

 **everwell**[®] Inverter air conditioner

Service Manual

Models

ME1223-EU ME1223-CU

ME1823-EU ME1823-CU

ME2423-EU ME2423-CU

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1. Important Notice

This service manual is intended for use by individuals possessing adequate backgrounds of electrical, electronic and mechanical experience. Any attempt to repair the appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

The information, specifications and parameter are subject to change due to technical modification or improvement without any prior notice. The accurate specifications are presented on the nameplate label.

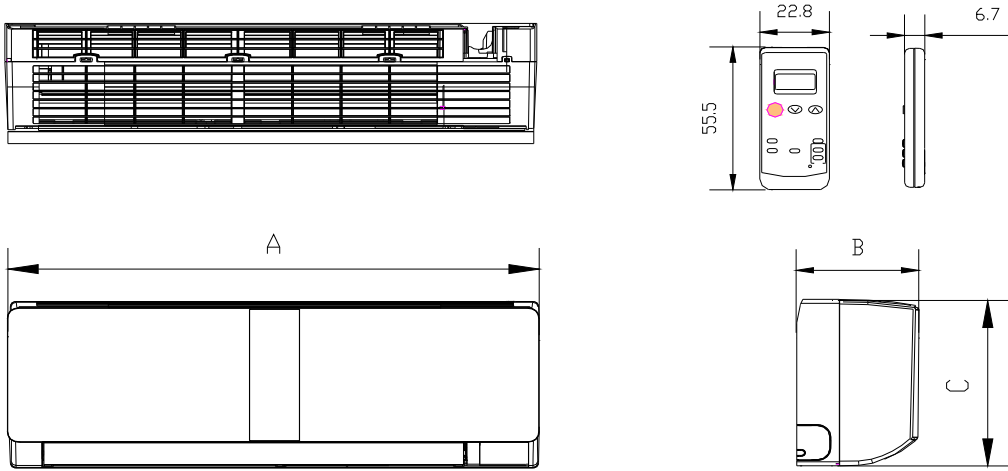
How to order spare parts

To have your order filled promptly and correctly, please furnish the following information:

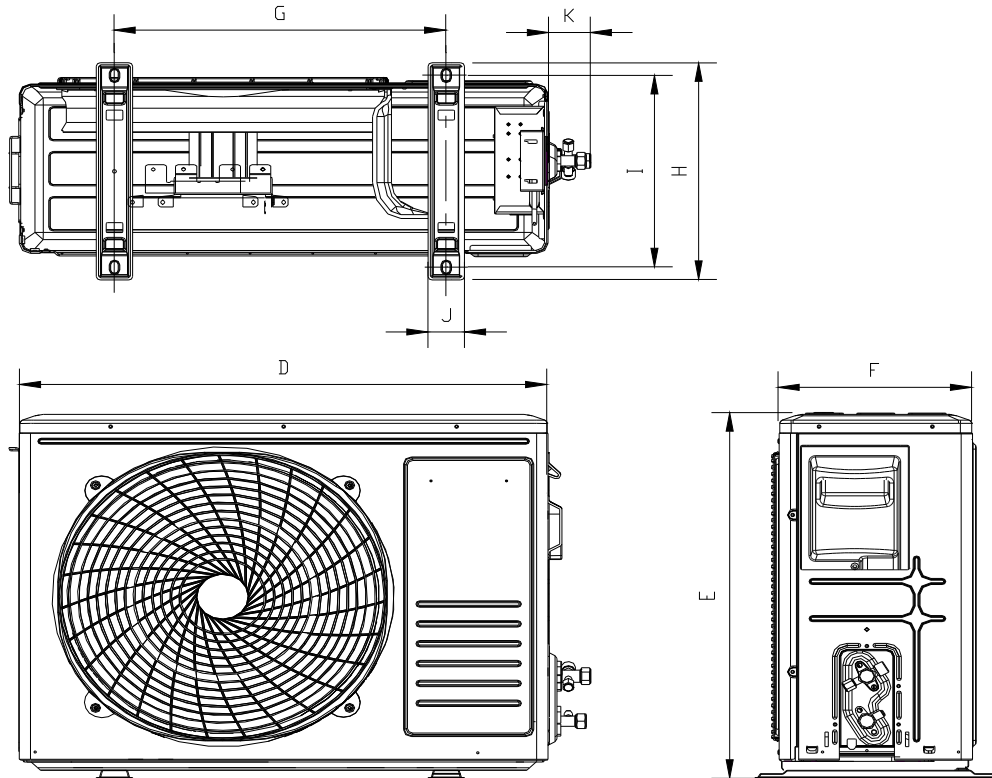
1. Model No. with Indoor or Outdoor
2. No. in the Explosion View
3. Part Name
4. The quantity you ordered

2. Product Dimensions

Indoor Unit:



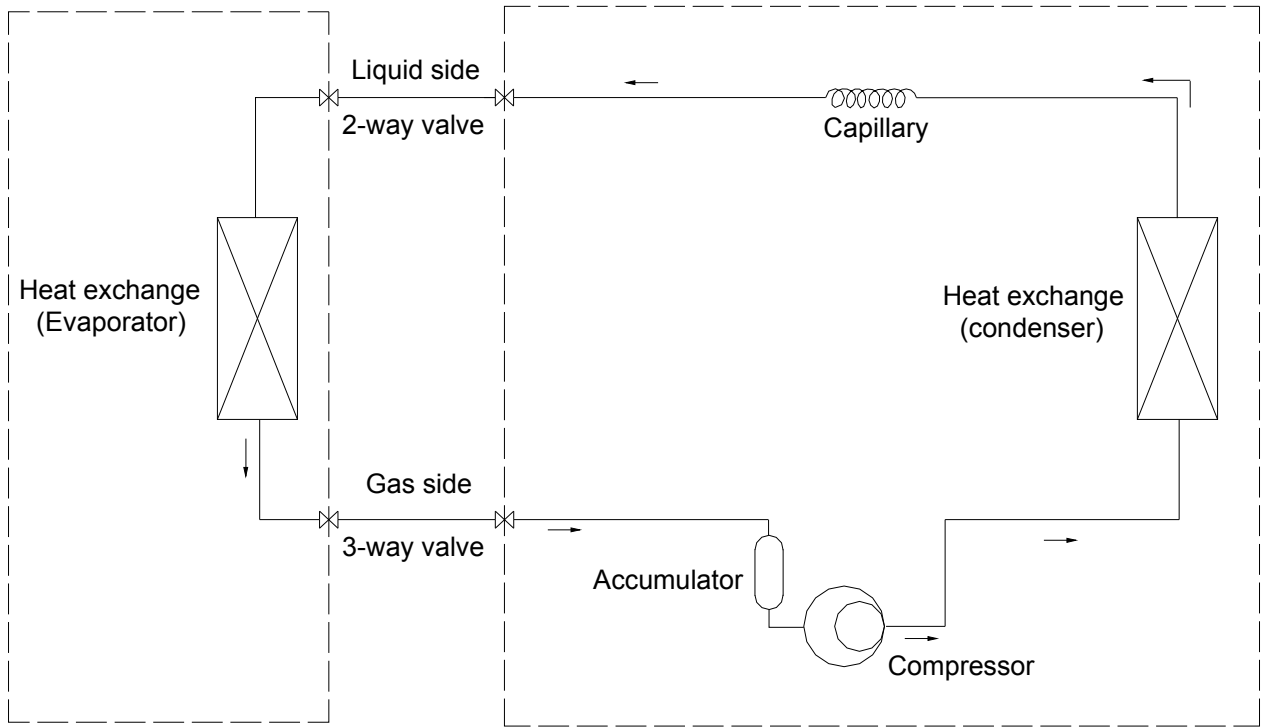
Outdoor Unit:



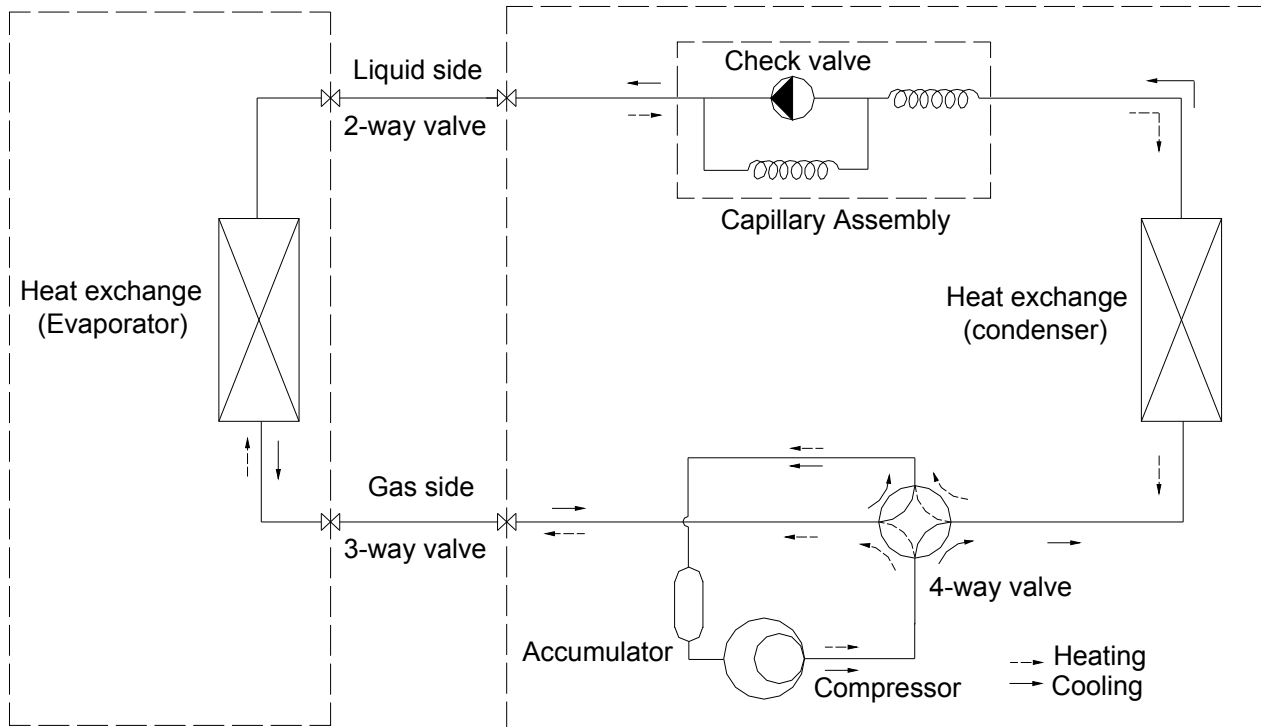
Model	A	B	C	D	E	F	G	H	I	J	K
12K	770	180	240	700	552	256	439.2	302	277.8	48	55
18K	898	202	280	760	552	256	507.8	302	277.8	48	55
24K	1033	202	313	820	605	300	518	357	329	55	63

3. Refrigeration cycle diagram

Cooling only

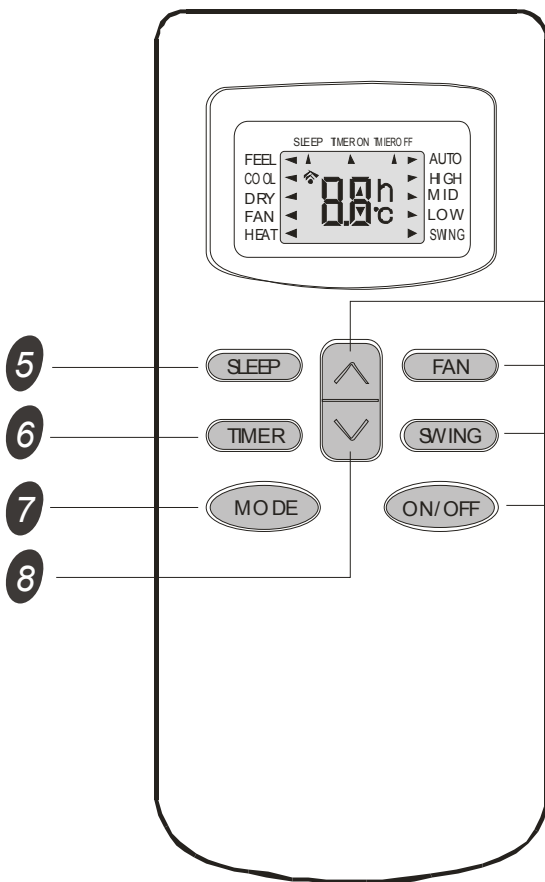


Heat pump



4. Operation details

Remote controller



- 1 ON/OFF button**
Used to star and stop operation when pressed.
- 2 Swing control button**
Used to adjust airflow direction
- 3 FAN SPEED control button**
Used to select the indoor fan motor speed: AUTO, High, Mid and Low
- 4 UP button**
Used to decrease the set room temperature and time.
- 5 SLEEP button**
Used to set or cancel sleep mode operation.
- 6 TIMER button**
Used to set select TIMER operation.
- 7 MODE button**
Used to select the type of operation mode: Feel, Cooling, Dry, Fan and Heating (Only for Heat Pump).
- 8 DOWN button**
Used to decrease the set room temperature and time.

Note: Each mode and relevant function will be further specified in following pages.

Remote controller:

The remote controller is not preset as Cooling Only Air Conditioner or Heat Pump by manufacturer. Each time after the remote controller replace batteries or is energized, the arrowhead will flashes on the front of **Heat** or **Cool** on LCD of the remote controller.

User can preset the remote controller depending on the air conditioner type you have purchased as follows:

Press any button when the arrow head flashes on the front of **Cool**, Cooling Only is set.

Press any button when the arrow head flashes on the front of **Heat**, Heat Pump is set.

If you don't press any button within 10 seconds, the remote controller is preset as Heat Pump automatically.

Note:

If the air conditioner you purchased is a Cooling Only one, but you preset the remote controller as 'Heat Pump, it doesn't bring any matter. But if the air conditioner you purchased is a Heat Pump one, and you preset the remote controller as Cooling Only, then you CAN NOT preset the Heating operation with the remote controller.

Electronic Controller

1. Safety Protection

(1) Time Delay for Safety protection

3 minutes delay for compressor ---The compressor is ceased for 3minutes before restarting to balance the pressure in the refrigeration cycle in order to protect the compressor.

(2) Discharge temperature protection

There is a temperature sensor on top of compressor, when the temperature exceed the limit, system control will shut down compressor and IDU display board shows error code E8.

(3) Lower voltage protection

When AC voltage $\leq 158V$ and keep it for 10 seconds, unit will be shut down for protection.

(4) Over voltage protection

When AC voltage $\geq 260V$, unit will be shut down and recover while $AC \leq 255V$.

(5) Over current protection

When current of outdoor unit overload, the controller will shut down unit for protection.

(6) Compressor driving protection

When compressor start on or in the process of running, if there is no feedback to controller or load of compressor is abnormality, the air conditioner will shut down, and show error code E9.

(7) IPM module protection

IPM module has high temperature & over current protection itself, when it happened the IDU display shows E9 error code, also LED on ODU PCB blinks.

2. Auto Mode (FEEL)

(1) When the Auto mode is selected, the operation mode and initial temperature set are determined by the initial room temperature at start-up of operation except turn the air conditioner off and operate it again.

(2) If the mode is change to **FEEL** from others, the FEEL mode doesn't operate until compressor to be stopped for more than 3 minutes.

Mode	Initial Room Temperature	Initial Set Temperature
COOLING	$RT \geq 26^{\circ}C$	$23^{\circ}C$
DRY	$26^{\circ}C > RT \geq 20^{\circ}C$	$RT - 2^{\circ}C$
HEATING for Heat Pump/ FAN for Cooling Only	$RT < 20^{\circ}C$	$23^{\circ}C$ (HEATING) or "—" (FAN)

- In the FEEL mode, the controller can adjust temperature by $1^{\circ}C$ press ▲ or ▼ button, and the

maximum adjustment is $RT \pm 2^\circ\text{C}$.

3. Cooling Mode

(1) Compressor frequency control.

According to the difference of Room Temperature and Set Temperature ($\delta t = RT - ST$), running frequency of the compressor is controlled by electronic controller. When room temperature is much higher than set temperature, the compressor will start at a high frequency, and while the room temperature goes down, the compressor running frequency decline to lower value.

When room temperature is lower than the set target, the compressor will run at very low frequency. In general, unit will change its running frequency according to δt to make the room temperature closing to the set value.

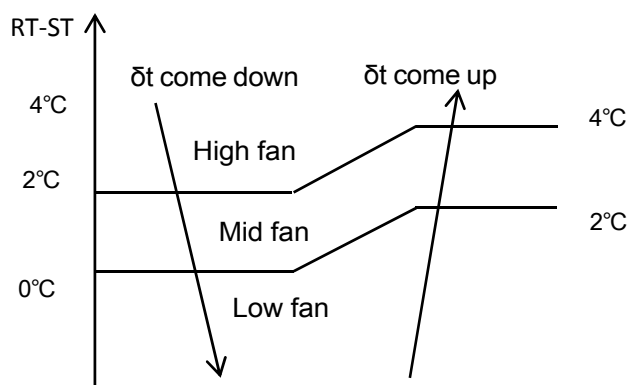
(2) Outdoor temperature affects running frequency of the compressor.

Outdoor temperature affect compressor's running frequency. Difference inlet temperature of outdoor unit is adapted by difference compressor running frequency. While outdoor temperature is about 30°C , the compressor will run in high frequency.

If unit run in "Cooling" mode and outdoor temperature is less than -2°C , the controller will shut down compressor and show error code, while the ambient temperature is over 1°C , the compressor will run automatically.

(3) Auto fan control in cooling mode.

In cooling mode (include cooling at FEEL mode), fan speed is determined by δt as the following diagram:



(4) Anti-frosting protection of indoor evaporator.

If $IPT \leq -1^\circ\text{C}$ detected in consecutive 3 min, the compressor and outdoor fan motor stop operation, indoor fan motor runs at preset speed; If $IPT \geq 5^\circ\text{C}$ detected 3min later, then outdoor fan motor and compressor will start up again, and indoor fan motor restores to it's original state.

(5) ODU overheating protection.

If $OPT > 105^\circ\text{C}$, the compressor stop operation for protection.

If $OPT \leq 90^\circ\text{C}$, the air conditioner recover to operate.

4. DRY Mode

- (1) The compressor, ODU fan motor operate the same cycle as Cooling mode.
- (2) When the system operates in Dry mode, at first it operates in cooling mode, the set temperature $ST=RT-2^{\circ}C$ constant, the system operates in low fan speed. During the course of process, the fan speed can't be adjusted by remote controller, but you can control the vane direction.
- (3) When $RT \leq 12^{\circ}C$, the compressor stops and it will operate again while $RT \geq 14^{\circ}C$.
- (4) Protection under Dry mode is the same as Cooling mode.

5. FAN Mode

Under fan mode, the IDU fan motor runs at preset of High, Mid or low speed only.

There is no sensor or temperature protection at Fan mode.

The display shows “—“ or indoor room temperature.

6. HEATING Mode (Heat Pump only)

On the Heating mode, the room temperature (RT) is compensated (CRT) $-3^{\circ}C$, the room temperature displayed on the LED is $CRT=RT-3^{\circ}C$. (The temperature compensation on heating mode controlled by ODU PCB)

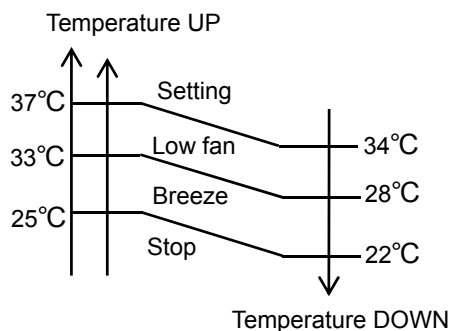
- (1) Frequency control

Same as frequency control in cooling mode, the running frequency of compressor is controlled by PCB controller. Unit change its running frequency according to δt to let the room temperature closing to the set value in process.

- (2) Indoor fan motor control

1) Cold Air Prevention Control

- The function is intended to prevent cold air from being discharged when heating mode selected or while in defrosting.
- The indoor fan speed will be controlled as following.

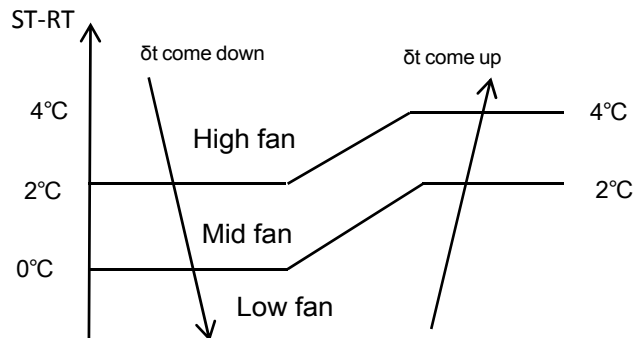


- In heating operation, if air conditioner turned off, the indoor fan motor will run at most

for another 30 seconds since the compressor stopped.

2) Auto fan control (heating)

In heating mode (*include in FEEL mode*) , fan speed is determined by δt as the following:



(3) 4-way valve control

In heating mode, 4-way valve will power on ahead of compressor for 5 seconds, and cut off for 2 minutes later than compressor. 4-way valve will not power off unless the machine to be switched off, mode changed or on the process of defrosting.

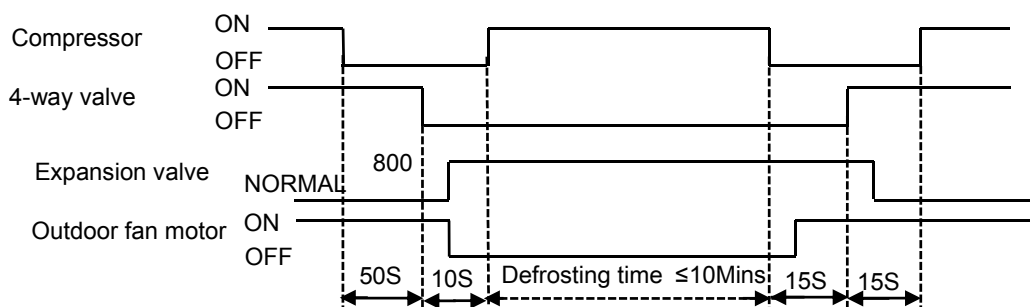
(4) Defrosting

Defrosting is controlled by the microprocessor.

When one of the following conditions is satisfied, unit comes into defrosting:

- When $OPT \leq 3^{\circ}C$, unit operate continuously for **40 minutes**, and $OPT \leq -6^{\circ}C$ keeps for 3 minutes or more.
- When $OPT \leq 3^{\circ}C$, unit operate continuously for **80 minutes**, and $OPT \leq -4^{\circ}C$ keeps for 3 minutes or more.
- When $OPT \leq 3^{\circ}C$, unit operate continuously for **120 minutes**, and $OPT \leq -2^{\circ}C$ keeps for 3 minutes or more.
- Before the air con comes into defrosting, compressor running frequency drop down to a lower frequency firstly, then the compressor shuts down.

In defrosting, the max. frequency of compressor is F9 (a little less than the highest frequency). In this period all protection function are available.



In defrosting, LED showing by winking.

No matter AC come into or out of defrosting, indoor fan motor speed is the same as Cold Air Prevention Control.

While one of the following conditions satisfied, unit comes out of defrosting and shifts to heating mode:

- a. Outdoor coil Temperature (OPT) $\geq 15^{\circ}\text{C}$.
- b. The time of defrosting keeps for more than 10 minutes.

(5) Indoor exchanger overheat protection

When IDU Pipe (*exchanger*) Temperature (IPT) is higher than 55°C , unit comes into indoor exchanger overheat protection. The compressor drops its frequency toward to F1 level until $\text{IPT} \leq 52^{\circ}\text{C}$

If $\text{IPT} \leq 52^{\circ}\text{C}$ and keep for 5 minutes, control system doesn't limit running frequency.

If $\text{IPT} > 62^{\circ}\text{C}$, control system shut down compressor, and recover while IPT drop less than 50°C .

7. "SLEEP" mode

When the SLEEP button is pressed, the AC operates as following:

- The indoor fan speed is set at low speed, the power lamp and the sleep lamp is on, the display of temperature will close after 30 seconds.
- When selecting COOLING/DRY operation with SLEEP mode, the set temperature will be raised by 1°C after 1 hour later and by 2°C 2 hour later.
- When selecting HEATING operation with SLEEP mode, the set temperature will be dropped by 1°C 1 hour later and 2°C 2 hours later.
- After the System operates in SLEEP mode for 8 hours, it will stop automatically.

8. EMERGENCY Operation

When the EMERGENCY switch is pressed one time, COOLING mode is selected and if the switch press again within 3s, HEATING mode selected, while press third times, the unit will switch off.

When the remote controller missing, failed or the batteries run down, press the EMERGENCY Operation switch on front of the indoor unit for function test.

NOTE: Do not press the EMERGENCY Operation switch during normal operation.

9. AUTO-RESTART Function (Option)

While air conditioner is operating in one mode, all of its operation data, such as working mode, preset temperature etc. would be memorized into EEPROM. If power supply cut off due to reasons and recover again, the AUTO-RESTART function will set synchronously and the air conditioner would work at the same mode as before.

Note: Auto-restart Pre-setting (optional):

To activate or cancel the Auto-restart function:

Press the **SLEEP** button 10 times within 8 second while air conditioner on operating state:

- 1). If the Auto-restart function to be turned off before, then it will be activated after press SLEEP as above, and the buzzer BEEPs three times;
- 2). If the function to be activated before, it will be cancelled Auto-Restart at once, and the buzzer BEEPs four times.

10. Protection and Failure Display

- When protection display is available, controller will show error code, digital LED shows error code and setting temperature by turns.
- If there is more than one failure, it will show error codes according to the error list sequence.
- To insure the signal communication of indoor and outdoor unit, any failure code relates to outdoor unit will remain display for 2 minutes maximum after it's recovered.
- Among all the failure codes, sensor failure can be recovery automatically once it comes normal.

Failure code (IDU)

Failure Type	Digital LED Code
Indoor and outdoor communication failure	E0
Indoor room temperature sensor (IRT)	E1
Indoor coil temperature sensor (IPT)	E2
Outdoor coil temperature sensor (OPT)	E3
System abnormality	E4
Model configuration wrong	E5
Indoor fan motor fault	E6
Outdoor temperature sensor	E7
Exhaust temp. sensor	E8
IPM drive and module fault	E9
Current sensor fault	EA
Communication failure of main PCB and display board	Eb
Outdoor communication failure	EC
Outdoor unit EEPROM fault	EE
Outdoor fan motor fault (DC motor)	EF
Temp. switch fault (on top of the compressor)	EP
Voltage sensor fault	EU

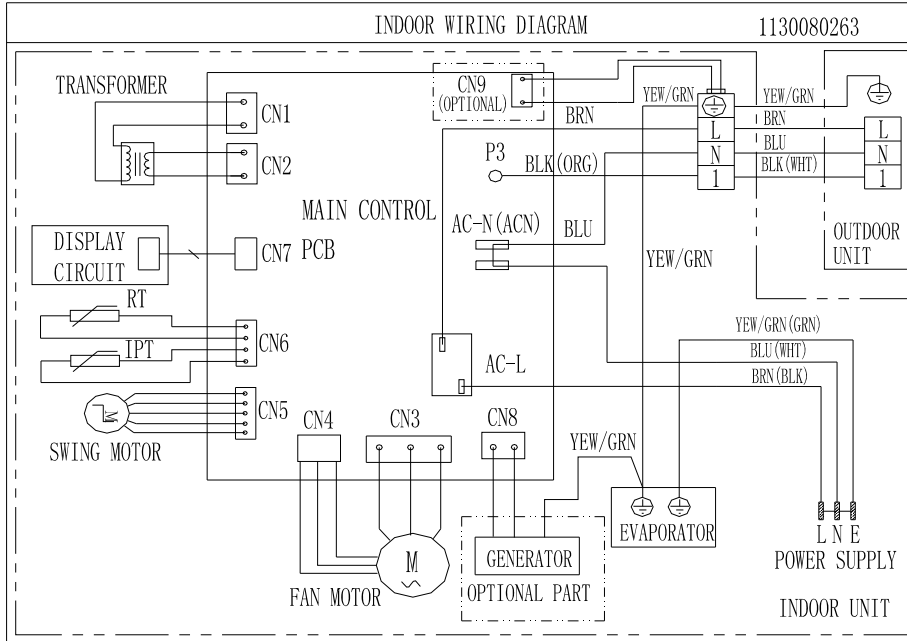
Outdoor failure display

There is a LED on outdoor power board, it blinks 1s **ON** and 1s **OFF** while compressor standby and it light constantly (**ON**) while compressor running; If there is failure happened on ODU, The indicator (LED) alerts the fault in a cycle as such that it light for 0.5 seconds **ON**, 0.5 seconds **OFF**, blinks “n” times and then **OFF** for 3 seconds. For details as table below:

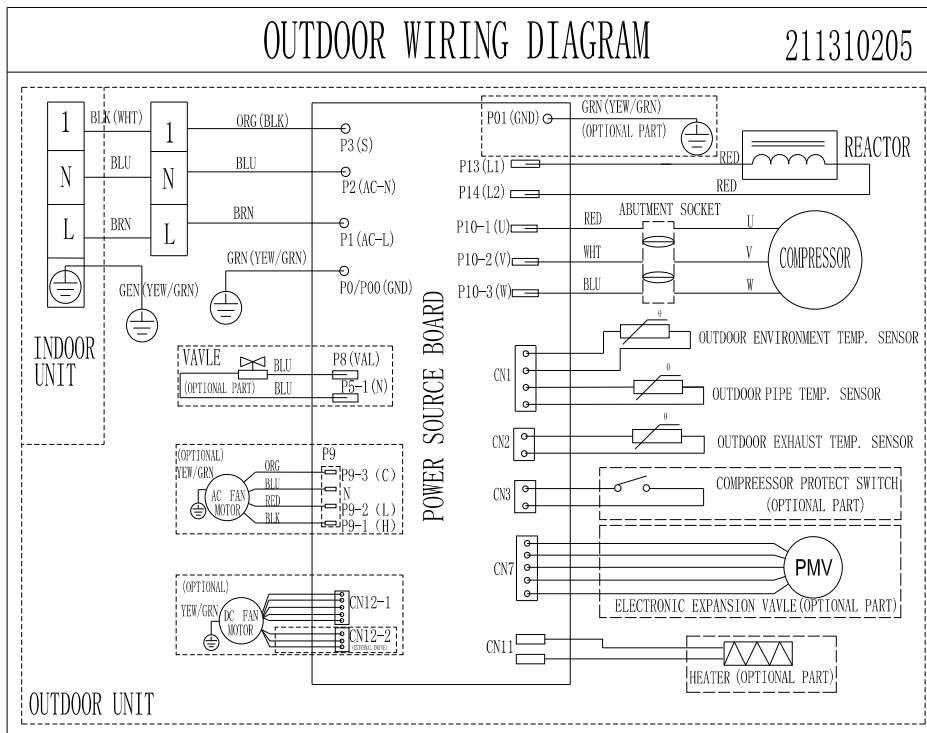
Blink times(n)	Fault Message	Blink times(n)	Fault Message
1	IPM protection	18	Short-circuit / open-circuit fault of intake temperature sensor
2	Overvoltage / under voltage	19	Outdoor EEPROM fault
3	Overcurrent	20	Outdoor fan motor protection
4	Exhaust over temperature protection	21	Indoor fan motor protection
5	Outdoor coil over temperature protection		
6	Drive fault and protection (V1, VP1)	23	System in shortage of Freon
7	Communication fault with indoor unit	24	Model configuration wrong
8	Compressor overheat fault (compressor top switch)	25	Indoor sensor fault
9	Short-circuit / open-circuit fault of outdoor temperature sensor	26	Indoor coil sensor fault
10	Short circuit / open-circuit fault of outdoor heat exchanger temperature sensor	27	Indoor EEPROM fault
11	Short-circuit / open-circuit fault of exhaust temperature sensor	28	Indoor fan motor fault
12	Voltage sensor fault	30	drive fault (V4、VP2)
13	Current sensor fault	31	Outdoor environmental Over temperature / Under temperature protection
14	IPM fault	32	Indoor coil defrost prevention
15	communication fault between power source board and IPM	33	Indoor coil overheating protection
16	No feedback from DC fan motor(outdoor unit)		
17	Defrost state		

5. Wiring diagram

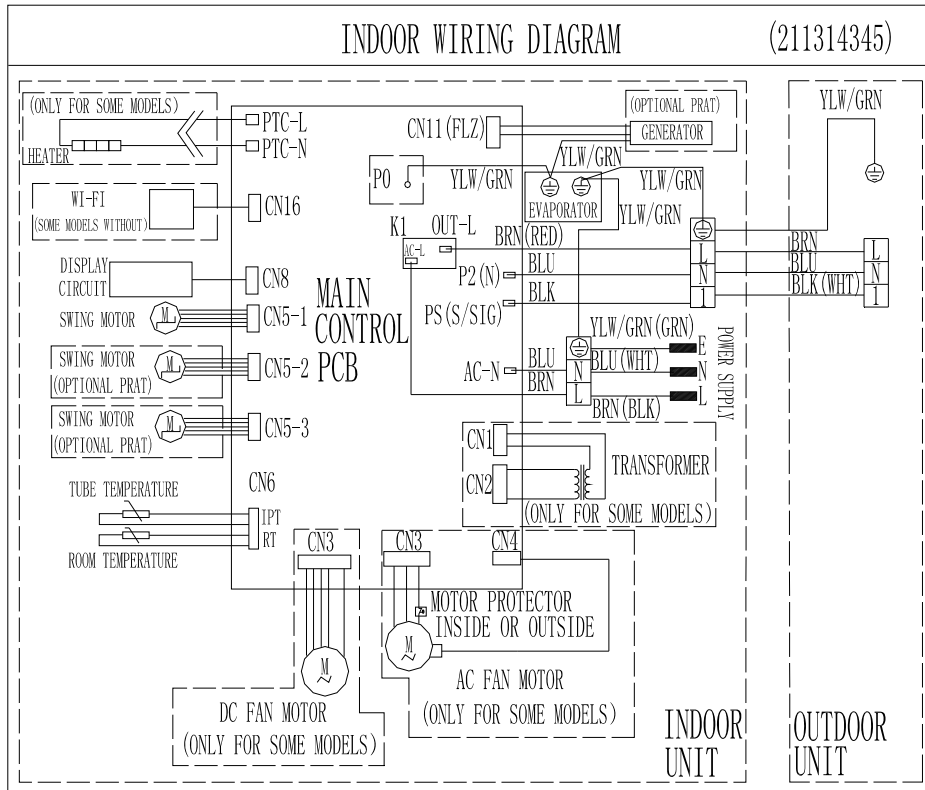
INDOOR UNIT: ME1223-EU ME1823-EU



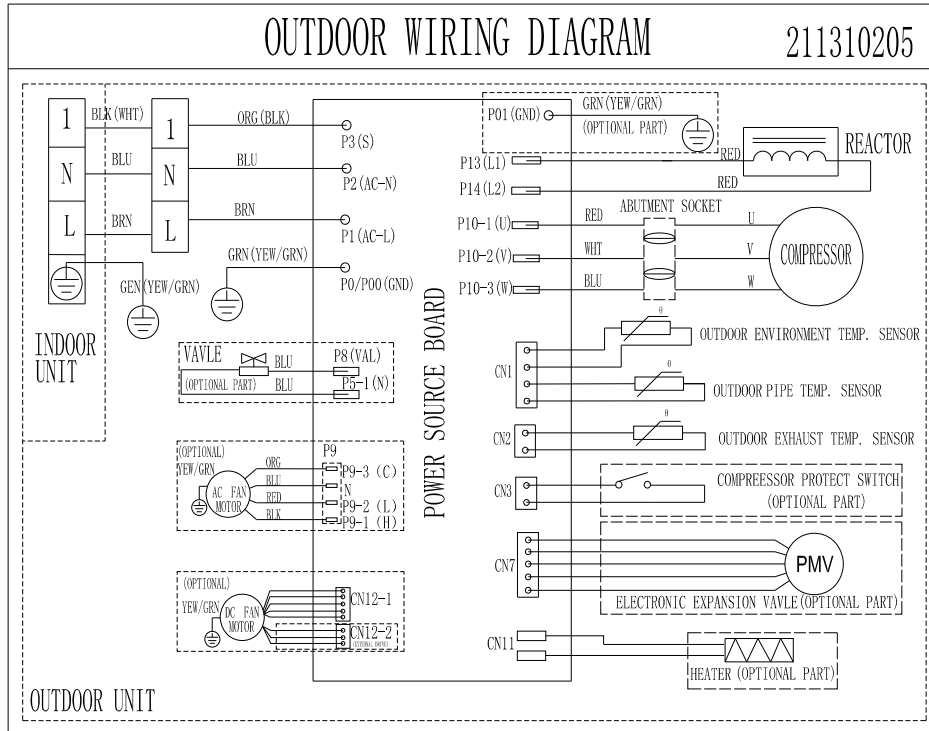
OUTDOOR UNIT: ME1223-CU ME1823-CU



INDOOR UNIT: ME2423-EU

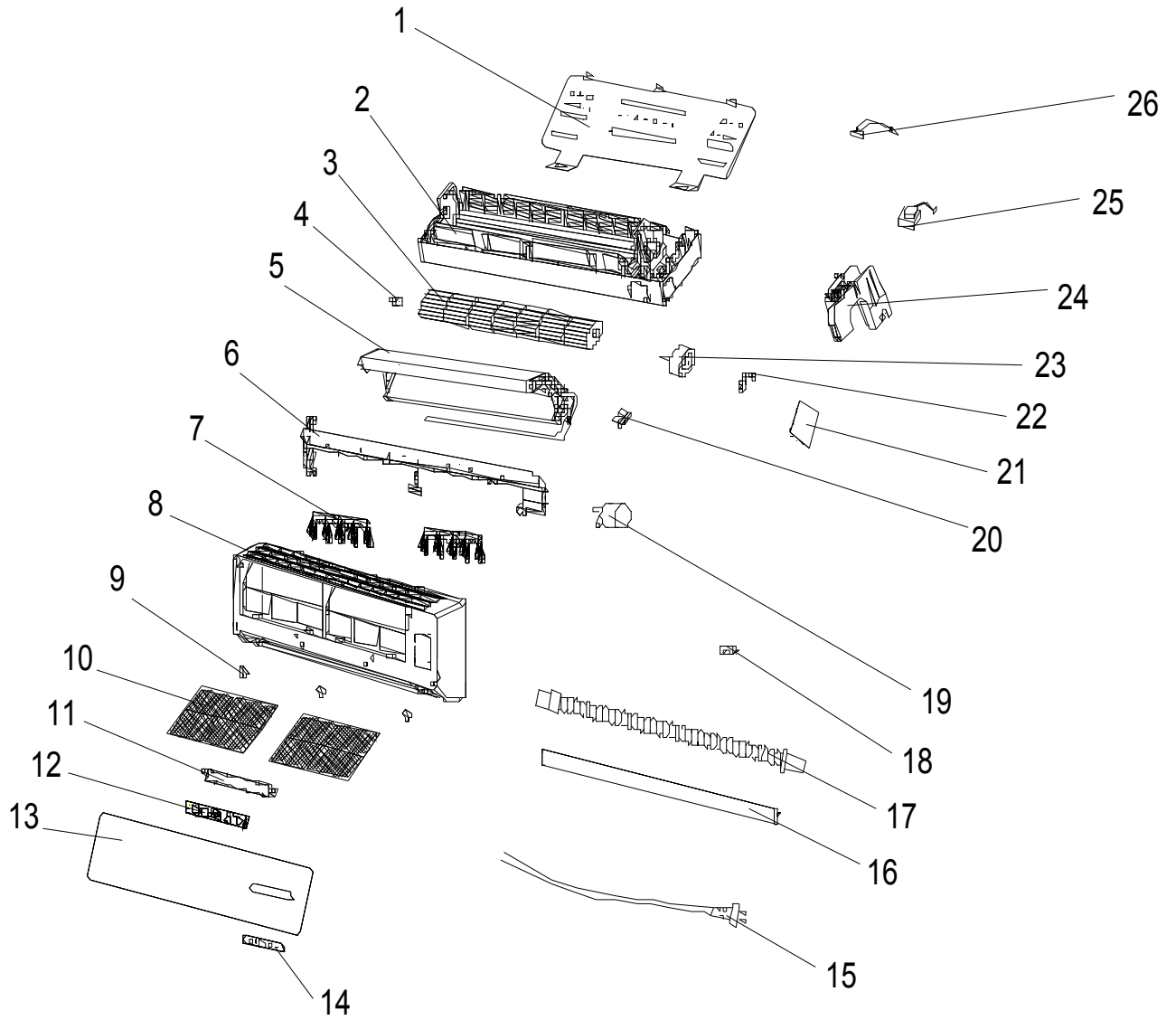


OUTDOOR UNIT: ME2423-CU



6. Explosion view and parts

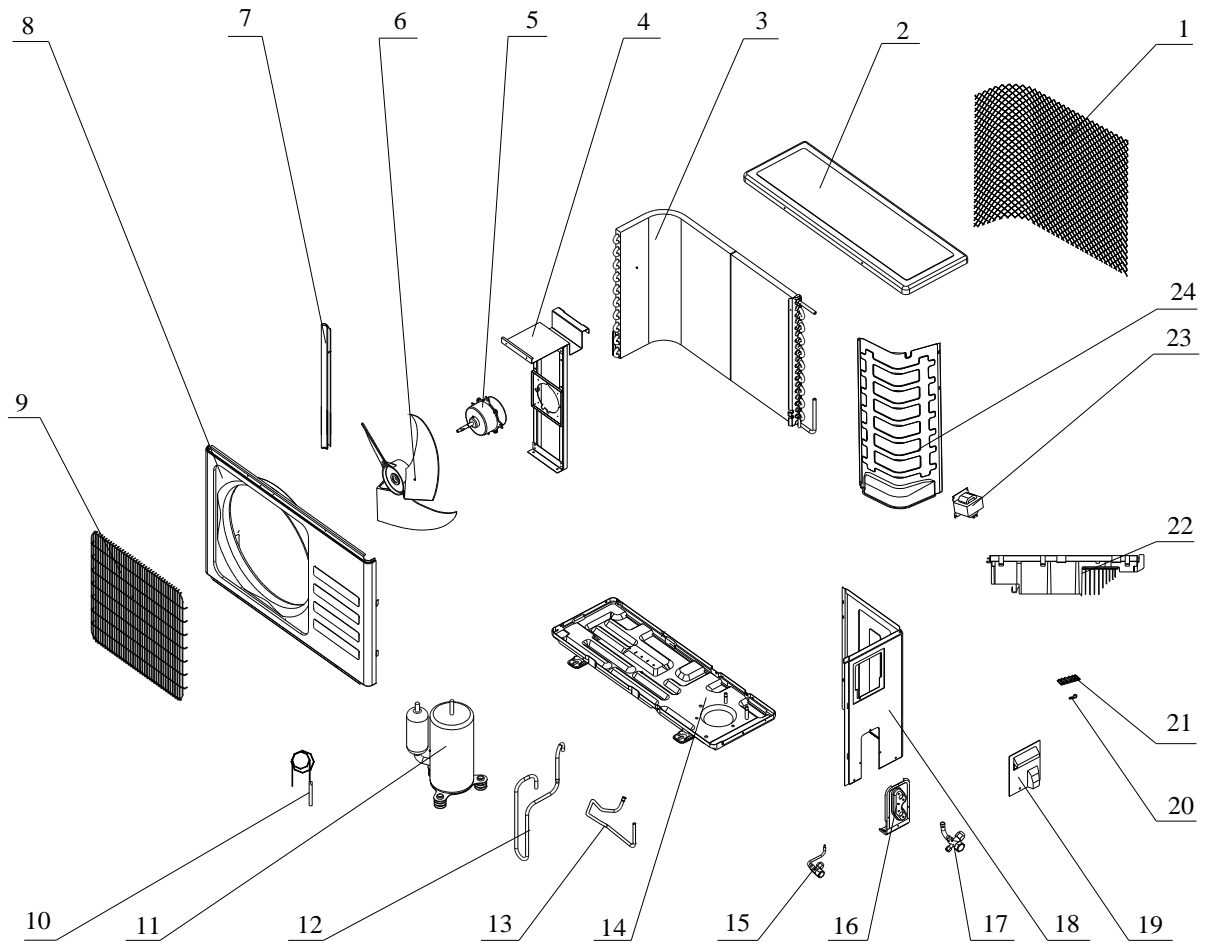
INDOOR UNIT: ME1223-EU ME1823-EU ME2423-EU



INDOOR UNIT: ME1223-EU ME1823-EU ME2423-EU

No.	Part No.	Part Name	Q'ty	Remark
1		Installation Plate	1	
2		Base	1	
3		Cross Fan	1	
4		Bearing Mount	1	
5		Evaporator	1	900-II K7-1.4(QS)
6		Water Drainage Assembly	1	
7		Vertical Vane Assembly A	12	
8		Face Frame	1	
9		Screw Cover	3	
10		Left Air Filter	1	
		Right Air Filter	1	
11		Display PCB Box	1	
12		Display PCB	1	
13		Front Panel	1	
14		Display PCB Cover	1	
15		Power Supply Cord	1	
16		Vane	1	
17		Drainage Hose	1	
18		Cable Clamp	1	
19		Vane Motor	1	
20		Sensor Holder	1	
21		Main PCB	1	
22		Indoor Motor Cover	1	
23		Indoor Motor	1	
24		Electrical Box	1	
25		Transformer	1	
26		Indoor Sensor Assembly	1	
27		Remote Controller	1	Not shown in Explosion view
28		Indoor Carton	1	
29		Left Foaming	1	
30		Right Foaming	1	
31		Middle Pasteboard Supporter	1	

OUTDOOR UNIT: ME1223-CU ME1823-CU ME24923-CU



OUTDOOR UNIT: ME1223-CU ME1823-CU ME24923-CU

No.	Part No.	Part Name	Q'ty	Remark
1		Back Grille	1	Optional
2		Top Cover	1	
3		Condenser	1	760- I B7-1.3(QS)
4		Outdoor Motor Supporter	1	
5		Outdoor Motor	1	
6		Propeller Fan	1	
7		Left grille supporter	1	
8		Front Plate	1	
9		Fan Guard	1	
10		Capillary Assembly	1	
11		Compressor	1	
12		Discharge Pipe	1	
13		Suction Pipe	1	
14		Base	1	
15		Two-way Valve	1	
16		Valve Supporter	1	
17		Three-way Valve	1	
18		Right Plate	1	
19		Electrical Box Cover	1	
20		Cable clamp	1	
21		Terminal	1	
22		Outdoor PCB Assembly	1	
23		Inductor	1	
24		Partition plate	1	
25		Pipe Temp. sensor and outdoor	1	
26		Discharge Temp. sensor	1	
27		Base carton assembly		
28		Cabinet Carton	1	Not shown in Explosion view
29		Cover Forming	1	

7. Precaution

7.1 SAFETY RULES AND RECOMMENDATIONS FOR THE INSTALLATION

- Read this guide before installing and using the appliance.
- During the installation of the indoor and outdoor units the access to the working area should be forbidden to children.
Unforeseeable accidents could happen.
- Make sure that the base of the outdoor unit is firmly fixed.
- Check that air cannot enter the refrigerant system and check for refrigerant leaks when moving the air conditioner.
- Check that air cannot enter the refrigerant system and check for refrigerant leaks when moving the air conditioner.
- The ratings of the fuse installed in the built in-control unit are T 5A / 250V.
- The user must protect the indoor unit with a fuse of suitable capacity for the maximum input current or with another overload protection device.
- Ensure that the mains voltage corresponds to that stamped on the rating plate. Keep the switch or power plug clean. Insert the power plug correctly and firmly into the socket, thereby avoiding the risk of electric shock or fire due to insufficient contact.
- Check that the socket is suitable for the plug, otherwise have the socket changed.
- The appliance must be fitted with means for disconnection from the supply mains having a contact separation in all poles that provide full disconnection under over voltage category III conditions, and these means must be incorporated in the fixed wiring in accordance with the wiring rules.
- The air conditioner must be installed by professional or qualified persons. Do not install the appliance at a distance of less than 50 cm from inflammable substances (alcohol, etc.) Or from pressurized containers (e.g. spray cans).
- If the appliance is used in areas without the possibility of ventilation, precautions must be taken to prevent any leaks of refrigerant gas from remaining in the environment and creating a danger of fire.
- The packaging materials are recyclable and should be disposed of in the separate waste bins. Take the air conditioner at the end of its useful life to a special waste collection center for disposal.
- Only use the air conditioner as instructed in this booklet. These instructions are not intended to cover every possible condition and situation. As with any electrical household appliance, common sense and caution are therefore always recommended for installation, operation and maintenance.
- The appliance must be installed in accordance with applicable national regulations.
- Before accessing the terminals, all the power circuits must be disconnected from the power supply.
- The appliance shall be installed in accordance with national wiring regulations.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or

instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.

7.2 SAFETY RULES AND RECOMMENDATIONS FOR THE USER

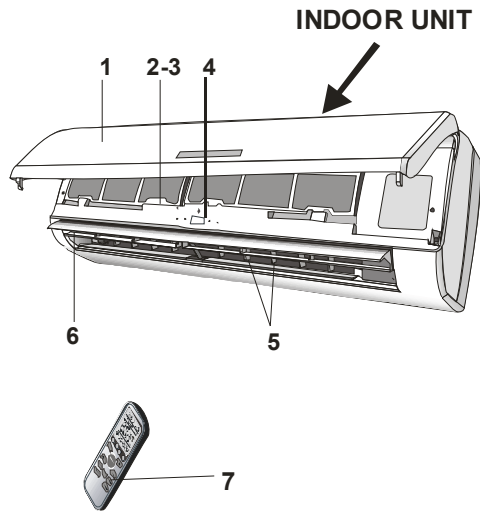
- Do not try to install the conditioner alone; always contact specialized technical personnel. Cleaning and maintenance must be carried out by specialized technical personnel. In any case disconnect the appliance from the mains electricity supply before carrying out any cleaning or maintenance.
- Ensure that the mains voltage corresponds to that stamped on the rating plate. Keep the switch or power plug clean. Insert the power plug correctly and firmly into the socket, thereby avoiding the risk of electric shock or fire due to insufficient contact.
- Do not pull out the plug to switch off the appliance when it is in operation, since this could create a spark and cause a fire, etc.
- This appliance has been made for air conditioning domestic environments and must not be used for any other purpose, such as for drying clothes, cooling food, etc.
- The packaging materials are recyclable and should be disposed of in the separate waste bins. Take the air conditioner at the end of its useful life to a special waste collection center for disposal.
- Always use the appliance with the air filter mounted. The use of the conditioner without air filter could cause an excessive accumulation of dust or waste on the inner parts of the device with possible subsequent failures.
- The user is responsible for having the appliance installed by a qualified technician, who must check that it is earthed in accordance with current legislation and insert a thermomagnetic circuit breaker.
- The batteries in remote controller must be recycled or disposed of properly. Disposal of Scrap Batteries --- Please discard the batteries as sorted municipal waste at the accessible collection point.
- Never remain directly exposed to the flow of cold air for a long time. The direct and prolonged exposition to cold air could be dangerous for your health. Particular care should be taken in the rooms where there are children, old or sick people.
- If the appliance gives off smoke or there is a smell of burning, immediately cut off the power supply and contact the Service Centre.
- The prolonged use of the device in such conditions could cause fire or electrocution.
- Have repairs carried out only by an authoritative Service Centre of the manufacturer. Incorrect repair could expose the user to the risk of electric shock, etc.
- Unhook the automatic switch if you foresee not to use the device for a long time. The airflow direction must be properly adjusted.
- The flaps must be directed downwards in the heating mode and upwards in the cooling mode.
- Only use the air conditioner as instructed in this booklet. These instructions are not intended to cover every possible condition and situation. As with any electrical household appliance, common sense and caution are therefore always recommended for installation, operation and maintenance.

- Ensure that the appliance is disconnected from the power supply when it will remain inoperative for a long period and before carrying out any cleaning or maintenance.
- Selecting the most suitable temperature can prevent damage to the appliance.

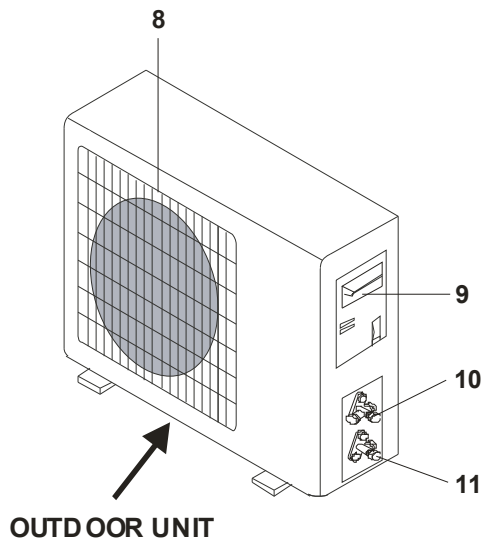
7.3 SAFETY RULES AND PROHIBITIONS

- Do not bend, tug or compress the power cord since this could damage it. Electrical shocks or fire are probably due to a damaged power cord. Specialized technical personnel only must replace a damaged power cord.
- Do not use extensions or gang modules.
- Do not touch the appliance when barefoot or parts of the body are wet or damp.
- Do not obstruct the air inlet or outlet of the indoor or the outdoor unit. The obstruction of these openings causes a reduction in the operative efficiency of the conditioner with possible consequent failures or damages.
- In no way alter the characteristics of the appliance.
- Do not install the appliance in environments where the air could contain gas, oil or sulphur or near sources of heat.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- Do not climb onto or place any heavy or hot objects on top of the appliance.
- Do not leave windows or doors open for long when the air conditioner is operating.
- Do not direct the airflow onto plants or animals.
- A long direct exposition to the flow of cold air of the conditioner could have negative effects on plants and animals.
- Do not put the conditioner in contact with water. The electrical insulation could be damaged and thus causing electrocution.
- Do not climb onto or place any objects on the outdoor unit
- Never insert a stick or similar object into the appliance. It could cause injury.
- Children should be supervised to ensure that they do not play with the appliance. If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

8 .Names of parts



Indoor unit	
No.	Name
1	Front panel
2	Air filter
3	Special filter(option)
4	Display PCB
5	Vertical vane
6	Horizontal vane
7	Remote controller



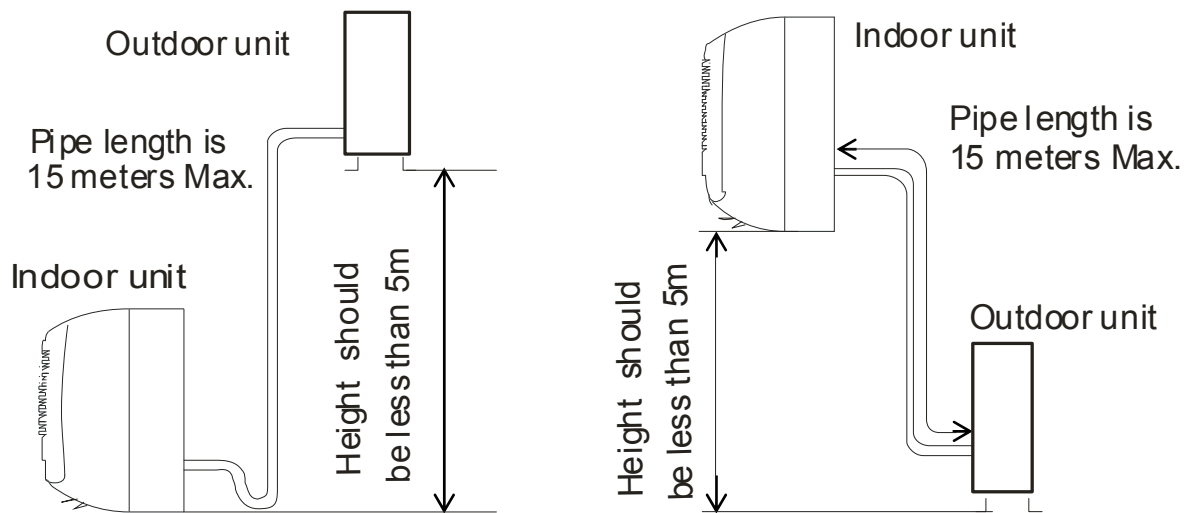
Outdoor unit	
No.	Name
8	Air outlet grille
9	Electronic box cover
10	2-way valve
11	3-way valve

9. Installation manual

9.1 Installation Details

Connecting pipe length

Model	Pipe size(Inch)	
	Liquid	Gas
12K	1/4	1/2
18K	1/4	3/8
24K	1/4	1/2



Mode	Standard length: m	Refrigerant piping Max. length: m	Additional refrigerant Calculation: $\times g=20g/m(A-5m)$
12K	3.5	15	20g/m
18K	5.0	15	30g/m
24K	5.0	15	30g/m

Connecting cables

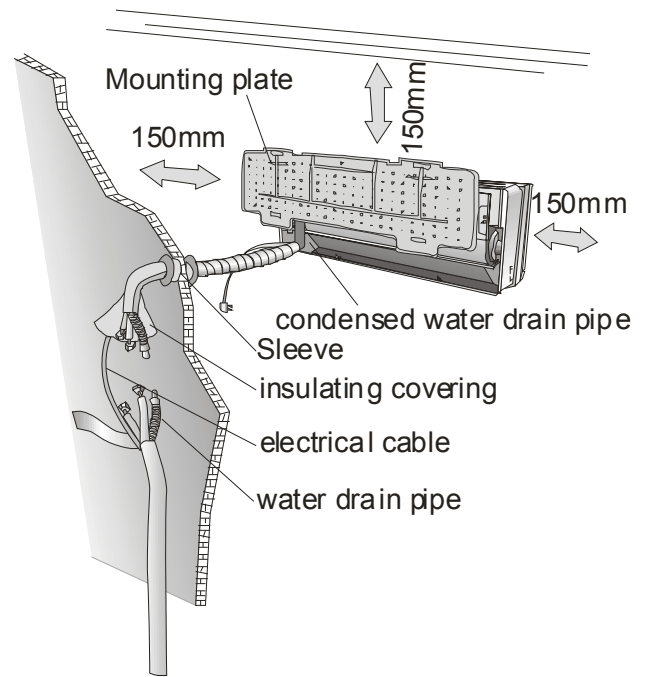
The power cord should be selected according to the following specifications sheet.

Appliance Amps	Wire Size
5	AWG21/0.75 mm ²
10	AWG18/1.0 mm ²
13	AWG15 /1.5 mm ²
18	AWG14/1.6 mm ²
25	AWG12/2.0 mm ²
30	AWG10/2.5 mm ²

9.2 Installation for the first time

Indoor unit

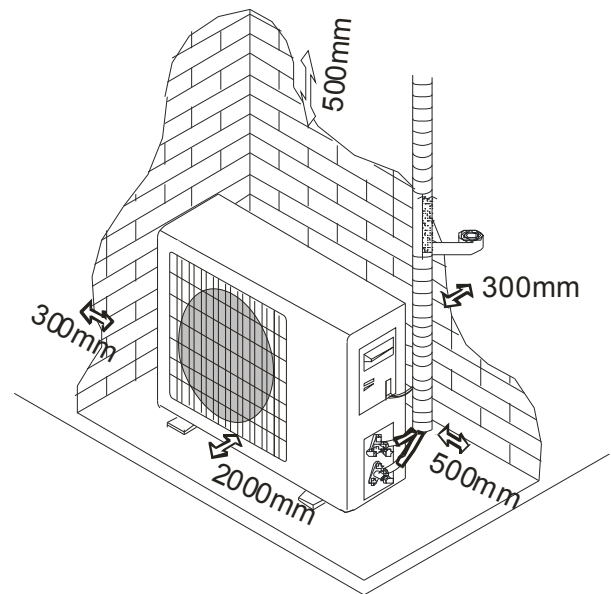
- Install the indoor unit level on a strong wall that is not subject to vibrations
- The inlet and outlet ports should not be obstructed: the air should be able to blow all over the room.
- Do not install the unit near a source of heat, steam, or flammable gas.
- Install the unit near an electric socket or private circuit.
- Do not install the unit where it will be exposed to direct sunlight.
- Install the unit where connection between indoor and outdoor unit is as easy as possible.
- Install the unit where it is easy to drain the condensed water.
- Check the machine operation regularly and leave the necessary spaces as shown in the picture.
- Install the indoor unit where the filter can be easily accessible.



OUTDOOR UNIT

- Do not install the outdoor unit near sources of heat, steam or flammable gas.
- Do not install the unit in too windy or dusty places.
- Do not install the unit where people often pass. Select a place where the air discharge and operating sound level will not disturb the neighbours.
- Avoid installing the unit where it will be exposed to direct sunlight (other wise use a protection, if necessary, that should not interfere with the air flow).
- Leave the spaces as shown in the picture for
- The air to circulate freely.
- Install the outdoor unit in a safe and solid place.
- If the outdoor unit is subject to vibration, place rubber gaskets onto the feet of the unit.
- Install the indoor unit in the room to be air conditioning, avoiding to installation in corridors or communal areas.

Minimum space to be left (mm) showing in the picture.



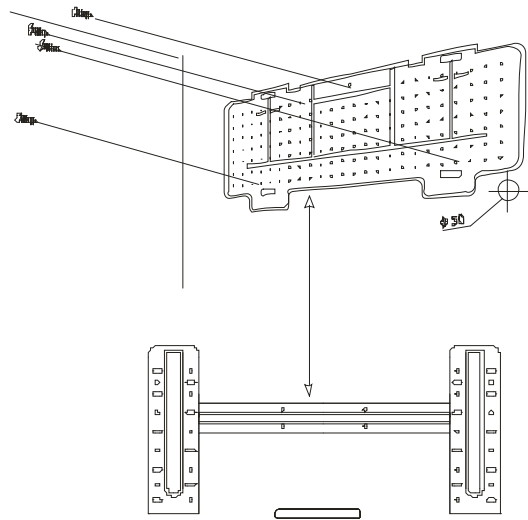
- Install the indoor unit at a height of at least 2.5m from the ground.

To install, proceed as follows:

9.2.1 Installation of the mounting plate.

- 1) By using a level, put the mounting plate in a perfect square position vertically and horizontally.
- 2) Drill 32mm deep holes in the wall to fix the plate.
- 3) Insert the plastic anchors into the hole.
- 4) Fix the mounting plate by using the provided tapping screws.
- 5) Check that the mounting plate is correctly fixed.

Note: The shape of the mounting plate may be different from the one above, but installation method is similar.

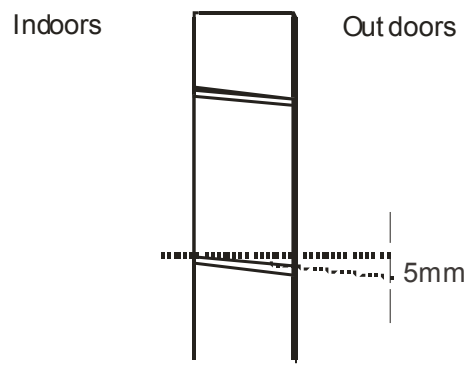


9.2.2 Drilling a hole in the wall for the piping

- 1) Decide where to drill the hole in the wall for the piping (if necessary) according to the position of the mounting plate
- 2) Install a flexible flange through the hole in the wall to keep the latter intact and clean.

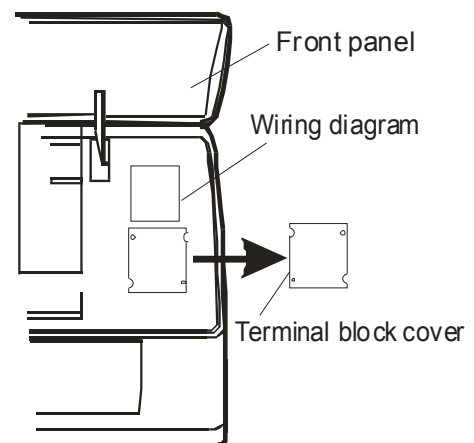
The hole must slope downwards towards the exterior.

Note: Keep the drain pipe down towards the direction of the wall hole, otherwise leakage may occur.



9.2.3 Electrical connections---Indoor unit

- 1).Lift the front panel.
- 2).Take off the cover as indicated in the picture (by removing a screw or by breaking the hooks).
- 3).For the electrical connections, see the circuit diagram on the right part of the unit under the front panel.
- 4).Connect the cable wires to the screw terminals by following the numbering, Use wire size suitable to the electric power input (see name plate on the unit) and according to all current national safety code requirements.
- 5).The cable connecting the outdoor and indoor units must be suitable for outdoor use.
- 6).The plug must be accessible also after the appliance has been installed so that it can be pulled out if necessary.



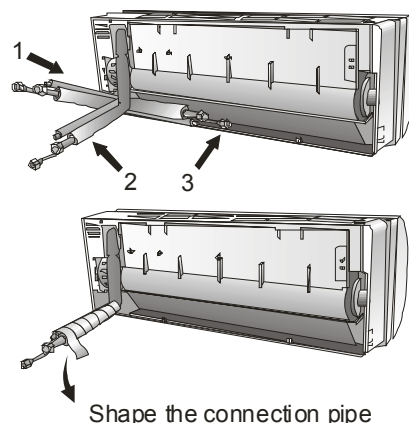
7).An efficient earth connection must be ensured.

8).If the power cable is damaged, it must be replaced by an authorized Service Centre.

9.2.4 Refrigerant piping connection

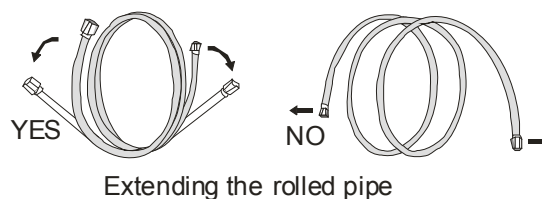
The piping can be run in the 3 directions indicated by numbers in the picture. When the piping is run in direction 1 or 3, cut a notch along the groove on the side of the indoor unit with a cutter.

Run the piping in the direction of the wall hole and bind the copper pipes, the drain pipe and the power cables together with the tape with the drain pipe at the bottom, so that water can flow freely.



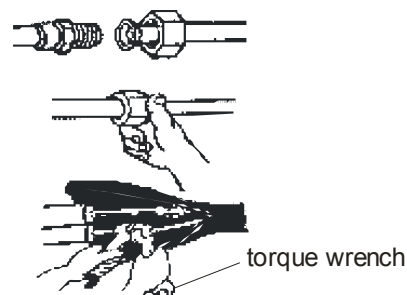
9.2.5 Connecting the pipes.

- Do not remove the cap from the pipe until connecting it, to avoid dampness or dirt from entering.
- If the pipe is bent or pulled too often, it will become stiff. Do not bend the pipe more than three times at one point.
- When extending the rolled pipe, straighten the pipe by unwinding it gently as shown in the picture.



9.2.6 Connections to the indoor unit

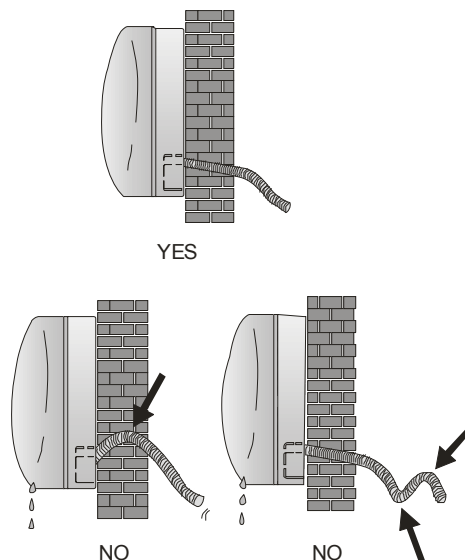
- 1).Remove the indoor unit pipe cap (check that there is no debris inside).
- 2).Insert the flare nut and create a flange at the extreme end of the connection pipe.
- 3).Tighten the connections by using two wrenches working in opposite directions.



9.2.7 Indoor unit condensed water drainage

The indoor unit condensed water drainage is fundamental for the success of the installation.

- 1).Place the drain hose below the piping, taking care not to create siphons.
- 2).The drain hose must slant downwards to aid drainage.
- 3).Do not bend the drain hose or leave it protruding or twisted and do not put the end of it in water. If an extension is connected to the drain hose, ensure that it is lagged when it passes into the indoor unit.



4). If the piping is installed to the right, the pipes, power cable and drain hose must be lagged and secured onto the rear of the unit with a pipe connection.

- Insert the pipe connection into the relative slot.
- Press to join the pipe connection to the base.

9.2.8 Electronic connections

1. Take the cover away.
2. Connect the cable wires to the terminal board using the same numbering as in the indoor unit.
3. For the electrical connections, see the wiring diagram on the back of the cover
4. Fasten the cables with a cable-clamp.
5. An efficient earth connection must be ensured.
6. Replace the covers.

9.2.9 Connecting the pipe

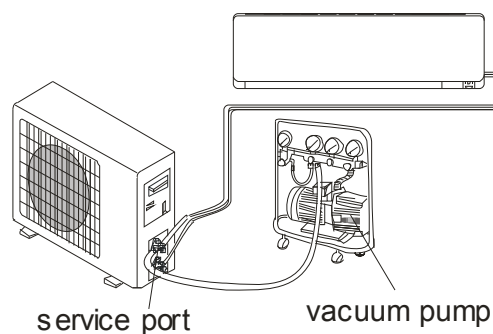
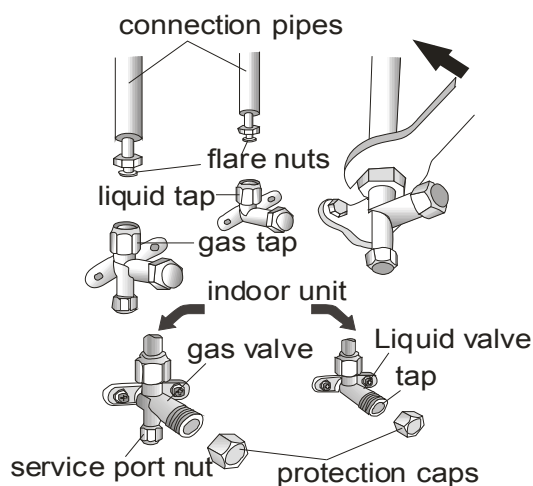
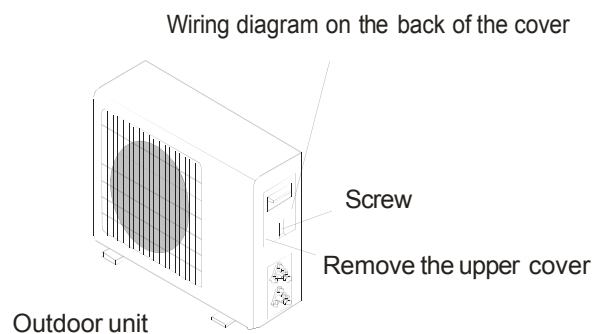
Screw the flare nuts to the outdoor unit coupling with the same tightening procedures described for the indoor unit.

Note: If the tightening torque is not sufficient, there will probably be some leakage. With excessive tightening torque there will also be some leakage, as the flange could be damaged.

9.2.10 Bleeding

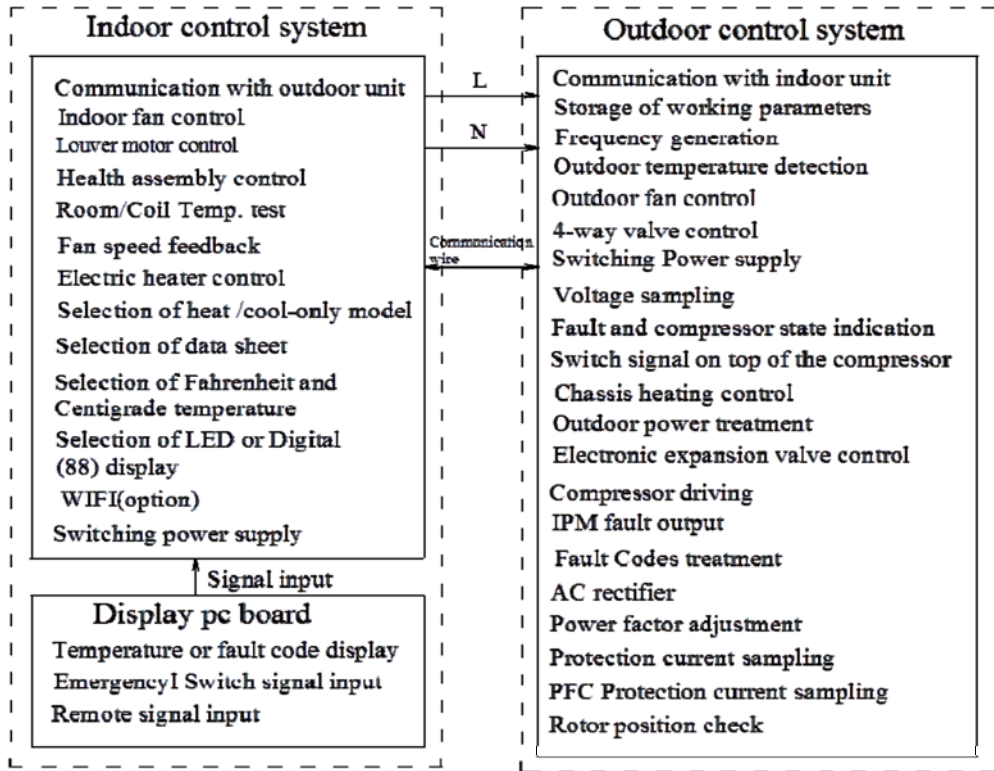
Air and humidity left inside the refrigerant circuit can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circuit by using a vacuum pump.

The air and humidity left inside the refrigerant circulation can cause compressor malfunction. After having connected the indoor and outdoor units, bleed the air and humidity from the refrigerant circulation using a vacuum pump.



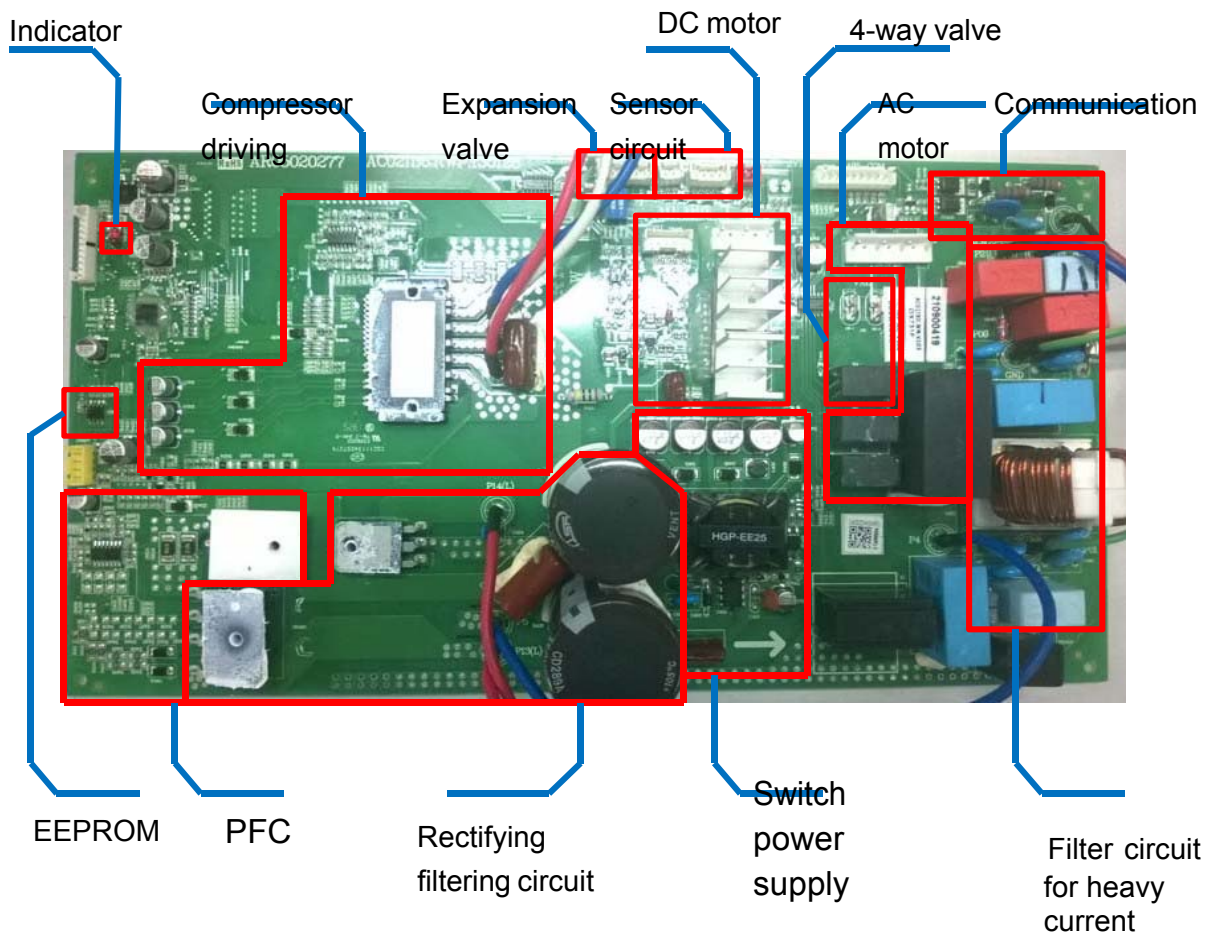
10. Trouble shooting

10.1 Outdoor control diagram

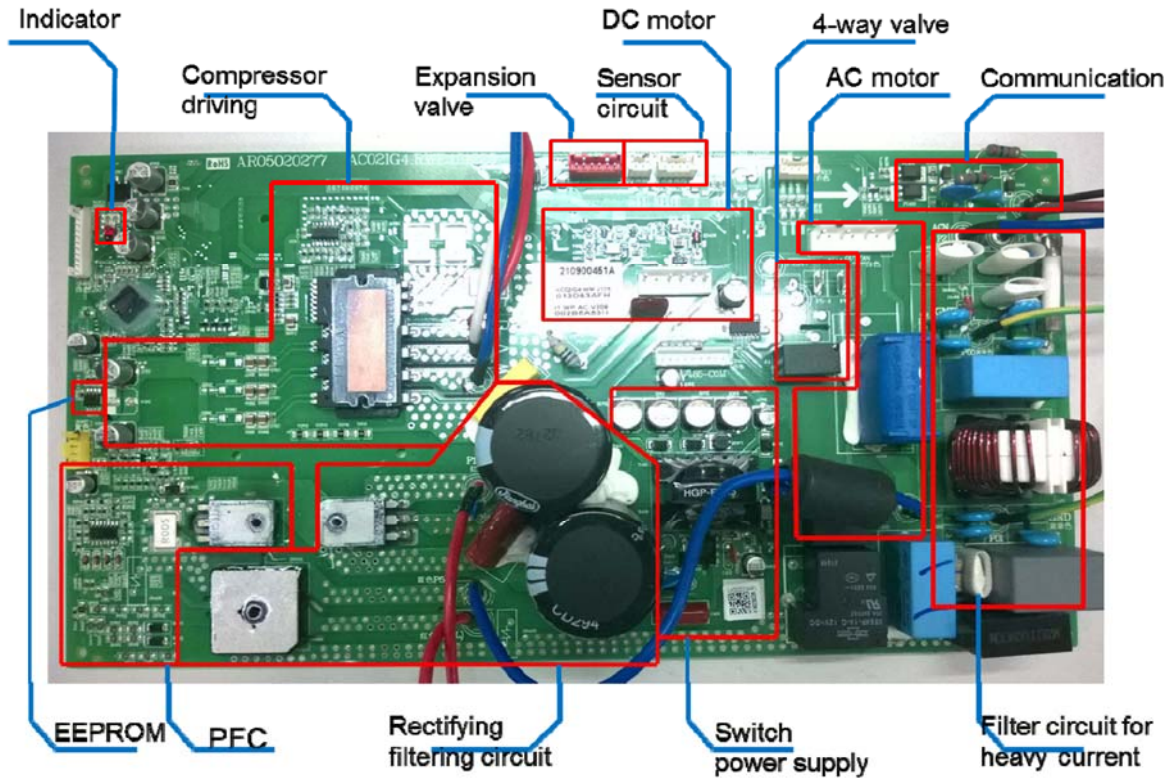


10.2 The structure of ODU PCB

12K

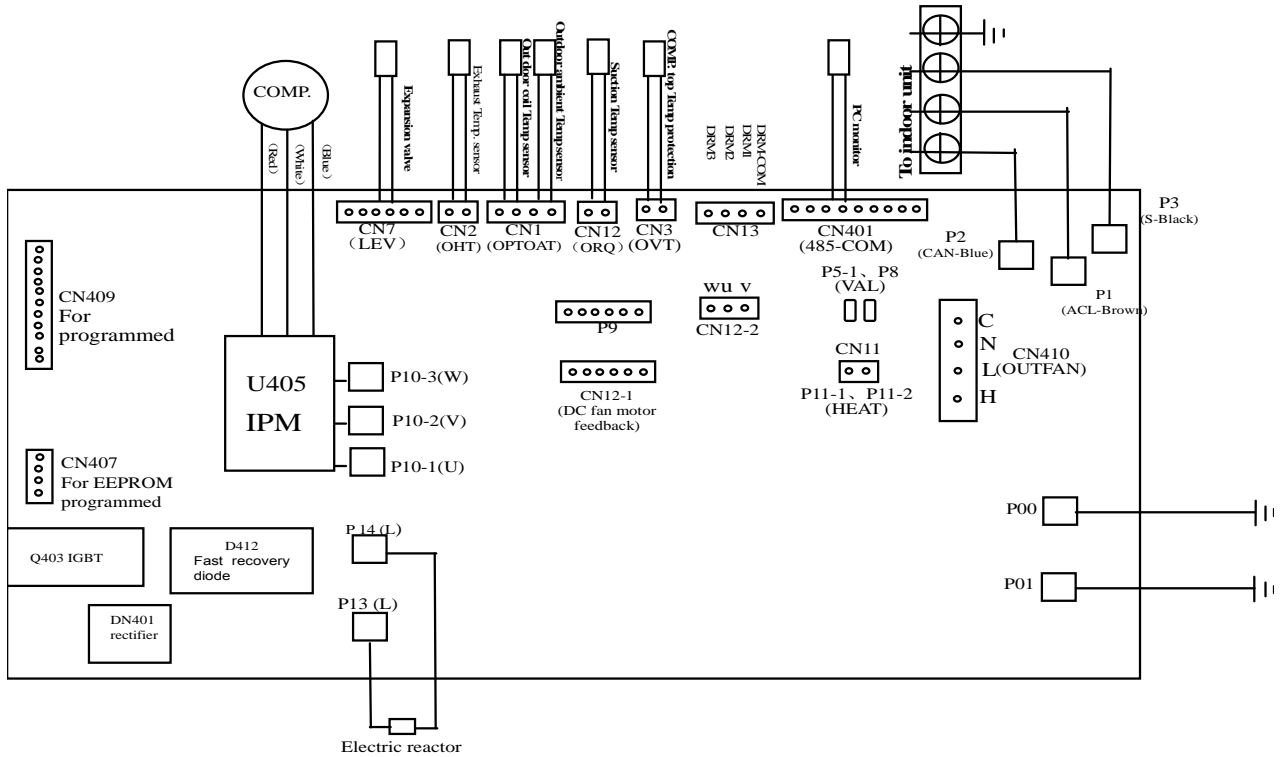


18K 24K

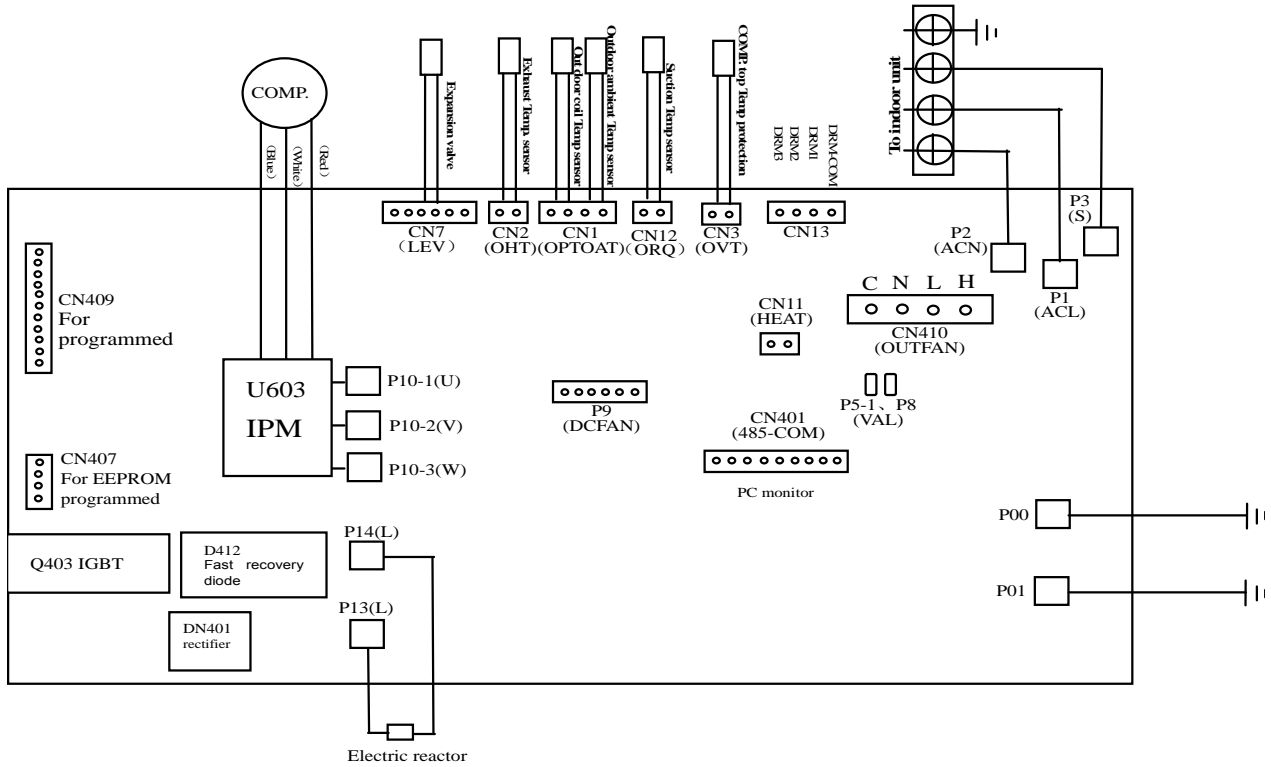


11.3 Connection of ODU PCB

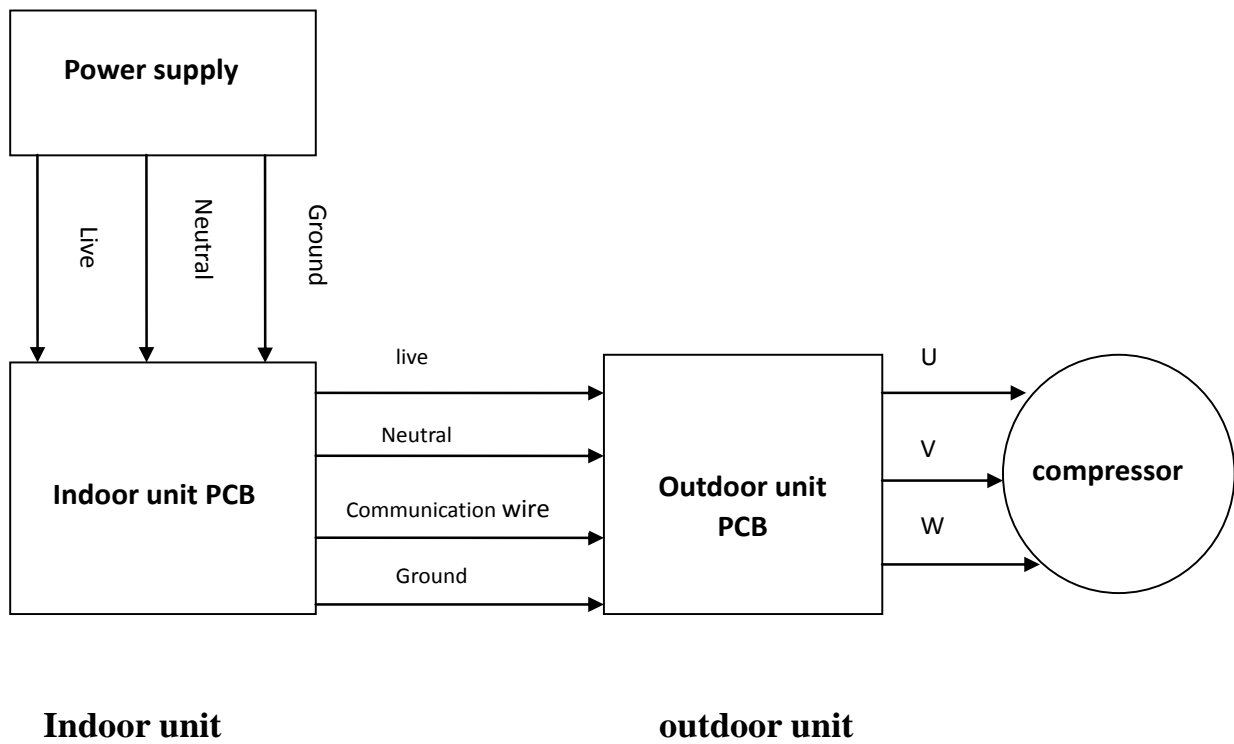
12K



18K 24K



10.4 Current flow



Indoor unit

outdoor unit

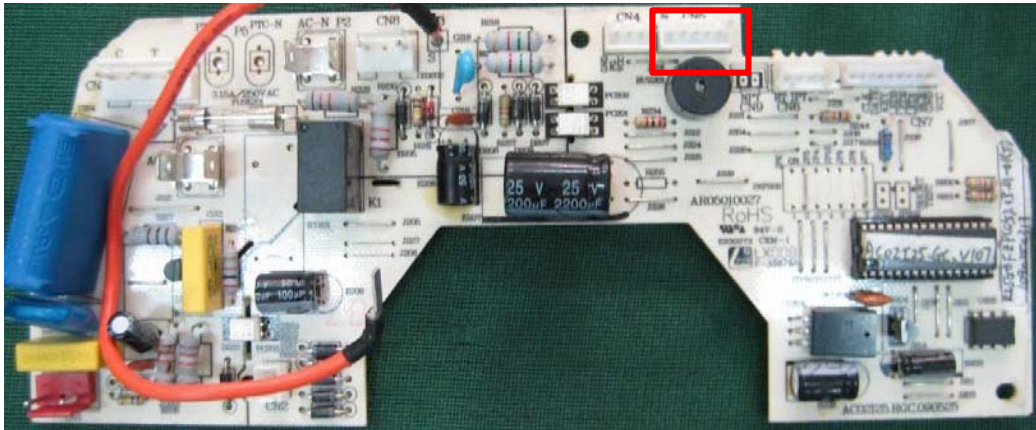
10.5 Examples of repairing

10.5.1 Display E1 or E2

Cause: Room temperature sensor (IRT) and Indoor pipe (coil) temperature sensor (IPT) or indoor main PCB fault.

Solution:

- 1) Check the connector of sensor and slot (CN6), if loose please connect again.
- 2) Measure the resistance on the two ends of indoor temperature sensor, if short or broken please replace it.
- 3) If the above testing is normal, please replace the indoor main PCB.

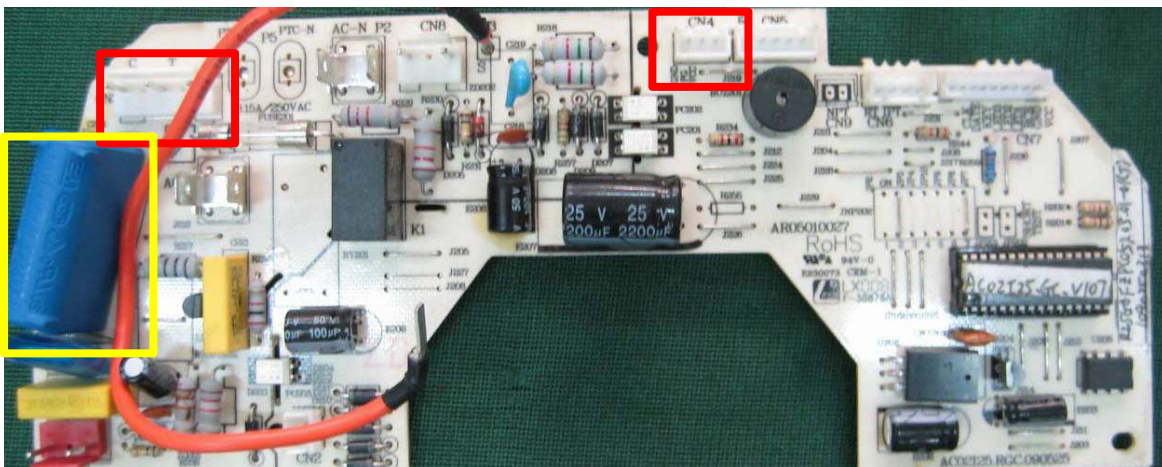


10.5.2 Display E6

Cause: indoor fan motor or indoor main PCB fail.

Solution:

- 1) Check the indoor fan blade lock or not, if lock please readjust it.
- 2) Check the indoor fan motor wire connected to the PCB (CN3, CN4), if loose please connect again.
- 3) Check the startup capacitance value, if capacitance incorrect, replace with a new capacitor.
- 4) Measure the resistance on the two ends of indoor fan motor, if short or broken please replace the indoor fan motor.
- 5) If above inspections are normal, please replace the indoor main PCB.



10.5.3 Display E3, E7 or E8

Cause: outdoor pipe temp sensor, outdoor temp sensor & exhaust temp sensor fault.

Solution:

- 1) Check the connector of sensor and slot (CN6), if loose please connect again.

- 2) Measure the resistance on the two ends of indoor temperature sensor, if short or broken please replace it.
- 3) If the above testing is normal, please replace the outdoor PCB.

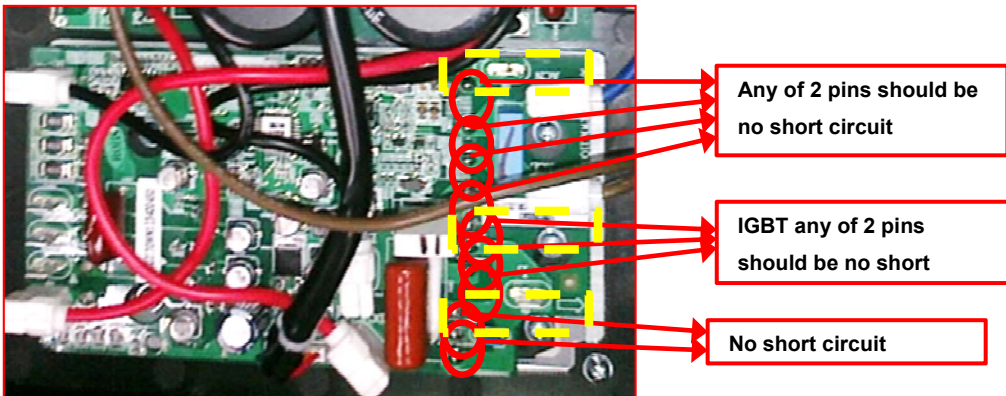


10.5.4 Display E0,E5

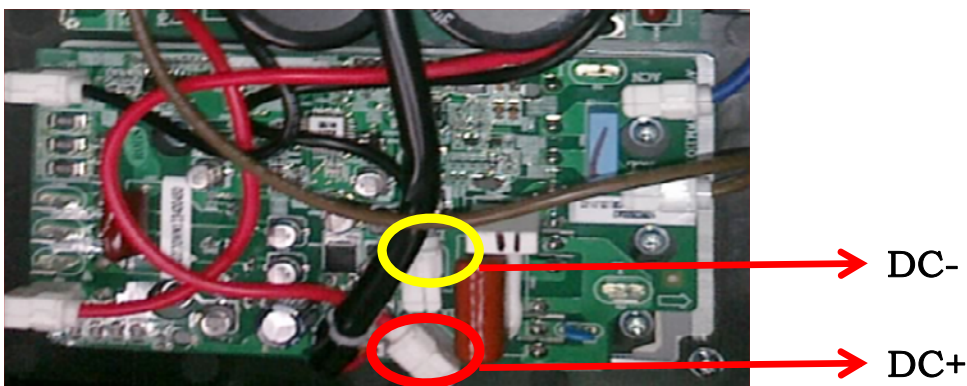
Cause: Indoor / outdoor communication fault.

Solution:

- 1) Check if the indoor and outdoor connections are correct. The terminal L1 and L2 which connect to indoor unit shall correspond to each other on indoor and outdoor units. Measure the voltage on outdoor terminal L1 and L2 (before display of E0 fault). If the voltage is "0", please replace indoor main PCB.
- 2) If the L1 & L2 which connect to indoor unit voltage is normal, measure the voltage between the outdoor terminal L2 and 1. If the voltage change occurs between 0~24V (change pulse voltage), please replace indoor main PCB.
- 3) If the L1 & L2 which connect to indoor unit voltage is normal, measure the voltage between the outdoor terminal L2 and 1. If the voltage change occurs between 0~12V(change pulse voltage), but there is no 24V, please replace the outdoor PCB.
- 4) If the L1 & L2 voltage is normal, measure the voltage between the outdoor terminal L2 and 1. If the voltage has no change, firstly replace the indoor main PCB. If the fault remains unsolved, replace the outdoor PCB.
- 5) Is there any burnt on outdoor PCB? If no, test the rectifier, FRD, IGBT etc. any component broken, replace outdoor PCB.



- 6) Test the DC voltage between DC+ and DC-. If the voltage is approx 300V or 0V, please replace outdoor PCB.



10.5.5 Display EA

Cause: Current sensor fault

Solution:

- 1) Check for refrigerant leakage, to find the leakage point and recharge the refrigerant.
- 2) Current sampling circuit broken on the outdoor PCB and replace outdoor PCB.

10.5.6 Display E9 (first display P0 or P9)

Cause: Outdoor PCB drive circuit broken.

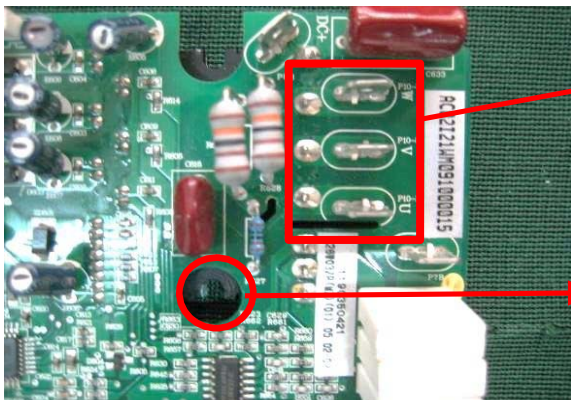
Solution:

Re-energize and check the protection code on display. Firstly display P0.

- 1) If this code is displayed when the compressor is started for several seconds or even not started, check the compressor connection for correctness, if no insert wrong, replace outdoor PCB.
- 2) Check if the outdoor module is tightly installed onto the radiating fins and if the silicone is applied evenly, fix the screws again if loose.
- 3) Check the system pressure, recharge refrigerant if the pressure is low, and discharge some refrigerant if the pressure is too high.
- 4) Check the outdoor ventilation and if there is any obstruction that affects the normal radiating of the air conditioner, and installation again.
- 5) If the above inspections are normal, but the fault remains unsolved, please replace the outdoor PCB.

Re-energize and check the protection code on display. Firstly display P9.

- a) Check the U,V, W connection, if is correctness or loose please connect again.
- b) If this code is displayed when the compressor is started for several seconds or even not started, check the compressor connection for correctness, if no insert wrong, replace outdoor PCB.
- c) When the compressor is restarted immediately after stop, this might also cause P9 protection because the cooling system is not stable, try starting the air conditioner again after a longer period of stop.



The wiring U,V,W are closed as red, white and blue respectively.

Heat radiation problem easily happened while the screw is not fixed tightly.

10.5.7 Display EU.

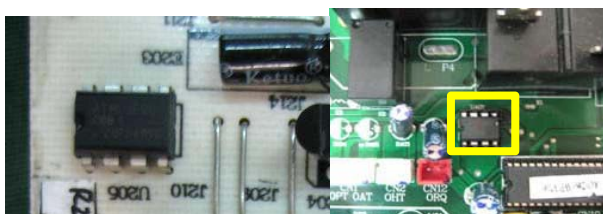
Cause: Voltage sensor fault.

Solution: Please replace outdoor PCB.

10.5.8 Display EE

Cause: EEPROM fault

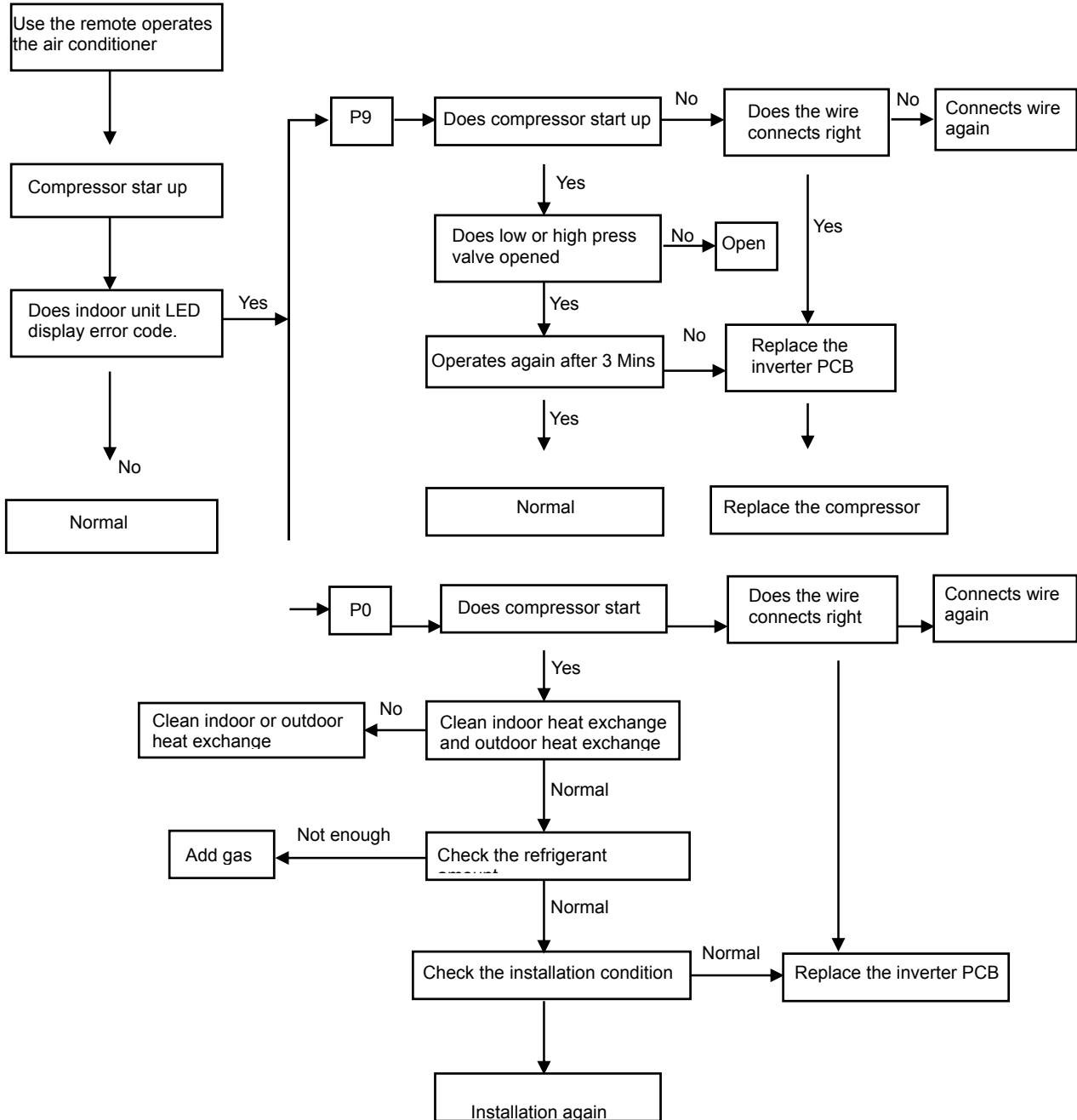
Solution: Shut down power supply and reenergize it, if the fault remains there, check the EEPROM installation, if no problem, please replace indoor PCB or



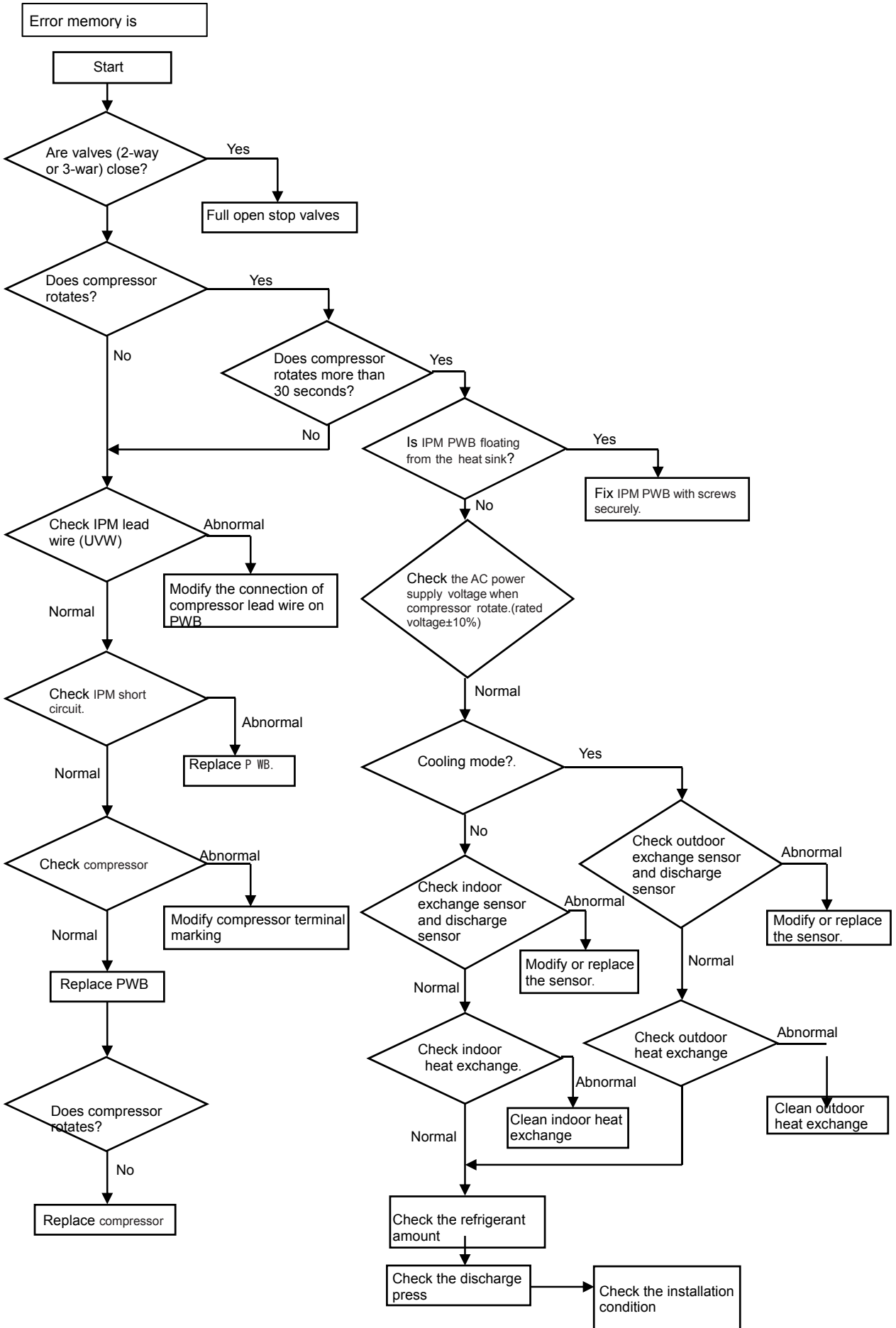
10.6 MALFUNCTION (PARTS) CHECK METHOD

10.6.1 Procedure for determining defective outdoor unit IPM/compressor

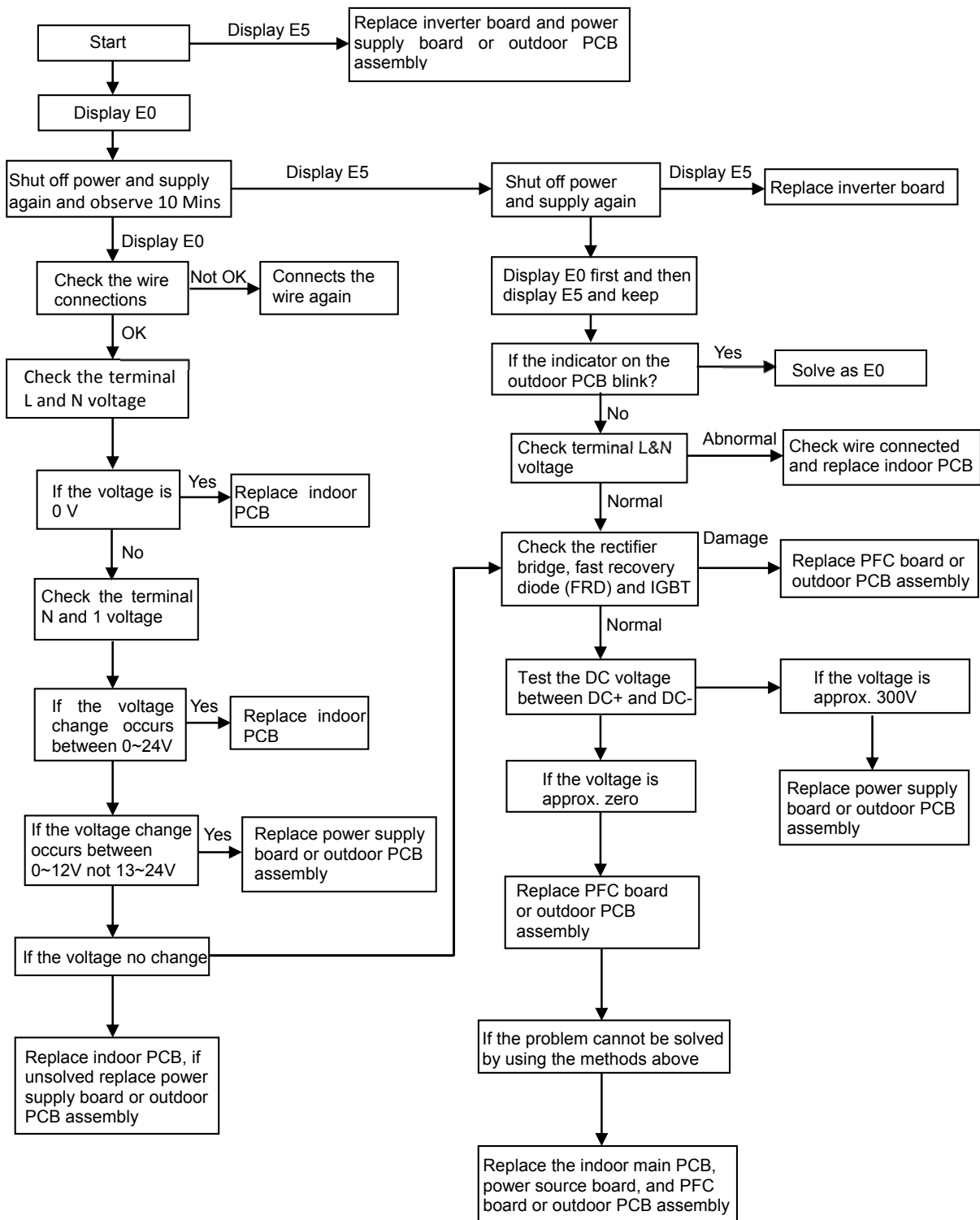
The following flow chart shows a procedure for locating the cause of a malfunction when the compressor does not start up and a DC overcurrent indication error occurs.



10.6.2 DC Over Current Error



10.6.3 E0,E5 Error

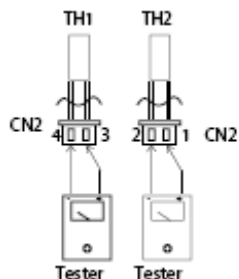


10.7 THERMISTOR TEMPERATURE CHARACTERISTICS

1. Indoor unit and outdoor exchange temperature and outside air temperature sensor temperature characteristics

TEMP. (°C)	Resistance (k Ohm)	Voltage of resistance	TEMP. (°C)	Resistance (k Ohm)	Voltage of resistance	TEMP. (°C)	Resistance (k Ohm)	Voltage of resistance
-30	63.513	4.628	15	7.447	2.968	60	1.464	1.115
-29	60.135	4.609	16	7.148	2.918	61	1.418	1.088
-28	56.956	4.589	17	6.863	2.868	62	1.374	1.061
-27	53.963	4.568	18	6.591	2.819	63	1.331	1.035
-26	51.144	4.547	19	6.332	2.769	64	1.290	1.009
-25	48.488	4.524	20	6.084	2.720	65	1.250	0.984
-24	45.985	4.501	21	5.847	2.671	66	1.212	0.960
-23	43.627	4.477	22	5.621	2.621	67	1.175	0.936
-22	41.403	4.452	23	5.404	2.572	68	1.139	0.913
-21	39.305	4.426	24	5.198	2.524	69	1.105	0.890
-20	37.326	4.399	25	5.000	2.475	70	1.072	0.868
-19	35.458	4.371	26	4.811	2.427	71	1.040	0.847
-18	33.695	4.343	27	4.630	2.379	72	1.009	0.825
-17	32.030	4.313	28	4.457	2.332	73	0.979	0.805
-16	30.458	4.283	29	4.292	2.285	74	0.950	0.785
-15	28.972	4.252	30	4.133	2.238	75	0.922	0.765
-14	27.567	4.219	31	3.981	2.192	76	0.895	0.746
-13	26.239	4.186	32	3.836	2.146	77	0.869	0.728
-12	24.984	4.152	33	3.697	2.101	78	0.843	0.710
-11	23.795	4.117	34	3.563	2.057	79	0.819	0.692
-10	22.671	4.082	35	3.435	2.012	80	0.795	0.675
-9	21.606	4.045	36	3.313	1.969	81	0.773	0.658
-8	20.598	4.008	37	3.195	1.926	82	0.751	0.641
-7	19.644	3.969	38	3.082	1.883	83	0.729	0.625
-6	18.732	3.930	39	2.974	1.842	84	0.709	0.610
-5	17.881	3.890	40	2.870	1.800	85	0.689	0.595
-4	17.068	3.850	41	2.770	1.760	86	0.669	0.580
-3	16.297	3.808	42	2.674	1.720	87	0.651	0.566
-2	15.565	3.766	43	2.583	1.681	88	0.633	0.552
-1	14.871	3.723	44	2.494	1.642	89	0.615	0.538
0	14.212	3.680	45	2.410	1.604	90	0.598	0.525
1	13.586	3.635	46	2.328	1.567	91	0.582	0.512
2	12.991	3.590	47	2.250	1.530	92	0.566	0.499
3	12.426	3.545	48	2.174	1.495	93	0.550	0.487
4	11.889	3.499	49	2.102	1.459	94	0.535	0.475
5	11.378	3.452	50	2.032	1.425	95	0.521	0.463
6	10.893	3.406	51	1.965	1.391	96	0.507	0.452
7	10.431	3.358	52	1.901	1.357	97	0.493	0.441
8	9.991	3.310	53	1.839	1.325	98	0.480	0.430
9	9.573	3.262	54	1.779	1.293	99	0.467	0.419
10	9.174	3.214	55	1.721	1.262	100	0.455	0.409
11	8.795	3.165	56	1.666	1.231			
12	8.433	3.116	57	1.613	1.201			
13	8.089	3.067	58	1.561	1.172			
14	7.760	3.017	59	1.512	1.143			

Resistance at 25°C: 5 kΩ.



TH1: indoor room temperature sensor and outside air temperature sensor

TH2: indoor exchange temperature sensor and outside exchange temperature sensor

Before measuring resistance, disconnect connectors as shown above.

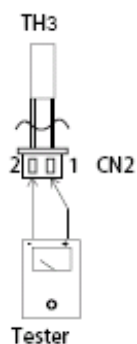
2. Outdoor unit sensor temperature characteristics

TEMP. (°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)	TEMP. (°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)	TEMP. (°C)	R min (k Ohm)	R(t) (k Ohm)	R max (k Ohm)
-30	283.3	322.9	367.7	24	19.36	20.89	22.52	78	2.563	2.654	2.745
-29	267.4	304.4	346.3	25	18.55	20	21.54	79	2.481	2.567	2.654
-28	252.5	287.1	307.4	26	17.77	19.14	20.6	80	2.402	2.484	2.567
-27	238.5	270.9	307.4	27	17.03	18.32	19.7	81	2.327	2.404	2.483
-26	225.4	255.7	289.8	28	16.32	17.55	18.85	82	2.254	2.327	2.401
-25	213.1	241.4	273.3	29	15.65	16.81	18.04	83	2.183	2.253	2.323
-24	201.5	228	257.9	30	15	16.1	17.27	84	2.115	2.182	2.248
-23	190.6	215.5	243.4	31	14.39	15.43	16.54	85	2.05	2.113	2.176
-22	180.3	203.6	229.8	32	13.81	14.79	15.34	86	1.985	2.047	2.109
-21	170.7	192.5	217	33	13.25	14.18	15.17	87	1.922	1.983	2.045
-20	161.6	182.1	205	34	12.72	13.6	14.54	88	1.861	1.922	1.983
-19	153.1	172.3	193.7	35	12.21	13.05	13.93	89	1.802	1.862	1.923
-18	145	163.1	183.2	36	11.72	12.52	13.36	90	1.746	1.805	1.865
-17	137.5	154.4	173.2	37	11.26	12.01	12.81	91	1.692	1.75	1.809
-16	130.3	146.2	163.9	38	10.82	11.53	12.29	92	1.639	1.697	1.755
-15	123.6	138.5	155.1	39	10.29	11.07	11.78	93	1.589	1.646	1.703
-14	117.3	131.3	146.8	40	9.986	10.63	11.31	94	1.54	1.596	1.653
-13	111.3	124.4	139	41	9.6	10.21	10.85	95	1.493	1.549	1.604
-12	105.6	118	131.7	42	9.231	9.813	10.42	96	1.448	1.502	1.558
-11	100.3	111.9	124.7	43	8.878	9.43	10	97	1.404	1.458	1.512
-10	95.24	106.2	118.2	44	8.54	9.064	9.612	98	1.362	1.415	1.469
-9	90.49	100.8	112.1	45	8.217	8.714	9.233	99	1.321	1.373	1.426
-8	85.99	95.68	106.3	46	7.908	8.38	8.872	100	1.284	1.335	1.387
-7	81.75	90.86	100.8	47	7.612	8.06	8.526	101	1.245	1.296	1.348
-6	77.74	86.31	95.74	48	7.328	7.754	8.196	102	1.209	1.258	1.309
-5	73.94	82.01	90.88	49	7.057	7.461	7.88	103	1.173	1.222	1.272
-4	70.35	77.95	86.29	50	6.797	7.18	7.578	104	1.139	1.187	1.236
-3	66.96	74.11	81.96	51	6.548	6.912	7.289	105	1.105	1.153	1.202

-2	63.74	70.48	77.87	52	6.309	6.655	7.013	106	1.073	1.12	1.168
-1	60.69	67.05	74	53	6.08	6.409	6.748	107	1.042	1.089	1.136
0	57.81	63.8	70.34	54	5.861	6.173	6.495	108	1.013	1.058	1.104
1	55.08	60.72	66.88	55	5.651	5.947	6.253	109	0.9833	1.028	1.074
2	52.49	57.81	63.61	56	5.449	5.73	6.02	110	0.9553	0.9997	1.045
3	50.03	55.05	60.52	57	5.255	5.522	5.798	111	0.9283	0.9719	1.016
4	47.71	52.44	57.59	58	5.07	5.323	5.585	112	0.9021	0.9451	0.9892
5	45.5	49.97	54.82	59	4.891	5.132	5.381	113	0.8765	0.9191	0.9626
6	43.41	47.62	52.2	60	4.72	4.949	5.101	114	0.8524	0.894	0.9367
7	41.42	45.4	49.71	61	4.556	4.774	4.997	115	0.8087	0.8595	0.9117
8	39.53	43.2	42.33	62	4.398	4.605	4.817	116	0.8059	0.8461	0.8875
9	37.74	41.29	45.12	63	4.247	4.448	4.644	117	0.7837	0.8233	0.8641
10	36.04	39.39	43.01	64	4.101	4.288	4.479	118	0.7623	0.8012	0.8413
11	34.42	37.59	41	65	3.961	4.139	4.32	119	0.7415	0.7798	0.8193
12	32.89	35.87	39.1	66	3.827	3.995	4.167	120			
13	31.43	34.25	37.29	67	3.698	3.858	4.021	121	0.702	0.7386	0.7773
14	30.04	32.71	35.58	68				122	0.6631	0.7195	0.7572
15	29.72	31.24	33.95	69				123	0.6649	0.7007	0.7378
16				70	3.339	3.476	3.616	124	0.6472	0.6824	0.7189
17				71	3.229	3.359	3.491	125	0.6301	0.6647	0.7006
18	25.13	27.26	29.55	72	3.122	3.246	3.372	126	0.6135	0.6476	0.6829
19	24.05	26.07	28.23	73	3.02	3.138	3.257	127	0.5974	0.6309	0.6657
20	23.02	24.93	26.97	74	2.921	3.033	3.146	128	0.5818	0.6148	0.649
21	22.04	23.84	25.77	75	2.827	2.933	3.04	129	0.5667	0.5991	0.6328
22	21.1	22.81	24.63	76	2.735	2.836	2.938	130	0.5521	0.5839	0.6171
23	20.21	21.83	23.55	77	2.647	2.743	2.84				

R—Resistance

Resistance at 25°C : 20 kΩ





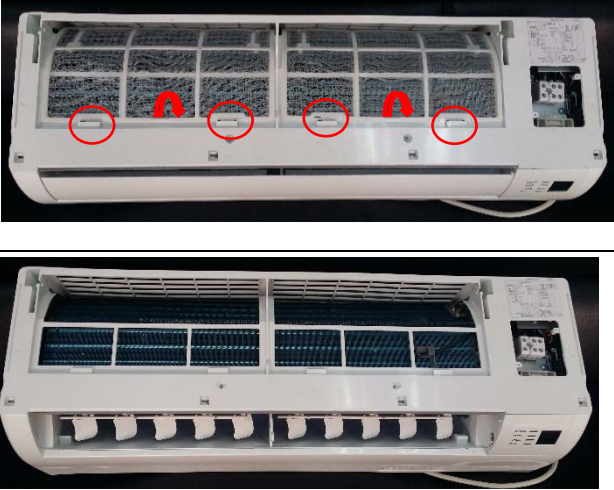
TH3: Outdoor unit discharge pipe sensor

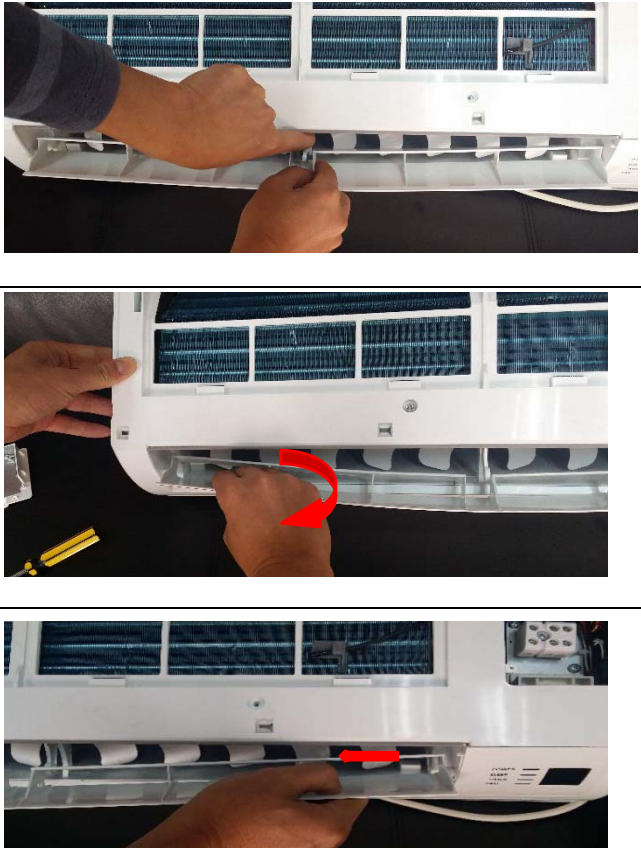
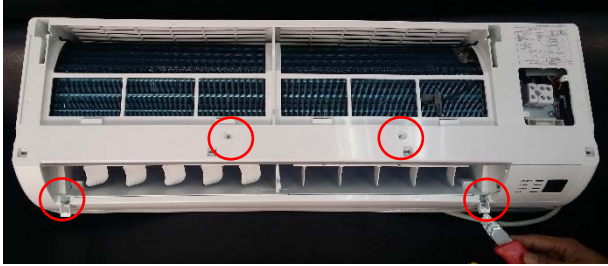
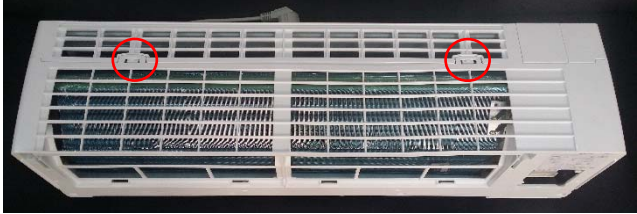

Before measuring resistance, disconnect connectors as shown above.







11 . DISASSEMBLY PROCEDURE

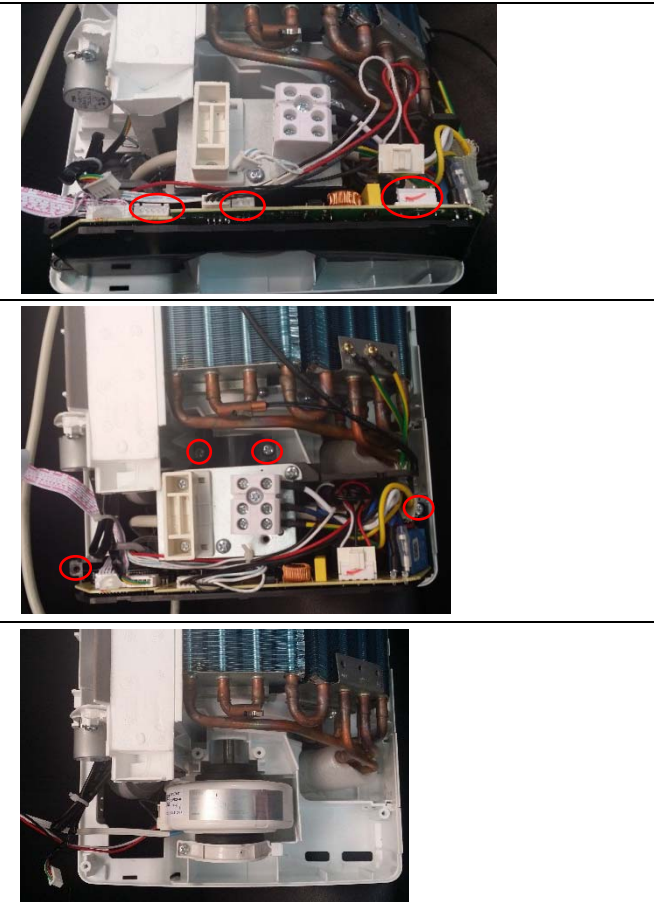
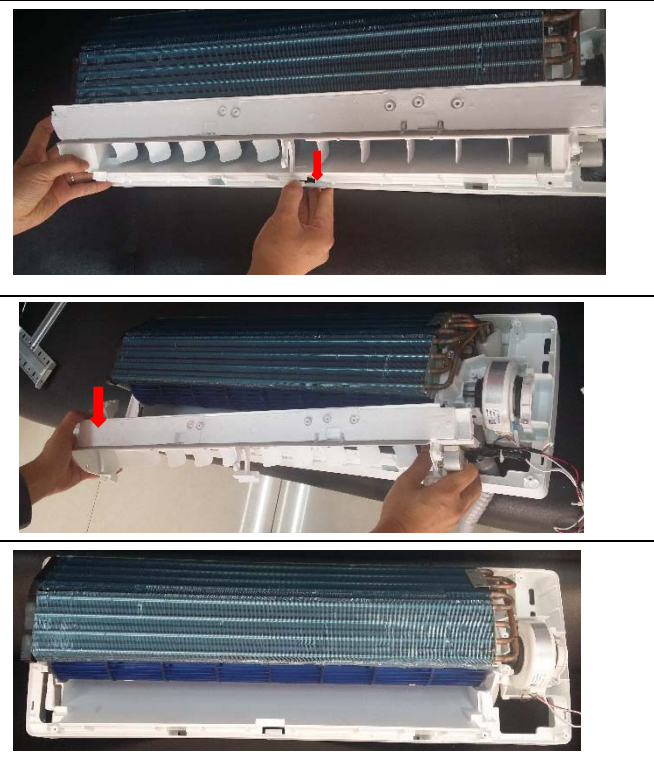
If, in carrying out repairs and modifications, the work requires the use of arc- and flame-producing apparatus, such as welding, brazing and soldering equipment, this work shall only be started after the rooms have been thoroughly ventilated. While the work is being carried out, the mechanical ventilation, if any, shall be kept in constant operation and all windows and doors kept open. In the case of repairs to parts of the refrigerant circuit, it maybe necessary that not only the workman but also a second person shall be present for observation and assistance. Necessary protective equipment shall be available and, in the case of open flames or arcs, fire extinguishing apparatus shall be ready to hand. Welding and brazing shall be carried out by qualified workmen.

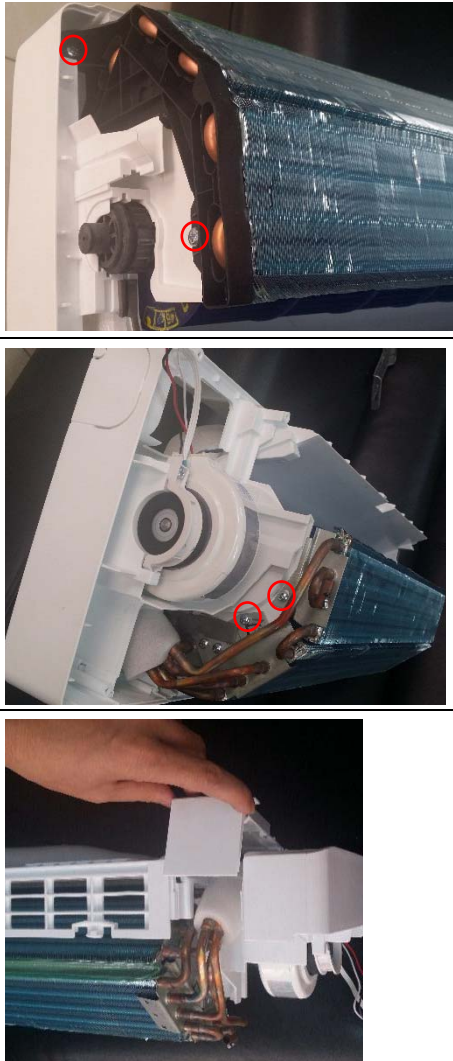

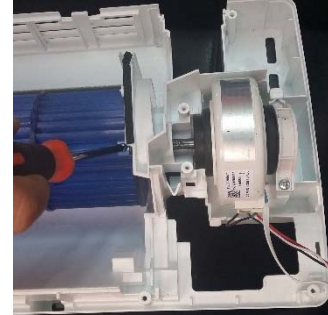
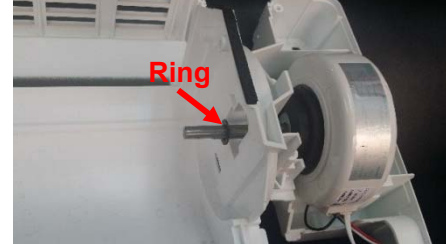
[1] INDOOR UNIT

No.	Content	Picture
1	Open the front panel and remove it.	
2	Remove 1 screws fixing on the terminal cover.	
3	Remove the terminal cover.	
4	Slide out the 2 air filters.	




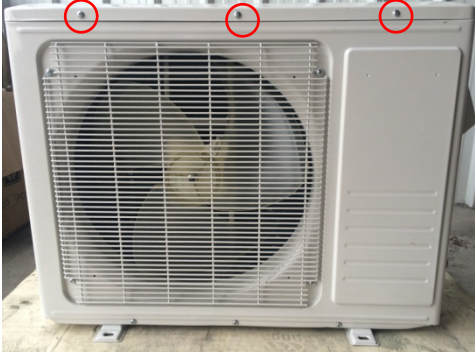
<p>5</p>	<p>Take out the vane from the water drainage assembly.</p>	
<p>6</p>	<p>Take out the screw cover and remove screws fixing on the frame.</p>	
<p>7</p>	<p>Unfasten the front panel and pull forward it slightly. (2 circled positions hooked.)</p>	
<p>8</p>	<p>Take off the display PCB cover.</p>	




9	Take out the face frame.	 
10	Remove 2 screws and take out the electronic box cover.	   

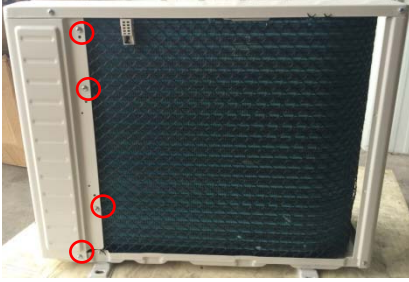


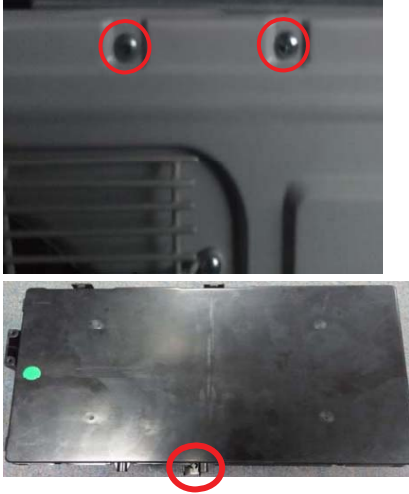

<p>11</p>	<p>Remove the 3 screws and the 4 connectors and remove the control box.</p>	
<p>12</p>	<p>Take out the water drainage assemble.</p>	

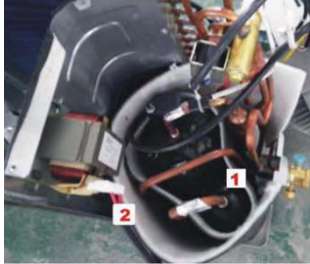
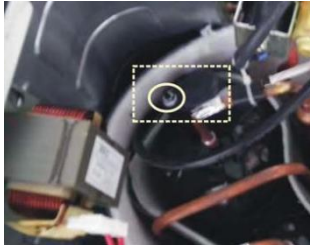


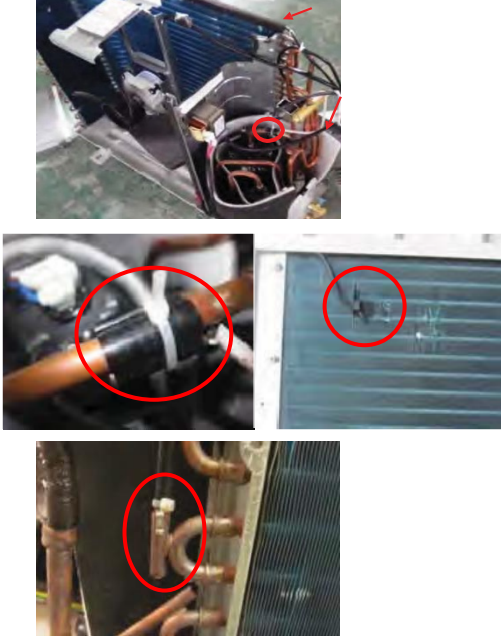
<p>13</p>	<p>Remove 4 screws and the In And Out Pipe Fixer.</p>	 <p>The first photograph shows the top of the air conditioner unit with two screws circled in red. The second photograph shows the unit from a different angle with two more screws circled in red. The third photograph shows a hand removing a white plastic component (the In And Out Pipe Fixer) from the unit.</p>
<p>14</p>	<p>Take out the evaporator</p>	 <p>The photograph shows the evaporator coil, which is a blue cylindrical component, being lifted out of the white plastic housing of the air conditioner.</p>
<p>15</p>	<p>Loosen the screw of cross flow fan and separate the cross flow fan and the fan motor</p>	 <p>The photograph shows a close-up of the fan assembly. A screwdriver is being used to turn a screw that secures the fan to the motor housing.</p>
<p>16</p>	<p>Remark: When assembling, insert the cross flow fan to the ring position.</p>	 <p>The photograph shows the fan being pushed into a specific slot in the motor housing. A red arrow points to this slot, which is labeled 'Ring' in red text.</p>





[2]OUTDOOR UNIT:

No.	Content	Picture
1	Remove the fixed screw and control box cover.	
2	Take out the 2 screws on the right side of top plate.	
3	Take out screws on the left side of top plate.	
4	The screws of the front of a front panel removed.	

<p>5</p> <p>The screws on the right, front and left side of front plate removed.</p>		
<p>6</p> <p>The screws on the left and back side of grille supporter removed.</p>		
<p>7</p> <p>The screws on the right side of right plate removed.</p>		

8	<p>Unscrew the 4 screws on the back side of right plate and removed the right plate.</p>	
9	<p>Remove the screws fixed on the control box.</p>	
10	<p>Remove the reactor in the control box.</p>	
11	<p>Remove the screws fixed the control box.</p>	
12	<p>Remove the screws fixed the bulkhead plate.</p>	

<p>13</p>	<p>Remove the compressor covers 1 and 2.</p>	
<p>14</p>	<p>Remove the nut, and remove the terminal cover.</p>	
<p>15</p>	<p>Remove the lead wire and the cover gasket.</p>	
<p>16</p>	<p>Remove the compressor cover</p>	
<p>17</p>	<p>Remove the 3 thermistors.</p>	

<p>18</p>	<p>Remove the outdoor fan</p>	
<p>19</p>	<p>Take off lead wires from terminal assembly. (Blue wire, Brown wire, Black wire)</p>	
<p>20</p>	<p>Take off screw (earth). Take off earth lead wire (green/yellow) from electronic box.</p>	
<p>21</p>	<p>Take off box cover.</p>	
<p>22</p>	<p>Take off the 4 screws.</p>	