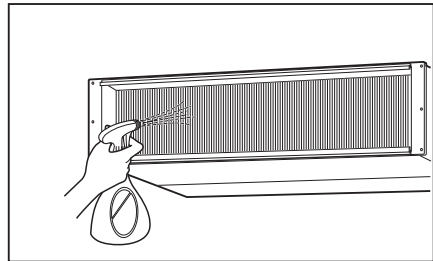
**Check the Drainage**

**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.

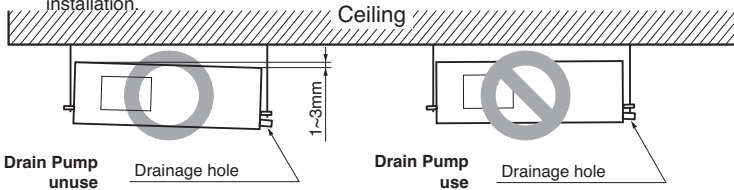


**CAUTION**

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 5mm.

**Front of view**

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



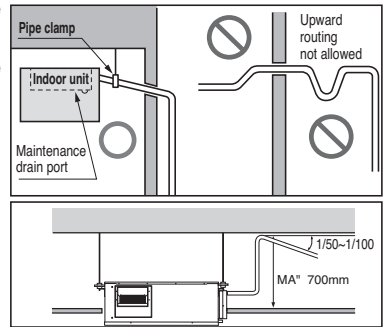
**Indoor Unit Drain Piping**

- 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 inner diametes Ø 25mm and pipe fittings

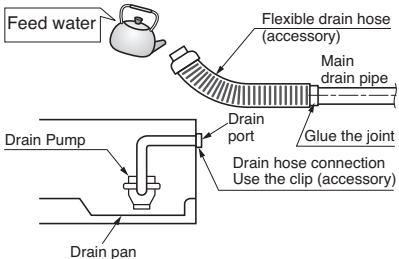
- Be sure to install heat insulation on the drain piping.

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 operation 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 strained. A strained hose may cause 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.

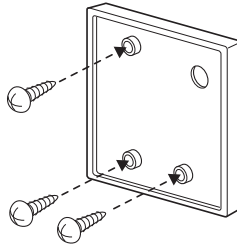
**HAND OVER**

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

## Installation of Wired Remote Controller

### 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.

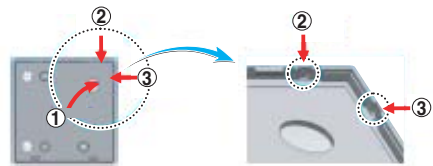


### 2. Can set up Wired remote controller cable into three directions.

- 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

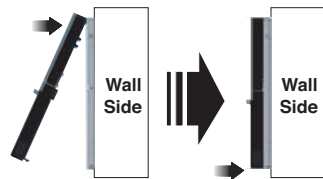


&Wire guide grooves&

### 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.

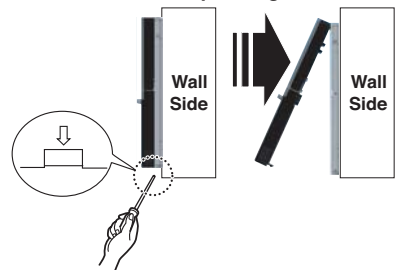
<Connecting order>



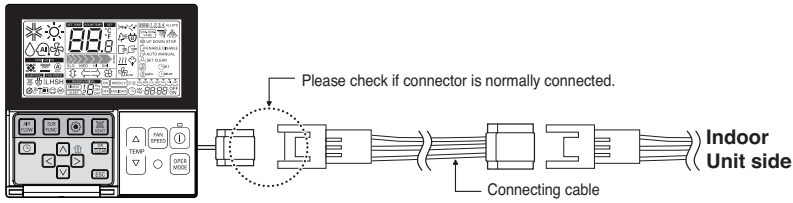
When separating remote controller from setup board, as the picture below, after inserting into the lower separating hole using screw driver and then, spinning clockwise, remote controller is separated.

- 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>



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

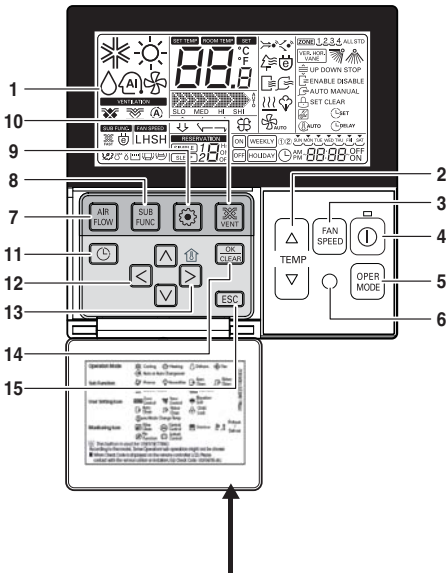
Do not install the cable to be 50m or above.

(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.



## Name and function of wired remote controller(Accessory)



Please attach the inform label inside of the door.  
Please choose proper language depend on your country.

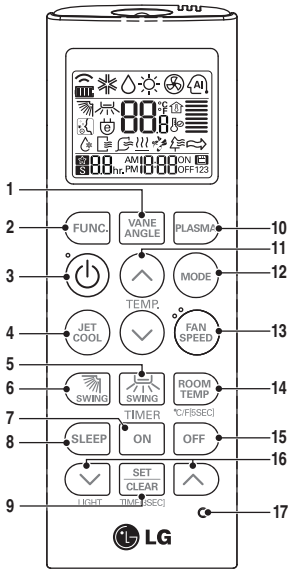
1. **Operation indication screen**
2. **Set temperature button**
  - It will set not room temperature but outlet air temperature.
3. **Fan speed button**
  - Fan Speed have 3 Steps.
  - Middle and Low step is same
4. **ON/OFF button**
5. **Operation mode selection button**
6. **Wireless remote controller receiver**
  - Some products don't receive the wireless signals.
7. **Air flow button**
8. **Subfunction button**
9. **Function setting button**
10. **Ventilation button**
11. **Reservation**
12. **Up,down,left,right button**
  - To check the indoor temperature, press button.
13. **Room temperature button**
  - Displays only the room temperature of the remote controller perception.
  - There is no control of room temperature.
  - In case of fresh air intake unit, displays only the temperature around remote controller.
14. **Setting/Cancel button**
15. **Exit button**

※ Some functions may not be operated and displayed depending on the product type.

※ It will display strange value to the room temperature if wired remote controller is not connected.

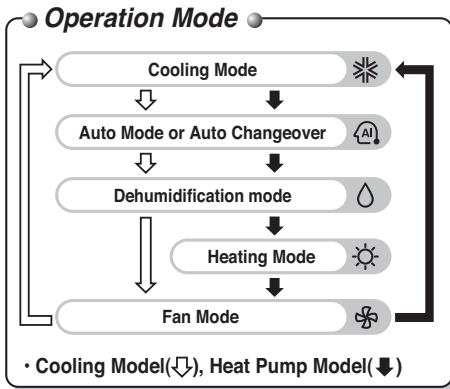
Model : PQRCSL0 (Black Color)  
PQRCSLQW (White Color)

**Name and function of wired remote controller(Accessory)**



**PQWRCQ0FDB (Cooling only)**  
**PQWRHQ0FDB (Heat pump)**

- 1. VANE ANGLE Button**  
Used to set each vane angle.
- 2. FUNCTION SETTING Button**  
Used to set or clear Auto Clean, Smart Clean, Electric heater or Individual vane angle control.
- 3. ON/OFF Button**  
Used to turn on/off the unit.
- 4. JET COOL Button**  
Speed cooling operates super high fan speed.
- 5. LEFT/RIGHT AIRFLOW Button (OPTIONAL)**  
Used to set the desired left/right(horizontal) air-flow direction.
- 6. UP/DOWN AIRFLOW Button**  
Used to stop or start louver movement and set the desired up/down airflow direction.
- 7. ON TIMER Button**  
Used to set the time of starting operation.
- 8. SLEEP TIMER Button**  
Used to set the time of sleeping operation.
- 9. SET / CLEAR Button**  
Used to set/clear the timer.  
Used to set the current time(if it input for 3sec.)
- 10. PLASMA Button (OPTIONAL)**  
Used to start or stop the plasma-purification function.
- 11. ROOM TEMPERATURE SETTING Button**  
Used to select the room temperature.
- 12. OPERATION MODE SELECTION Button**  
Used to select the operation mode.
- 13. INDOOR FAN SPEED SELECTION Button**  
Used to select fan speed in four steps low, medium, high and chaos.
- 14. ROOM TEMPERATURE CHECKING Button**  
Used to check the room temperature.
- 15. OFF TIMER Button**  
Used to set the time of stopping operation.
- 16. TIMER SETTING(Up/Down)/LIGHT Button**  
Used to set the timer.  
Used to adjust the brightness.(if it is not time adjust mode)
- 17. RESET Button**  
Used to reset the remote controller.



## Dip Switch Setting of Indoor unit PCB

	Function	Description	Setting Off	Setting On	Default
SW1	Communication	N/A (Default)	-	-	Off
SW2	Cycle	N/A (Default)	-	-	Off
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	-	Off
SW6	Heater linkage	N/A	-	-	Off
SW7	Ventilator linkage	Selection of Ventilator linkage	Linkage Removal	Working	Off
	Vane selection (Console)	Selection of up/down side Vane	Up side + Down side Vane	Up side Vane Only	
	Region selection	Selection tropical region	General model	Tropical model	
SW8	Etc.	Spare	-	-	Off

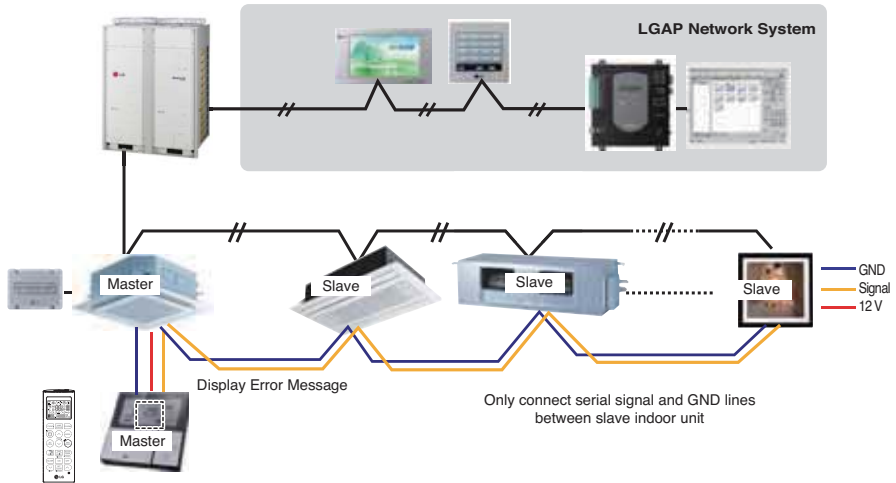
### CAUTION

For Multi V Models, Dip switch 1, 2, 6, 8 must be set OFF.

## Group Control Setting

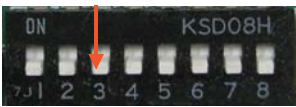
### 1. Group Control 1

#### ■ Wired remote controller 1 + Standard Indoor Units

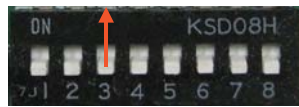


#### ■ Dip Switch in PCB (Cassette and Duct Type indoor units)

##### ① Master Setting - No. 3 Off



##### ② Slave Setting - No. 3 On



1. It is possible to 16 indoor units(Max) by one wired remote controller.  
Set only one indoor unit to Master, set the others to Slave.
2. It is possible to connect with every type of indoor units.
3. It is possible to use wireless remote controller at the same time.
4. It is possible to connect with Dry Contact and Central controller at the same time.
  - The Master indoor unit is possible to recognize Dry Contact and Central Controller only.
  - In case of Central controller and Group controller at the same time, it is possible to connect standard 2series indoor units or later since Feb. 2009.
  - In case of Central controller setting, the Central controller can control indoor units after setting only the address of master indoor unit.
  - Slave indoor unit will be operated like master indoor unit.
  - Slave indoor unit can not be individually controlled by Central controller.
  - Some remote controller can't perform with Dry Contact and Central controller at the same time. So contact us further information about it.

### 5. In case of any error occurs at indoor unit, display on the wired remote controller.

Exception of the error indoor unit, an individual indoor unit control possibility.

### 6. In case of Group Control, it is possible to use following functions.

- Selection of operation options (operation/stop/mode/set temperature)
- Control of flow rate (High/Middle/Low)
- It is not possible at some functions.

\* Master/Slave setting of indoor units be set possible using a PCB Dip Switch.

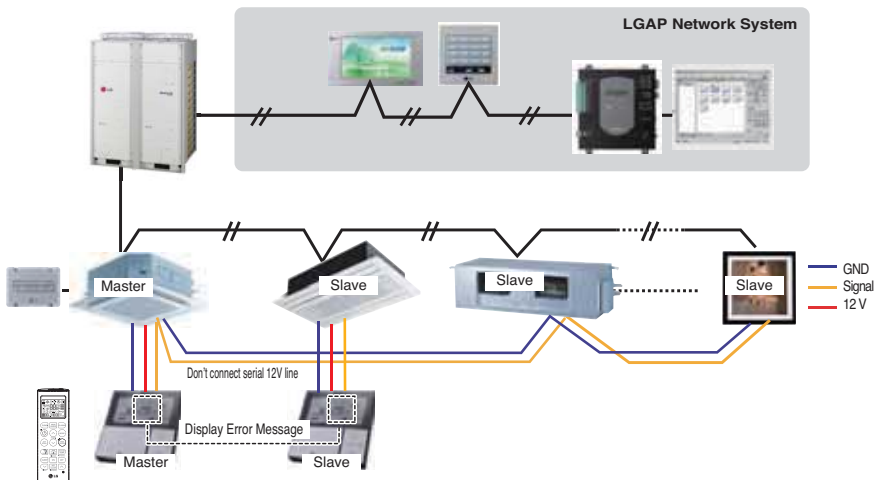
\* It is possible to connect indoor units since Feb. 2009.

In the other cases, please contact LGE.

\* It can be the cause of malfunctions when there is no setting of master and slave.

## 2. Group Control 2

### ■ Wired remote controllers + Standard Indoor Units



\* It is possible to control N indoor units by wired remote controller M units. ( $M+N \leq 17$  Units)

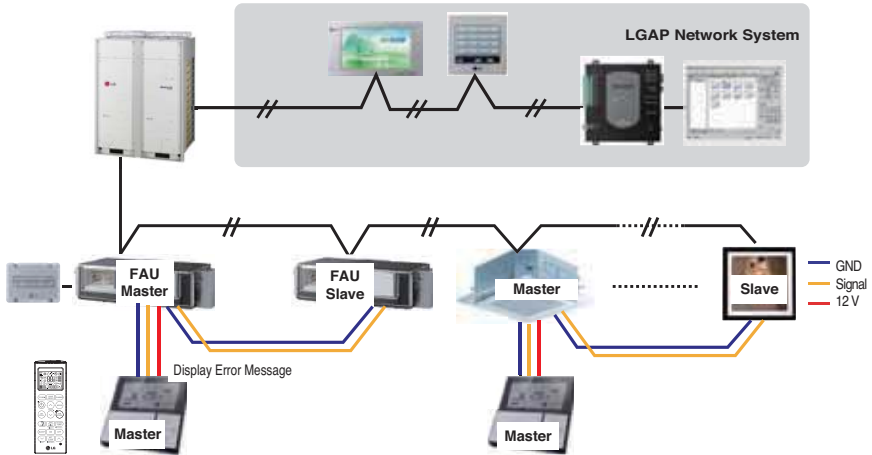
Set only one indoor unit to Master, set the others to Slave.

Set only one wired remote controller to Master, set the others to Slave.

Other than those, it is same with the Group Control 1.

### 3. Group Control 3

■ Mixture connection with indoor units and Fresh Air Intake Unit



\* In case of connecting with standard indoor unit and Fresh Intake Unit, separate Fresh Air Intake Unit with standard units.  
(Because setting temperature are different.)

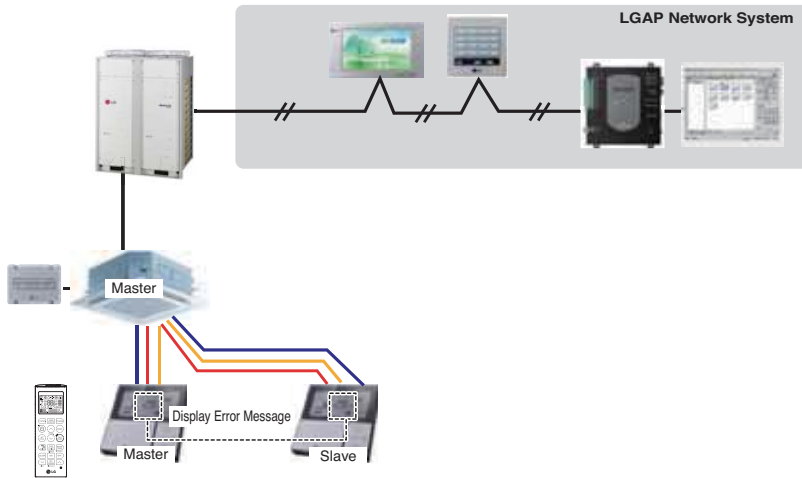
\* Other than those, it is same with Group Control 1.



\* FAU : Fresh Air Intake Unit  
Standard: Standard Indoor Unit

## 4. 2 Remote Control

### ■ Wired remote controller 2 + Indoor unit 1

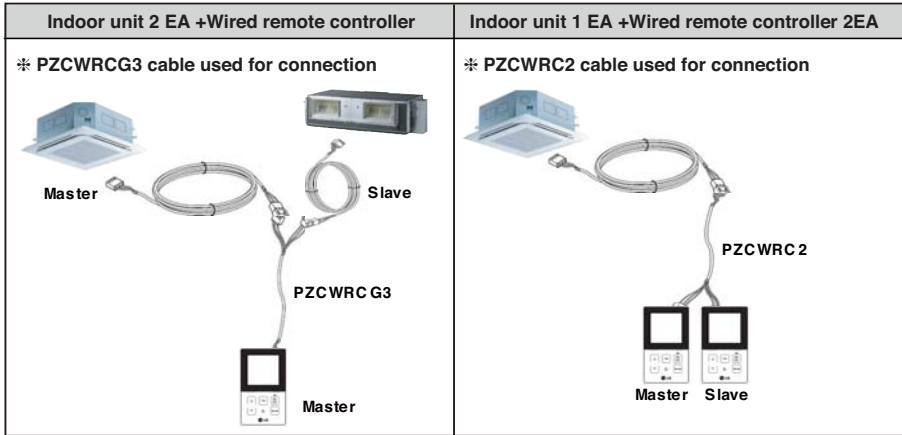


1. It is possible to connect two wired remote controllers with one indoor unit.
2. Every types of indoor unit is possible to connect two remote controller.
3. It is possible to use wireless remote controller at the same time.
4. It is possible to connect with Dry Contact and Central controller at the same time.
5. In case of any error occurs at indoor unit, display on the wired remote controller.
6. There isn't limits of indoor unit function.

\* Maximum 2wired remote controllers can be connected with 1 indoor unit.

## 5. Accessories for group control setting

It is possible to set group control by using below accessories.

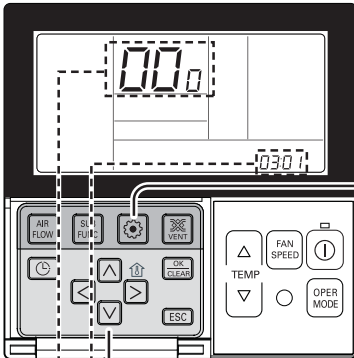




# How to Set E.S.P.?

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.



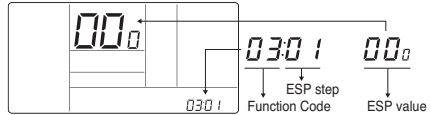
Function code,  
ESP code

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.

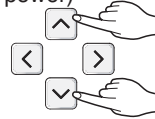


- 2** If entering into ESP setup mode by using button, it indicates as the picture below.



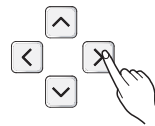
- 3** Select ESP fan step by pressing button. (01: very low, 02: low, 03: medium, 04: high, 05: power)

0301

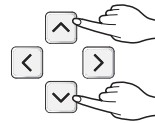


- 4** Move to ESP value setting by pressing button.  
(It is 000 when delivering from the warehouse.)

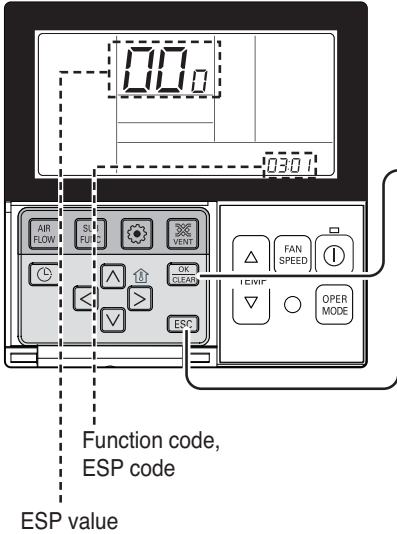
0301 000



- 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.



- 6** Select ESP fan step again by using button and setup ESP value, as No. 4 and 5, that corresponds each wind flow
- 7** Press button to save.
- 8** Press button to exit.
  - \* 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.

- Please be careful not to change the ESP value for each fan step.
- It does not work to setup ESP value for very low/power step for some products.
- ESP value is available for specific range belongs to the product.

# Outlet Air Temp & Air flow rate

## 1. Outlet Air Temperature

### ARNU48GBRZ2

#### Cooling

Outdoor air temperature		59°FWB		63°FWB		69°FWB		73°FWB		79°FWB		82°FWB		86°FWB		90°FWB		95°FWB	
*FDB	*CDB	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
70	21	4.7	3.5	5.2	3.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	4.6	4.1	5.0	3.7	7.8	3.6	-	-	-	-	-	-	-	-	-	-	-	-
77	25	4.6	4.5	4.9	4.3	7.7	4.2	-	-	-	-	-	-	-	-	-	-	-	-
81	27	-	-	4.9	4.9	6.9	4.8	10.4	4.6	-	-	-	-	-	-	-	-	-	-
84	29	-	-	-	-	6.6	5.4	9.9	5.2	12.9	4.6	-	-	-	-	-	-	-	-
88	31	-	-	-	-	6.3	6.1	9.0	5.7	12.5	5.2	14.2	5.1	-	-	-	-	-	-
91	33	-	-	-	-	-	-	8.8	6.3	12.2	5.8	13.6	5.5	15.2	4.7	-	-	-	-
96	35	-	-	-	-	-	-	8.6	6.9	11.8	6.4	13.1	5.9	14.9	5.3	-	-	-	-
99	37	-	-	-	-	-	-	-	11.0	6.9	12.7	6.5	14.3	5.9	16.2	5.4	-	-	-
104	40	-	-	-	-	-	-	-	10.6	7.9	12.4	7.5	13.9	6.8	15.9	6.4	17.4	5.5	-

Outdoor air temperature		59°FWB		63°FWB		69°FWB		73°FWB		79°FWB		82°FWB		86°FWB		90°FWB		95°FWB	
*FDB	*CDB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB
70	21	11.8	9.9	12.7	11.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	11.9	10.0	13.0	12.0	13.5	12.7	-	-	-	-	-	-	-	-	-	-	-	-
77	25	12.0	10.1	13.3	12.0	13.7	12.8	-	-	-	-	-	-	-	-	-	-	-	-
81	27	-	-	13.8	12.0	14.0	13.5	14.7	14.0	-	-	-	-	-	-	-	-	-	-
84	29	-	-	-	-	14.2	13.8	14.8	14.4	16.7	15.7	-	-	-	-	-	-	-	-
88	31	-	-	-	-	14.3	14.0	15.5	15.2	16.9	16.0	17.5	17.4	-	-	-	-	-	-
91	33	-	-	-	-	-	-	15.7	15.3	17.2	16.2	18.2	17.9	20.5	19.5	-	-	-	-
96	35	-	-	-	-	-	-	15.8	15.5	17.5	16.5	18.9	18.2	20.7	19.7	-	-	-	-
99	37	-	-	-	-	-	-	-	17.7	17.2	19.2	18.5	20.9	20.1	22.5	21.6	-	-	-
104	40	-	-	-	-	-	-	-	17.9	17.5	19.5	18.7	21.2	20.3	22.5	21.7	25.2	25.1	-

#### Heating

Outdoor air temperature		23°FWB		27°FWB		32°FWB		36°FWB		39°FWB		43°FWB		50°FWB		57°FWB	
*FDB	*CDB	SHC		SHC		SHC		SHC		SHC		SHC		SHC		SHC	
18	-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-3	14.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	0	-	14.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	3	-	-	13.8	-	-	-	-	-	-	-	-	-	-	-	-	-
45	7	-	-	-	14.0	-	-	12.5	-	-	-	-	-	-	-	-	-
52	11	-	-	-	-	-	-	-	12.7	-	-	-	-	-	-	-	-
59	15	-	-	-	-	-	-	-	-	11.2	-	-	11.3	-	-	-	-
64	18	-	-	-	-	-	-	-	-	-	-	-	9.9	-	-	10.1	-
68	20	-	-	-	-	-	-	-	-	-	-	-	8.9	-	-	9.0	-
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	8.1	-

Outdoor air temperature		23°FWB		27°FWB		32°FWB		36°FWB		39°FWB		43°FWB		50°FWB		57°FWB	
*FDB	*CDB	*CDB		*CDB		*CDB		*CDB		*CDB		*CDB		*CDB		*CDB	
18	-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-3	38.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	0	-	39.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	3	-	-	42.1	-	-	-	42.7	-	-	-	-	-	-	-	-	-
45	7	-	-	-	42.6	-	-	43.2	-	-	-	-	43.3	-	-	-	-
52	11	-	-	-	-	-	-	-	43.2	-	-	-	42.8	-	43.0	-	-
59	15	-	-	-	-	-	-	-	-	43.2	-	-	-	43.2	-	43.7	-
64	18	-	-	-	-	-	-	-	-	-	43.2	-	-	43.2	-	43.5	-
68	20	-	-	-	-	-	-	-	-	-	-	43.1	-	-	43.1	-	-

Note) CA: Total Capacity (KW), SHC: Sensible Heat Capacity (kW)  
WB: Wet Bulb(°C), DB: Dry Bulb(°C)

#### NOTICE

- The data shown in the graph illustrates the supported operating ranges under the following conditions:
  - Indoor and Outdoor Unit
  - Effective piping length: 7.5 m
  - Height differential: 0 m
- The actual temperature may not match the temperature setting under some circumstances due to the outdoor-air processing load or mechanical protection controls.
- The system will not operate in fan mode when the outdoor air temperature is -5°C or below.

## Outlet Air Temp & Air flow rate

### ARNU76GB8Z2

#### Cooling

Outdoor air temperature		59°FWB 15°CWB		63°FWB 17°CWB		69°FWB 20°CWB		73°FWB 23°CWB		79°FWB 26°CWB		82°FWB 28°CWB		86°FWB 30°CWB		90°FWB 32.0		95°FWB 35°CWB	
*FDB	*CDB	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
70	21	7.7	5.0	8.6	5.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	7.5	5.8	8.1	5.8	11.9	5.5	-	-	-	-	-	-	-	-	-	-	-	-
77	25	7.4	6.7	8.2	6.7	11.4	6.4	-	-	-	-	-	-	-	-	-	-	-	-
81	27	-	-	8.3	7.5	11.1	7.2	14.8	6.6	-	-	-	-	-	-	-	-	-	-
84	29	-	-	-	-	10.8	7.9	14.4	7.3	18.2	6.9	-	-	-	-	-	-	-	-
88	31	-	-	-	-	10.7	8.8	14.1	8.1	17.9	7.7	20.7	7.3	-	-	-	-	-	-
91	33	-	-	-	-	-	-	13.7	8.9	17.6	8.5	20.3	8.0	22.2	7.3	-	-	-	-
96	35	-	-	-	-	-	-	13.4	9.7	17.3	9.3	19.9	8.8	21.5	7.9	-	-	-	-
99	37	-	-	-	-	-	-	-	-	15.1	14.8	19.3	9.4	21.2	8.7	24.4	8.2	-	-
104	40	-	-	-	-	-	-	-	-	16.2	11.1	19.1	10.6	20.7	9.8	24.0	9.4	28.6	8.8

Outdoor air temperature		59°FWB 15°CWB		63°FWB 17°CWB		69°FWB 20°CWB		73°FWB 23°CWB		79°FWB 26°CWB		82°FWB 28°CWB		86°FWB 30°CWB		90°FWB 32.0		95°FWB 35°CWB	
*FDB	*CDB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB
70	21	10.6	8.3	10.6	10.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	10.7	8.4	10.8	10.4	11.5	11.0	-	-	-	-	-	-	-	-	-	-	-	-
77	25	10.8	8.5	10.9	10.2	11.6	11.3	-	-	-	-	-	-	-	-	-	-	-	-
81	27	-	-	11.0	10.1	11.8	11.5	13.1	12.5	-	-	-	-	-	-	-	-	-	-
84	29	-	-	-	-	12.0	11.7	13.4	12.8	14.4	14.2	-	-	-	-	-	-	-	-
88	31	-	-	-	-	12.0	11.7	13.6	13.0	14.5	14.3	15.5	15.3	-	-	-	-	-	-
91	33	-	-	-	-	-	-	13.7	13.2	14.7	14.5	15.9	15.5	17.6	17.4	-	-	-	-
96	35	-	-	-	-	-	-	13.8	13.4	14.9	14.8	16.1	15.7	18.1	17.8	-	-	-	-
99	37	-	-	-	-	-	-	-	-	15.1	14.8	16.5	16.1	18.3	17.9	19.4	18.9	-	-
104	40	-	-	-	-	-	-	-	-	15.5	15.3	16.6	16.1	18.5	18.1	19.5	19.0	21.1	21.1

#### Heating

Outdoor air temperature		23°FWB -5°CWB		27°FWB -2.9°CWB		32°FWB 0°CWB		36°FWB 2°CWB		39°FWB 4°CWB		43°FWB 6°CWB		50°FWB 10°CWB		57°FWB 14°CWB	
*FDB	*CDB	SHC		SHC		SHC		SHC		SHC		SHC		SHC		SHC	
18	-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-3	-	20.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	0	-	-	-	19.1	-	-	-	-	-	-	-	-	-	-	-	-
37	3	-	-	-	-	18.3	-	18.2	-	-	-	-	-	-	-	-	-
45	7	-	-	-	-	-	-	16.8	-	16.6	-	16.7	-	-	-	-	-
52	11	-	-	-	-	-	-	-	-	15.0	-	14.9	-	-	-	-	-
59	15	-	-	-	-	-	-	-	-	-	-	13.2	-	13.2	-	13.2	-
64	18	-	-	-	-	-	-	-	-	-	-	-	-	11.8	-	11.8	-
68	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11.1	-

Outdoor air temperature		23°FWB -5°CWB		27°FWB -2.9°CWB		32°FWB 0°CWB		36°FWB 2°CWB		39°FWB 4°CWB		43°FWB 6°CWB		50°FWB 10°CWB		57°FWB 14°CWB	
*FDB	*CDB	*CDB		*CDB		*CDB		*CDB		*CDB		*CDB		*CDB		*CDB	
18	-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-3	-	43.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	0	-	-	-	43.1	-	-	-	-	-	-	-	-	-	-	-	-
37	3	-	-	-	-	44.3	-	44.2	-	-	-	-	-	-	-	-	-
45	7	-	-	-	-	-	-	45.2	-	44.5	-	44.8	-	-	-	-	-
52	11	-	-	-	-	-	-	-	-	-	-	45.1	-	44.9	-	44.9	-
59	15	-	-	-	-	-	-	-	-	-	-	-	-	44.8	-	44.8	45.0
64	18	-	-	-	-	-	-	-	-	-	-	-	-	44.7	-	44.8	44.8
68	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45.2	45.2

Note) CA: Total Capacity (KW), SHC: Sensible Heat Capacity (kW)  
WB: Wet Bulb(°C), DB: Dry Bulb(°C)

#### NOTICE

- The data shown in the graph illustrates the supported operating ranges under the following conditions:
  - Indoor and Outdoor Unit
  - Effective piping length: 7.5 m
  - Height differential: 0 m
- The actual temperature may not match the temperature setting under some circumstances due to the outdoor-air processing load or mechanical protection controls.
- The system will not operate in fan mode when the outdoor air temperature is -5°C or below.

# ARNU96GB8Z2

## Cooling

Outdoor air temperature		59°FWB		63°FWB		69°FWB		73°FWB		79°FWB		82°FWB		86°FWB		90°FWB		95°FWB	
		15°CWB		17°CWB		20°CWB		23°CWB		26°CWB		28°CWB		30°CWB		32.0		35°CWB	
*FDB	*CDB	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
70	21	5.4	3.7	11.1	6.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	5.2	4.3	10.3	7.9	16.0	7.5	-	-	-	-	-	-	-	-	-	-	-	-
77	25	5.1	5.0	10.6	9.2	15.3	9.8	-	-	-	-	-	-	-	-	-	-	-	-
81	27	-	-	10.6	10.5	14.8	10.0	20.5	9.2	-	-	-	-	-	-	-	-	-	-
84	29	-	-	-	-	14.3	11.2	19.7	10.3	25.4	9.6	-	-	-	-	-	-	-	-
88	31	-	-	-	-	14.2	12.5	19.2	11.4	25.0	10.9	29.0	10.3	-	-	-	-	-	-
91	33	-	-	-	-	-	-	18.7	12.7	24.4	12.0	28.5	11.3	31.1	10.2	-	-	-	-
96	35	-	-	-	-	-	-	18.2	13.9	24.0	13.2	27.9	12.4	30.0	11.1	-	-	-	-
99	37	-	-	-	-	-	-	-	-	23.5	14.3	26.9	13.4	29.6	12.3	34.4	11.6	-	-
104	40	-	-	-	-	-	-	-	-	22.2	15.9	26.5	15.2	28.8	14.0	33.8	13.4	40.0	12.5

Outdoor air temperature		59°FWB		63°FWB		69°FWB		73°FWB		79°FWB		82°FWB		86°FWB		90°FWB		95°FWB	
		15°CWB		17°CWB		20°CWB		23°CWB		26°CWB		28°CWB		30°CWB		32.0		35°CWB	
*FDB	*CDB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB
70	21	11.7	9.4	11.7	11.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
73	23	11.8	9.5	11.9	11.5	12.6	12.1	-	-	-	-	-	-	-	-	-	-	-	-
77	25	11.9	9.6	12.0	11.3	12.7	12.4	-	-	-	-	-	-	-	-	-	-	-	-
81	27	-	-	12.1	11.2	12.9	12.6	14.2	13.6	-	-	-	-	-	-	-	-	-	-
84	29	-	-	-	-	13.1	12.8	14.5	13.9	15.5	15.3	-	-	-	-	-	-	-	-
88	31	-	-	-	-	13.1	12.8	14.7	14.1	15.6	15.4	16.6	16.4	-	-	-	-	-	-
91	33	-	-	-	-	-	-	14.8	14.3	15.8	15.6	17.0	16.6	18.7	18.5	-	-	-	-
96	35	-	-	-	-	-	-	14.9	14.5	16.0	15.7	17.2	16.8	19.2	18.9	-	-	-	-
99	37	-	-	-	-	-	-	-	-	16.2	15.9	17.6	17.2	19.4	19.0	20.5	20.0	-	-
104	40	-	-	-	-	-	-	-	-	16.6	16.4	17.7	17.2	19.6	19.2	20.6	20.1	22.2	22.2

## Heating

Outdoor air temperature		23°FWB		27°FWB		32°FWB		36°FWB		39°FWB		43°FWB		50°FWB		57°FWB	
		-5°CWB		-2.9°CWB		0°CWB		2°CWB		4°CWB		6°CWB		10°CWB		14°CWB	
*FDB	*CDB	SHC		SHC		SHC		SHC		SHC		SHC		SHC		SHC	
18	-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-3	30.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	0	-	28.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	3	-	-	28.0	-	-	-	27.7	-	-	-	-	-	-	-	-	-
45	7	-	-	-	25.3	-	-	25.0	-	-	-	-	-	-	-	-	-
52	11	-	-	-	-	-	-	-	25.0	-	-	-	-	-	-	-	-
59	15	-	-	-	-	-	-	-	-	22.1	-	-	-	22.5	-	-	-
64	18	-	-	-	-	-	-	-	-	-	22.1	-	-	19.8	-	-	19.6
68	20	-	-	-	-	-	-	-	-	-	-	17.6	-	17.6	-	-	17.9
		-	-	-	-	-	-	-	-	-	-	-	16.4	-	-	-	16.4

Outdoor air temperature		23°FWB		27°FWB		32°FWB		36°FWB		39°FWB		43°FWB		50°FWB		57°FWB	
		-5°CWB		-2.9°CWB		0°CWB		2°CWB		4°CWB		6°CWB		10°CWB		14°CWB	
*FDB	*CDB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB	*CDB	*CWB
18	-9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-3	43.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32	0	-	43.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37	3	-	-	45.3	-	-	-	44.7	-	-	-	-	-	-	-	-	-
45	7	-	-	-	45.2	-	-	44.6	-	-	-	-	-	-	-	-	-
52	11	-	-	-	-	-	-	-	44.6	-	-	-	-	-	-	-	-
59	15	-	-	-	-	-	-	-	-	43.6	-	-	-	-	-	-	-
64	18	-	-	-	-	-	-	-	-	-	44.2	-	-	44.9	-	-	-
68	20	-	-	-	-	-	-	-	-	-	-	44.2	-	44.8	-	-	44.5
		-	-	-	-	-	-	-	-	-	-	-	44.5	44.5	-	-	45.0
		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	44.7

Note) CA: Total Capacity (KW), SHC: Sensible Heat Capacity (kW)  
WB: Wet Bulb(°C), DB: Dry Bulb(°C)

**NOTICE**

- The data shown in the graph illustrates the supported operating ranges under the following conditions:
  - Indoor and Outdoor Unit
  - Effective piping length: 7.5 m
  - Height differential: 0 m
- The actual temperature may not match the temperature setting under some circumstances due to the outdoor-air processing load or mechanical protection controls.
- The system will not operate in fan mode when the outdoor air temperature is -5°C or below.

## 2. Air flow rate

### ARNU48GBRZ2

Setting Value	ESP (mmAq)										
	5	6	8	10	12	14	15	16	17	18	20
70	15.8	-	-	-	-	-	-	-	-	-	-
75	18.7	16	-	-	-	-	-	-	-	-	-
80	22.2	19.9	13.6	-	-	-	-	-	-	-	-
85	24.2	23.4	17.8	-	-	-	-	-	-	-	-
87	25.2	24.1	19.6	-	-	-	-	-	-	-	-
90	26.8	25.5	21.9	15.9	-	-	-	-	-	-	-
92	28.1	27	22.8	18.2	10.6	-	-	-	-	-	-
94	29	27	24	19.8	13.8	-	-	-	-	-	-
96	30.3	28.5	25	22.5	15.8	-	-	-	-	-	-
98	-	29.8	26.5	22.8	17.4	10.7	-	-	-	-	-
101	-	31.8	28	24.2	20.5	16	-	-	-	-	-
103	-	32.7	29.17	25.9	22	16.5	11.8	-	-	-	-
106	-	-	30.9	28.2	24.6	19.9	15.2	11.9	-	-	-
111	-	-	-	30.8	28.3	24.2	20.7	17.7	15.8	14.7	-
116	-	-	-	-	30.7	27.6	25.2	24.2	22.4	18.8	13.4
121	-	-	-	-	-	30.4	29.7	27.2	26.3	25.6	18.7
126	-	-	-	-	-	-	-	28.6	27.6	27.4	25.9
130	-	-	-	-	-	-	-	-	-	-	26.5
135	-	-	-	-	-	-	-	-	-	-	-
140	-	-	-	-	-	-	-	-	-	-	-

### ARNU76GB8Z2, ARNU96GB8Z2

Setting Value	ESP (mmAq)								
	6	9	12	15	18	20	22	23	25
55	25.39	-	-	-	-	-	-	-	-
60	33.65	-	-	-	-	-	-	-	-
65	40.01	30.29	-	-	-	-	-	-	-
70	46.43	35.81	17.31	-	-	-	-	-	-
75	50.93	45.35	35.57	-	-	-	-	-	-
80	55.77	51.91	42.86	26.57	-	-	-	-	-
85	-	54.22	49.74	42.67	20.9	-	-	-	-
88	-	-	52.72	46.44	33.72	-	-	-	-
90	-	-	52.54	48.82	40.09	23.07	-	-	-
92	-	-	-	50.91	44.3	23.46	-	-	-
94	-	-	-	50.9	46.73	39.65	13.87	-	-
96	-	-	-	-	49.84	44.04	24.17	23.63	-
98	-	-	-	-	49.66	48.09	39.72	25.28	14.49
100	-	-	-	-	-	48.23	42.56	40.34	15.47
102	-	-	-	-	-	-	46.41	45.92	38.6
105	-	-	-	-	-	-	-	46.51	45.44

NOTE)

- Setting Value : ESP value

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