

INSTALLATION MANUAL

AHU Control Kit

- 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.

MODEL : PRCKAO



P/NO : MFL50024801

www.lg.com

TIPS FOR SAVING ENERGY

Here are some tips that will help you minimize the power consumption when you use the air conditioner. You can use your air conditioner more efficiently by referring to the instructions below:

- Do not cool excessively indoors. This may be harmful for your health and may consume more electricity.
- Block sunlight with blinds or curtains while you are operating the air conditioner.
- Keep doors or windows closed tightly while you are operating the air conditioner.
- Adjust the direction of the air flow vertically or horizontally to circulate indoor air.
- Speed up the fan to cool or warm indoor air quickly, in a short period of time.
- Open windows regularly for ventilation as the indoor air quality may deteriorate if the air conditioner is used for many hours.
- Clean the air filter once every 2 weeks. Dust and impurities collected in the air filter may block the air flow or weaken the cooling / dehumidifying functions.

For your records

Staple your receipt to this page in case you need it to prove the date of purchase or for warranty purposes. Write the model number and the serial number here:

Model number : _____

Serial number : _____

You can find them on a label on the side of each unit.

Dealer's name : _____

Date of purchase : _____

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.

Always comply with the following precautions to avoid dangerous situations and ensure peak performance of your product

WARNING

It can result in serious injury or death when the directions are ignored

CAUTION

It can result in minor injury or product damage when the directions are ignored

WARNING

- Installation or repairs made by unqualified persons can result in hazards to you and others.
- Installation **MUST** conform with local building codes or, in the absence of local codes, with the Nation Electrical Code NFPA 70/ANSI C1-1003 or current edition and Canadian Electrical Code Part1 CSA C.22.1.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

Installation

- Don't touch with the hands while the power is on.
 - There is risk of fire or electric shock.
- Use standard parts(connector).
 - Do not disassemble or repair the product. 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.
- Use the correctly rated breaker or fuse.
 - There is risk of fire or electric shock.
- Do not install, remove, or re-install the unit by yourself (customer).
 - There is risk of fire, electric shock, explosion, or injury.
- For installation, always contact the dealer or an Authorized Service Center.
 - There is risk of fire, electric shock, explosion, or injury.

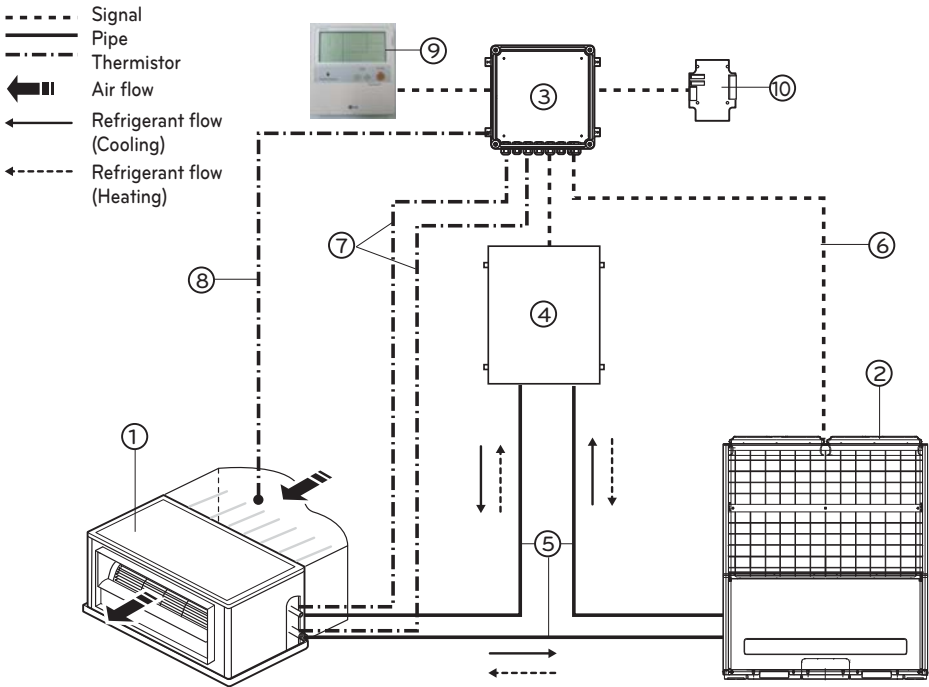
Operation

- When the product is soaked (flooded or submerged), contact an Authorized Service Center.
 - There is risk of fire or electric shock.
- Be cautious that water could not enter the product.
 - There is risk of fire, electric shock, or product damage.

TABLE OF CONTENTS

2	TIPS FOR SAVING EN- ERGY	
3	IMPORTANT SAFETY INSTRUCTIONS	
5	INSTALLATION SCENE	
6	SUPPLIES	
7	OPTIONAL ACCES- SORIES	
8	PART DESCRIPTION	
8	Control Kit (PRCKA0)	
9	BEFORE INSTALLA- TION	
11	CONTROL KIT INSTAL- LATION	
11	Mechanical installation	
12	Electric Wiring Work	
15	Dry contact connection_optional ac- cessory	
16	TEST OPERATION	
17	TROUBLESHOOTING	

INSTALLATION SCENE



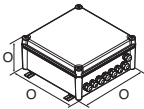
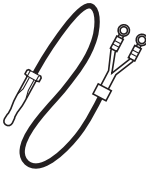
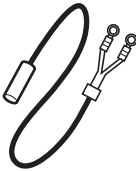


Parts and components

No.	Name	Remarks
1	Air Handling Unit	Field supply
2	Outdoor Unit	Multi_V
3	AHU Control Kit(PRCKA0)	-
4	AHU EEV Kit(PRLK048A0)	-
5	Field piping	Field supply

Wiring connections

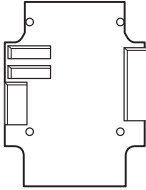
6	Control kit wiring	(Power supply and communication between control kit and outdoor unit)
7	Pipe thermistors (EBG58712427/EBG58712428)	Evaporator (In/Out) control of Air Handling Unit
8	Room thermistor (EBG61106821)	Return air control
9	Remote controller(PQRCUSA0)	Optional accessory
10	Dry contact PCB(PQDSBNGCM0)	Optional accessory

SUPPLIES

PRCKA0					
Compo-nents	AHU Control Kit	Room thermistor	Pipe thermistors	Installation manual	Capacity setting option PCB
P/NO	AJT57850901	EBG61106821	EBG58712427 EBG58712428	MFL50024801	EBR52358907/09/10/ 11/12/13/14/15/16/17
Shape					
Quantity (EA)	1	1	2(Each 1)	1	10(Each 1)

Model Name	Weight(kg)		Dimension(mm)			POWER
	NET	Gross	W	H	D	
PRCKA0	2.2	3.6	280	135	280	220~240V/50Hz/1Phase

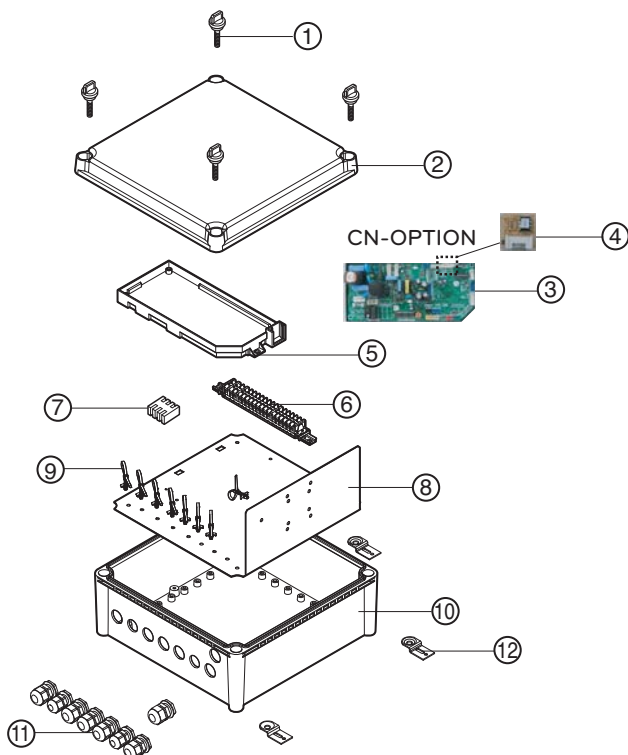
OPTIONAL ACCESSORIES

Accessories		
Components	Remote controller	Dry contact PCB
Model name	PQRCUSA0	PQDSBNGCM0
Shape		

* For further details of the accessories, refer to the manual provided at the time of purchasing the accessories.

PART DESCRIPTION

Control Kit (PRCKA0)



No.	Part Name	Quantity(EA)
1	Plastic bolt	4
2	Control box cover	1
3	Main PCB	1
4	Option PCB(36k)	1
5	Main PCB case	1
6	Terminal block (communication)	1
7	Terminal block (POWER Supply)	1
8	Panel	1
9	Support Tie wrap	8
10	Control box case	1
11	Cable gland(2type)	8
12	Bracket	4

BEFORE INSTALLATION

CAUTION

■ Don't install or operate the unit in rooms mentioned below.

- ① Where mineral oil, like cutting oil is present.
- ② Where the air contains high levels of salt such as air near the ocean.
- ③ Where sulphurous gas is present such as that in areas of hot spring.
- ④ In vehicles or vessels.
- ⑤ Where voltage fluctuates a lot such as that in factories.
- ⑥ Where high concentration of vapor spray are present.
- ⑦ Where machines generating electromagnetic waves are present.
- ⑧ Where acidic or alkaline vapor is present.
- ⑨ The option boxes must be installed with entrances downward.

■ Check the mentioned below, when you apply the AHU(Field supply).

- ① If the AHU (Field supply) provided in the field is exclusively for heating, you must not change the operating mode to cooling on the remote controller. If not, it can cause electric shock, injury or death. If you want to operate in cooling mode, AHU (Field supply) must comply with the following details.
(Following)
 - The insulation level of AHU (Field supply) motor must be 'F' or above, and the protection level must satisfy 'IP 54'.
 - AHU (Field supply) must have the drain pan installed.
- ② Fan speed button on the wired remote controller(PQRCUSA0) is not operated.
- ③ For refrigerant piping of outdoor unit, refer to the installation manual supplied with the outdoor unit.
- ④ For installation of the wired remote controller(PQRCUSA0), refer to the manual supplied with the wired remote controller.
- ⑤ For connection of the Dry contact PCB(PQDSBNGCM0), refer to the manual supplied with the Dry contact PCB(PQDSBNGCM0).

■ AHU Control Kit

- ① Thermistor cable and remote controller wire should be located at least 50mm away from power supply wires and from wires to the controller. Not following this guideline may result in malfunction due to electrical noise.
- ② Use only specified wires, and tightly connect wires to the terminals. Keep wiring in neat order so that it does not obstruct other equipment. Incomplete connections could result in overheating, and in worse case electric shock or fire.

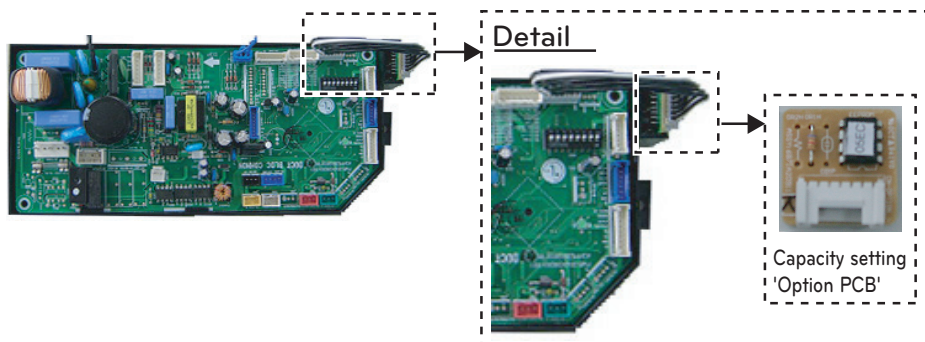
CAUTION

Selection of Evaporator(Air Handling Unit)

See table below for applicable units

Selecting the capacity setting 'Option PCB'(Accessory) according to the capacity mentioned below.

- The corresponding capacity setting 'Option PCB' needs to be selected depending on the need capacity.
- After checking the need capacity, remove the 36k Option PCB equipped in the main PCB, and set up the Option PCB fitted the need capacity in the main PCB.



Option PCB P/NO	Capacity (Btu/h)	Standard heat ex- changer volume (10-3 × m3)	Maximum heat ex- changer capacity (kW)	Air Flow rate (CMM)
EBR52358907	28 k	2.7	8.6	22~26
EBR52358908	36 k	3.1	11	25~32
EBR52358909	42 k	3.4	13.8	31~35
EBR52358910	48 k	4.0	15.4	33~45
EBR52358911	76 k	5.4	22.2	50~64
EBR52358912	96 k	6.3	28.1	64~72
EBR52358914	115 k	7.3	33.7	72~88
EBR52358915	134 k	8.5	39.3	88~103
EBR52358916	155 k	9.5	45.4	103~116
EBR52358917	172 k	10.5	50.4	114~129
EBR52358913	182 k	11.2	56.2	121~137

* Saturated Suction Temperature(SST) = 6 °C, SH (Superheat) 5K,
Air Temperature = 27 °C DBT / 19 °C WBT

* Heat exchanger volume [m³] = Pipe cross-section x Tube length

- Pipe cross-section = $\pi \times ID^2 / 4$ [m²]

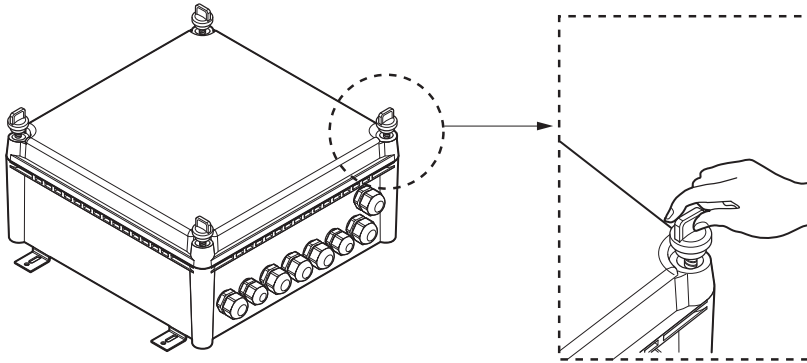
- Tube length = Tube length of 1 pipe x Tube step x Tube row [m]

* Standard Tube step : 6 step

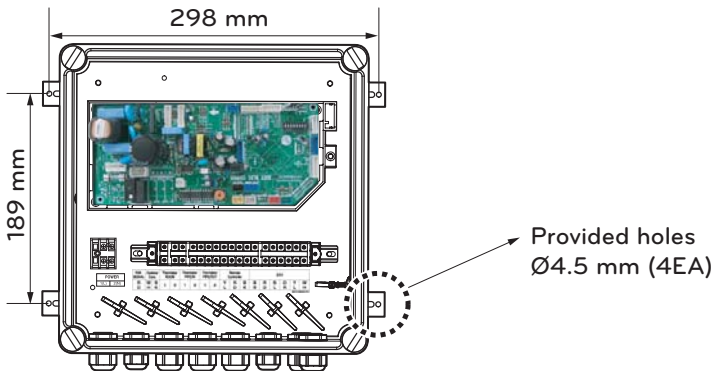
CONTROL KIT INSTALLATION

Mechanical installation

1. Remove the Control Kit box cover by unscrewing the plastic bolt(4EA).



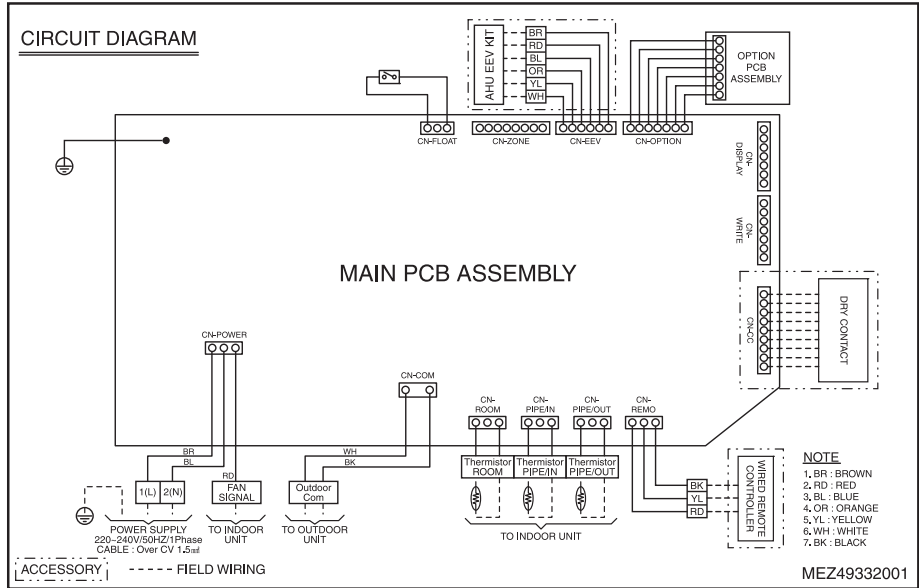
2. Drill 4 holes on correct position and fix the Control Kit box securely with 4 screws(Field supply) through the provided holes $\varnothing 4.5$ mm(Reference the length of the holes $\varnothing 4.5$)



Electric Wiring Work

Circuit diagram

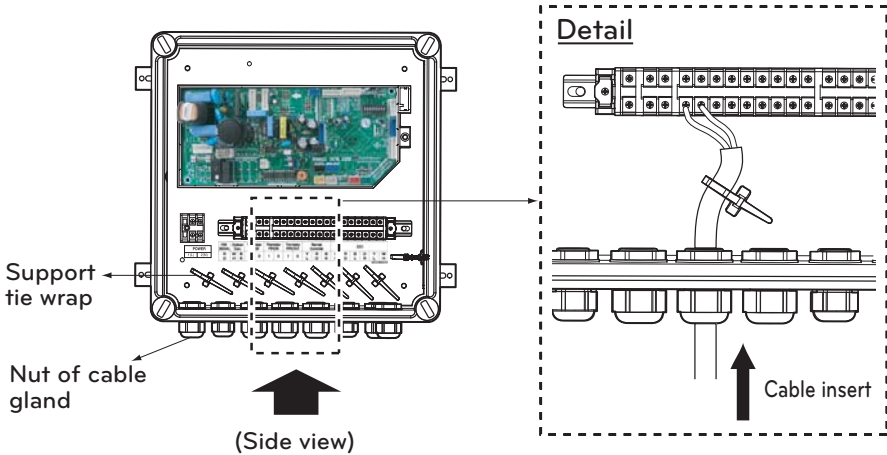
1. For electric wiring, refer to figure 'Circuit diagram' mentioned below.



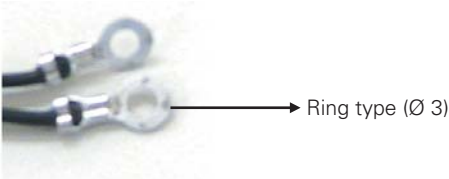
CONNECTOR NUMBER	LOCATION POINT	FUNCTION
CN-POWER	AC POWER SUPPLY	AC POWER LINE INPUT FOR INDOOR CONTROLLER
CN-COM	COMMUNICATION	CONNECTION BETWEEN INDOOR AND OUTDOOR
CN-ROOM	ROOM SENSOR	ROOM AIR THERMISTOR
CN-PIPE/IN	SUCTION PIPE SENSOR	PIPE IN THERMISTOR
CN-PIPE/OUT	DISCHARGE PIPE SENSOR	PIPE OUT THERMISTOR
CN-REMO	REMOTE CONTROLLER	REMOTE CONTROL LINE
CN-FLOAT	FLOAT SWITCH INPUT	FLOAT SWITCH SENSING
CN-EEV	EEV OUTPUT	EEV CONTROL OUTPUT
CN-OPTION	OPTION PCB	COMMUNICATION BETWEEN MAIN AND OPTION
CN-CC	DRY CONTACT	DRY CONTACT LINE

Connection of the wires

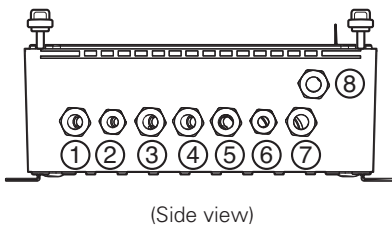
2. For connection to outdoor unit and to controller (Field supply) :
Pull the wires inside through the cable gland and close that's nut firmly in order to ensure a good pull relieve and water protection.
3. The wires require an additional pull-relief. Strap the wire with the support tie wrap.



4. For the wired remote controller wire and outdoor unit communication wire, remove the coating at the end of the wire to connect and use the ring type (Ø 3) to connect to the terminal block.



5. Each wire have to pass the number of the cable gland mentioned below.

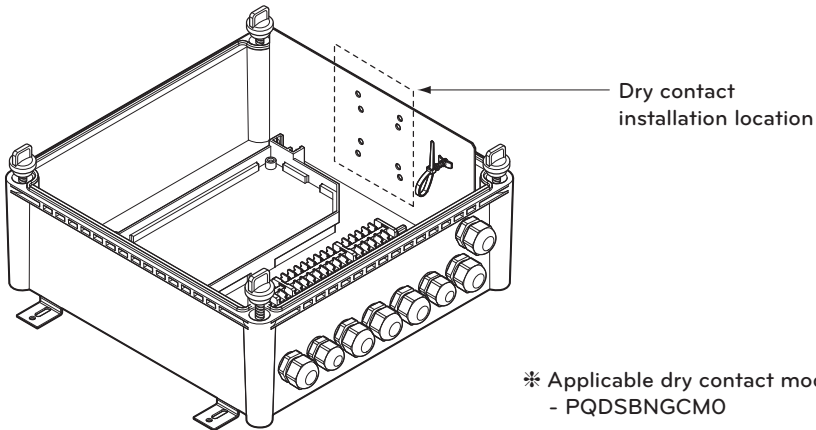


No.	Electric wire
①	POWER SUPPLY
②	FAN SIGNAL
③	Outdoor com.
④	Room thermistor
⑤	Pipe thermistor(In/Out)
⑥	Remote controller
⑦	EEV Kit
⑧	DRY contact

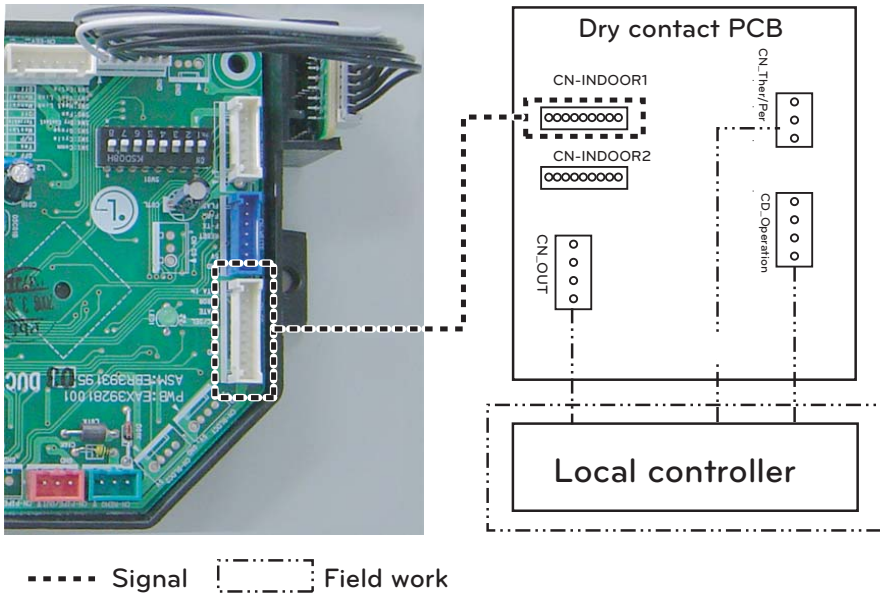
**CAUTION**

- All field supplied parts and materials and electric works must be conform to local codes.
- Use copper wire only.
- All wiring must be performed by an authorized electrician.
- A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with relevant local and national legislation.
- Refer to the installation manual attached to the outdoor unit for the size of power supply electric wire connected to the outdoor unit, the capacity of the circuit breaker and switch, wiring and wiring instructions.

Dry contact connection_optional accessory



1. Using screw(4EA), fix the dry contact on the side panel.

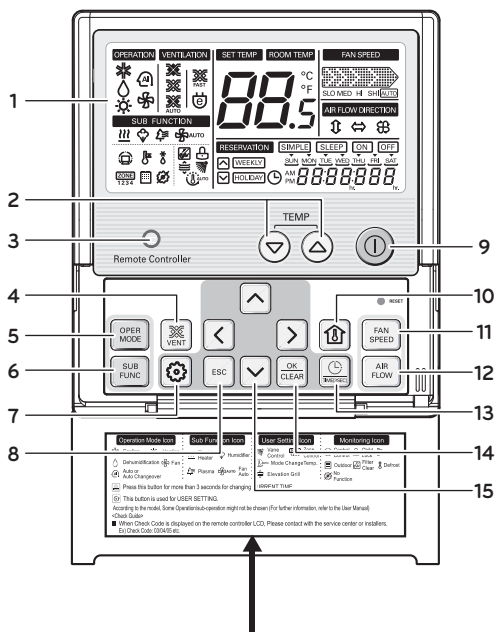


2. Using cable, connect the dry contact to main PCB.
For more information, please refer to dry contact installation manual.

TEST OPERATION

Before test operation, be sure all information is understood completely, and follow the guideline of manual.

- Check the refrigerant piping of outdoor unit.
(Additional charging of the refrigerant ,the maximum allowed piping length and open the stop valve)
* For more detailed information of that, refer to the installation manual supplied with the outdoor unit.
- Executing the test operation.
 1. Connect the power and turn on with the wired remote controller(PQRCUSA0).
 2. Check the AHU(Field supply) and outdoor unit operation when the wired remote controller (PQRCUSA0) is controlled.



- 1 Operation indication screen
- 2 Set temperature button
- 3 Wireless remote (Do not operate) controller Receiver
* Some products don't receive the wireless signals.
- 4 Ventilation button (Do not operate)
- 5 Operation mode selection button
- 6 Subfunction button
- 7 Function setting button
- 8 Exit button
- 9 On/ Off button
- 10 Room temperature button
- 11 Fan speed button (Do not operate)
- 12 Air flow button (Do not operate)
- 13 Reservation/ Time setting button
- 14 Setting/ Cancel button
- 15 Up, Down, Left, Right button

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

* For more detailed function of the wired remote controller, refer to the Owner's & Installation manual supplied with the wired remote controller.

* Button ③,④,⑪,⑫ on the wired remote controller(PQRCUSA0) is not operated.

TROUBLESHOOTING

Problem	Problem	Remedy
AHU Control Kit does not work	No power supply	Check the electrical connection and voltage of the power supply.
	Wiring is wrong	Check the electrical connection of the Control kit (Refer to the circuit diagram of the Control Kit)
	AHU Control Kit is broken	Check the electrical and mechanical part.

