



**WB, CB, RB, UB, FB SERIES INDOOR UNITS FOR
MULTI SPLIT SYSTEM AIR CONDITIONER AND
HEAT PUMP. SERVICE MANUAL. *Multi Zone***

**AND MATCHED OUTDOOR UNITS, BOTH
PRE 2014 (PRE 50130070 SERIALS) AND 2014 AND
NEWER (50130070 and NEWER SERIALS)**

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Model Numbers:

WB009GMFI16MLD	WB012GMFI16MLD	WB012GMFI16MLD
	CB012GMFI16MLD	CB018GMFI16MLD
	RB012GLFI16MLD	RB018GMFI16MLD
	UB012GMFI16MLD	UB018GMFI16MLD
	FB012GMFI16MLD	



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WARNING

- Installation MUST conform with local building codes or, in the absence of local codes, with the National Electric NFPA70/ANSI C1-1993 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
- Installation or repairs made by unqualified persons can result in hazards to you and others.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.



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1. 1. Precaution

1.1 Safety Precaution

■ To prevent injury to the user or other people and property damage, the following instructions must be observed carefully.

■ Incorrect operation due to ignoring instructions will cause harm or damage.

■ Before servicing the unit, be sure to read this service manual entirely.

1.2 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 properly rated breaker.

Improper wiring or installation may cause 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 install, remove or reinstall the unit by yourself (End User).

There is risk of fire, electric shock, explosion,

or injury.

■ 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.

■ Do not install the product on weak or defective structures or stands.

■ 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.

■ 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.

■ Take care to ensure that power cable could not be pulled out or damaged during operation.

There is risk of fire or electric shock.

■ Do not place anything on the power cable.

There is risk of fire or electric shock.

■ Do not plug or unplug the power supply during operation.

There is risk of fire or electric shock.

■ Do not touch the product with wet hands during operation.

■ Do not place a heater or other appliance near the power cable.

There is risk of fire and electric shock.

■ Do not allow water to run into electrical parts.

It may cause fire, failure of the product, or electric shock.

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

There is risk of fire or failure of product.

■ Do not use the product in a tightly closed space for a long time.

Oxygen deficiency could occur.

- **When flammable gas leaks, turn off the gas and open a window for ventilation before turning the product on.**

- **If strange sounds or smoke comes from product, turn the breaker off or disconnect the power supply cable.**

There is risk of electric shock or fire.

- **Stop operation and disconnect the power during storm or hurricane. If possible, further secure the product before the hurricane arrives.**

There is risk of property damage, failure of product, or electric shock.

- **Do not open the inlet grill of the product during operation. (Do not touch the electrostatic filter, if the unit is so equipped.)**

There is risk of physical injury, electric shock, or product failure.

- **If the indoor section gets wet, contact an authorized service center.**

There is risk of fire or electric shock.

- **Be cautious that water should not enter the product.**

There is risk of fire, electric shock, or product damage.

- **Ventilate the product from time to time when operating it together with a nearby stove etc.**

There is risk of fire or electric shock.

- **Turn the main power off when cleaning or maintaining the product.**

There is risk of electric shock.

- **When the product will not be used for a long time, disconnect the power supply by turning off the breaker.**

There is risk of product damage or failure, or unintended operation.

- **Take care to ensure that nobody could step on or fall onto the outdoor unit.**

This could result in personal injury and product damage.

CAUTION

- **Always check several times for refrigerant leakage after installation or repairing the 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 perfect level when installing the product.**

To avoid vibration of water leakage.

- **Do not install the product where the noise or hot air from the outdoor unit could disturb the neighbors.**

It may cause disturbance for your neighbors.

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

- **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.

Operational

- **Do not expose the skin directly to cool air for long time. (Do not sit in the path of the air draft).**

- **Do not use the product for special purposes, such as preserving foods, works of art etc. It is a consumer air conditioner, not a precision refrigeration system.**

There is risk of damage or loss of property.

- **Do not block the inlet or outlet of air flow.**

- **Use a soft cloth to clean. Do not use harsh detergents, solvents, etc.**

There is risk of fire, electric shock, or damage to the plastic parts of the product.

- **Do not touch the metal parts of the product when removing the air filter. They are very sharp.**

- **Do not step on or put anything on the product. (outdoor unit)**

- **Always insert the filter securely. Clean the filter every two weeks or more often if necessary.**

A dirty filter reduces the efficiency of the air conditioner and could cause product malfunction or damage.

- **Do not insert hands or other objects through air inlet or outlet while the product is operating.**

- **Do not drink the condensate water drained from the product.**

- **Use a firm stool or ladder when cleaning or maintaining the product.**

Be careful and avoid personal injury.

- **Replace the all batteries in the remote control with new ones of the same type. Do not mix old and new batteries or different types of batteries.**

There is risk of fire or explosion.

- **Do not recharge or disassemble the batteries. Do not dispose of batteries in a fire.**

They may burn or explode.

- **If the liquid from the batteries gets onto your skin or clothes, wash it well with clean water. Do not use the remote if the batteries have leaked.**

2. Product Specifications

WALL MOUNT Models			WB009GMFI16MLD	WB012GMFI16MLD	WB018GMFI16MLD
Power supply		Ph-V-Hz	230V~ 60Hz, 1Ph	230V~ 60Hz, 1Ph	230V~ 60Hz, 1Ph
Indoor fan motor	Model		RPG20B	RPG20B	RPG28H
	Brand		Welling	Welling	Welling
	Input	W	43	43	58.5
	RLA	A	0.2	0.2	0.3
	LRA	A	0.23	0.23	0.356
	Winding Resistance	Ω	381/267	381/267	183.6/206
	Capacitor	uF	1.2	1.5	1.5
	Speed(Hi/Med/Lo)	r/min	1150 / 950 / 800	1150/1000/850	1130/1040/940
Indoor air flow (Hi/Med/Lo)		m3/h	450/370/320	570/500/420	880/820/730
Indoor noise level (Hi/Med/Lo)		dB(A)	35/30/25	37/32/27	42/37/34
Indoor unit	Dimension(W*D*H)	mm	710x190x250	790x198x265	920x223x292
	Dimension(W*D*H)	inch	27.95x7.48x9.84	31.1x7.8x10.43	36.22x8.78x11.5
	Packing (W*D*H)	mm	770x265x318	875x265x335	1015x295x368
	Packing (W*D*H)	inch	30.31x10.43x12.52	34.45x10.43x13.19	39.96x11.61x14.49
	Net/Gross weight	Kg	8 / 9.5	9 / 11	11.5 / 15
	Net/Gross weight	Pound	17.64/20.94	19.84/24.25	25.35/33.07
	Liquid side/ Gas side	mm(inch)	Φ6.35/Φ9.52(1/4"/3/8")	Φ6.35/Φ12.7(1/4"/1/2")	Φ6.35/Φ12.7(1/4"/1/2")

8-Way Ceiling Cassette Models			CB012GMFI16MLD	CB018GMFI16MFI
Power supply		Ph-V-Hz	208-230V~ 60Hz, 1Ph	208-230V~ 60Hz, 1Ph
Indoor fan motor	Model		WZDK37-38G	WZDK37-38G
	Qty		1	1
	Input	W	37	37
	Capacitor	uF	/	/
	Speed(Hi/Med/Lo)	r/min	950/840/670/600	950/840/670/600
Indoor air flow (Hi/Med/Lo) (No duct)		m3/h	620/520/410	620/520/410
Indoor external static pressure (Hi)		Pa	/	/
Indoor noise level (Hi/Med/Lo)		dB(A)	50/47/43	50/47/43
Indoor unit	Dimension(W*D*H) (body)	mm	570x570x260	570x570x260
	Dimension(W*D*H) (body)	inch	22.44x22.44x10.24	22.44x22.44x10.24
	Packing (W*D*H) (body)	mm	655x655x290	655x655x290
	Packing (W*D*H) (body)	inch	25.79x25.79x11.42	25.79x25.79x11.42
	Dimension(W*D*H) (panel)	mm	647x647x50	647x647x50
	Dimension(W*D*H) (panel)	inch	25.47x25.47x1.97	25.47x25.47x1.97
	Packing (W*D*H) (panel)	mm	715x715x123	715x715x123
	Packing (W*D*H) (panel)	inch	28.15x28.15x4.84	28.15x28.15x4.84
	Net/Gross weight (body)	Kg	16/19	18/21
	Net/Gross weight (body)	Pound	35.27/41.89	39.68/46.3
	Net/Gross weight (panel)	Kg	2.5/4.5	2.5/4.5
	Net/Gross weight (panel)	Pound	5.51/9.92	5.51/9.92
	Liquid side/ Gas side	Mm (inch)	Φ6.35/Φ12.7 (1/4"/1/2")	Φ6.35/Φ12.7 (1/4"/1/2")

Floor-Ceiling (Flex Mount) Model			UB012GMFI16MLD	UB018GMFI16MLD
Power supply		Ph-V-Hz	208-230V~ 60Hz, 1Ph	208-230V~ 60Hz, 1Ph
Indoor fan motor	Model		WZDK55-38GS-W	WZDK55-38GS-W
	Qty		1	1
	Input	W	55	55
	Capacitor	uF	/	/
	Speed(Hi/Med/Lo)	r/min	1000/800/700/600	1000/800/700/600
Indoor air flow (Hi/Med/Lo) (No duct)		m3/h	800/620/500	800/620/500
Indoor external static pressure (Hi)		Pa	/	/
Indoor noise level (Hi/Med/Lo)		dB(A)	43/36/32	44/38/33
Indoor unit	Dimension(W*D*H) (body)	mm	990x660x203	990x660x203
	Dimension(W*D*H) (body)	inch	38.98x25.98x7.99	38.98x25.98x7.99
	Packing (W*D*H) (body)	mm	1090x745x297	1090x745x297
	Packing (W*D*H) (body)	inch	42.91x29.33x11.69	42.91x29.33x11.69
	Net/Gross weight (body)	Kg	22/28	23/28.5
	Net/Gross weight (body)	Pound	48.5/61.73	50.71/62.83
	Liquid side/ Gas side	Mm (inch)	Φ6.35/Φ12.7 (1/4"/1/2")	Φ6.35/Φ12.7 (1/4"/1/2")

Ceiling Concealed (Ducted-Recessed) Models			RB012GMFI16MLD	RB018GMFI16MLD
Power supply		Ph-V-Hz	208-230V~ 60Hz, 1Ph	208-230V~ 60Hz, 1Ph
Indoor fan motor	Model		YSK27-4G	YSK68-4B
	Qty		1	1
	Input	W	71/48.8/36.7	90/56/43
	Capacitor	uF	2UF/450V	3.5UF/450V
	Speed(Hi/Med/Lo)	r/min	1255/1005/850	1010/790/690
Indoor air flow (Hi/Med/Lo) (No duct)		m3/h	630/550/460	800/640/530
Indoor external static pressure (Hi)		Pa	40	70
Indoor noise level (Hi/Med/Lo)		dB(A)	40/36/33	41/35/33
Indoor unit	Dimension(W*D*H) (body)	mm	700x635x210	920x635x210
	Dimension(W*D*H) (body)	inch	27.56x25x8.27	36.22x25x8.27
	Packing (W*D*H) (body)	mm	915x655x290	1135x655x290
	Packing (W*D*H) (body)	inch	36.02x25.79x11.42	44.68x25.79x11.42
	Net/Gross weight (body)	Kg	20/25	22.5/27.5
	Net/Gross weight (body)	Pound	44.09/55.12	50.71/63.93
	Liquid side/ Gas side	Mm (inch)	Φ6.35/Φ12.7 (1/4"/1/2")	Φ6.35/Φ12.7 (1/4"/1/2")

Floor Console Model			FB012GMFI16MLD
Power supply		Ph-V-Hz	208-230V~ 60Hz, 1Ph
Indoor fan motor	Model		RD-280-20-8A
	Qty		1
	Input	W	20
	Capacitor	uF	/
	Speed(Hi/Med/Lo)	r/min	680/560/460/420/350
Indoor air flow (Hi/Med/Lo) (No duct)		m3/h	450/390/350
Indoor external static pressure (Hi)		Pa	/
Indoor noise level (Hi/Med/Lo)		dB(A)	38/33/30
Indoor unit	Dimension(W*D*H) (body)	mm	700x600x210
	Dimension(W*D*H) (body)	inch	27.56x23.62x8.27
	Packing (W*D*H) (body)	mm	810x710x305
	Packing (W*D*H) (body)	inch	31.89x27.95x12.01
	Net/Gross weight (body)	Kg	15/20
	Net/Gross weight (body)	Pound	33.07/44.09
	Liquid side/ Gas side	Mm (inch)	Φ6.35/Φ12.7 (1/4"/1/2")

3. Features

3.1 New Eight-Way Cassette Type (Compact)

(1) New panel

- 360°surround (8-Way Discharge) air outlet design, provides a comfortable and even air distribution.



(2) Compact design

- The body size is 570×260×570mm, (22.5 x 22.5 x 10.25H Inches) which is just smaller than the standard ceiling tile grid size, for very easy installation, to blend in any decoration. The panel size is 647×50×647mm. (25.5 x 25.5 x 2H Inches)
- The attachment hooks are located at the four corners of the body, which saves installation space.



(3) Electric control box built-in

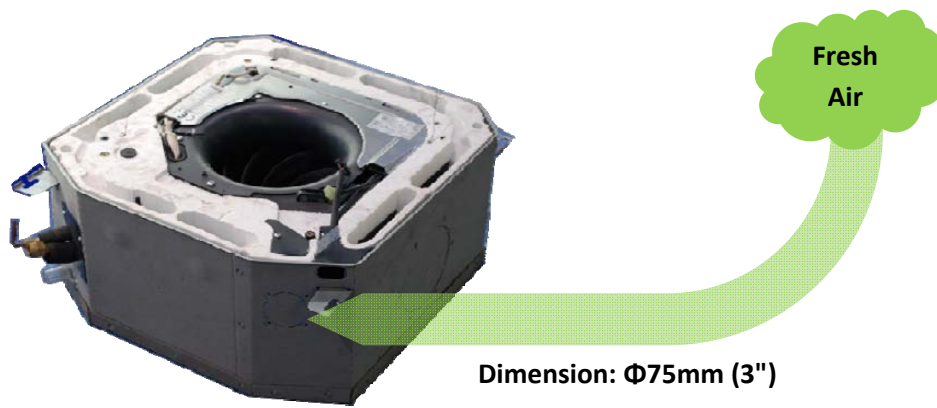
- The Electronic controller system box is built inside the indoor unit. Its location is very convenient for installation and maintenance. To access the controller, user only needs to open the air return grille.



(4) Fresh air intake function:

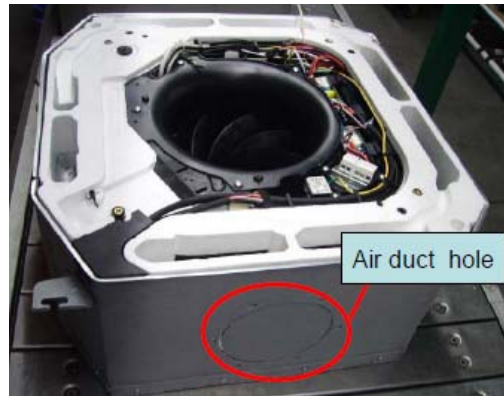
- Fresh air intake allows improved indoor air quality and comfort.





(5) Air passage function

- Reserved external duct connection knockout plates are available for remote air outlets from the sides of indoor unit, to connect air ducts at the sides to feed air to one or two nearby areas.



3.2 Ceiling & Floor type

(1) Two-way (Flex Mounting) Installation

- The rounded design of the ceiling and floor type air conditioner allows either ceiling or floor-level installation. Ceiling installation saves room space while floor installation allows each reach.



(2) **Compact Design**

- Compact design that makes the unit suitable for any interior space.



(3) **3D Airflow**

- Vertical air flow and horizontal airflow directions can be adjusted by remote controller. Combining two airflow directions help spread the air comfortably throughout even large rooms. With these functions, the whole room can be evenly air-conditioned for both floor-level and ceiling installed applications.



Optional drainage pipe connection

- Both right side and left side drainage holes are available to avoid the space limitation for drainage pipe installation for added convenience.

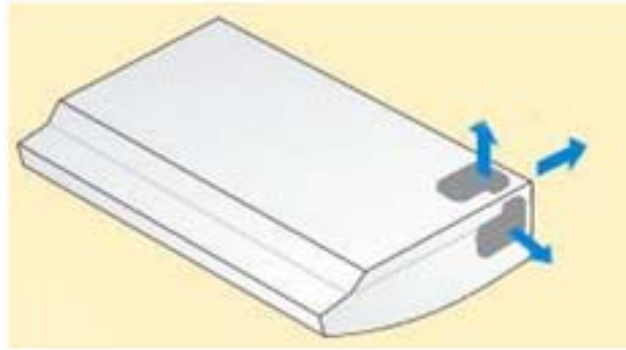


(4) **Convenient operation and easy maintenance**

- Remote controllers included as standard, wired controller optional.
- The filter rack without screwed fixing, allowing filters to be removed and serviced easily.

(5) **Easy installation, saves time**

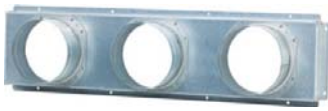
- The pipes can be connected from bottom, back and right side, making the installation easy.
- The wiring work can be finished before the installation.



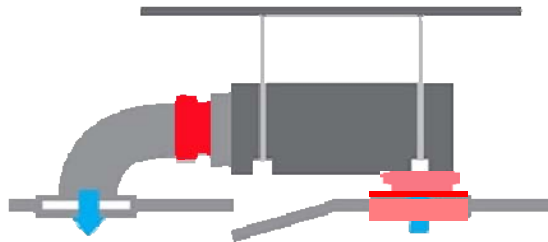
3.3 A5 Duct

(1) **Installation accessories: (Optional)**

- Front Discharge Duct Connector, Canvas Air Passage, Filter, Panel, for easy installation



Duct Connector



Canvas Air Passage



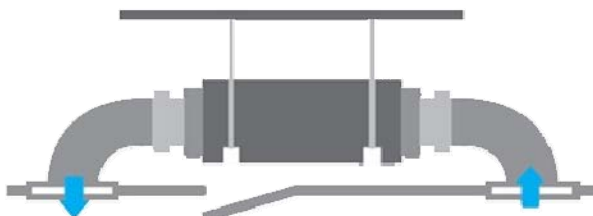
Filter



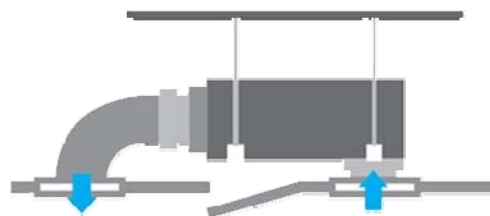
Access Panel

(2) **Easy Installation: Two air inlet styles (Bottom side or Rear Return, Field Convertible)**

- Air inlet from rear is standard for all capacity; air inlet from bottom is available by simple conversion
- The size of air inlet frame from rear and bottom is same, it's very easy to move the cover from bottom to rear side, or from rear to the bottom, in order to match the installation requirements.



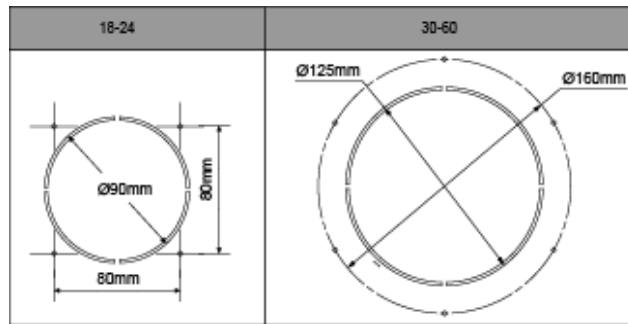
Air intake from rear (Standard)



Air intake from bottom (Field Converted)

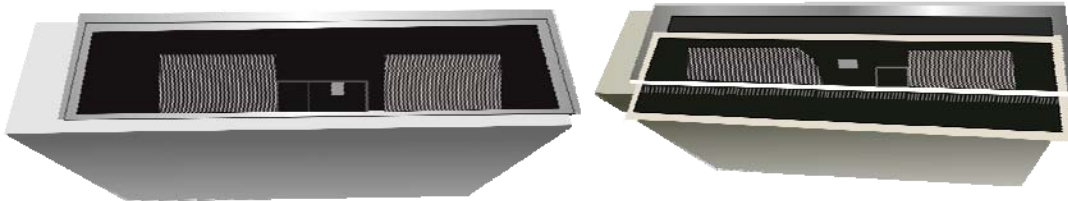
(3) Fresh air intake function

For utmost comfort, a fresh air intake duct connection is available.



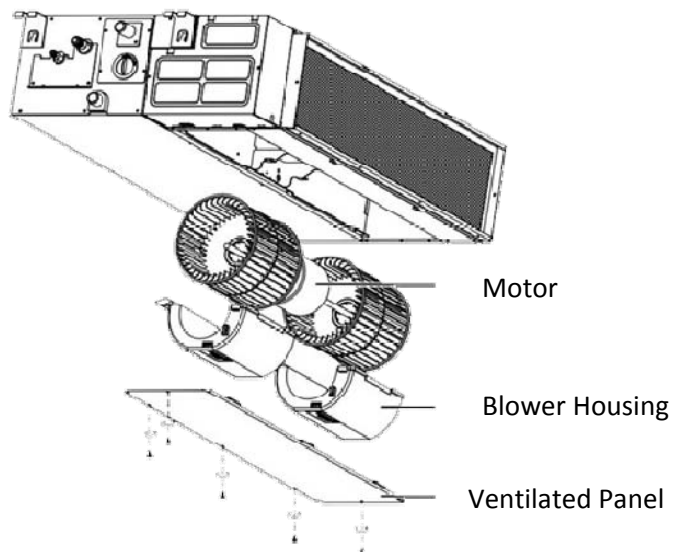
(4) Easy maintenance

- Easy to clean the filter (Filter is optional, standard product is shipped without filter)
It is easy to slide out the filter from the indoor unit for cleaning, whether the filter is installed on the rear or the bottom side.



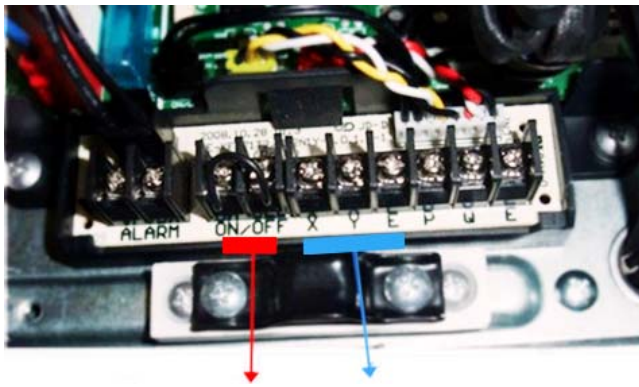
- Easy replacement access for the motor or centrifugal fans

Ventilated panel can be removed easily. Blower housing's are made in top and bottom halves, and removing the bottom half allows taking out motor with centrifugal fan assembly easily. Only requirement is the removal of two bolts to finish the job..



(5) Reserved remote on-off and central control ports

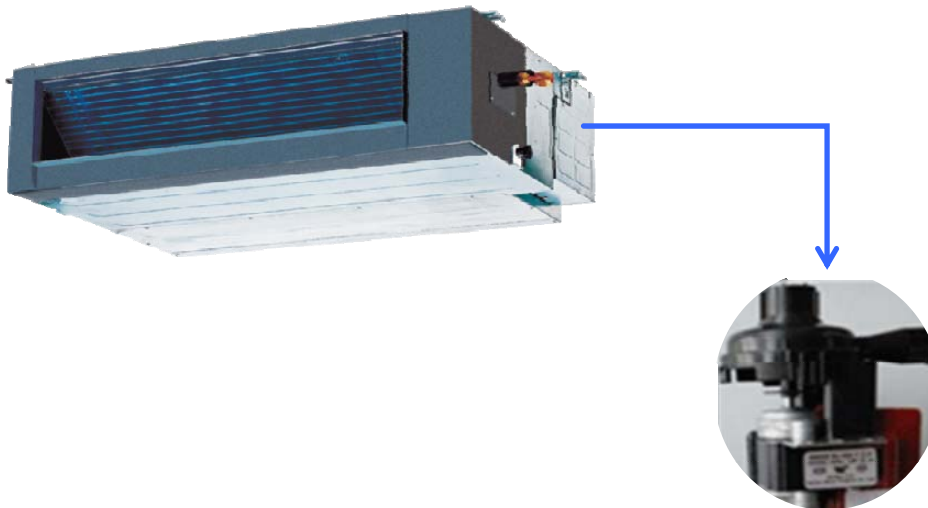
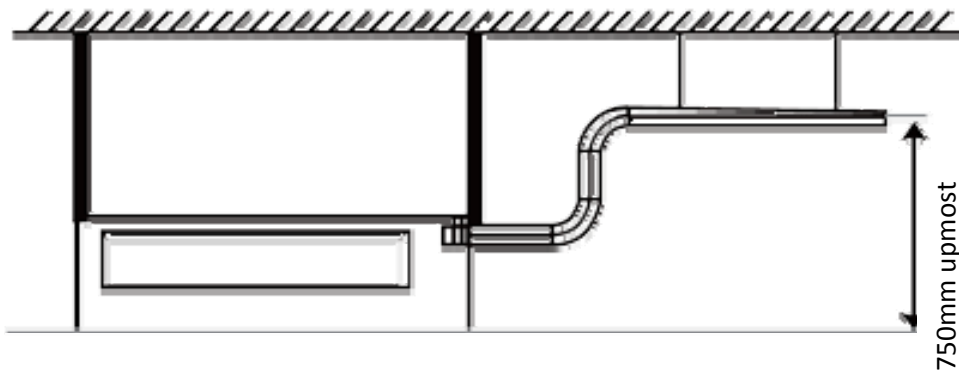
- Reserved remote on-off ports and central control ports, allow connecting cables of an on-off controller or a central controller to provide remote on-off control function or group control function.



Remote on-off ports Central control ports

(6) Built-in drain pump (Optional):

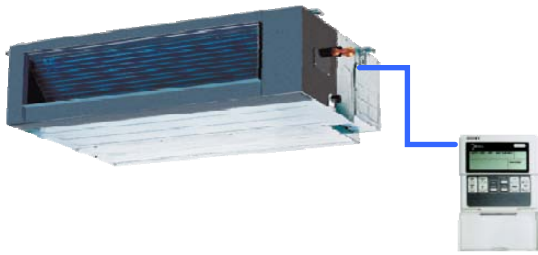
- Built-in drain pump can lift the water up to 750 mm (30 Inches). This provides the conveniency to install drainage piping even under most difficult space limitations.



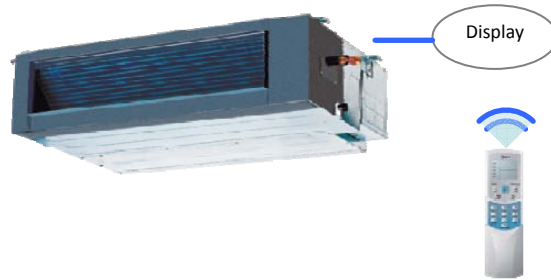
(7) Built-in display Thermostat

- The standard indoor unit is controlled by wired electronic controller.
- There is also a display board with a receiver inside the E-box. This part can be located elsewhere up to 10m (30 Feet) for remote controller access.
- The wired controller and the display board can display the error codes or production codes when the chips detect any failure.

Wired Controller (Standard)



Remote Controller (Optional)



3.4 Console

(1) Modern and elegant appearance

- The simple and stylish designs blend in your living space.



(2) Two air-outlets in Cooling mode



Quick Cooling

To maintain room temp

- Air outlet from top and bottom to make quick cooling -----When the system is newly switched on, or room temperature remains high, cold air will be blown out from top and bottom air outlets to cool down the room quickly.
- Air outlet from top to maintain room temp. ----When the room has been cooled down, or the A/C has been working over 1 hour, cold air discharged only from the top outlet will help maintain constant room temp.

Heating mode

- Anti-cold air draft (Warm Start) -----When the system is first turned on, temperature of indoor heat exchanger is very low. Therefore, in order to prevent cold air draft directly blowing onto the people nearby, only the upper louver is opened in a high position, the lower louver will remain closed.

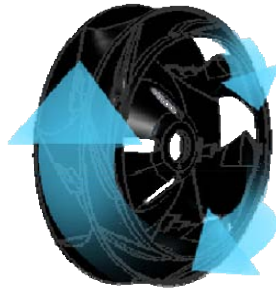


(3) Four air inlets

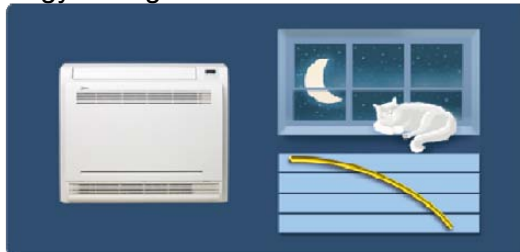


(4) Low noise

- DC indoor fan motor, with five speeds.
- Low noise and great energy savings.



- Advanced centrifugal fan technology for high airflow and reduced noise to a level as low as 28dB.

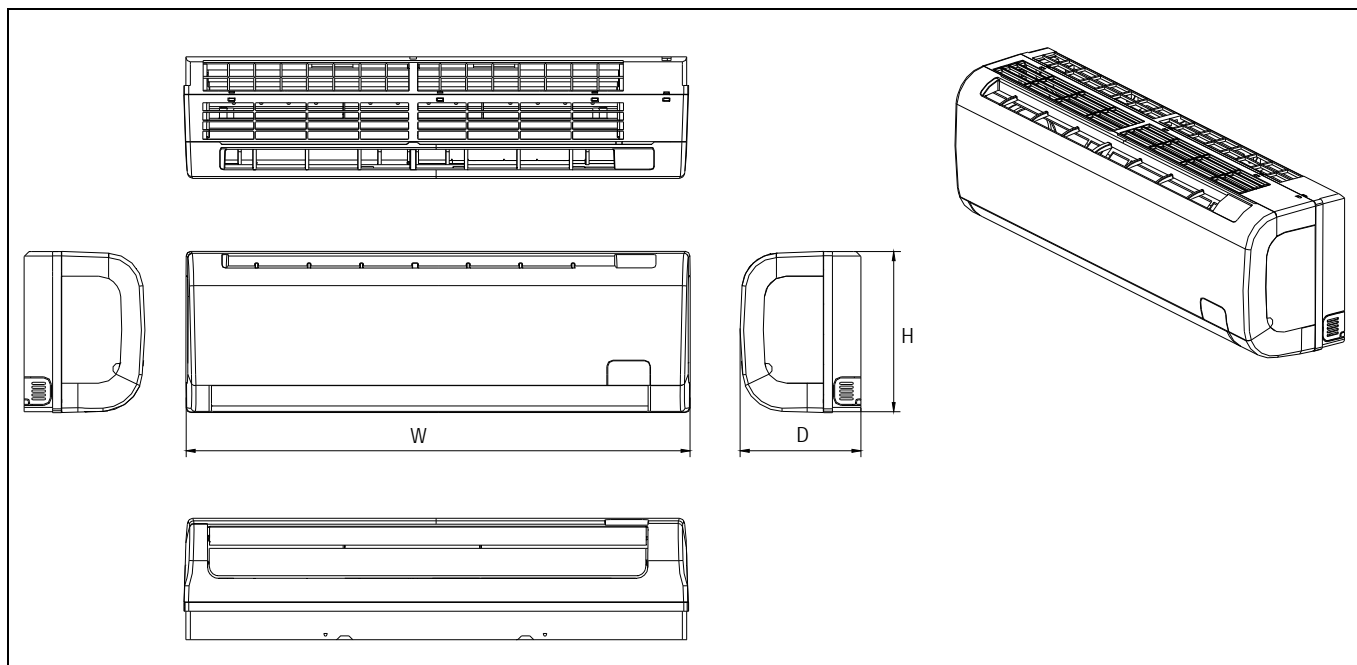


(5) Golden fin is optional.

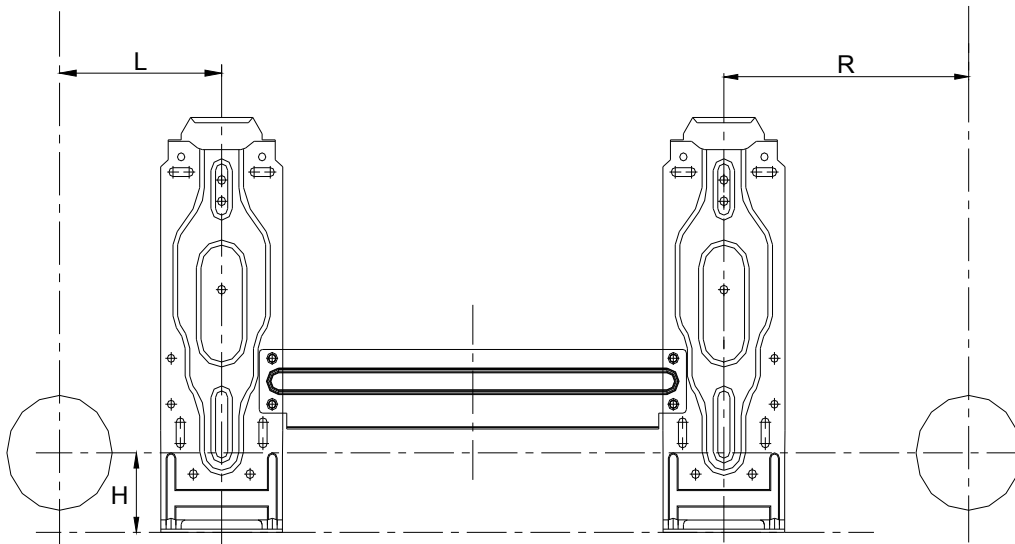
(6) Active carbon filter is standard.

4. Dimension of indoor unit

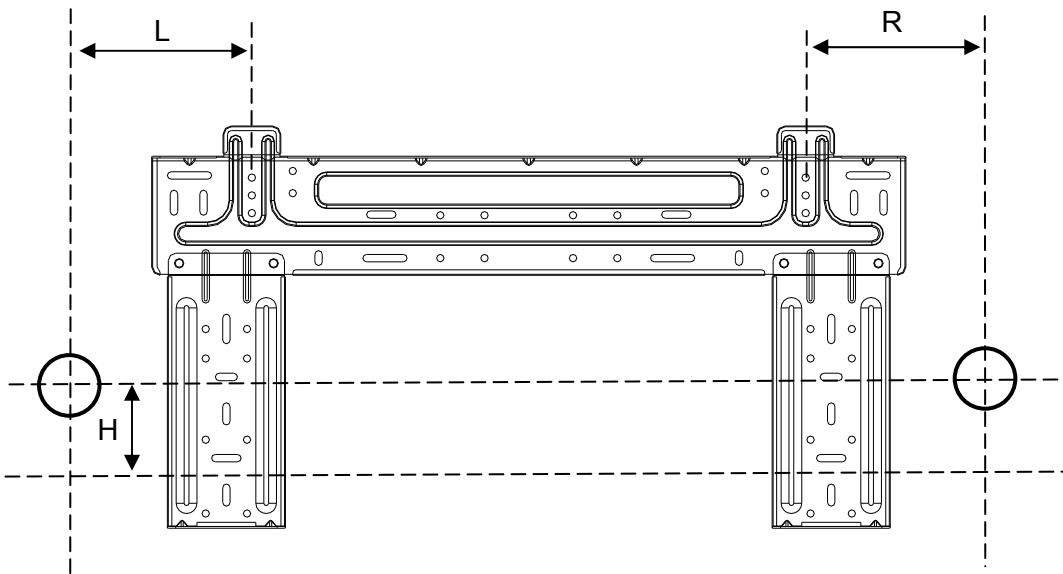
4.1 Wall Mounted Systems



Model \ Dimension mm(in)	W	H	D
WB009GMFI16MLD	710(28)	250(9.8)	190(7.5)
WB012GMFI16MLD	790(31.1)	265(10.4)	198(7.8)
WB018GMFI16MLD	920(36.2)	292(11.5)	223(8.8)

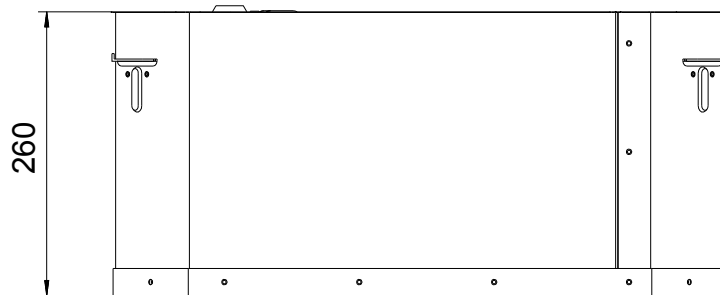
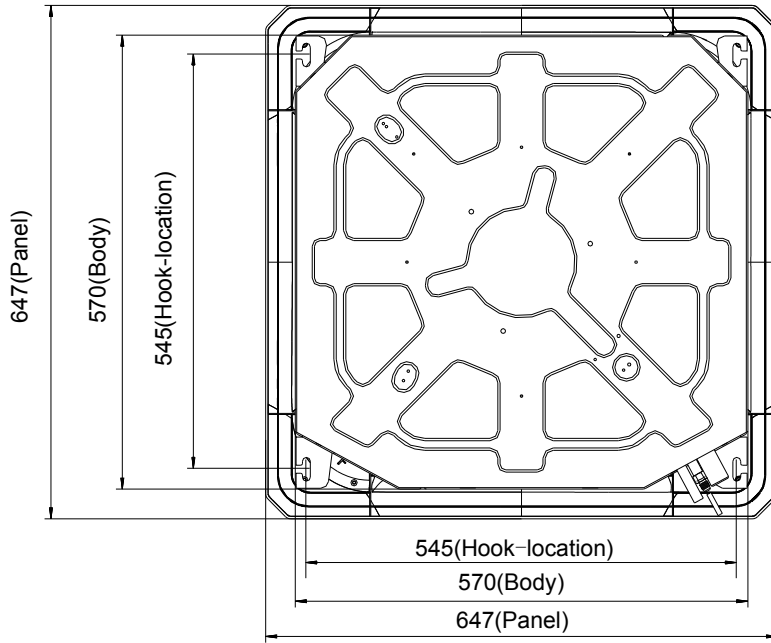


Model	R(mm(in))	L(mm(in))	H(mm(in))	Dimension of installation hole(mm(in))
WB009GMFI16MLD	111.5(4.4)	100(3.9)	45(1.8)	Φ65mm(2.56in)
WB012GMFI16MLD	151(5.9)	100(3.9)	45(1.8)	

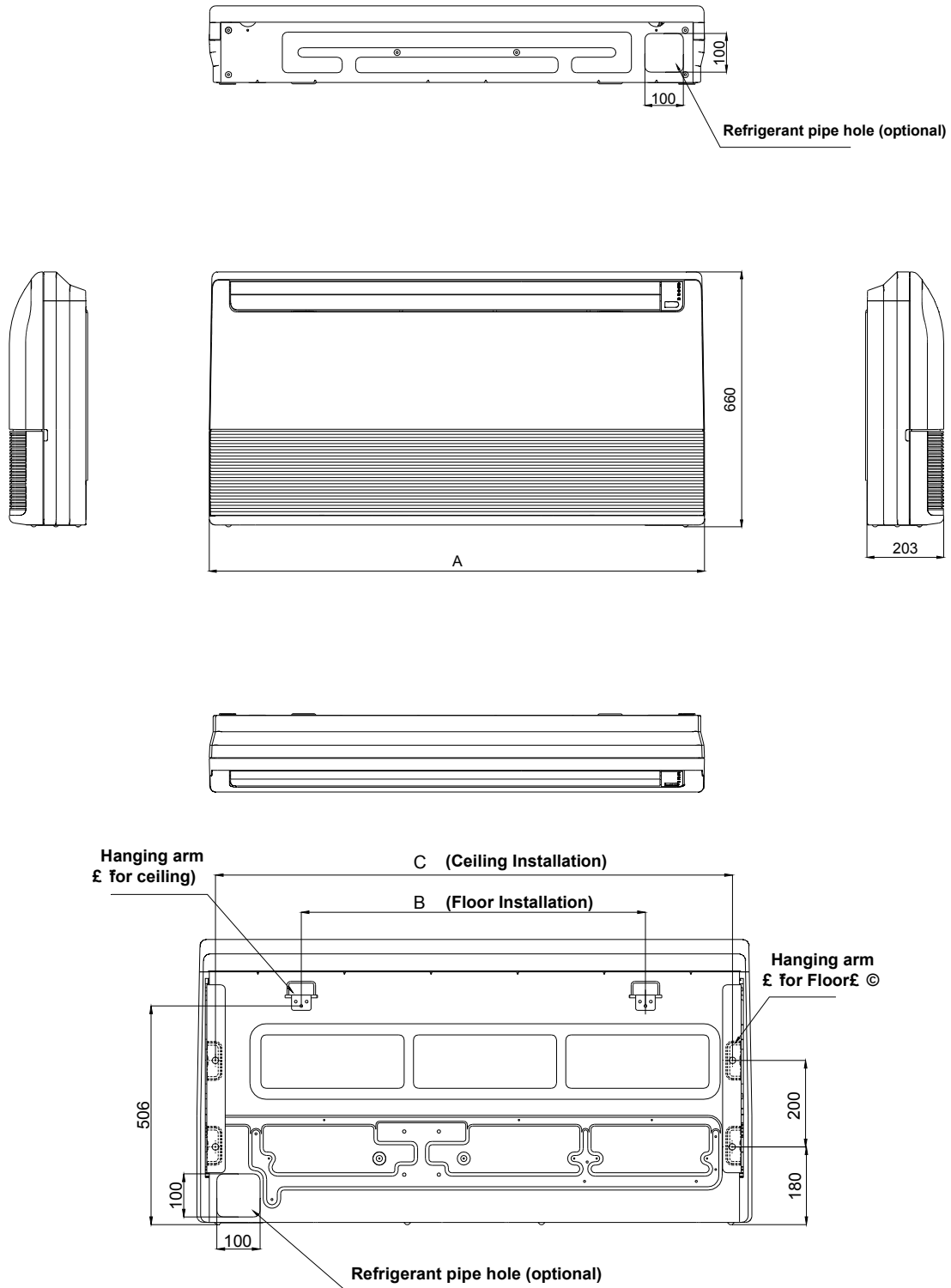


Model	R(mm(in))	L(mm(in))	H(mm(in))	Dimension of installation hole(mm(in))
WB018GMFI16MLD	186.5(7.3)	150(5.9)	45(1.8)	φ65(2.56in)

4.1 New Eight-Way Cassette type (compact) (12000Btu/h / 18000Btu/h) :

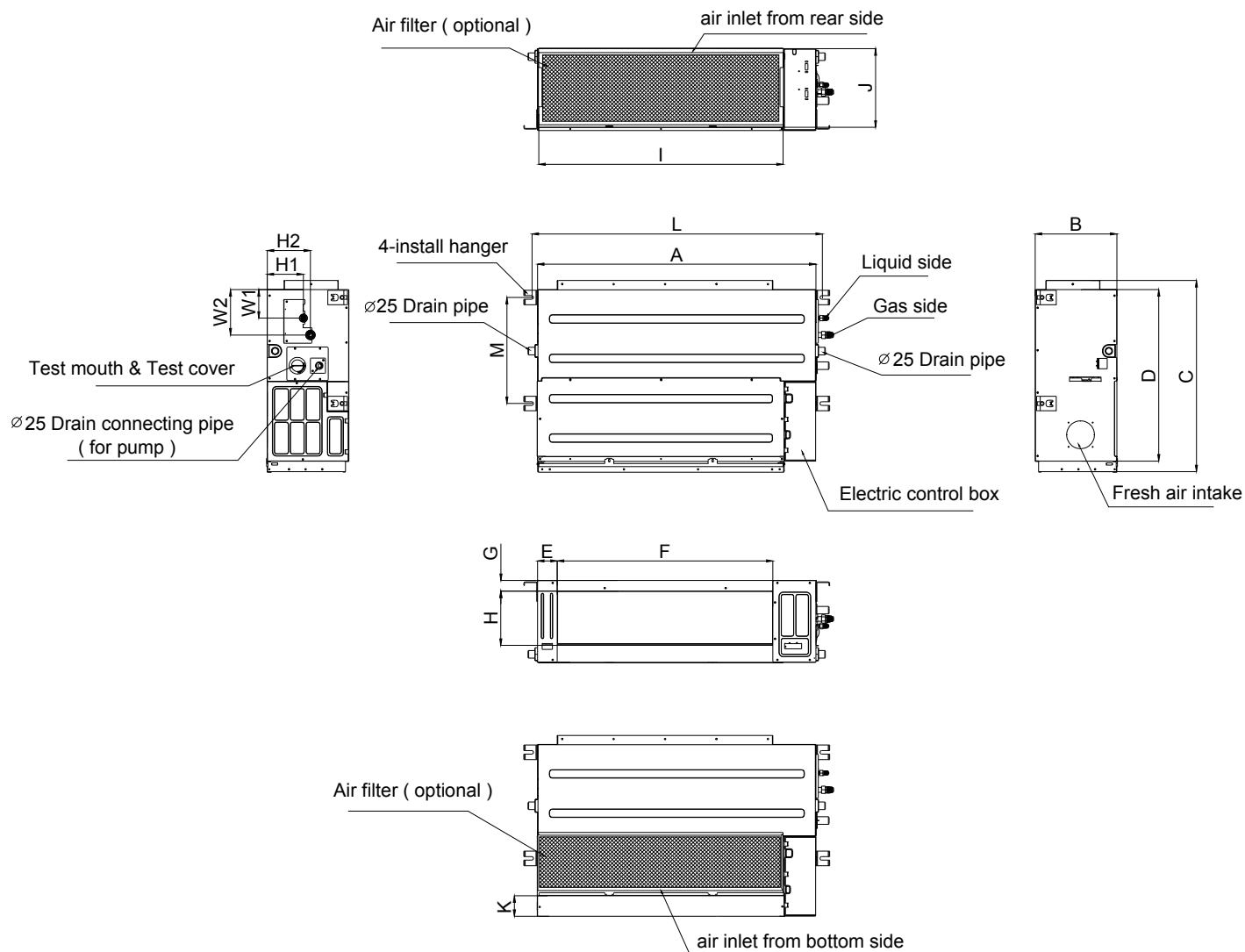


4.2 Ceiling & Floor / Flex Mount (12000Btu/h / 18000Btu/h):



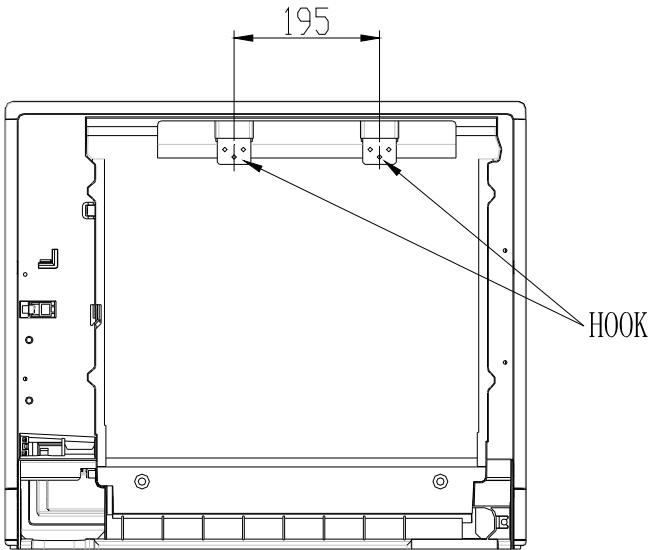
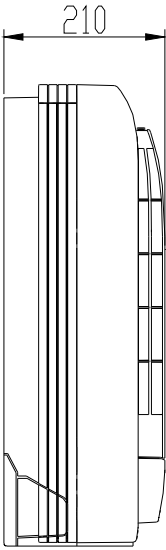
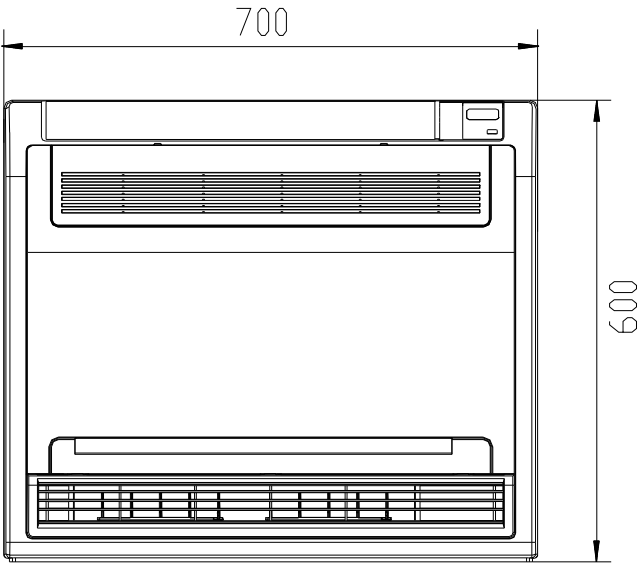
Dimension	A	B	C
Capacity(Btu/h)			
12000-18000	990 (39")	505 (20")	907 (23")

4.3 Ceiling Concealed Ducted (12000Btu/h / 18000Btu/h)



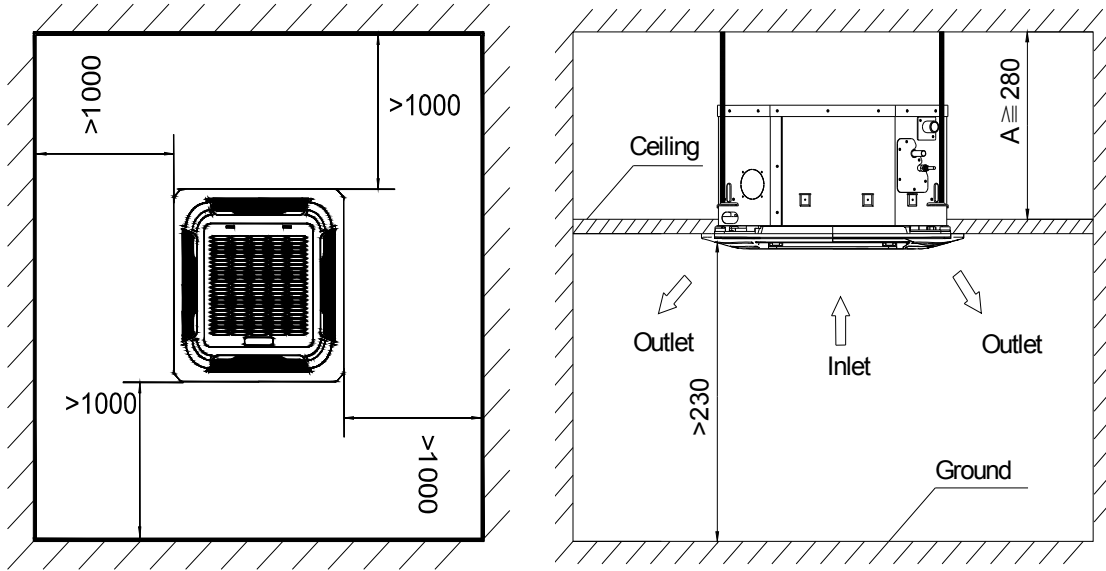
Capacity (Btu)	Outline dimension(mm)				Air outlet opening size				Air return opening size			Size of install hanger	
	A	B	C	D	E	F	G	H	I	J	K	L	M
12000	700 27.5"	210 8.3"	635 25"	570 22.5"	65 2.5"	493 19.5"	35 1.4"	119 47"	595 23.5"	200 8"	80 3"	740 29"	350 13.8"
18000	920 36.2"	210 8.3"	635 25"	570 22.5"	65 2.5"	713 28"	35 1.4"	119 47"	815 32"	200 8"	80 8"	960 38"	350 13.8"

4.4 Floor Console (12000Btu/h /18000Btu/h)

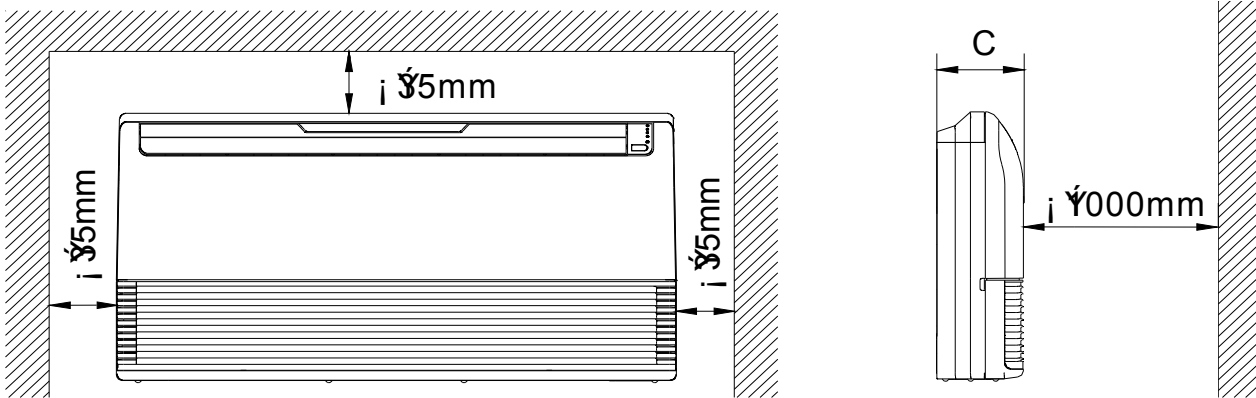


5. Service Space (unit: mm)

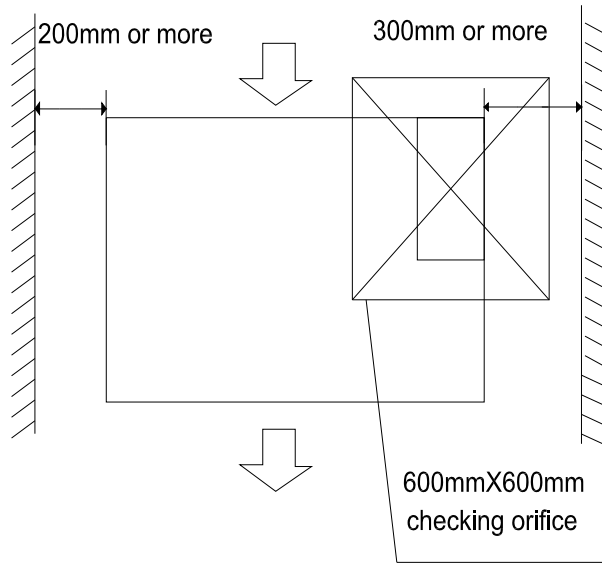
5.1 Eight-Way Cassette (compact)



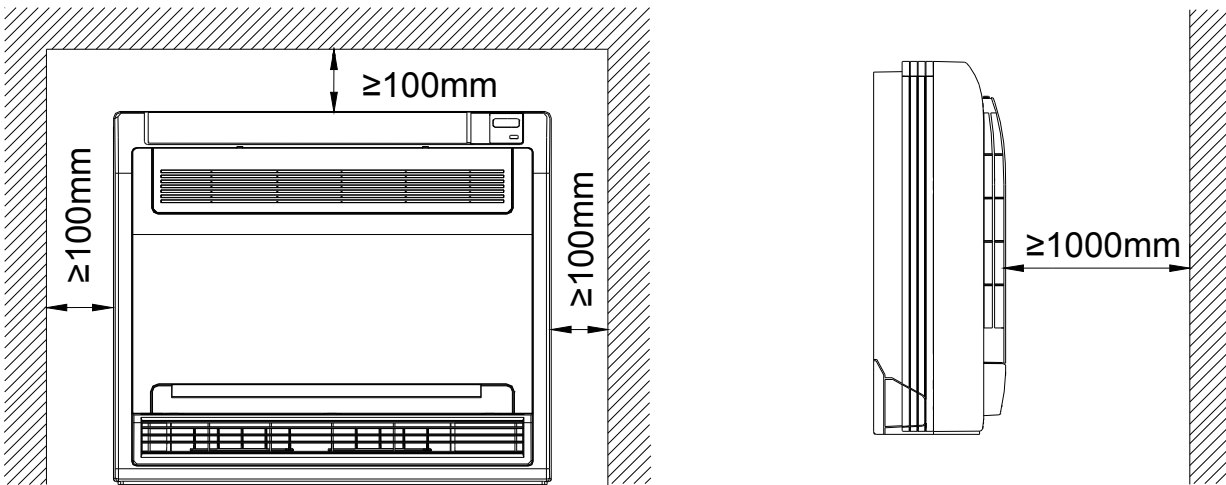
5.2 Ceiling & Floor / Flex Mount



5.3 Ceiling Concealed Ducted / Recessed



5.4 Floor Console



6. Operation Characteristics

Temperature Mode	Cooling operation	Heating operation	Drying operation
Room temperature	≥62°F	≤88°F	≥62°F
Outdoor temperature	32°F ~ 122°F (5°F ~ 122°F : For the models with low temperature cooling system)	5°F ~ 76°F	32°F ~ 122°F

CAUTION:

1. If air conditioner is used beyond the above conditions, the certain protections may be triggered.
2. Room relative humidity should be less than 80%. If the air conditioner operates in excess of this value, the surface of the air conditioner may attract condensation. In this case, please set the vertical air louver to its maximum angle (vertically to the floor), and set the fan to high speed.

7. Electronic Function

7.1 Abbreviation

T1: Indoor ambient temperature

T2: Pipe temperature of indoor heat exchanger

T3: Pipe temperature of outdoor heat exchanger

T4: Outdoor ambient temperature

Tp : Discharge temperature

Ts : Setting temp.

7.2 Main Protections

7.2.1 Three Minutes Delay at restart for compressor.

7.2.2 Fan Speed is out of control (For units using DC motor)

----When Indoor Fan Speed stays too low or too high for certain time, the unit will stop and the LED will display the failure code.

7.2.3 Indoor fan delayed open function

----When the system starts up, the louver will be active immediately and the indoor fan will start 10s later.

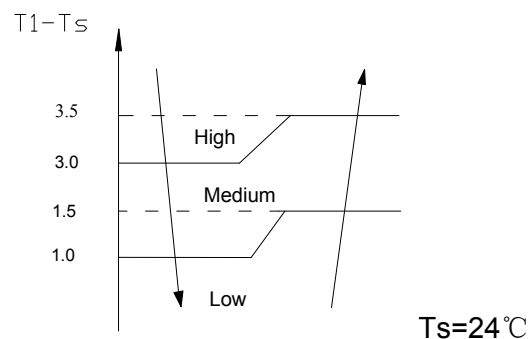
----If the system runs in heating mode, the indoor fan will be controlled by anti-cold draft (warm Start function).

7.3 Operation Modes and Functions

7.3.1 Fan mode.

- (1) The outdoor fan and compressor stop.
- (2) Temperature setting function is disabled, and no setting temperature is displayed.
- (3) Indoor fan can be set to high/med/low/auto.
- (4) The louver operates as same as in cooling mode.
- (5) Auto fan:

The action of auto fan in fan-only mode is the same as auto fan in cooling mode with 24°C setting temperature.

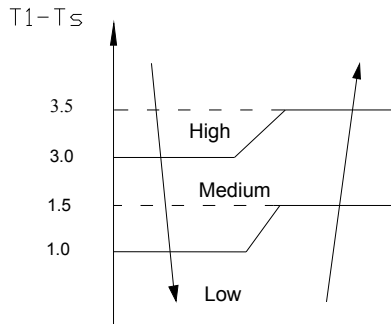


7.3.2 Cooling Mode

7.3.2.1 Indoor fan running rules

In cooling mode, indoor fan runs all the time and the speed can be selected as high, medium, low and auto.

Auto fan in cooling mode acts as follows:



7.3.2.4 Evaporator low temperature T2 protection.

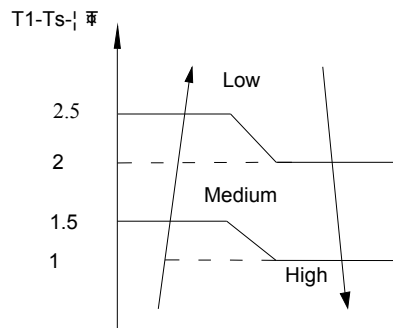
When $T_2 < 4^\circ\text{C}$, for 3 minutes, the indoor has no capacity demand. Resume at $T_2 > 7^\circ\text{C}$.

7.3.3 Heating Mode

7.3.3.1 Indoor fan running rules:

Indoor fan speed can be set as high, medium, low and auto fan and the anti-cold-draft (Warm Start function has preference.

Auto fan action in heating mode.



7.3.3.2 High evaporator coil temp.T2 protection:

If $T_2 > 63^\circ\text{C}$, while the indoor unit has no capacity

7.3.3.3 Prevent Over-Heating

In heating mode, when the indoor unit has no capacity requirement when the indoor room temperature setting is satisfied, the Indoor fan will run in Lowest Available Speed. (Anti-cold draft / Warm Start function has the priority)

7.3.4 Auto-mode

This mode can be chosen by remote controller and the setting temperature can be changed between $17\sim 30^\circ\text{C}$. ($64\text{F}\sim 86\text{F}$)

In auto mode, the system will choose cooling, heating or fan-only mode according to ΔT ($\Delta T = T_1 - T_s$).

$\Delta T = T_1 - T_s$	Running mode
$\Delta T > 1^\circ\text{C}$	Cooling
$-1 < \Delta T \leq 1^\circ\text{C}$	Fan-only
$\Delta T \leq -1^\circ\text{C}$	Heating

Indoor fan will run at auto fan of the relevant mode.

The louver operates same as in relevant mode.

If the system switches its mode between heating and cooling, the compressor will stay stopped for 15 minutes and then select the mode according to $T_1 - T_s$.

If the setting temperature is modified, the system will reselect running function.

7.3.5 Dehumidifier mode

7.3.5.1 Indoor fan speed is set at breeze speed and cannot be changed. The louver angle is the same as in the cooling mode.

7.3.5.2 Low room temperature protection:

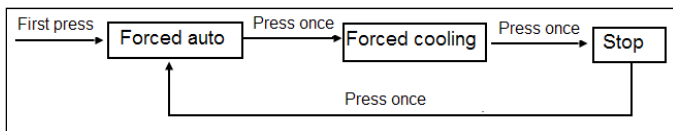
In dehumidifier mode, if room temperature is lower than 10°C (50F), the indoor fan will stop and not resume until room temperature exceeds 12°C (54F).

7.3.5.3 Evaporator freeze up protection is active

7.3.6 Forced operation function

7.3.6.1 Enter forced operation function:

Press the emergency start button continually, the system will run as per the below sequence:



When the system is off, pressing the emergency button will bring the system into forced auto mode. In this mode, pressing the button once more, will bring the system into forced cooling mode. In forced cooling mode, pressing the button will turn off the machine.

7.3.6.2 In forced operation mode, all general protections and remote control are available.

7.3.6.3 Operation rules:

Forced cooling mode:

The indoor fan runs as breeze. After running for 30 minutes, AC will switch to auto mode with 24 °C (75F) setting temperature.

Forced auto mode:

The action of forced auto mode is the same as normal auto mode with 24 °C (75F) setting temperature.

7.3.6.4 When there's an indoor unit running in forced cooling, it becomes the master forced cooling unit. Other indoor units will run at forced cooling mode as well and they will become the slave forced cooling units. The slave forced cooling units cannot quit forced cooling mode until the master forced cooling unit quits, and switch to cooling mode with low fan speed and with 24 °C (75F) setting temperature.

For other models::

7.3.6.5 The slave forced cooling units will not be controlled by other signals except timer off signal.

7.3.6.6 If AC is running in sleep mode and receives forced operation signal, it will quit the sleep mode.

7.3.7 Timer function

7.3.7.1 Timing range is 24 hours.

7.3.7.2 Timer on. The machine will turn on automatically when reaching the set ON time.

7.3.7.3 Timer off. The machine will turn off automatically when reaching the set OFF time.

7.3.7.4 Timer on/off. The machine will turn on automatically when reaching the set "on" time, and then turn off automatically when reaching the set "off" time.

7.3.7.5 Timer off/on. The machine will turn off automatically when reaching the set "off" time,

and then turn on automatically when reaching the setting "on" time.

7.3.7.6 The timer function will not change the system's currently set operation mode.

7.3.7.7 The setting time is relative time.

7.3.8 Sleep function mode

7.3.8.1 The sleep function is available in cooling, heating or auto modes.

7.3.8.2. Operation process in sleep mode is as follows:

In Cooling Mode, the setting temperature rises by 1°C (2F) steps (while lower than 30°C, 86F) once every one hour. 2 hours later the setting temperature stops rising and the indoor fan is runs at auto speed.

In Heating Mode, the setting temperature decreases by 1°C (2F) (while higher than 17°C, 63F) once every one hour. 2 hours later the setting temperature stops rising and indoor fan is runs at auto speed. (Anti-cold draft / Warm Start function has the priority).

7.3.8.3 Operation time in sleep mode is 7 hours. After 7 hours the systems turns off.

7.3.8.4 Shutdown or changing the mode or speed setting will cancel the economic operation.

7.3.8.5 When user uses timer off function in sleep mode (or sleep function in timer off mode), if the timing was less than 7 hours, sleep function will be cancelled when reaching the setting time. If the timing was more than 7 hours, the system will

not stop until reaching the setting time in sleep mode.

7.3.9 Auto-Restart function

The indoor unit is equipped with auto-restart function, which is carried out through an auto-restart module memory. In case of a sudden power failure, the module memorizes the setting conditions before the power failure. The unit will resume the previous operation settings (Excluding Swing function) automatically within 3 minutes after the power returns.

If the memorization condition is forced cooling mode, the unit will run in cooling mode for 30 minutes and turn to auto mode with 24°C (75F) setting temp.

7.3.10 Drain pump control (For Duct & Cassette units)

A water-level switch controls the action of the drain pump.

Main action under different condition: (every 5 seconds the system will check the water level)

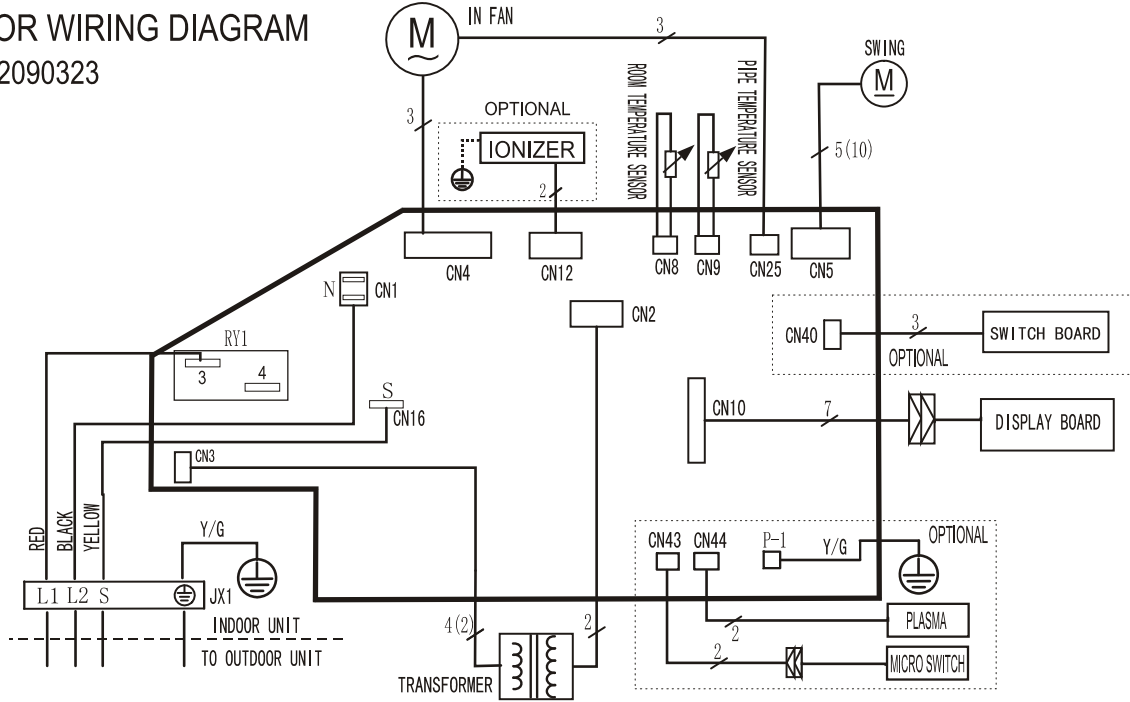
1. When the A/C operates in cooling (including auto cooling), dehumidifying and forced cooling modes, the pump will start running immediately and continuously, till cooling stops.

2. In case the water level increases beyond the controlled point, LED will flash an alarm and the drain pump will start while continuously checking the water level. If the water level comes down and LED alarm condition is removed (drain pump has a 1 minute OFF delay) than it will operate based on the last mode. Otherwise the entire system stop operating (including the pump) and LED remain with the alarm after 3 minutes.

8. Wiring Diagrams

WB009GMFI16MLD, WB012GMFI16MLD, WB018GMFI16MLD (Wall Mount Models)

INDOOR WIRING DIAGRAM 202052090323



CB012GMFI16MLD, CB018GMFI16MLD (Ceiling Cassette Models)

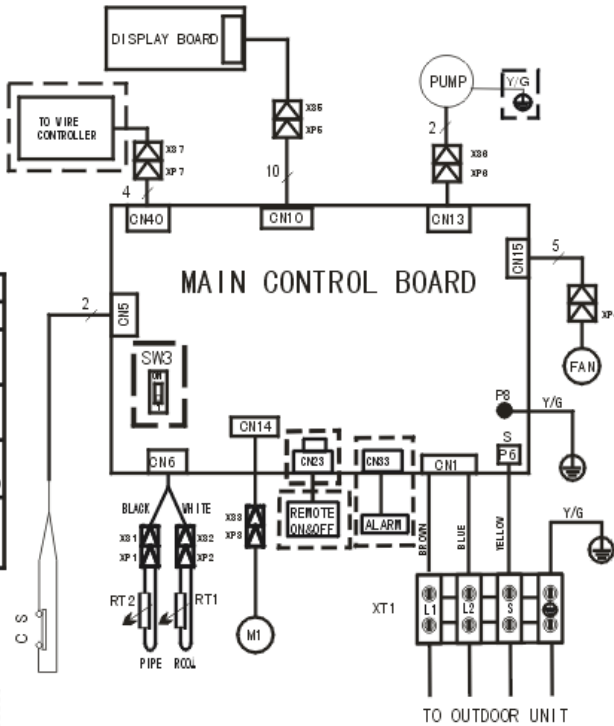
202042390121

SW 1				
Anti-cold air	factory setting	factory setting	factory setting	factory setting
TE1	28	30	Fan motor do not stop.	According to the EEPROM setting
TE2	30	32		
TE3	24	28		
TE4	15	24		
TE5	32	35		
TE6	30	32		

TYPE SELECTION		TEMPERATURE COMPENSATE	
SW 7	TYPE	SW 6	ΔT
	20		6
	26		2
	32		4 (factory setting)
	53		According to the EEPROM setting

SW 3		
Auto restart	YES (factory setting)	NO

NOTE 1:
The TYPE SELECTION, TEMPERATURE COMPENSATE AND ANTI-COLD AIR HAS BEEN SET BEFORE LEAVING THE FACTORY, ANYONE CAN'T MODIFY IT EXCEPT THE MAINTENANCE PERSON.



NOTE:
The wiring diagram is for explanation purpose only. The actual shape of the components may be different.

WIRING DIAGRAM INDOOR UNIT

CODE	PART NAME
CN1-40	P.C BOARD SOCKETS
FAN	INDOOR DC FAN MOTOR
M1	SWING MOTOR
PUMP	PUMP
RT1	ROOM TEMPERATURE
RT2	PIPE TEMPERATURE
XP1-XP6	CONNECTORS
XS1-XS6	CONNECTORS
XT1	4-WAY TERMINAL

UB012GMFI16MLD, UB018GMFI16MLD (Floor/Ceiling, Flex Mount Models).

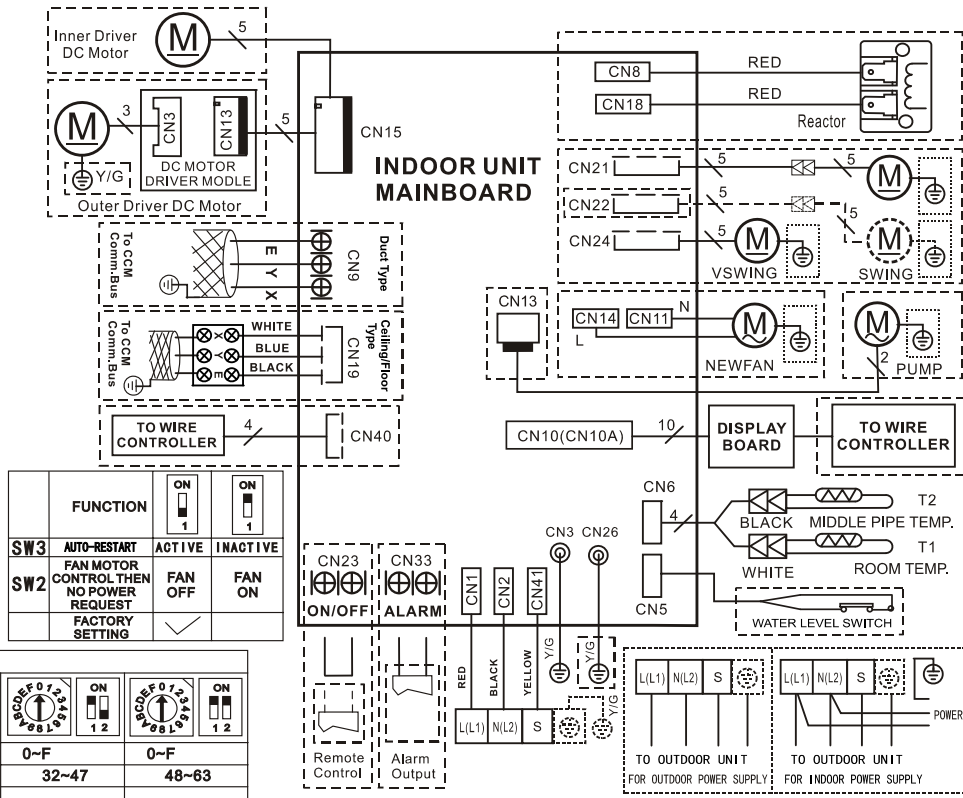
WIRING DIAGRAM (INDOOR UNIT)
202052290087

POWER SETTING:				
ENC1	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2
MODEL	20	26	32/35	53
FACTORY SETTING	ACCORDING TO RELATED MODEL.			

FOR TEMP. COMPENSATION				
SW6	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2
CODE	6°C	2°C	4°C	According to E Function
FACTORY SETTING	✓			

FOR ANTI-COLD WIND				
SW1	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2
TE1	28	30	Fan motor do not stop.	According to E Function
TE2	30	32		
TE3	24	28		
TE4	15	24		
TE5	32	35		
TE6	30	32		
FACTORY SETTING	✓			

FOR SETTING NETADDRESS				
S1+S2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2
CODE	0~F	0~F	0~F	0~F
NETADDRESS	0~15	16~31	32~47	48~63
FACTORY SETTING	✓			



RB012GMFI16MLD, RB018GMFI16MLD (Ceiling Concealed, Ducted Recessed Models).

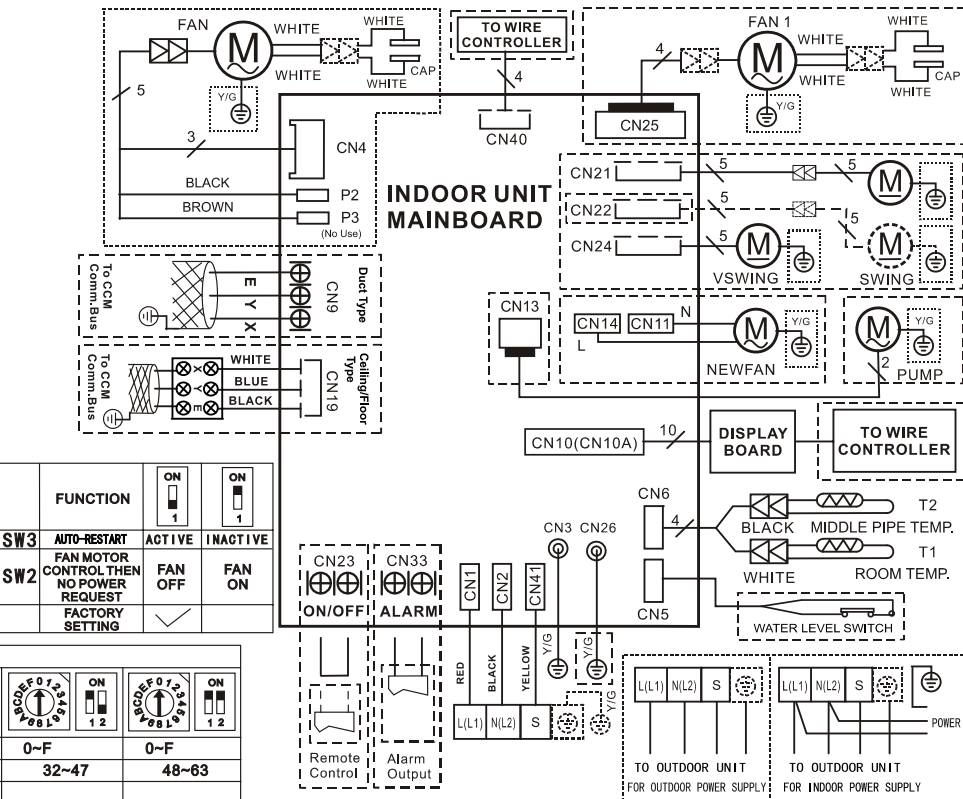
WIRING DIAGRAM (INDOOR UNIT)
202052290088

POWER SETTING:				
ENC1	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2
MODEL	20	26	32/35	53
FACTORY SETTING	ACCORDING TO RELATED MODEL.			

FOR TEMP. COMPENSATION				
SW6	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2
CODE	6°C	2°C	4°C	According to E Function
FACTORY SETTING	✓			

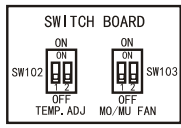
FOR ANTI-COLD WIND				
SW1	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2
TE1	28	30	Fan motor do not stop.	According to E Function
TE2	30	32		
TE3	24	28		
TE4	15	24		
TE5	32	35		
TE6	30	32		
FACTORY SETTING	✓			

FOR SETTING NETADDRESS				
S1+S2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2	<input type="checkbox"/> ON <input type="checkbox"/> 1 2
CODE	0~F	0~F	0~F	0~F
NETADDRESS	0~15	16~31	32~47	48~63
FACTORY SETTING	✓			



FB012GMFI16MLD (Floor Console Models).

FUNCTION OF SWITCHES



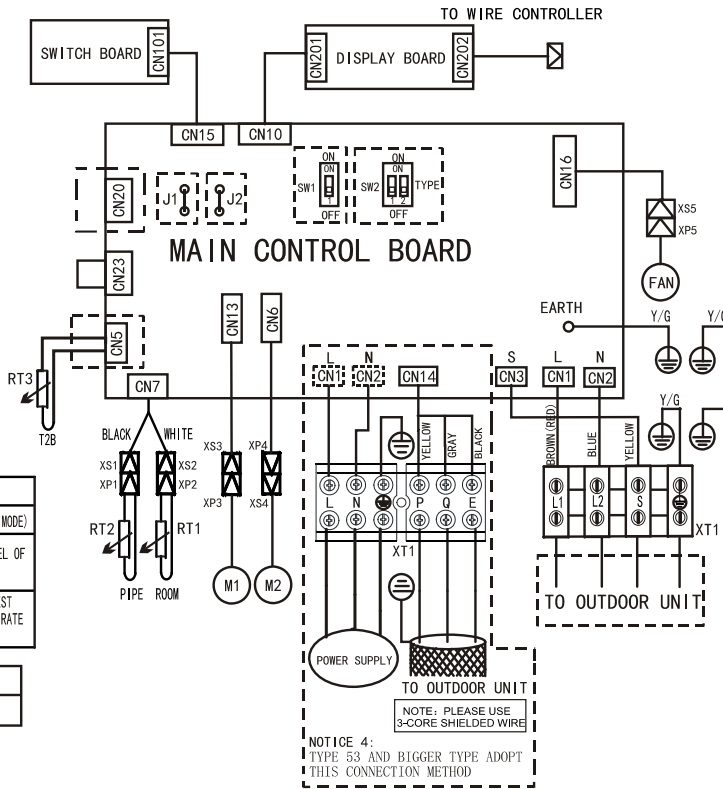
TEMP. COMPENSATION	
SW102	TEMP.
	6°C
	4°C
	2°C
	0°C

(FACTORY SETTING)

SW103	
MO/MU	FAN (EFFECTIVE IN POWERFUL MODE)

(FACTORY SETTING)

SW1	ON	OFF
RESTART	NO	YES

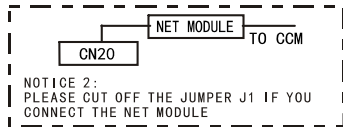


WIRING DIAGRAM (INDOOR UNIT)

CODE	PART NAME
CN1-CN20	P.C BOARD SOCKETS
FAN	INDOOR DC FAN MOTOR
M1	UPPER OUTLET SWING MOTOR
M2	LOWER OUTLET SWING MOTOR
RT1	ROOM TEMPERATURE
RT2	PIPE TEMPERATURE
RT3	T2B TEMPERATURE
XP1-XP5	CONNECTORS
XS1-XS5	CONNECTORS
XT1	4-WAY TERMINAL
J1-J2	JUMPER

TYPE SELECTION (SW1 ON THE MAIN CONTROL BOARD)				
TYPE	20	26	32	53
SW2				

NOTICE 1:
THE TYPE SELECTION AND MO/MU HAS BEEN SET BEFORE LEAVING THE FACTORY. ANYONE CAN'T MODIFY IT EXCEPT THE MAINTENANCE PERSON.



NOTICE 2:
PLEASE CUT OFF THE JUMPER J1 IF YOU CONNECT THE NET MODULE

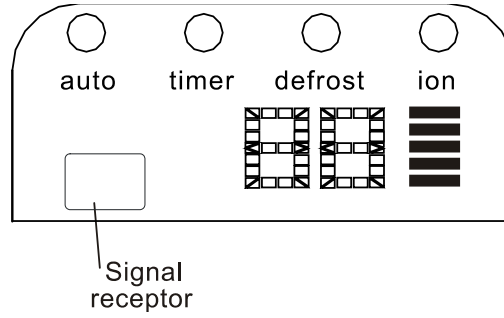
NOTICE 3:
PLEASE CUT OFF THE JUMPER J2 IF YOU WANT TO HAVE THE THERMAL FUNCTION

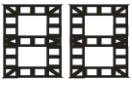

202052290083

Troubleshooting

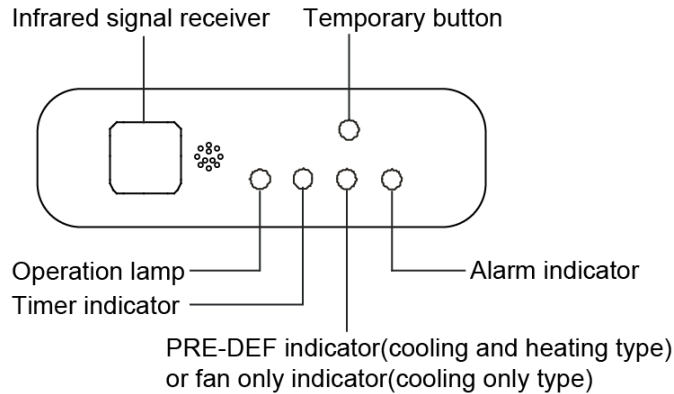
9.1 Display Board

9.1.1 Icon explanation on indoor display board (WB Series Wall Mount Models)

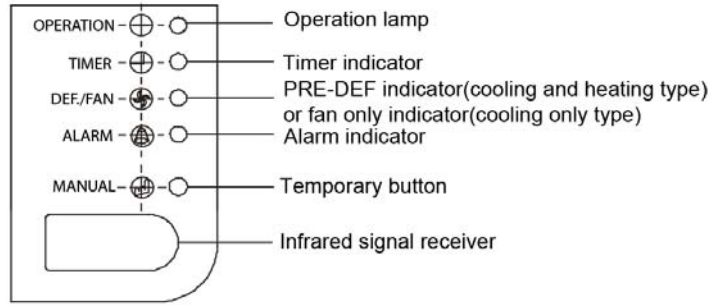


AUTO indication lamp	Lights up during the auto operation.
TIMER indication lamp	Lights up during Timer operation.
DEFROST indication lamp (For cooling & heating models only):	Lights up when the air conditioner starts defrosting automatically or when the warm air control (Warm Start) feature is activate in heating operation.
Ion indication	Illuminate when Ionizer/Plasma function is activated
	DIGITAL DISPLAY: Displays the current setting temperature and malfunction/protection code when the air conditioner is in operation.
	Frequency display: This display is separated into five zones. The zones illuminate based on the compressor current frequency. For example, higher frequency will illuminate more zones.

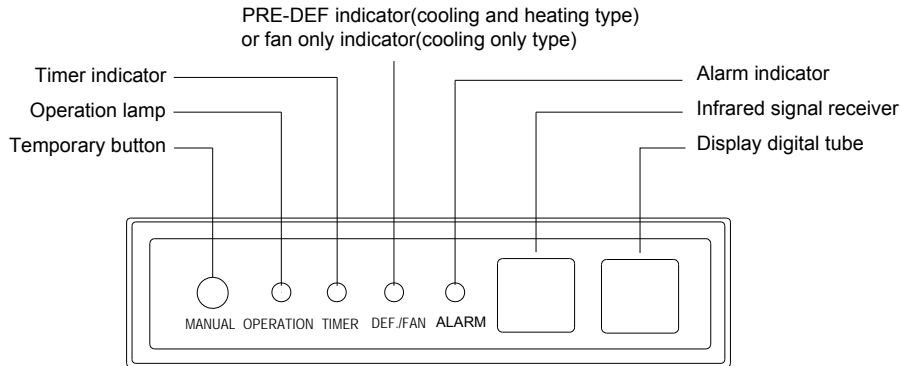
9.1.2 Icon explanation on indoor display board (CB Series Compact cassette)



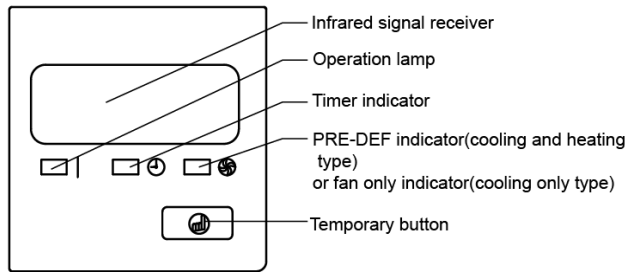
9.1.3 Icon explanation on indoor display board (UB Series Ceiling & floor)



9.1.4 Icon explanation on indoor display board (RB Series Ceiling Recessed Ducted)



9.1.5 Icon explanation on indoor display board (FB Series Console)



9.2 Indoor Unit Error Display

WB Series Wall Mount Units

Display	Failure
E0	Indoor EEPROM malfunction
E1	Indoor/ outdoor units communication error
E2	Zero-crossing signal error
E3	Indoor fan speed has been out of control
E5	Open circuit or short circuit of outdoor temperature sensor or outdoor EEPROM malfunction
E6	Open circuit or short circuit of T1 or T2 temperature sensor
P0	IPM module protection or IGBT over-strong current protection
P1	Voltage protection
P2	Temperature protection of compressor top
P3	Outdoor temperature is lower than -15°C (optional function)
P4	Inverter compressor drive protection
P5	Mode conflict

Note

P3: If the outdoor temperature $\leq -15\text{ }^{\circ}\text{C}$ for 1 hour, then the machine stops running, the indoor display shows the error code "P3". The unit can still receive remote control signals.

If the outdoor $\geq -12\text{ }^{\circ}\text{C}$ for 10 minutes, the compressor stops running more than one hour,

Or the outdoor temperature $\geq 5\text{ }^{\circ}\text{C}$ for 10 minutes, then AC will recover to the last mode and fan speed.

E4 : Reserved function.

FB Series Floor Console

Operation	Timer	De-frost	Failure
★	X	X	Open or short circuit of T1 temperature sensor
X	X	★	Open or short circuit of T2 temperature sensor
X	★	X	Indoor / outdoor units communication error
★	★	X	Indoor EEPROM malfunction
X	★	●	Outdoor fan speed has been out of control
★	X	★	IPM module protection
★	★	★	Open or short circuit of T3 or T4 temperature sensor or Outdoor unit EEPROM parameter error
★	●	X	Temperature protection of compressor top
★	◎	X	Inverter compressor drive protection
★	X	●	Mode conflict
★	●	★	Indoor fan speed has been out of control

★ flash at 5/sec, ● light ON, X extinguished, ◎flash at 0.5/sec

For RB Concealed-Duct, UB Floor-Ceiling, CB Ceiling Cassette:

Operation	Timer	De-frost	Alarm	Failure	Display
★	X	X	X	Open or short circuit of T1 temperature sensor	E0
X	X	★	X	Open or short circuit of T2 temperature sensor	E1
X	★	X	X	Indoor / outdoor units communication error	E2
X	X	X	★	Full-water malfunction	E3
★	★	X	X	Indoor EEPROM malfunction	E4
★	X	X	●	IPM module protection	E5
★	●	X	X	Open or short circuit of T3 or T4 temperature sensor or outdoor EEPROM malfunction	E6
★	●	★	X	Outdoor fan has been out of control	E7
★	●	●	X	Indoor fan speed has been out of control	F5
★	●	X	●	Voltage protection	P0
★	X	●	X	Temperature protection of compressor top.	P1
★	★	★	X	Outdoor unit over-current protection	P2
★	◎	X	X	Inverter compressor drive protection	P4
★	X	●	●	Mode conflict	P5

★ flash at 2.5/sec ● light ON, X extinguished, ◎flash at 0.5/sec
Note: Digital display is only available for duct type.

9.3 Outdoor Unit Error Display

For YN018GMFI16M2D, YN027GMFI16M3D, YN030GNFI16M3D, YN036GMFI16M4D (2014 and Newer)

Display	LED STATUS	IDU Error (Wall)	IDU Error (Others)
E0	Outdoor EEPROM malfunction	E5	E6
E2	Indoor / outdoor units communication error	E1	E2
E3	Communication malfunction between IPM board and outdoor main board	—	—
E4	Open or short circuit of outdoor temperature sensor(T3、 T4、 TP、 T2B)	E5	E6
E5	Voltage protection	P1	P0
E6	PFC module protection(Only for M4OC-36HRFN1-M)	—	—
E8	Outdoor fan speed has been out of control(Only for DC fan motor models)	E7	E7
F1	No A Indoor unit coil outlet temp. sensor or connector of sensor is defective	—	—
F2	No B Indoor unit coil outlet temp. sensor or connector of sensor is defective	—	—
F3	No C Indoor unit coil outlet temp. sensor or connector of sensor is defective	—	—
F4	No D Indoor unit coil outlet temp. sensor or connector of sensor is defective	—	—
P0	Temperature protection of compressor top (Only for M3OD-27HRDN1-M)	P2	P3(P1)
P1	High pressure protection (Only for M4OC-36HRFN1-M)	—	—
P2	Low pressure protection(Only for M4OC-36HRFN1-M)	—	—
P3	Current protection of compressor	—	—(P2)
P4	Temperature protection of compressor discharge	—	—
P5	High temperature protection of condenser	—	—
P6	IPM module protection	P0	E5

For Older (PRE 2014) Multi Split System Outdoor Units, YN018GMFI16M2D, YN027GMFI16M3D and YN036GMFI16M4D

Display digital tube	LED STATUS	IDU Error (Wall)	IDU Error (Others)
E0	Outdoor EEPROM malfunction	E5	E6
E1	No A Indoor unit coil outlet temp. sensor or connector of sensor is defective	—	—
E2	No B Indoor unit coil outlet temp. sensor or connector of sensor is defective	—	—
E3	No C Indoor unit coil outlet temp. sensor or connector of sensor is defective	—	—
E6	No D Indoor unit coil outlet temp. sensor or connector of sensor is defective	—	—
E4	Open or short circuit of outdoor temperature sensor(T4)	E5	E6
E5	Voltage protection	P1	P0
E7	Communication malfunction between IPM board and outdoor main board	—	—
P0	Temperature protection of compressor discharge (Temperature protection of compressor top(only for M2OC-18HRDN1-M&M3OC-27HRDN1-M))	P2	P3(P1)
P1	High pressure protection (Only for M4OC-36HRDN1-M)	—	—
P2	Low pressure protection(Only forM4OC-36HRDN1-M)	—	—
P3	Current protection of compressor	—	—(P2)
P4	IPM module protection	P0	E5
P6	High temperature protection of condenser	—	—
P7	Inverter compressor drive protection	P4	P4
PF	PFC module protection(Only for M4OC-36HRDN1-M)	—	—

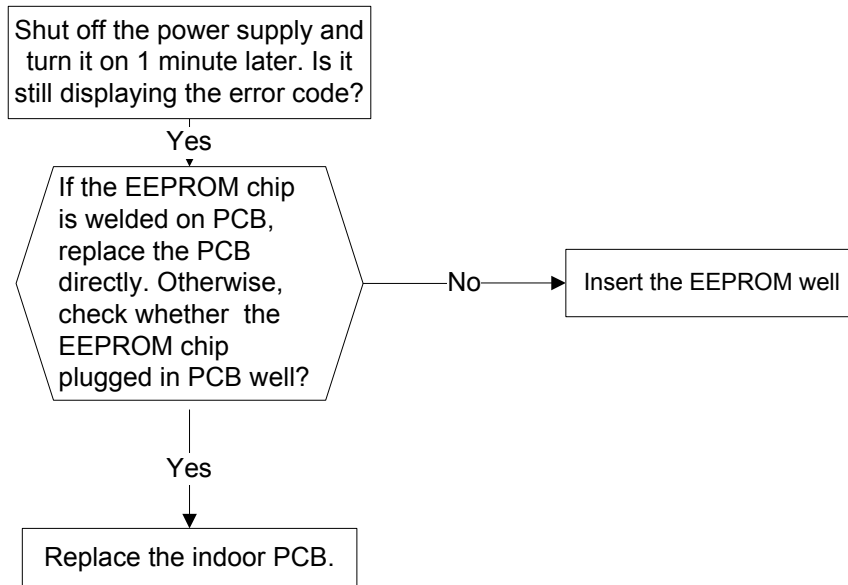
9.4 Diagnosis and Solution

9.4.1 Indoor unit trouble shooting

9.4.1.1 Indoor EEPROM malfunction diagnosis and solution.

Malfunction decision conditions	PCB main chip does not receive feedback from EEPROM chip
Supposed causes	<ul style="list-style-type: none">● Installation mistake● PCB faulty

Trouble shooting:

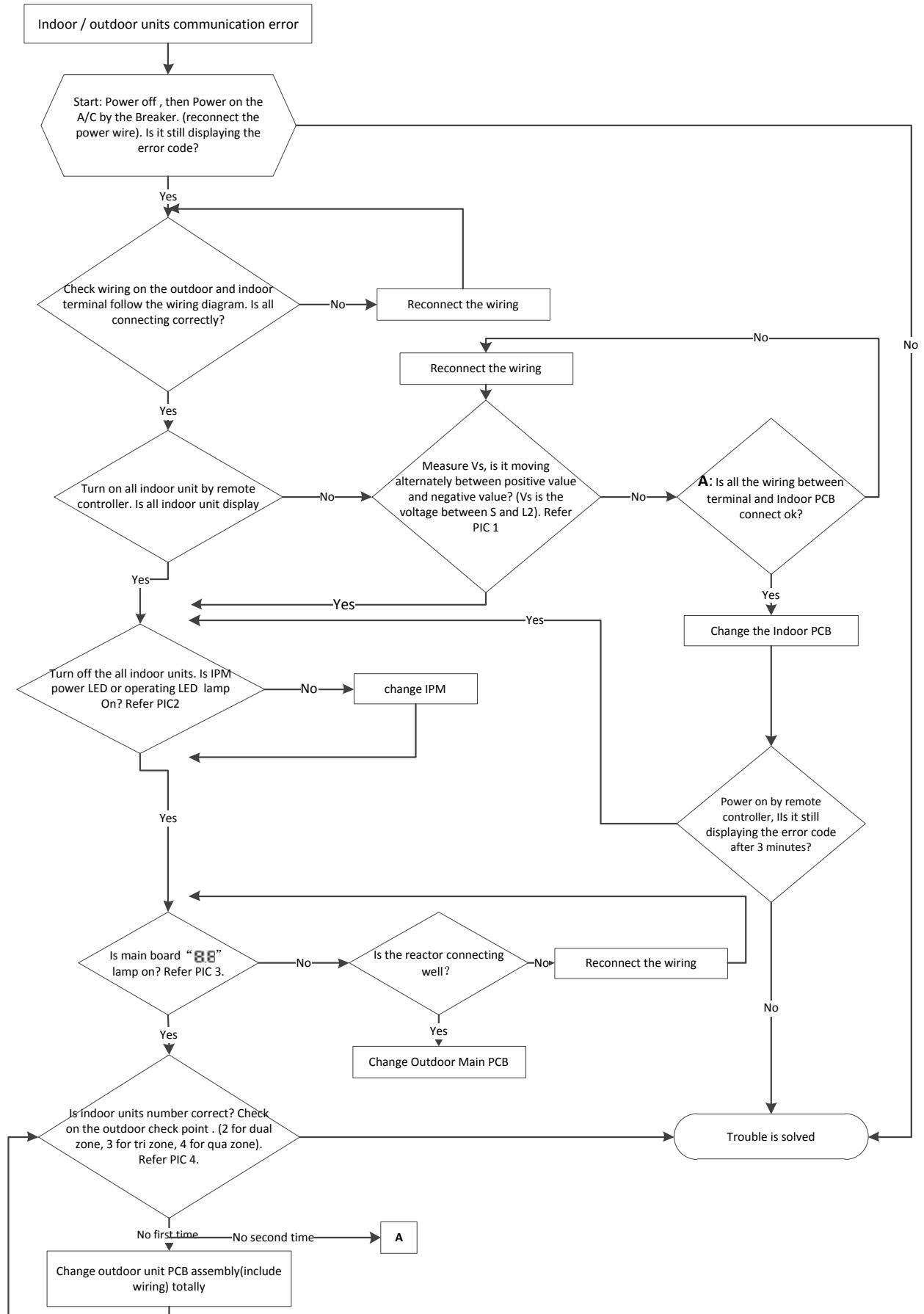


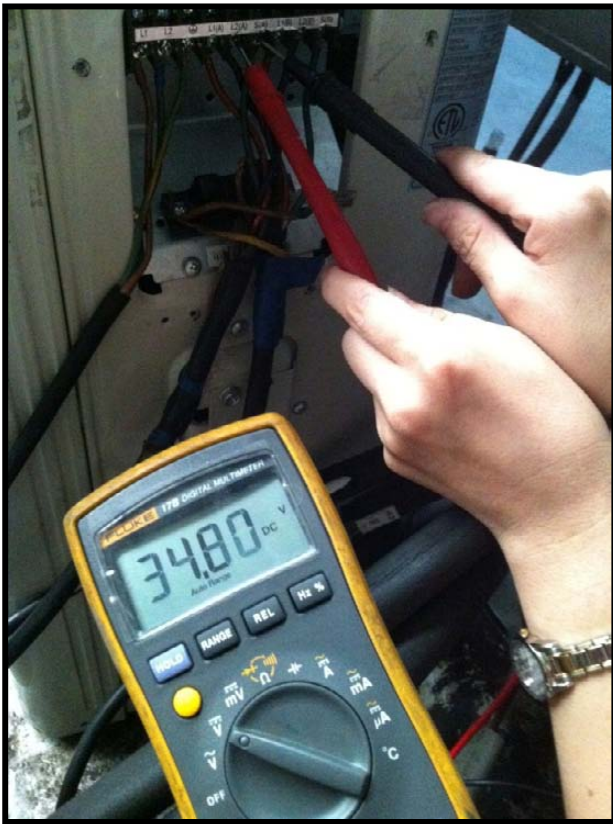
EEPROM: a read-only memory whose contents can be erased and reprogrammed using a pulsed voltage. For the location of EEPROM chip, please refer to the below photos.

9.4.1.2 Indoor / outdoor unit communication error diagnosis and solution.

Malfunction decision conditions	Indoor unit does not receive the feedback from outdoor unit for 120 seconds.
Supposed causes	<ul style="list-style-type: none">● Wiring mistake● Indoor or outdoor PCB faulty

Trouble shooting:





Pic 1: Use a multimeter to test the DC voltage between L2 port and S port of outdoor unit. The red pin of multimeter connects with L2 port while the black pin is for S port.

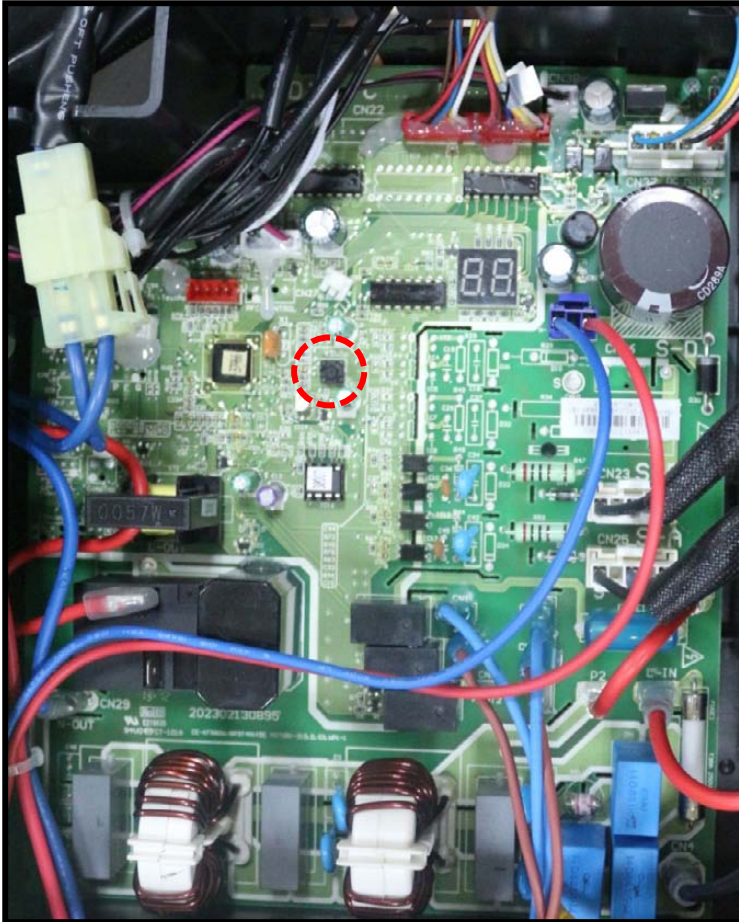
When AC is running normally, the voltage will move alternately between positive value and negative value.



Pic 2: :IPM (for dual/trio/quad-zone)



PIC3 :Main board LED when power on and unit standby.



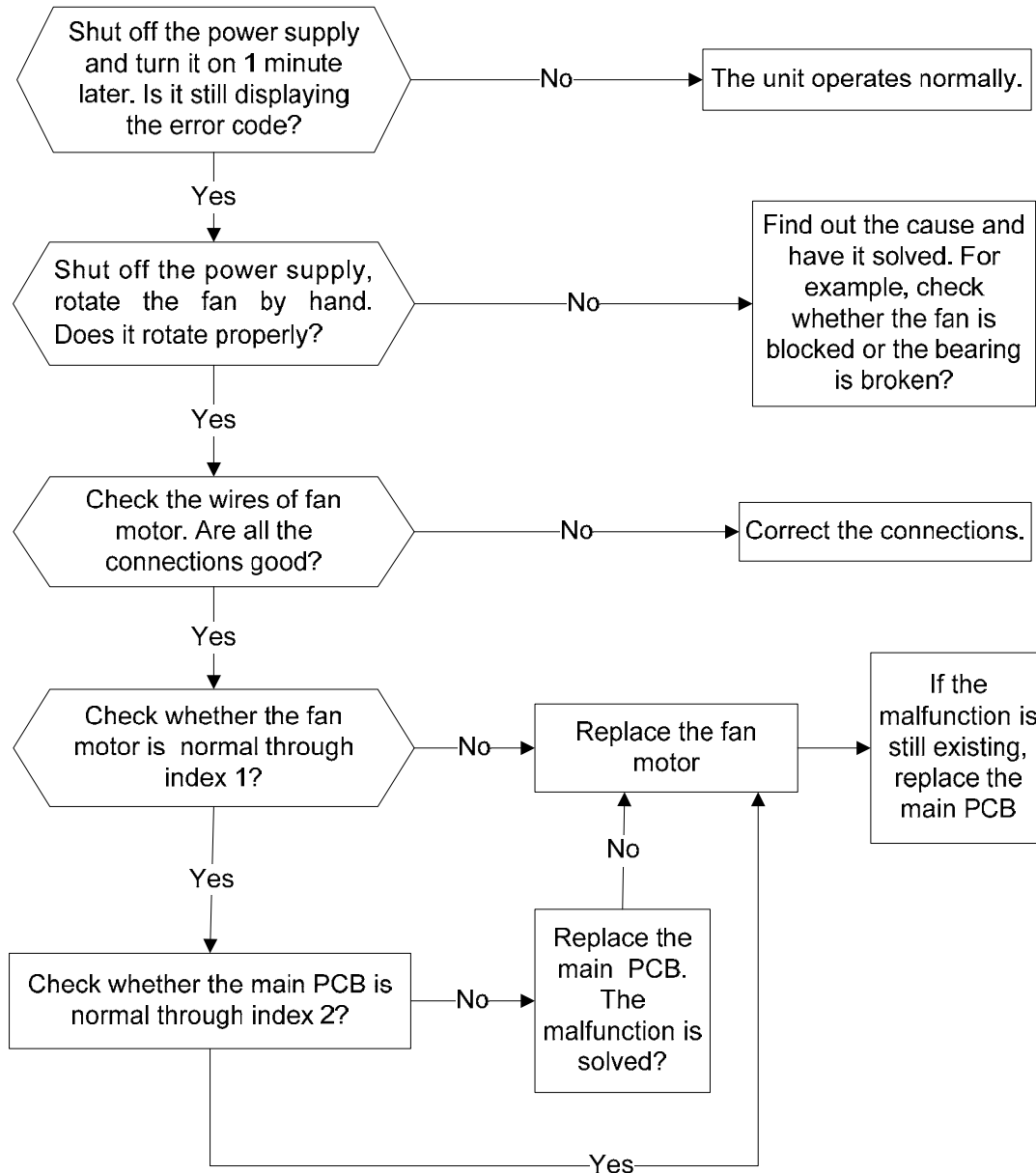
PIC 4: Check point button, press 1 time for check how many indoor units are connected (For 2014 and Newer OUTDOOR Units)

Check point button, press 18 times for check how many indoor units are connected (for Pre 2014 OUTDOOR Units)

9.4.1.3 Indoor fan speed has been out of control diagnosis and solution.

Malfunction decision conditions	When indoor fan speed stays too low (300RPM) for certain time, the unit will stop and the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Fan ass'y faulty ● Fan motor faulty ● PCB faulty

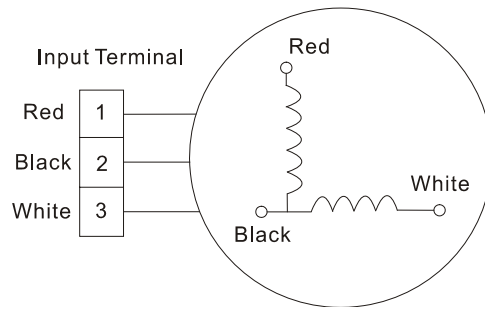
Trouble shooting:



Index 1:

1. Indoor AC fan motor

Measure the resistance value of each winding by using the tester.

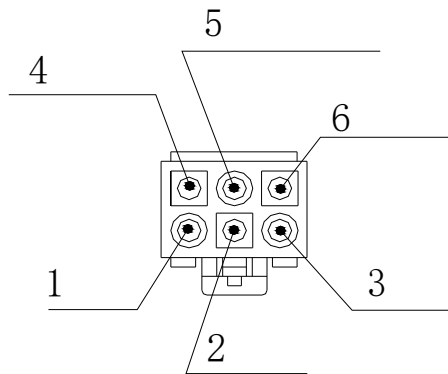


For the definite value of the resistance, refer to 9.5 Trouble Criterion Of Main Parts

2. Indoor DC fan motor(control chip is inside fan motor)

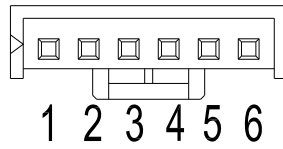
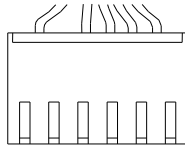
Measure the resistance value of each winding by using the tester. If any resistance value is zero, the fan motor must have problems and need to be replaced.

For console:



NO.	Color
1	Red
2	---
3	White
4	Blue
5	Yellow
6	Black

For other models:

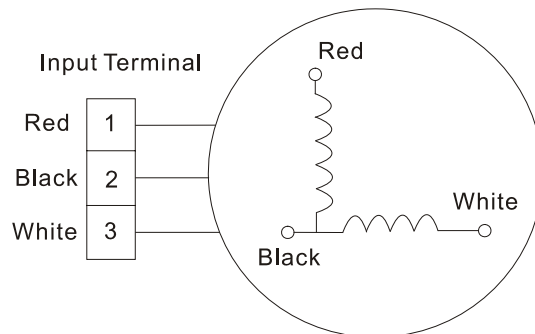


NO.	Color
1	Red
2	---
3	Black
4	White
5	Yellow
6	Blue

Index2:

1: Indoor AC fan motor

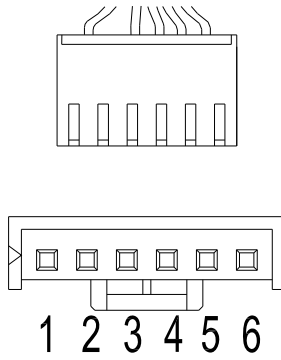
Power on and set the unit running in fan mode at high fan speed. After running for 15 seconds, measure the voltage of pin1 and pin2. If the value of the voltage is less than 100V(208~240V power supply)or 50V(115V power supply), the PCB must have problems and need to be replaced.



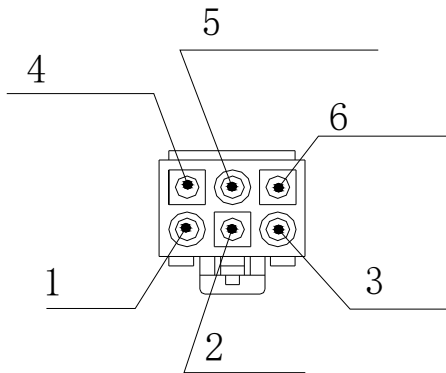
2. Indoor DC fan motor(control chip is inside fan motor)

Power on and when the unit is in standby, measure the voltage of pin1-pin3, pin4-pin3 in fan motor connector. If the value of the voltage is not in the range showing in below table, the PCB must have problems and need to be replaced.

For other models:



For console:



DC motor voltage input and output

For light commercial(except console):

NO.	Color	Signal	Voltage
1	Red	Vs/Vm	192V~380V
2	---	---	---
3	Black	GND	0V
4	White	Vcc	13.5-16.5V
5	Yellow	Vsp	0~6.5V
6	Blue	FG	15V

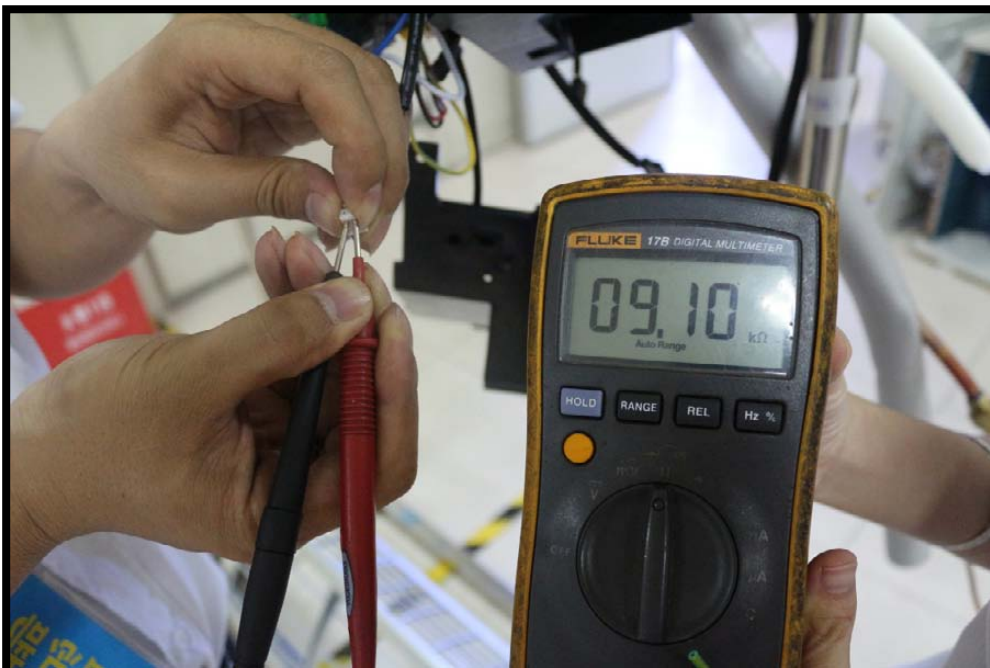
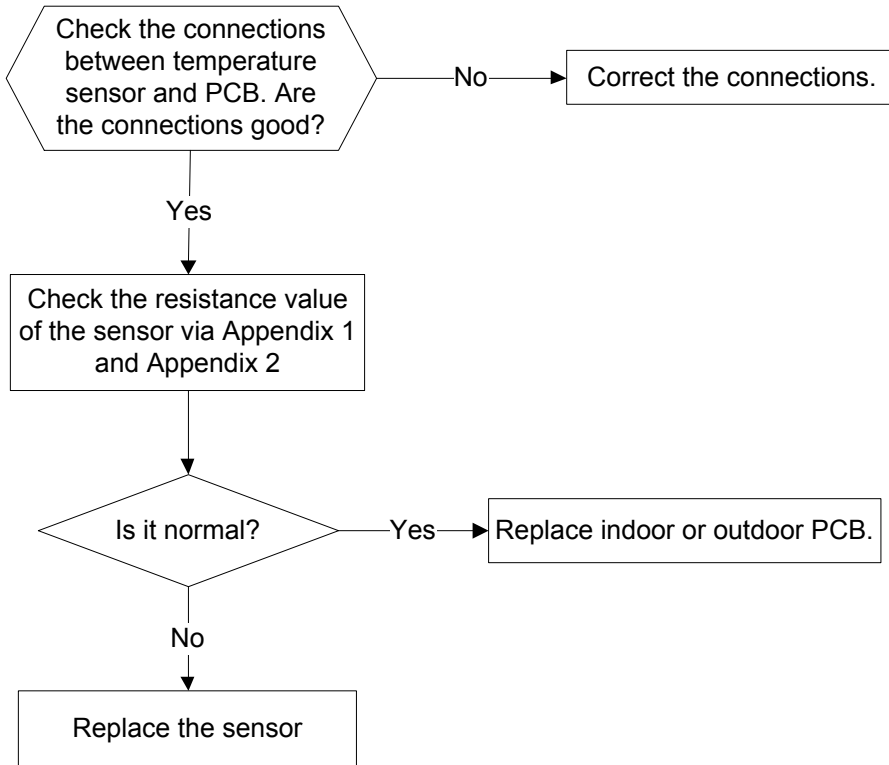
For console:

NO.	Color	Signal	Voltage
1	Red	VDC	310V
2	---	---	---
3	White	Vcc	15V
4	Blue	FG	15V
5	Yellow	Vsp	0-7.5V
6	Black	GND	0V

9.4.1.4 Open or short circuit of temperature sensor diagnosis and solution.

Malfunction decision conditions	If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none">● Wiring mistake● Sensor faulty● PCB faulty

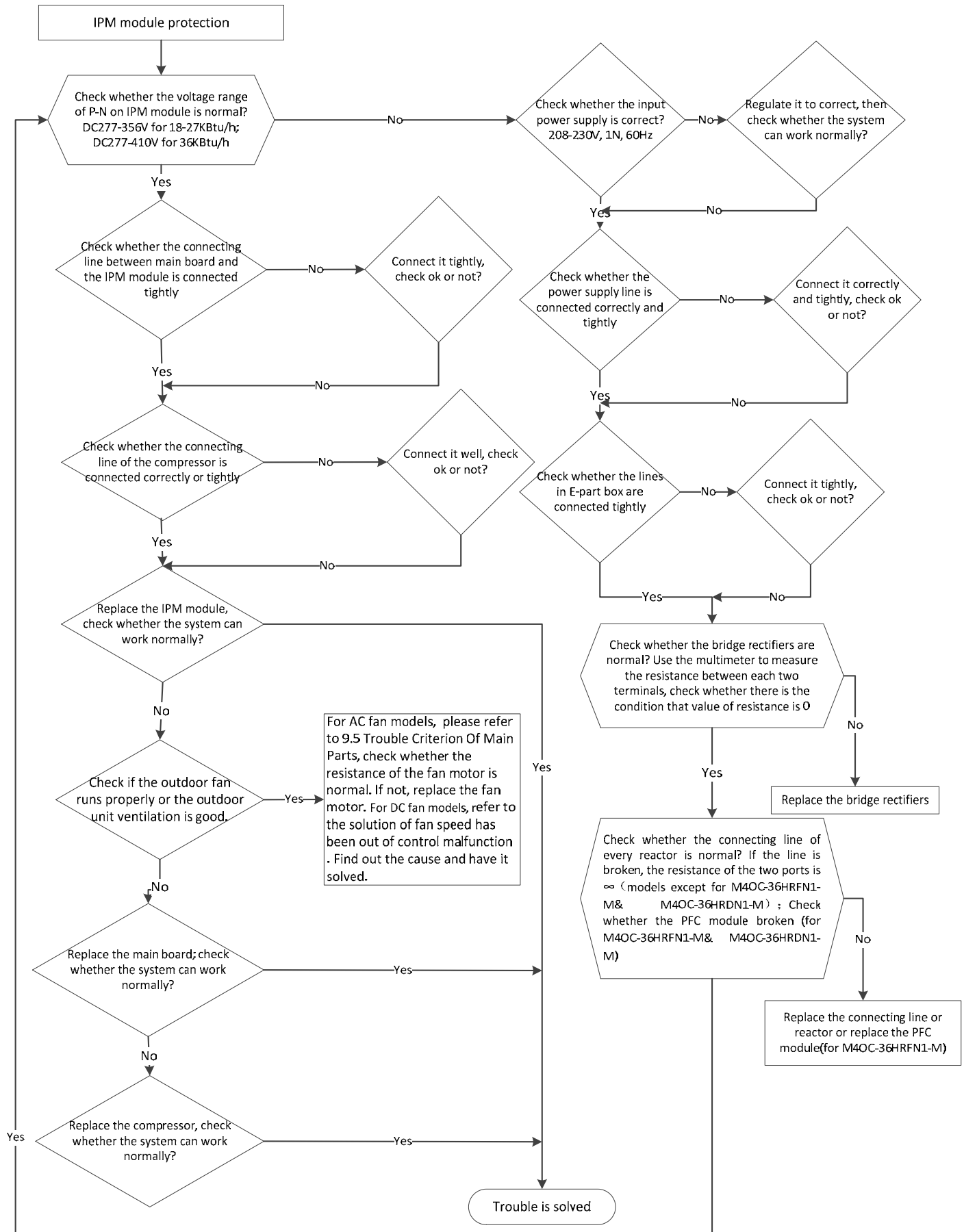
Trouble shooting:



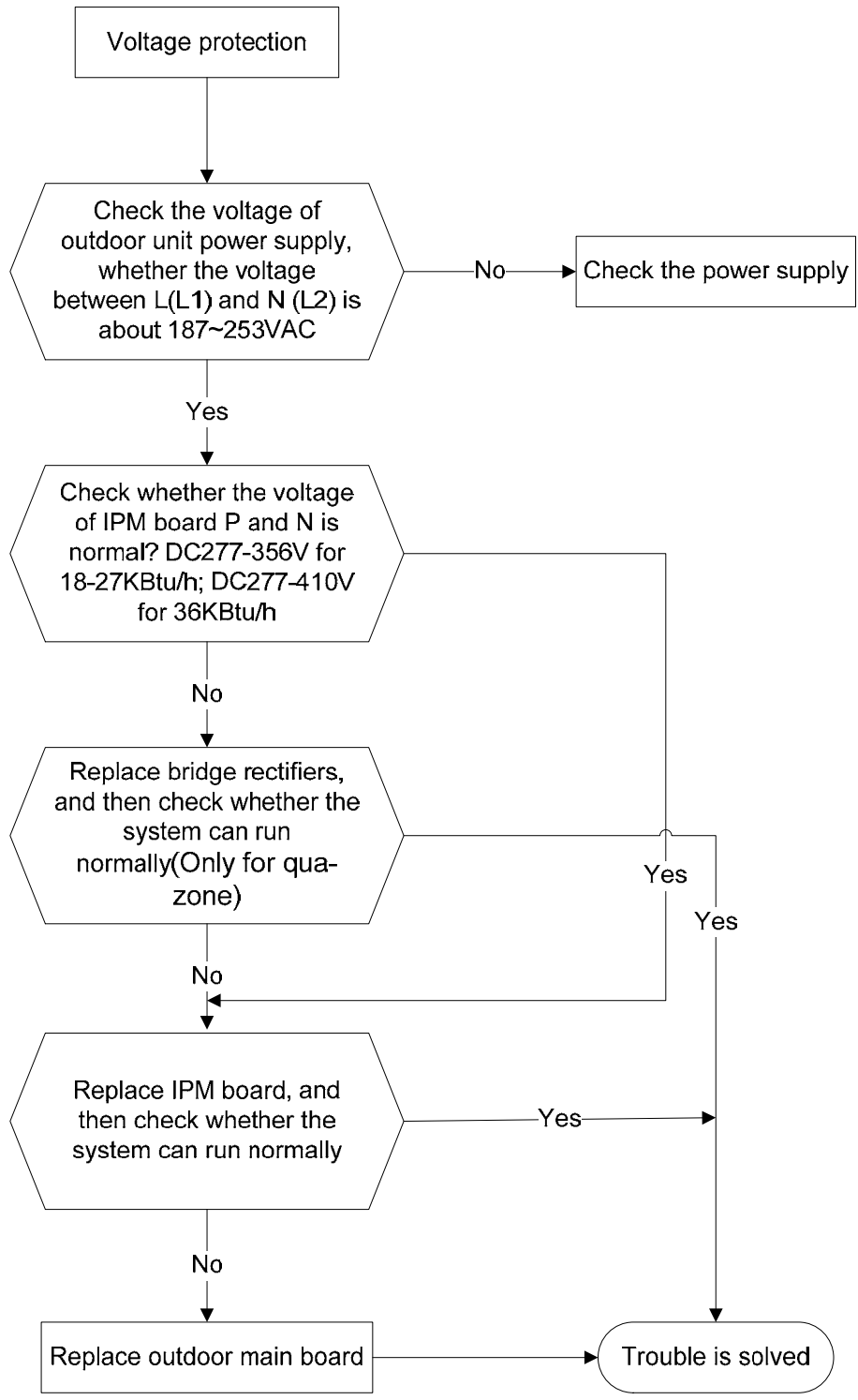
9.4.1.5 IPM module or IGBT over-strong current protection diagnosis and solution.

Malfunction decision conditions	When the voltage signal that IPM send to compressor drive chip is abnormal, the display LED will show “P6” and AC will turn off.
Supposed causes	<ul style="list-style-type: none">● Wiring mistake● IPM malfunction● Outdoor fan ass’y faulty● Compressor malfunction● Outdoor PCB faulty

Trouble shooting:

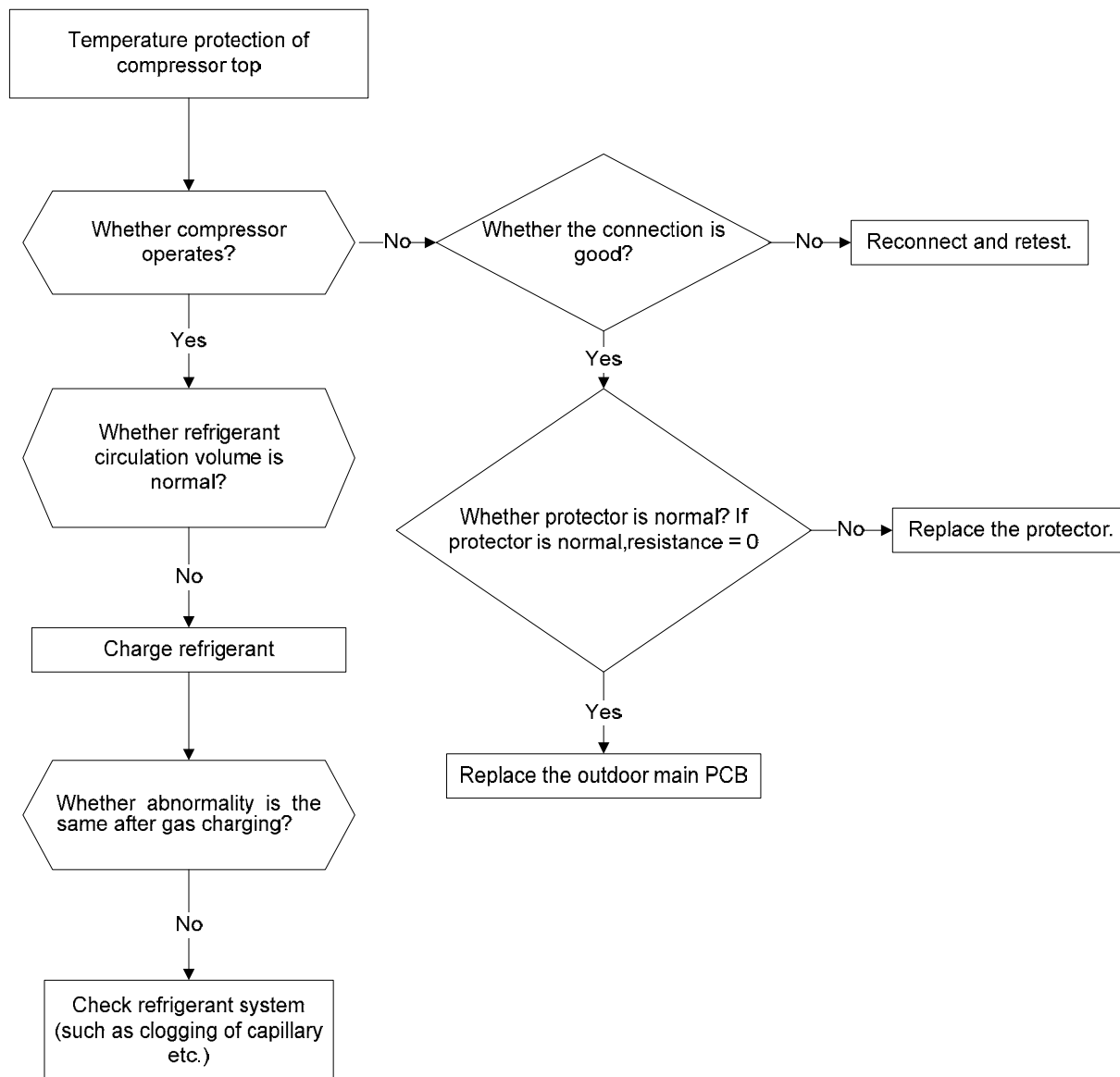


9.4.1.6 High voltage or Low voltage protection diagnosis and solution.



9.4.1.7 Temperature protection of compressor top diagnosis and solution.

Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

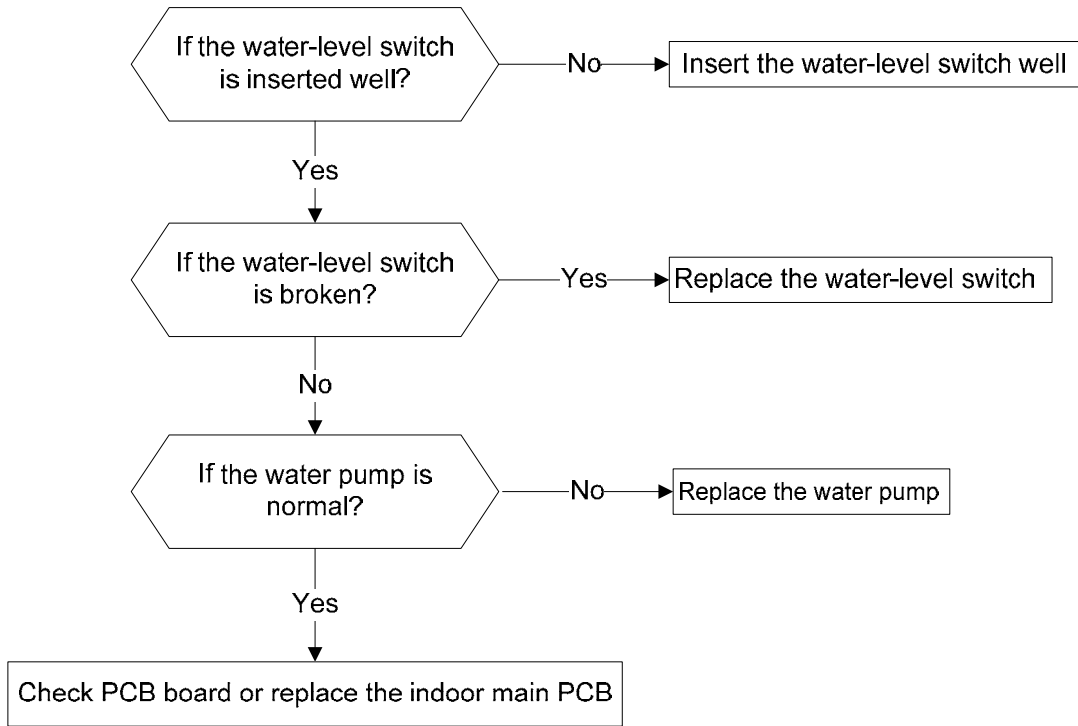


9.4.1.8 Inverter compressor drive error diagnosis and solution

The trouble shooting is same with one of IPM module protection (P0).

9.4.1.9 Full-Water malfunction diagnosis and solution (For Cassette / Concealed Duct)

Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none">● Wiring mistake● Water-level switch faulty● Water pump faulty● Indoor PCB faulty



9.4.1.10 Mode conflict.

Error Code	P5
Malfunction decision conditions	The indoor units cannot work cooling mode and heating at same time. Heating mode has a priority.
Unit action	<ul style="list-style-type: none"> ● When Indoor unit A working in cooling mode or fan mode, and indoor unit B is set to heating mode, then A will change to off and B will work in heating mode. ● When Indoor unit A working in heating mode, and indoor unit B is set to cooling mode or fan mode, then B will change to stand by and A will have no change.

	Cooling mode	Heating Mode	Fan	Off
Cooling mode	No	Yes	No	No
Heating Mode	Yes	No	Yes	No
Fan	No	Yes	No	No
Off	No	No	No	No

No: No mode conflict;

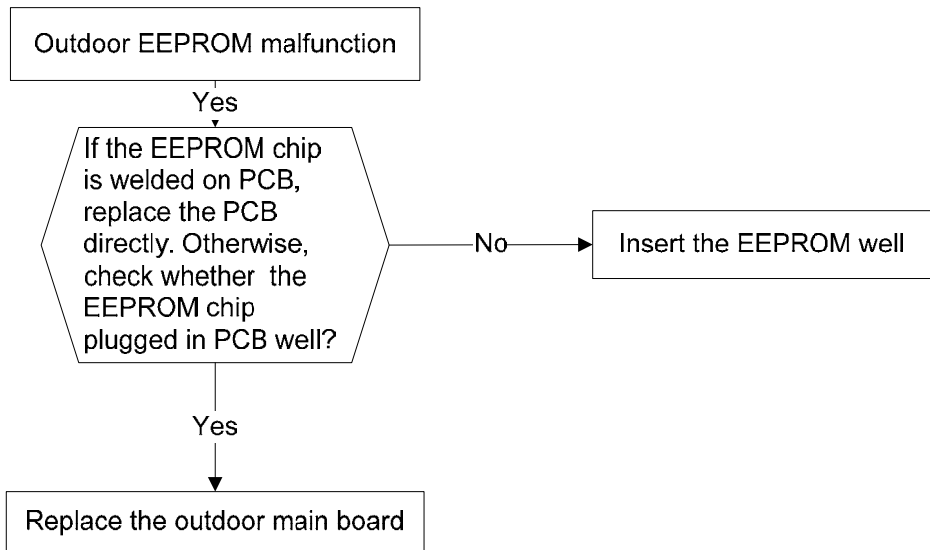
Yes: Mode conflict

9.4.2 Outdoor unit trouble shooting. For Newer (2014 and Newer) YN018GMFI16M2D, YN027GMFI16M3D, YN030GNFI16M3D, YN036GMFI16M4D Models.

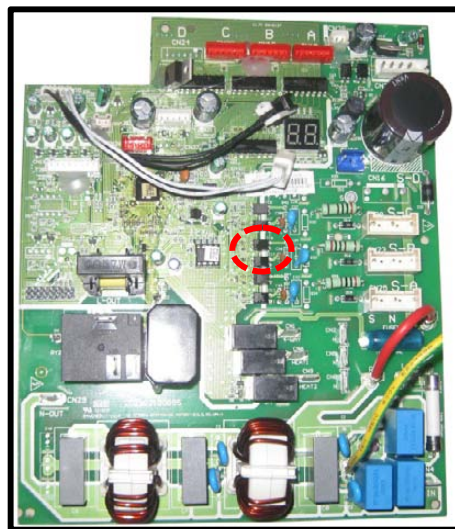
9.4.2.1 E0 (Outdoor EEPROM malfunction) error diagnosis and solution

Error Code	E0
Malfunction decision conditions	PCB main chip does not receive feedback from EEPROM chip
Supposed causes	<ul style="list-style-type: none"> ● Installation mistake ● PCB faulty

Trouble shooting:



EEPROM: a read-only memory whose contents can be erased and reprogrammed using a pulsed voltage. For the location of EEPROM chip, please refer to the below photos.

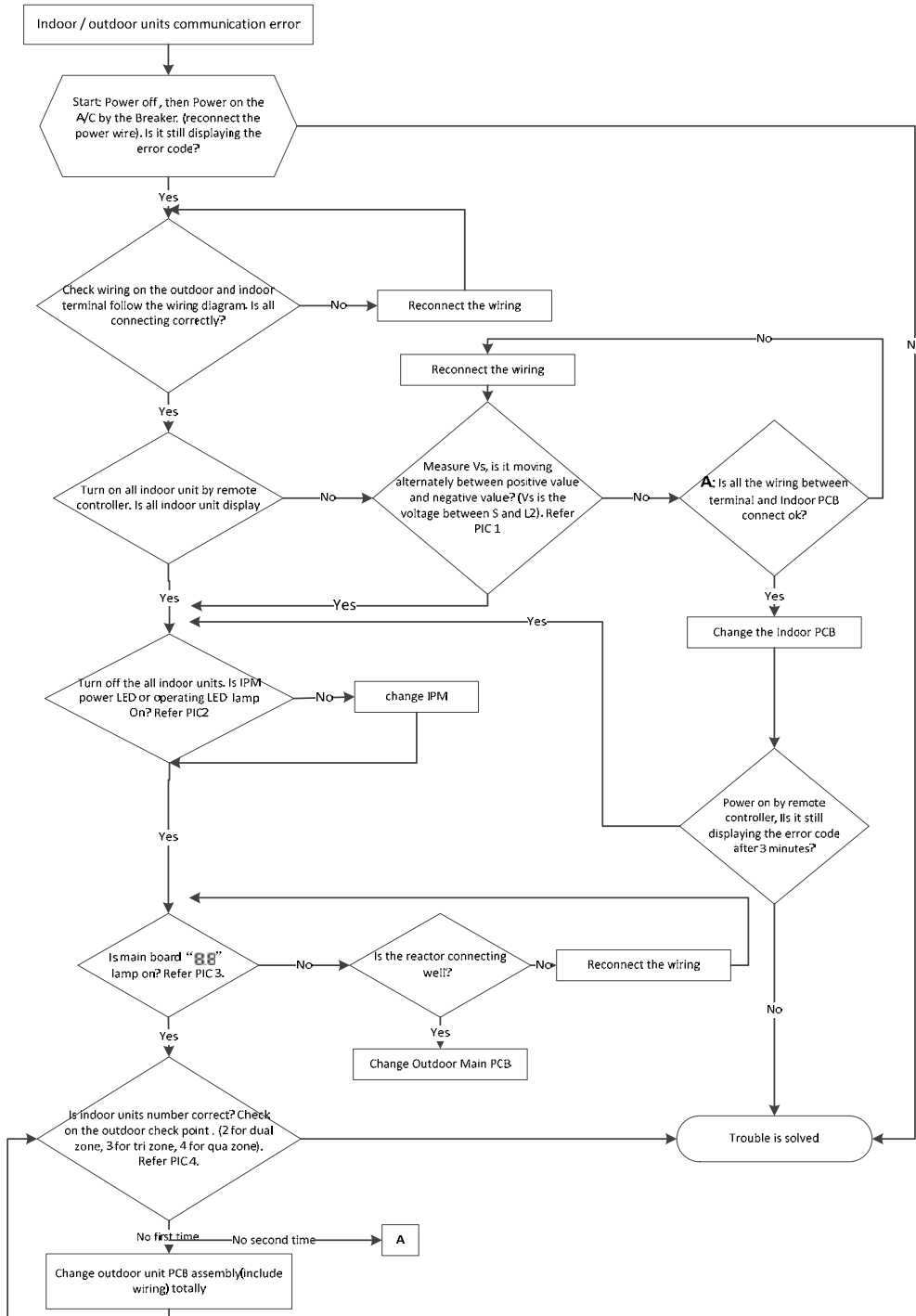


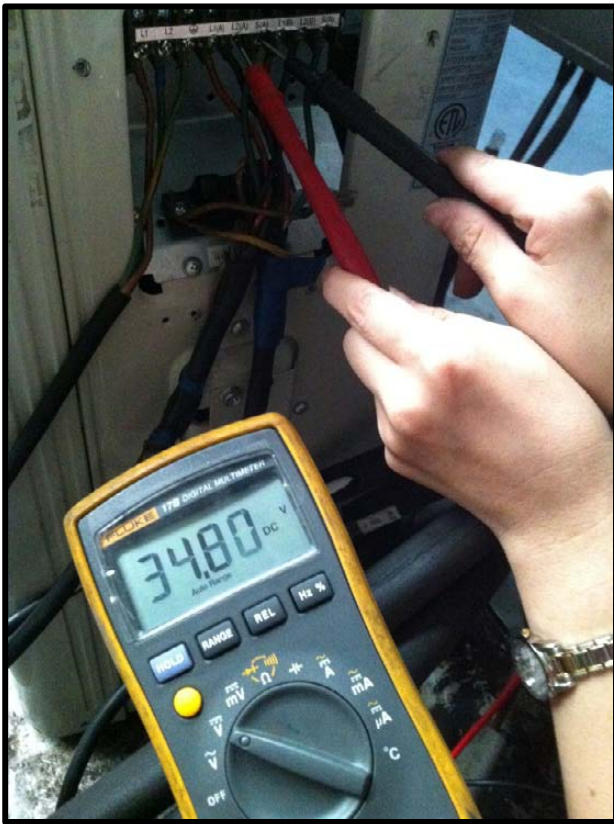
Outdoor PCB(YN030GMFI16M3D)

9.4.2.2 E2 (Indoor / outdoor unit communication error) error diagnosis and solution.

Error Code	E2
Malfunction decision conditions	Indoor unit does not receive the feedback from outdoor unit for 120 seconds or outdoor unit does not receive the feedback from any one indoor unit for 180 seconds.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Indoor or outdoor PCB faulty

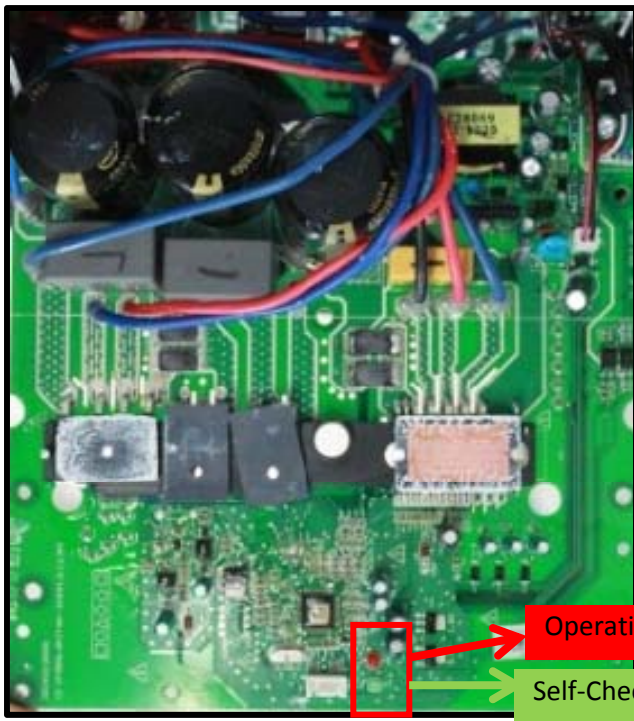
Trouble shooting:



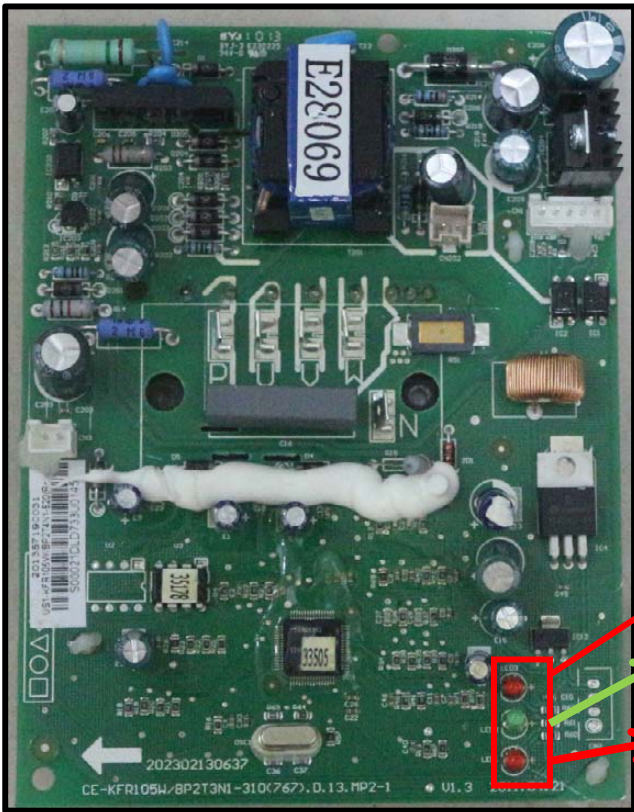


Pic 1: Use a multimeter to test the DC voltage between L2 port and S port of outdoor unit. The red pin of multimeter connects with L2 port while the black pin is for S port.

When AC is running normally, the voltage will move alternately between positive value and negative value.



Pic 2: :IPM (For dual/trio-zone)

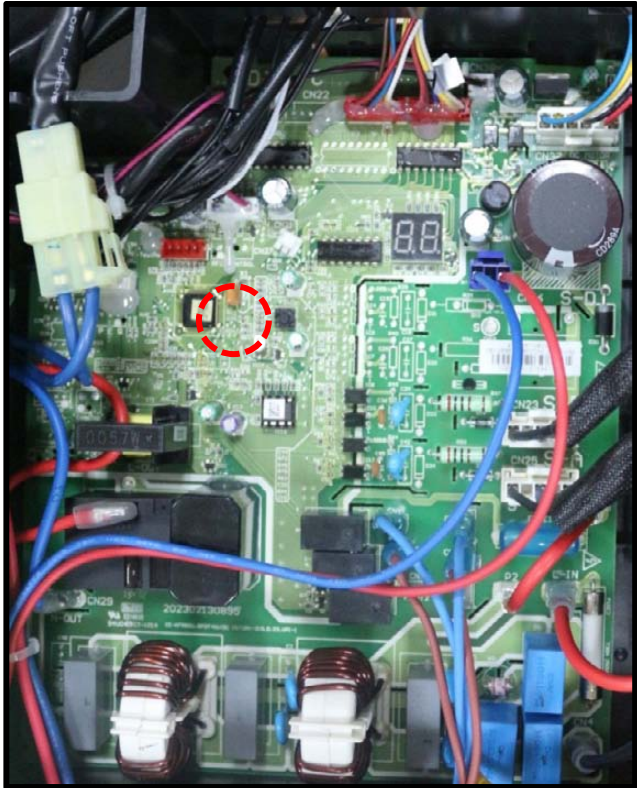


Pic 2: :IPM (For quad-zone)

- Power,
- Self-Check
- Operating



PIC3 :Main board LED when power on and unit standby.

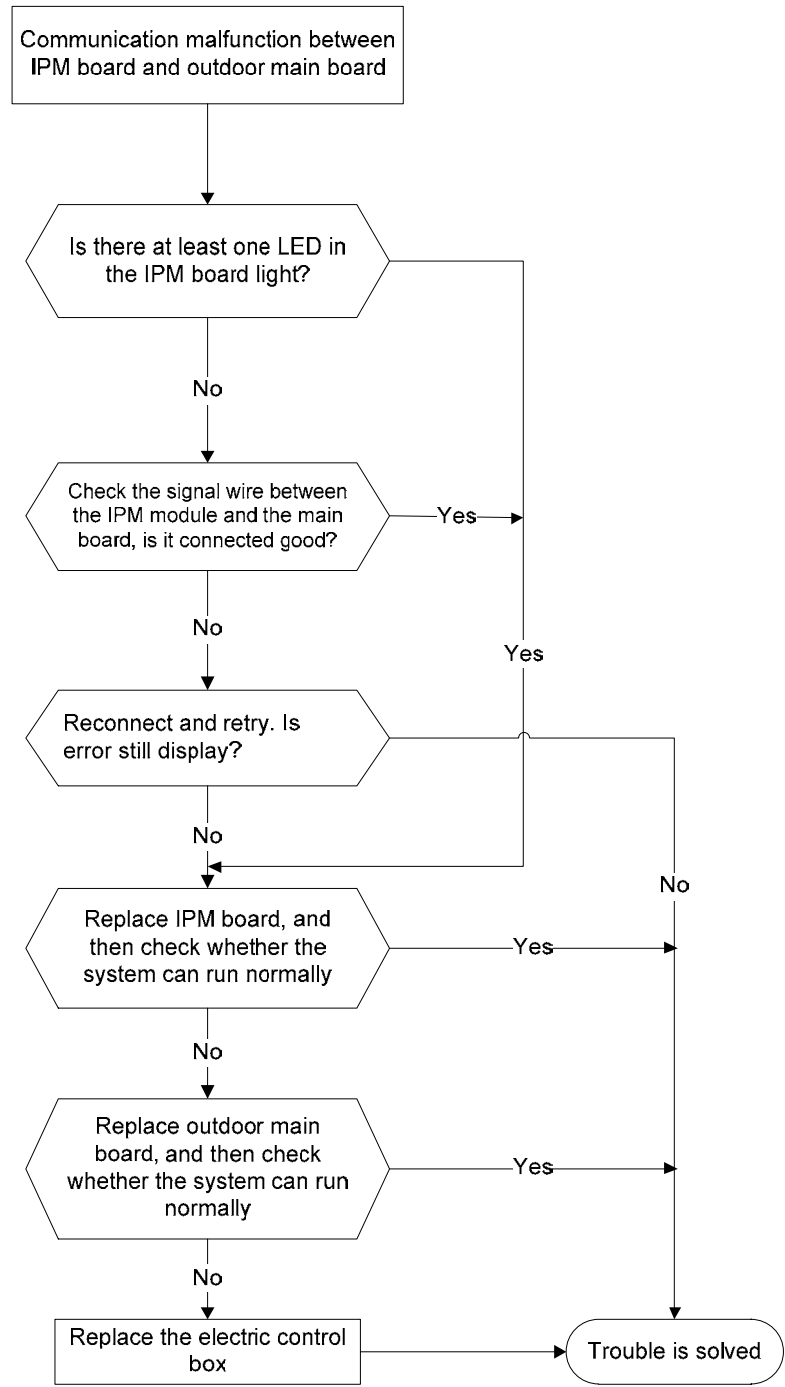


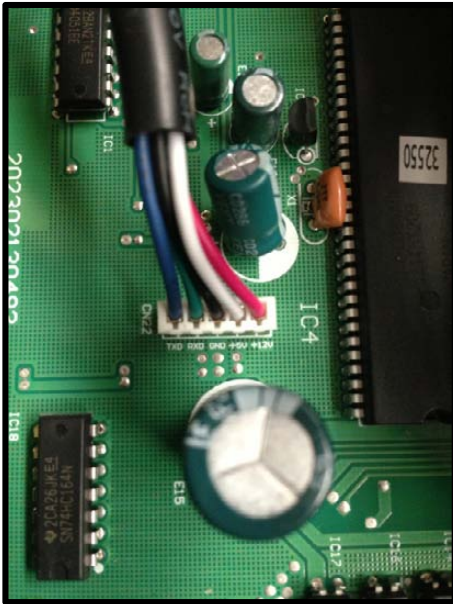
PIC 4: Check point button, press 1 time for check how many indoor units are connected.

9.4.2.3 E3 (Communication malfunction between IPM board and outdoor main board) error diagnosis and .

Error Code	E3
Malfunction decision conditions	PCB main chip does not receive feedback from IPM module for 60 seconds.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● PCB faulty

Trouble shooting:

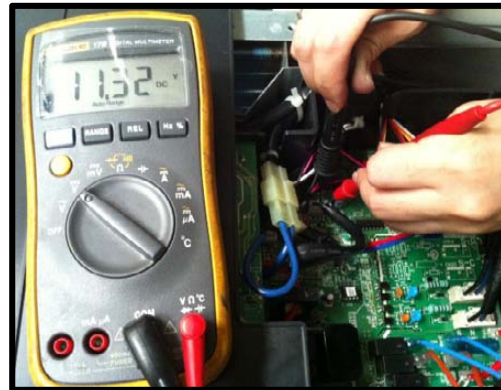
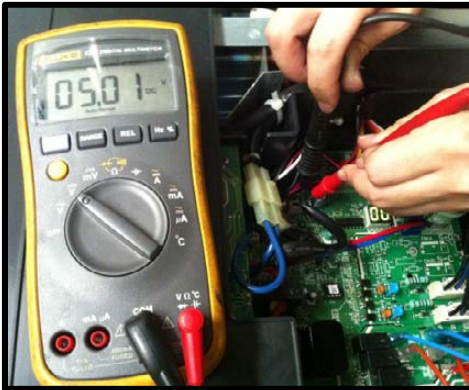




Remark:

Use a multimeter to test the DC voltage between black pin and white pin of signal wire. The normal value should be around 5V.

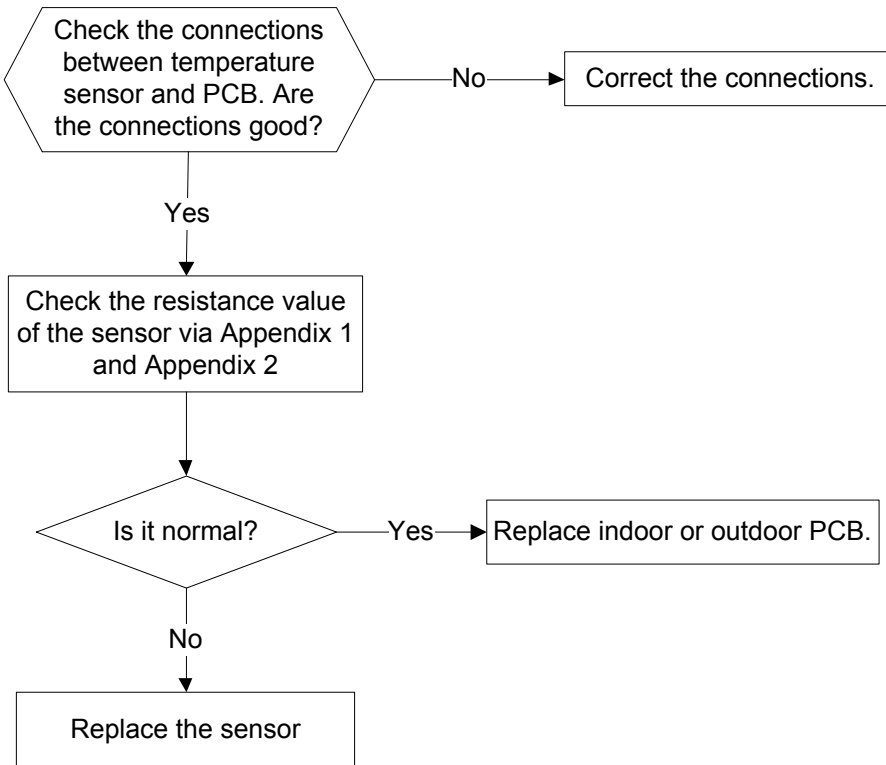
Use a multimeter to test the DC voltage between black pin and red pin of signal wire. The normal value should be around 12V.



**9.4.2.4 E4 (open or short circuit of outdoor temperature sensor) diagnosis and solution
F1/F2/F3/F4/F5 (open or short circuit of indoor coil temperature sensor) diagnosis and solution.**

Error Code	E4/F1/F2/F3/F4/F5
Malfunction decision conditions	If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Sensor faulty ● PCB faulty

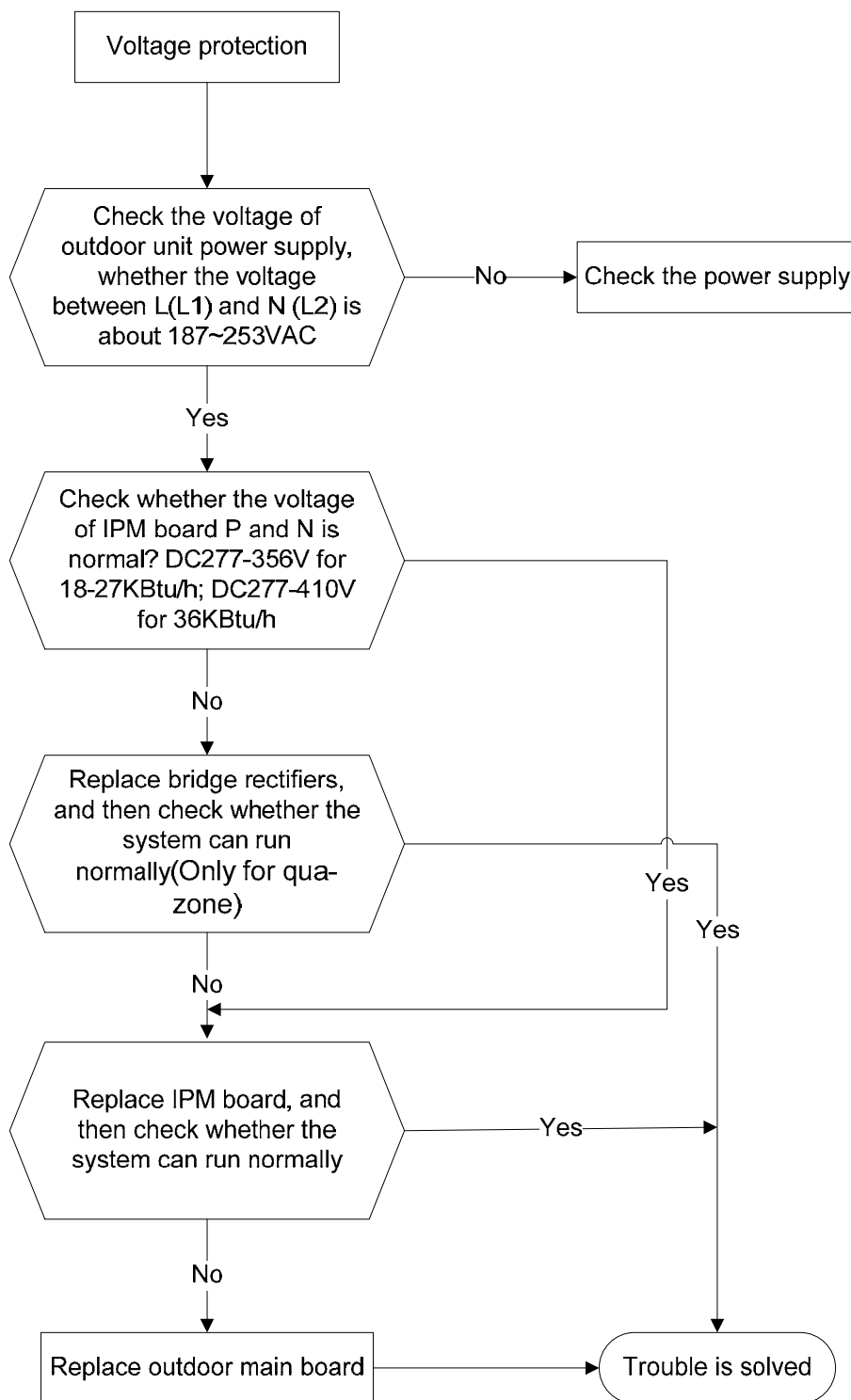
Trouble shooting:

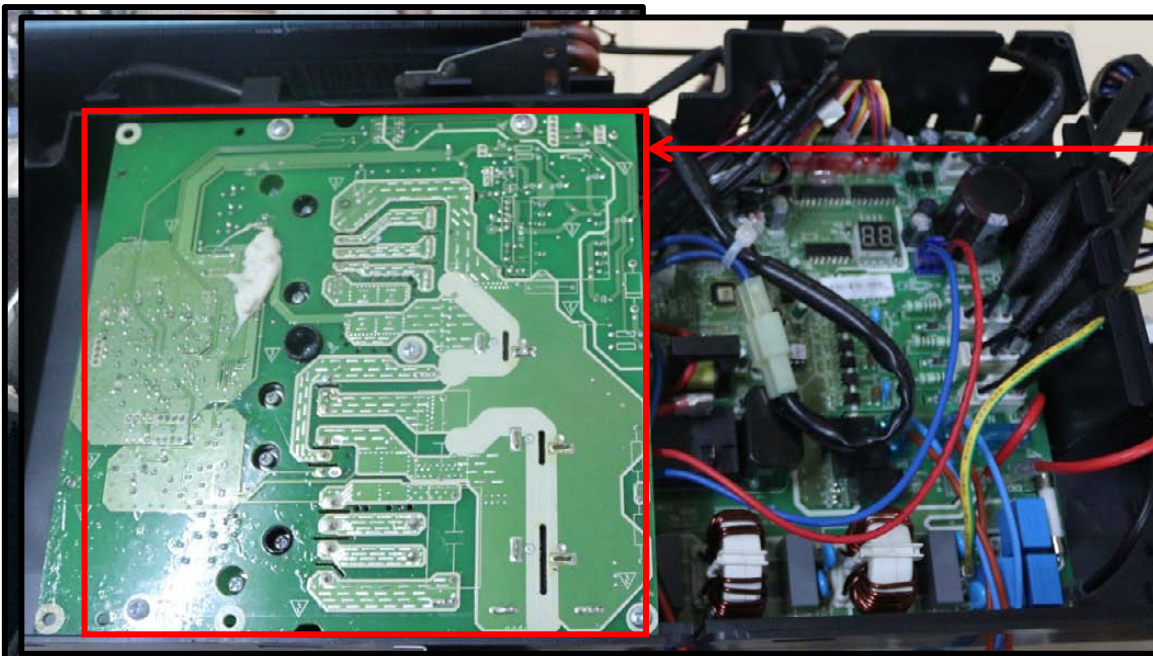


9.4.2.5 E5 (Voltage protection) error diagnosis and solution.

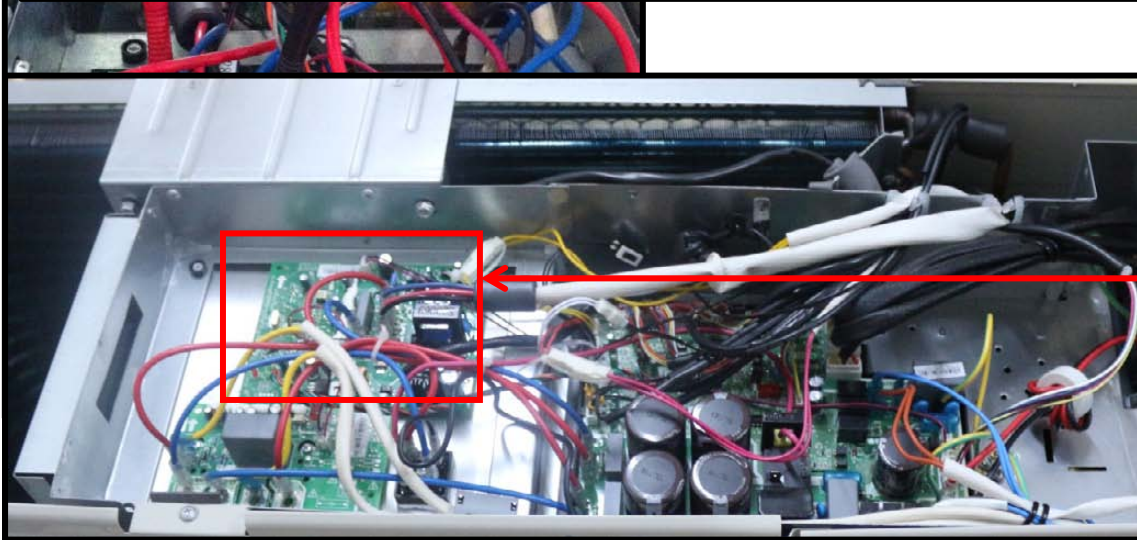
Error Code	E5
Malfunction decision conditions	An abnormal voltage rise or drop is detected by checking the specified voltage detection circuit.
Supposed causes	<ul style="list-style-type: none"> ● Power supply problems. ● System leakage or block ● PCB faulty

Trouble shooting:

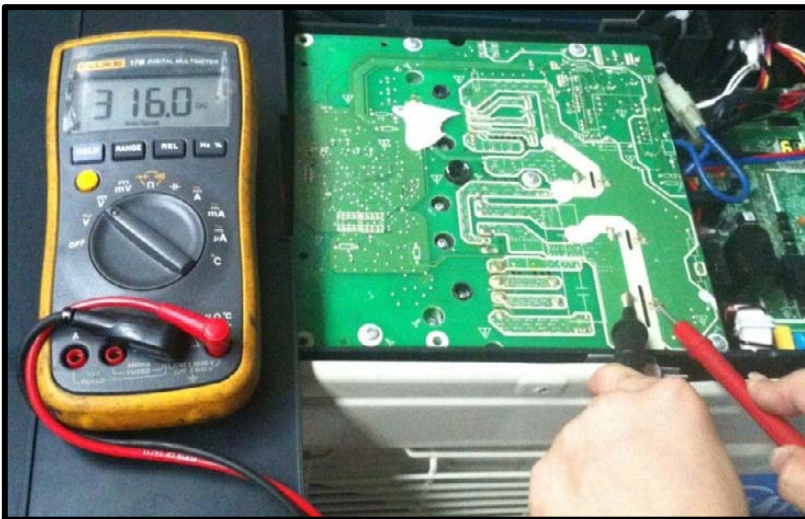




IPM (for dual/trio-zone)



IPM (for quad-zone)

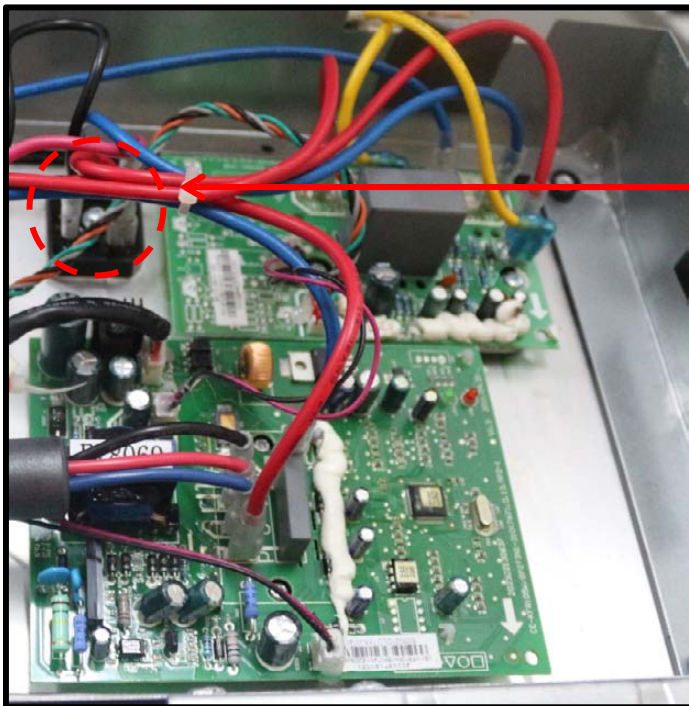


P-N (for dual/trio-zone)

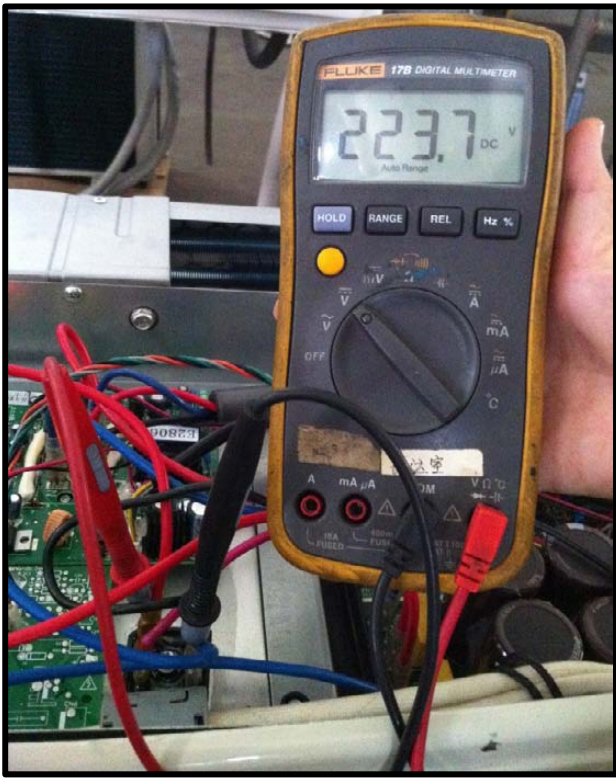
P-N (for quad-zone)



bridge rectifier
(for dual/tri-zone)



bridge rectifier
(for quad-zone)



Remark:

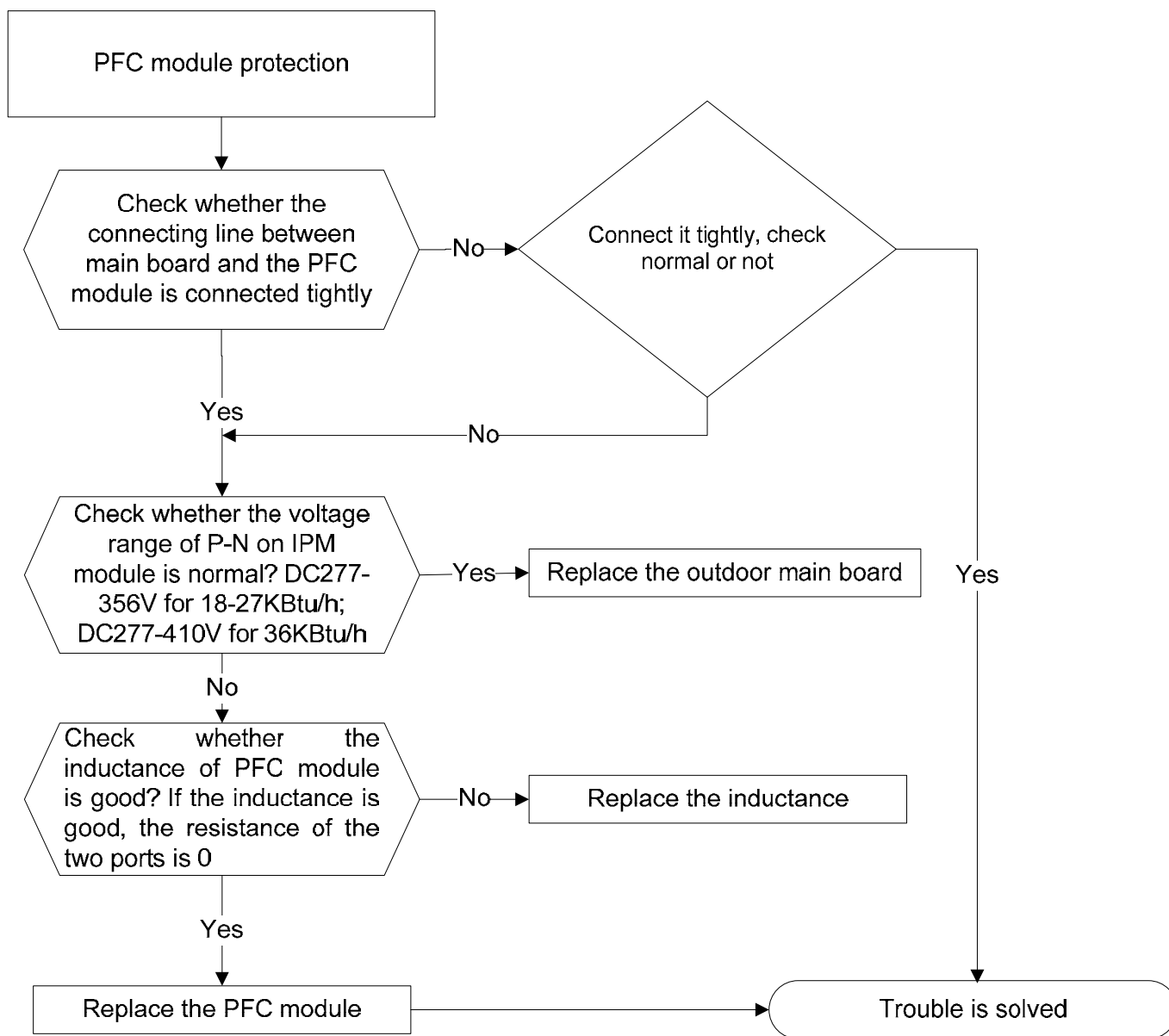
Measure the DC voltage between + and - port. The normal value should be 190V~250V.

9.4.2.6 E6 (PFC module protection) error diagnosis and solution. (Only for PRE 2014

YN036GMFI16M4D QUAD Zone)

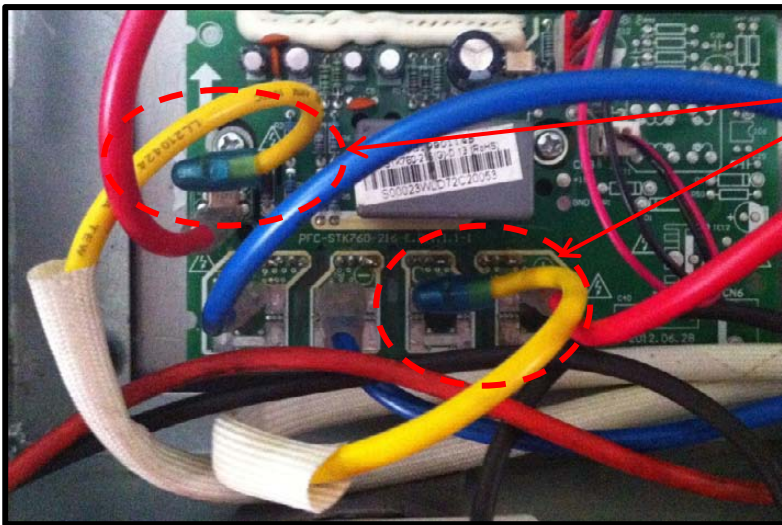
Error Code	E6
Malfunction decision conditions	When the voltage signal that PFC sends to main control board is abnormal, the display LED will show “E6” and AC will turn off.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Outdoor PCB faulty ● Inductance of PFC module faulty ● PFC module malfunction

Trouble shooting:





Inductance



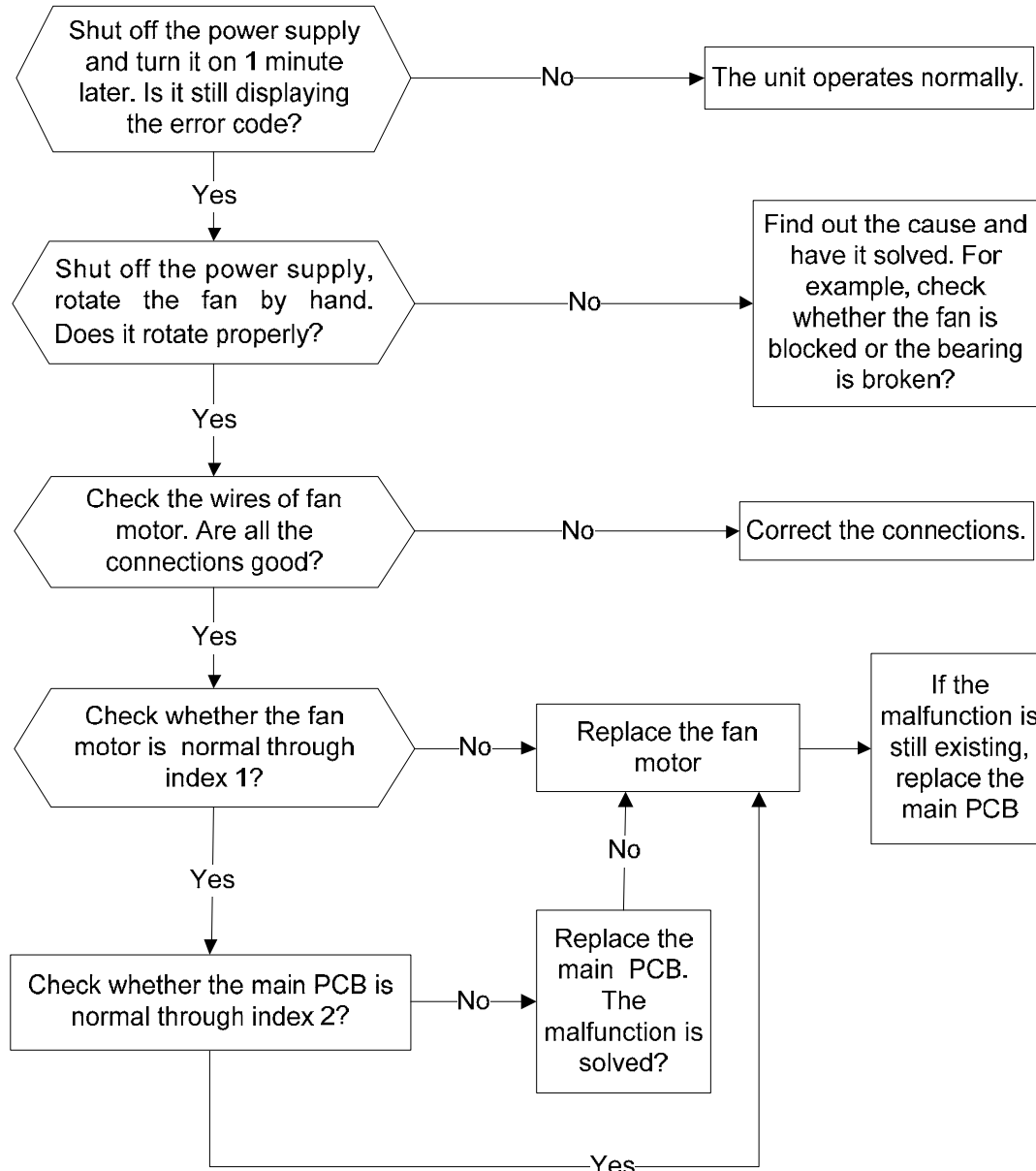
Two ports of the inductance



9.4.2.7 E8 (Outdoor fan speed has been out of control) diagnosis and solution (Only for DC fan motor models).

Error Code	E8
Malfunction decision conditions	When outdoor fan speed stays too low (300RPM) or too high (2400RPM) for certain time, the unit will stop and the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Fan ass'y faulty ● Fan motor faulty ● PCB faulty

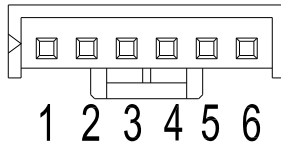
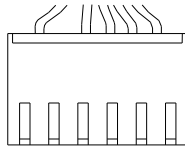
Trouble shooting:



Index 1:

1. DC fan motor(control chip is inside fan motor)

Measure the resistance value of each winding by using the tester. If any resistance value is zero, the fan motor must have problems and need to be replaced.

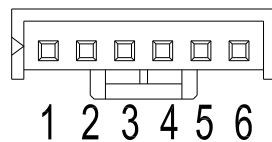
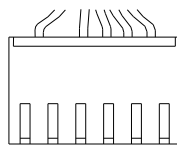


NO.	Color
1	Red
2	---
3	Black
4	White
5	Yellow
6	Blue

Index2:

1. DC fan motor(control chip is inside fan motor)

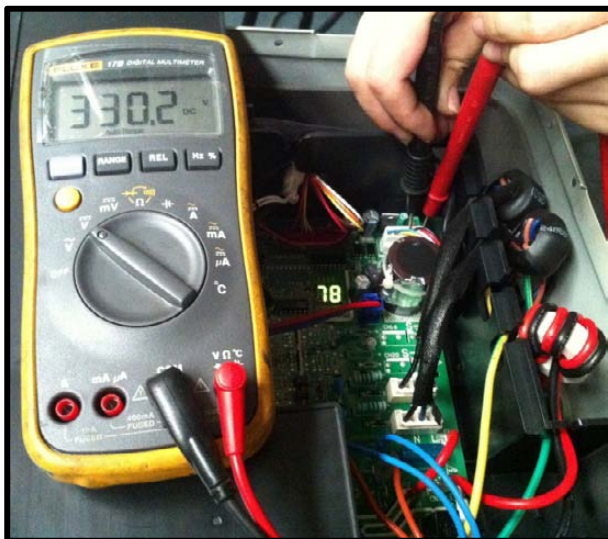
Power on and when the unit is in standby, measure the voltage of pin1-pin3, pin4-pin3 in fan motor connector. If the value of the voltage is not in the range showing in below table, the PCB must have problems and need to be replaced.



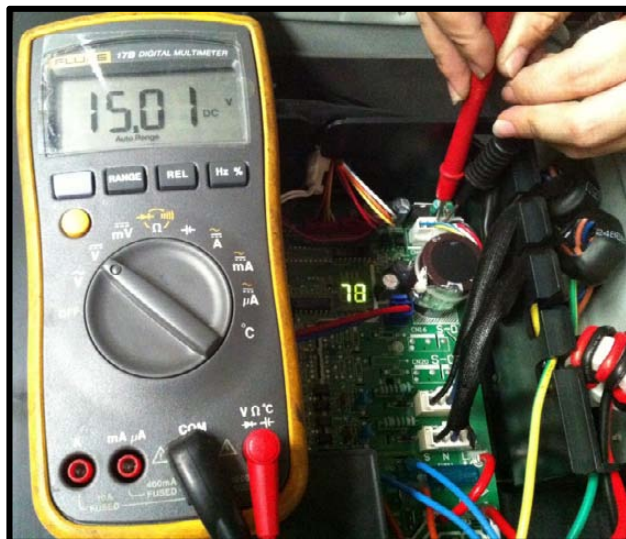
DC motor voltage input and output

NO.	Color	Signal	Voltage
1	Red	Vs/Vm	140~380V(M2OC-18HFN1-M&M4OC-36HRFN1-M) 192~380V(M3OC-30HRFN1-M)
2	---	---	---
3	Black	GND	0V
4	White	Vcc	13.5~16.5V
5	Yellow	Vsp	0~6.5V
6	Blue	FG	15V

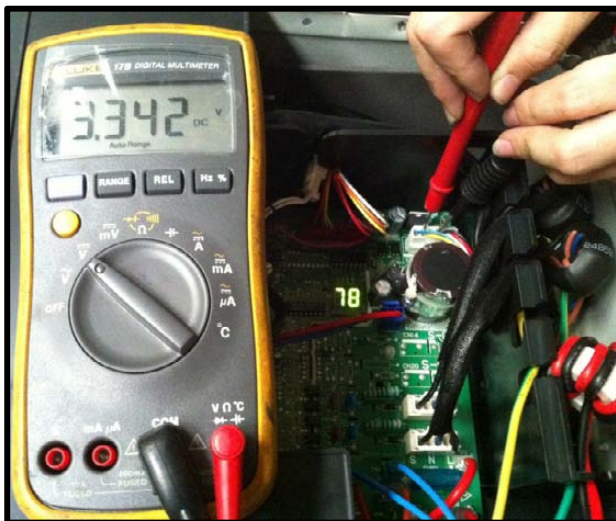
Vs



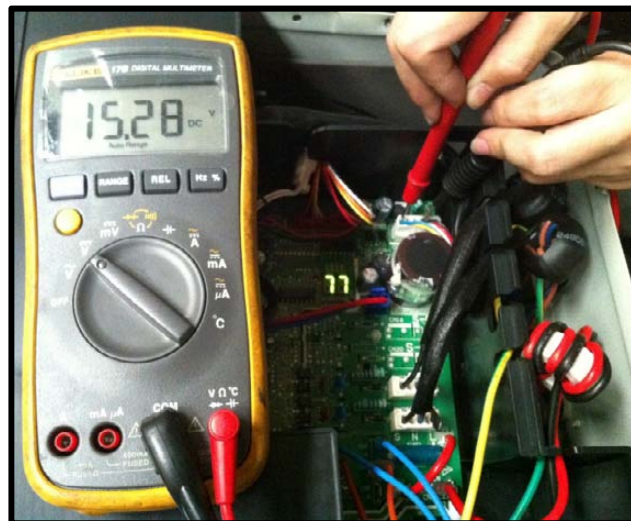
Vcc



Vsp



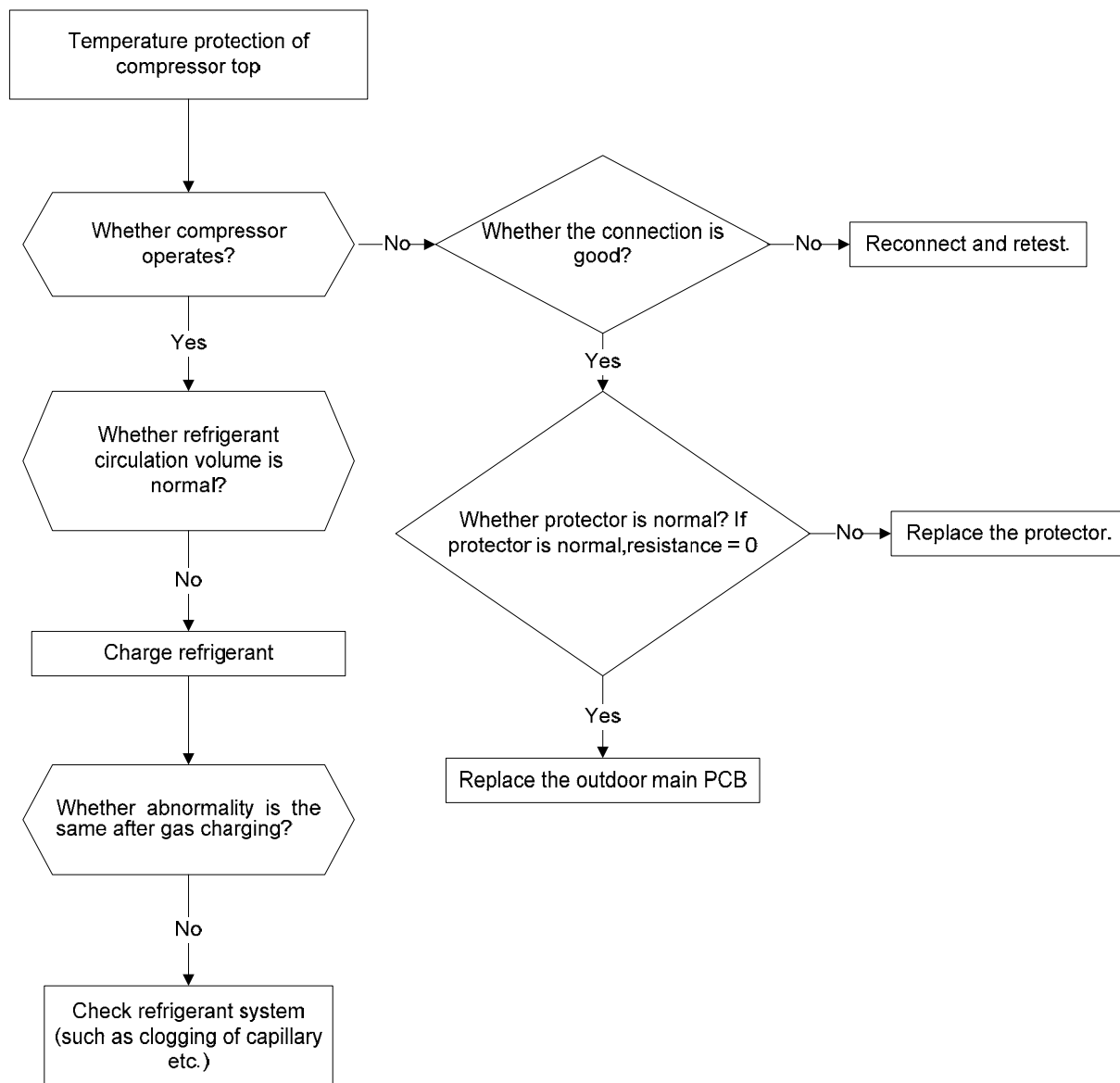
FG

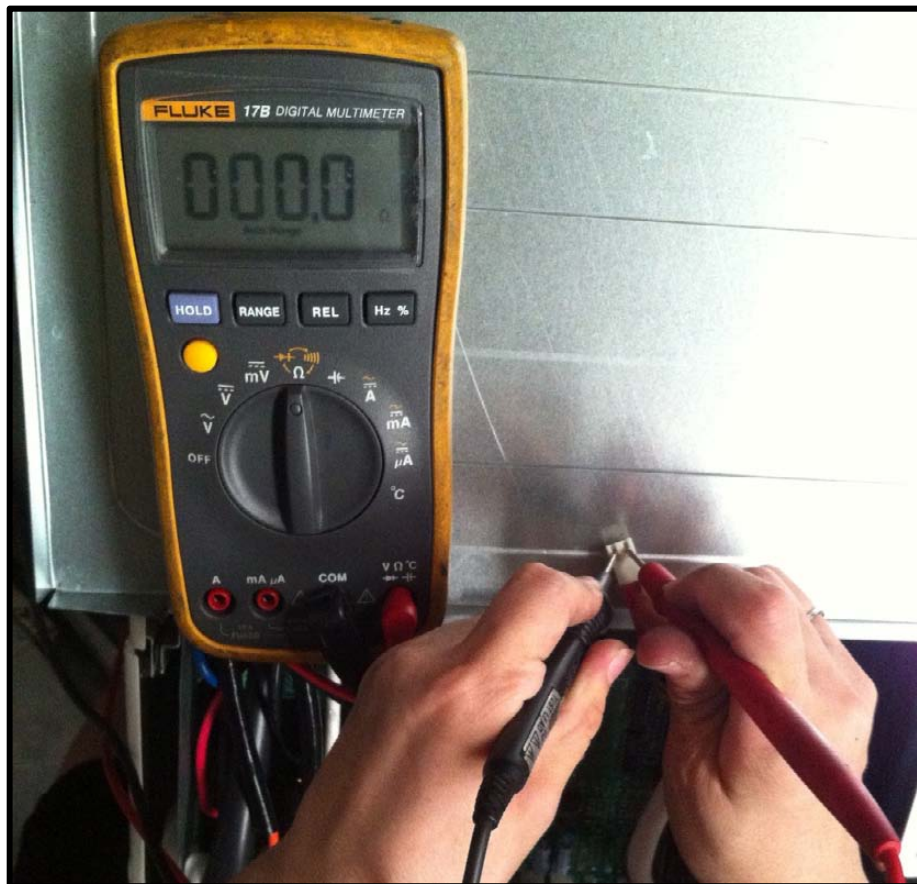
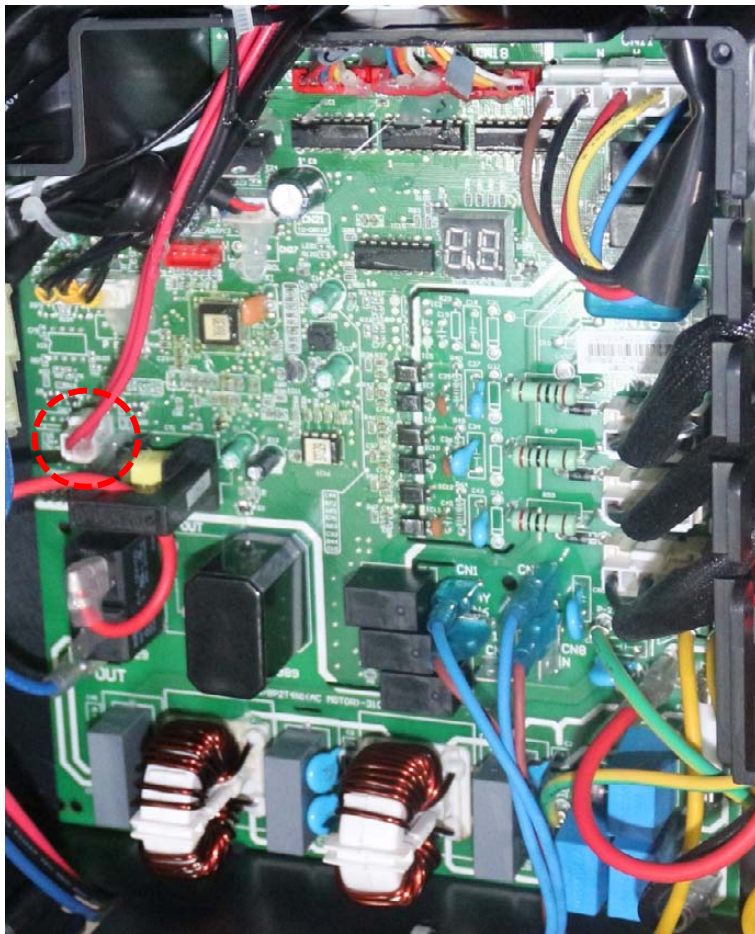


9.4.2.8 P0 (Temperature protection of compressor top) error diagnosis and solution. (Only for PRE 2014 YN027GMFI16M3D Triple Split Model)

Error Code	P0
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

Trouble shooting:

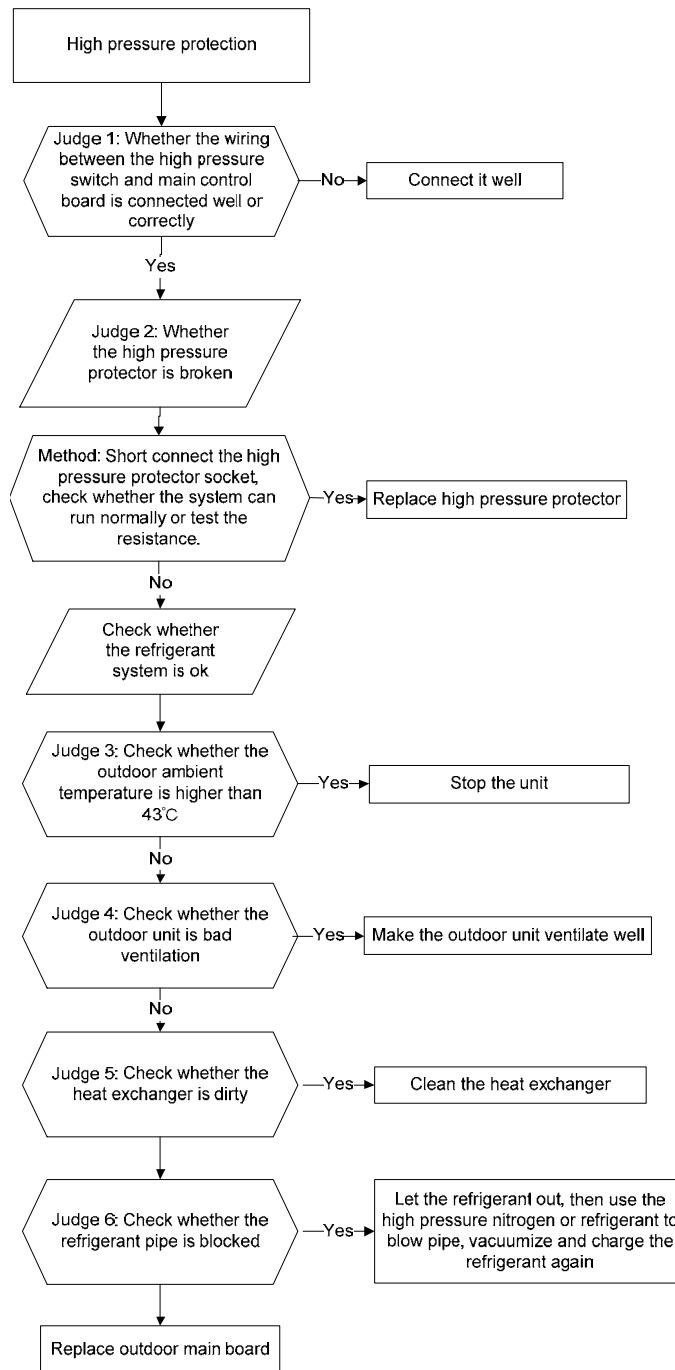


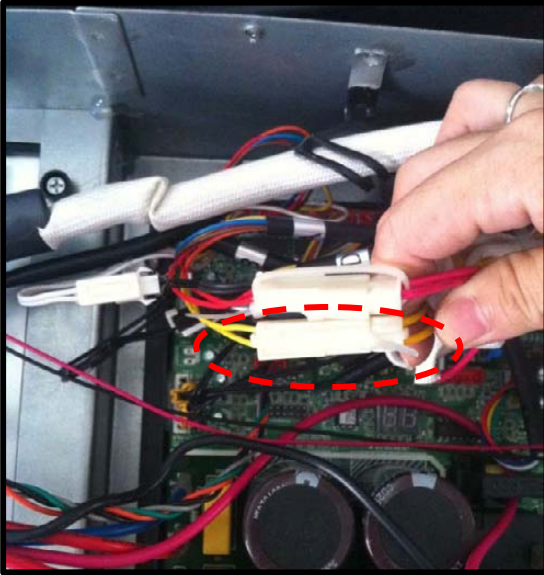
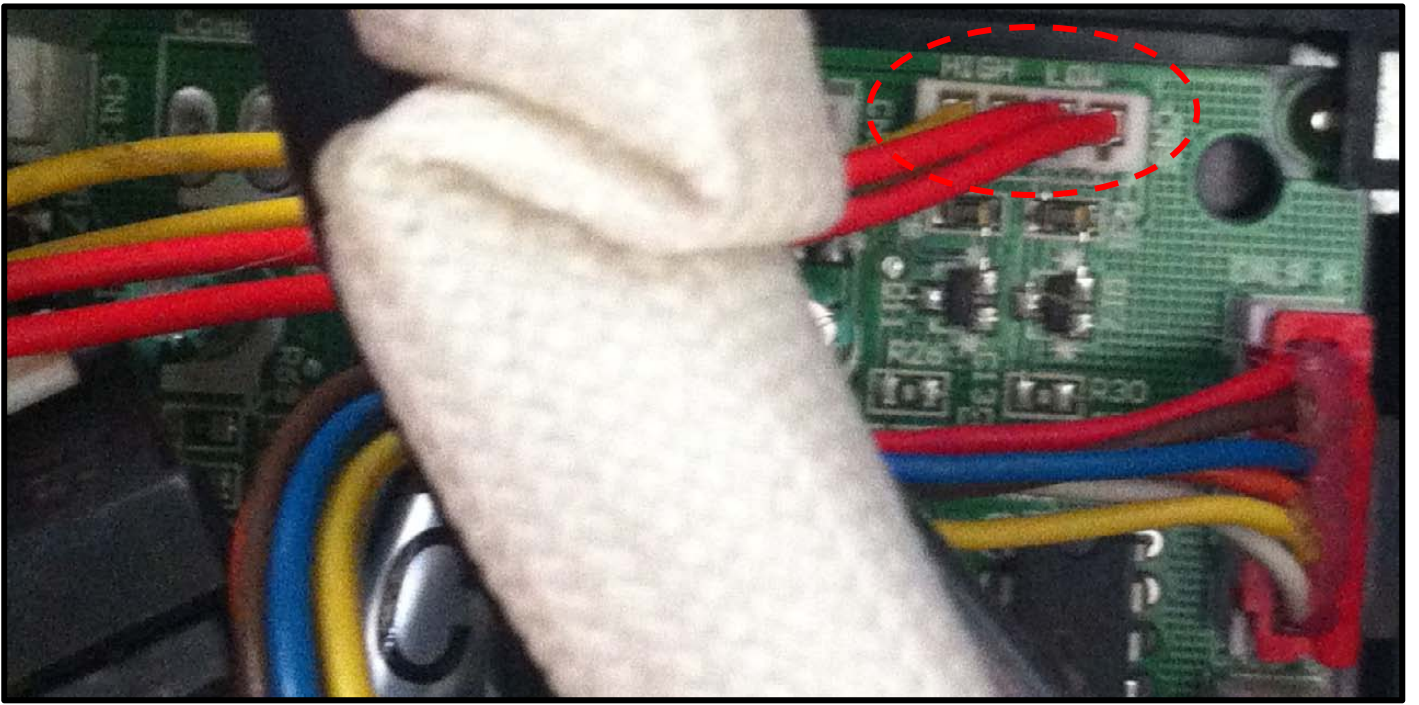


9.4.2.9 P1 (High pressure protection) error diagnosis and solution. (Only for PRE 2014 YN036GMFI16M4D Quad Split)

Error Code	P1
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

Trouble shooting:

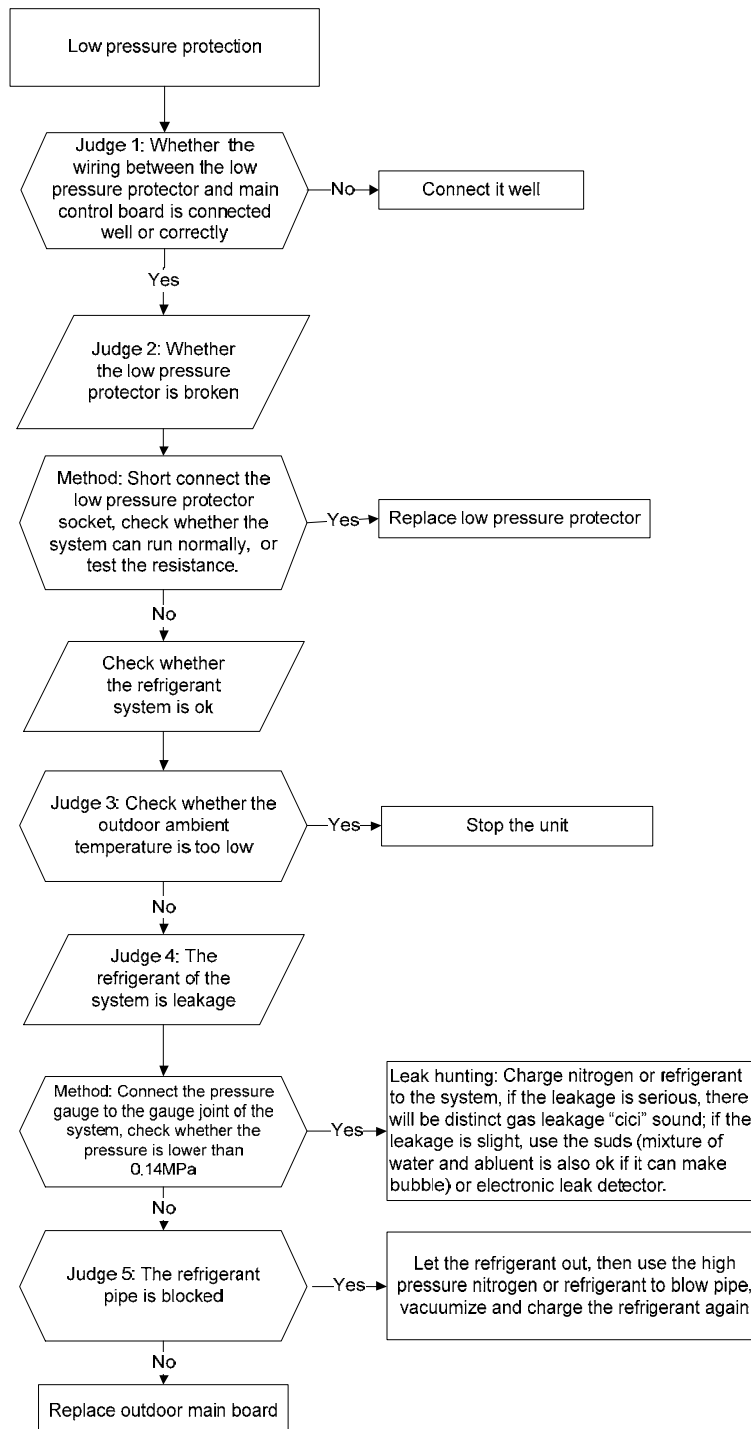


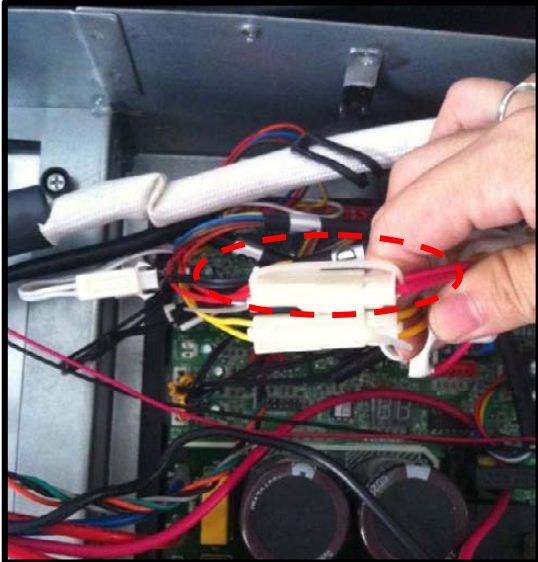
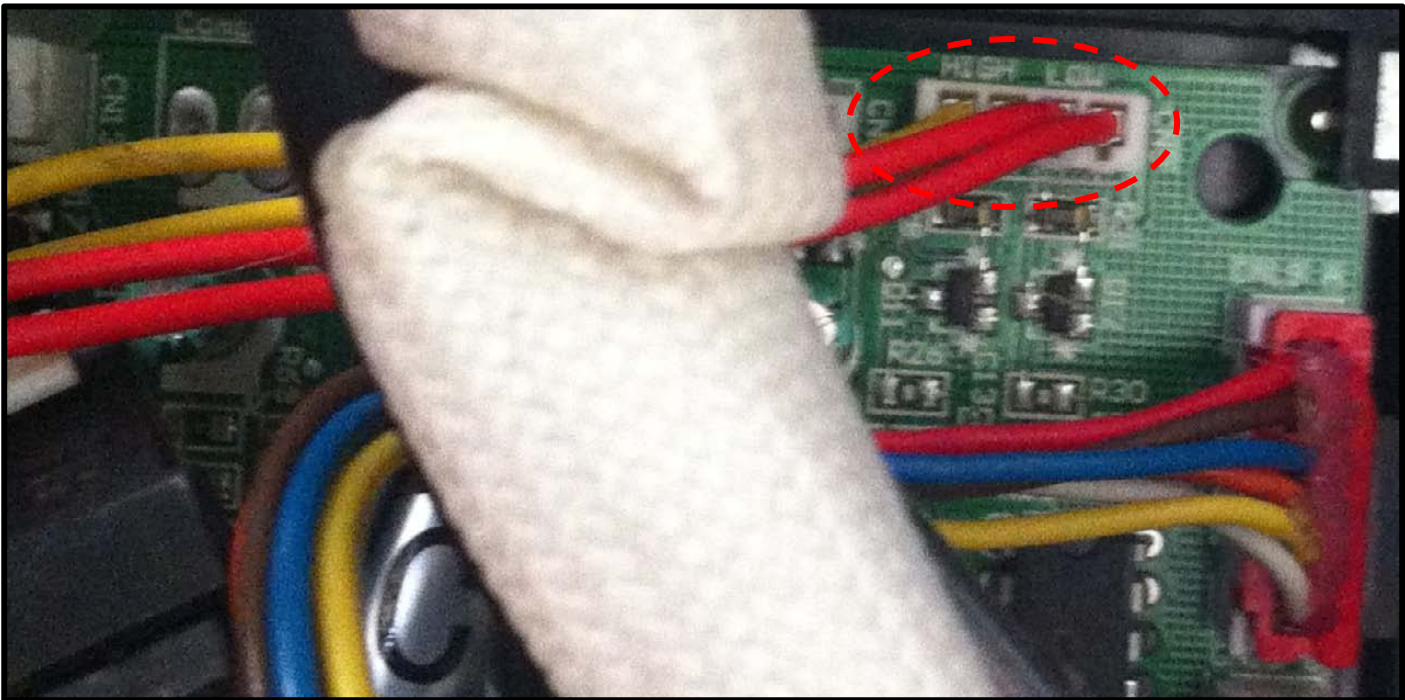


9.4.2.10 P2 (Low pressure protection) error diagnosis and solution. (Only for 2014 and NEWER YN036GMFI16M4D QUAD ZONE)

Error Code	P2
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

Trouble shooting:

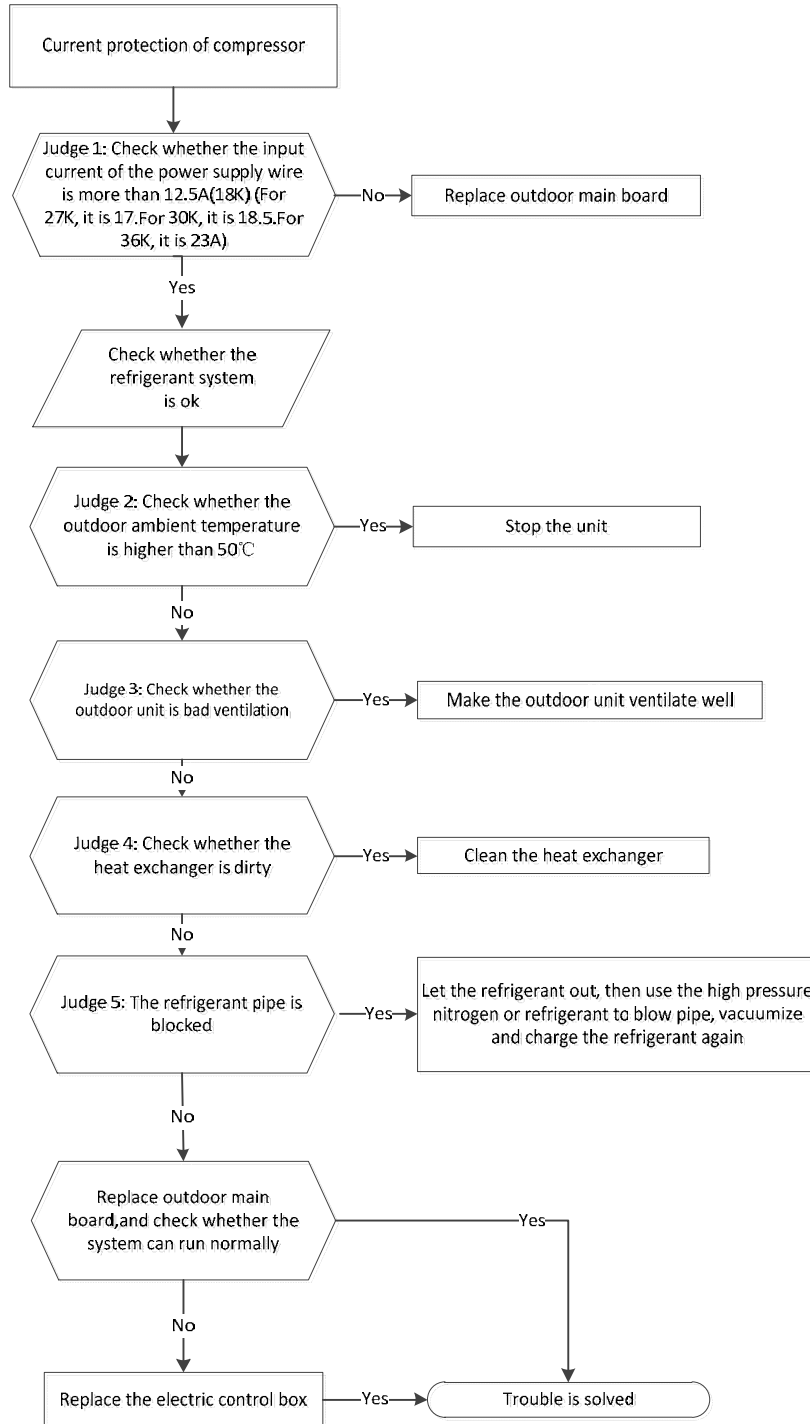




9.4.2.11 P3 (Current protection of compressor) error diagnosis and solution.

Error Code	P3
Malfunction decision conditions	If the compressor current exceeds the current limit value for 10 seconds, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

Trouble shooting:

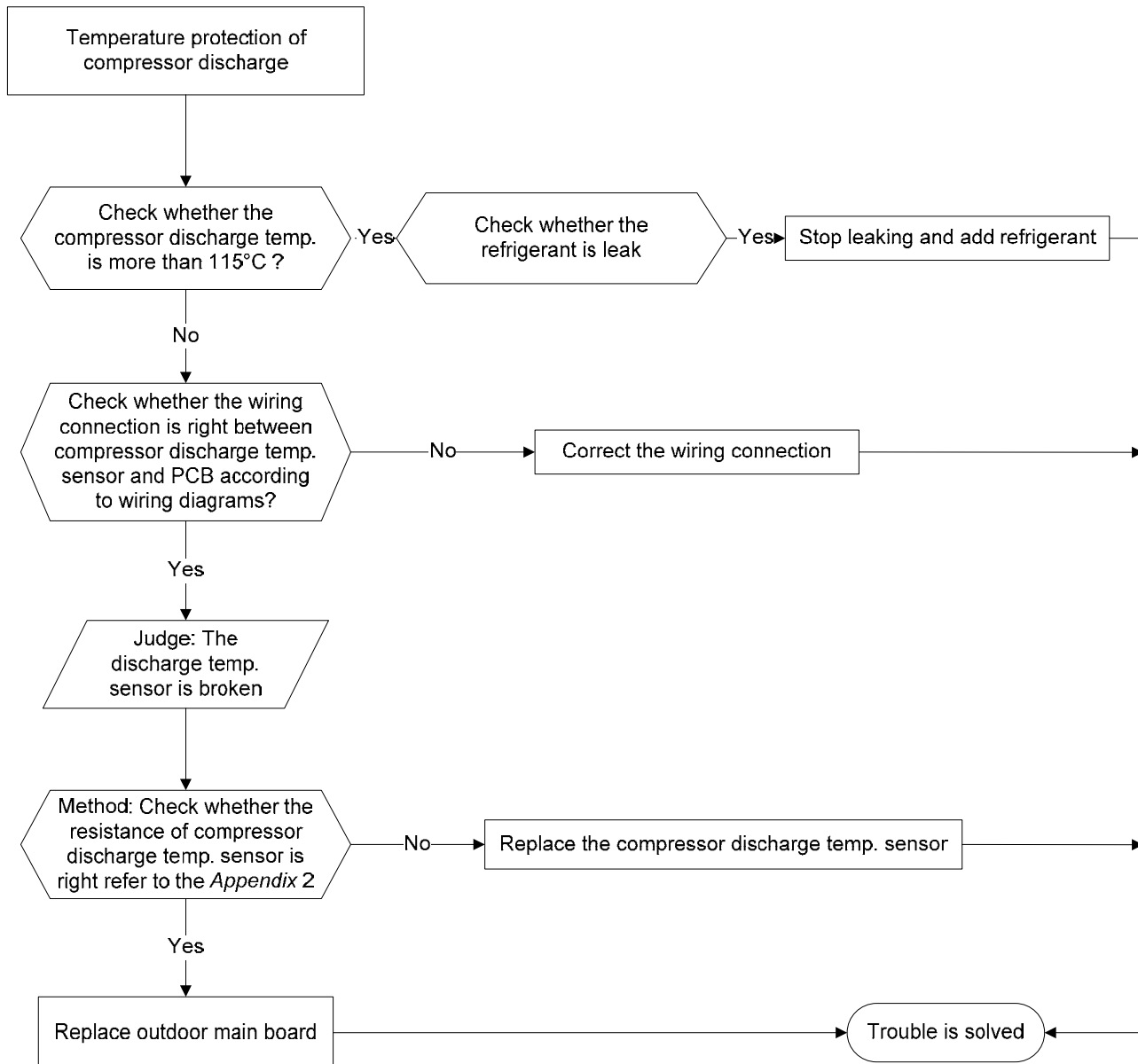




9.4.2.12 P4 (Temperature protection of compressor discharge) error diagnosis and solution.

Error Code	P4
Malfunction decision conditions	When the compressor discharge temperature(T_p) is more than 115°C for 10 seconds, the compressor will stop and restart till T_p is less than 90°C .
Supposed causes	<ul style="list-style-type: none"> ● Refrigerant leakage ● Wiring mistake ● The discharge temperature sensor faulty ● Outdoor PCB faulty

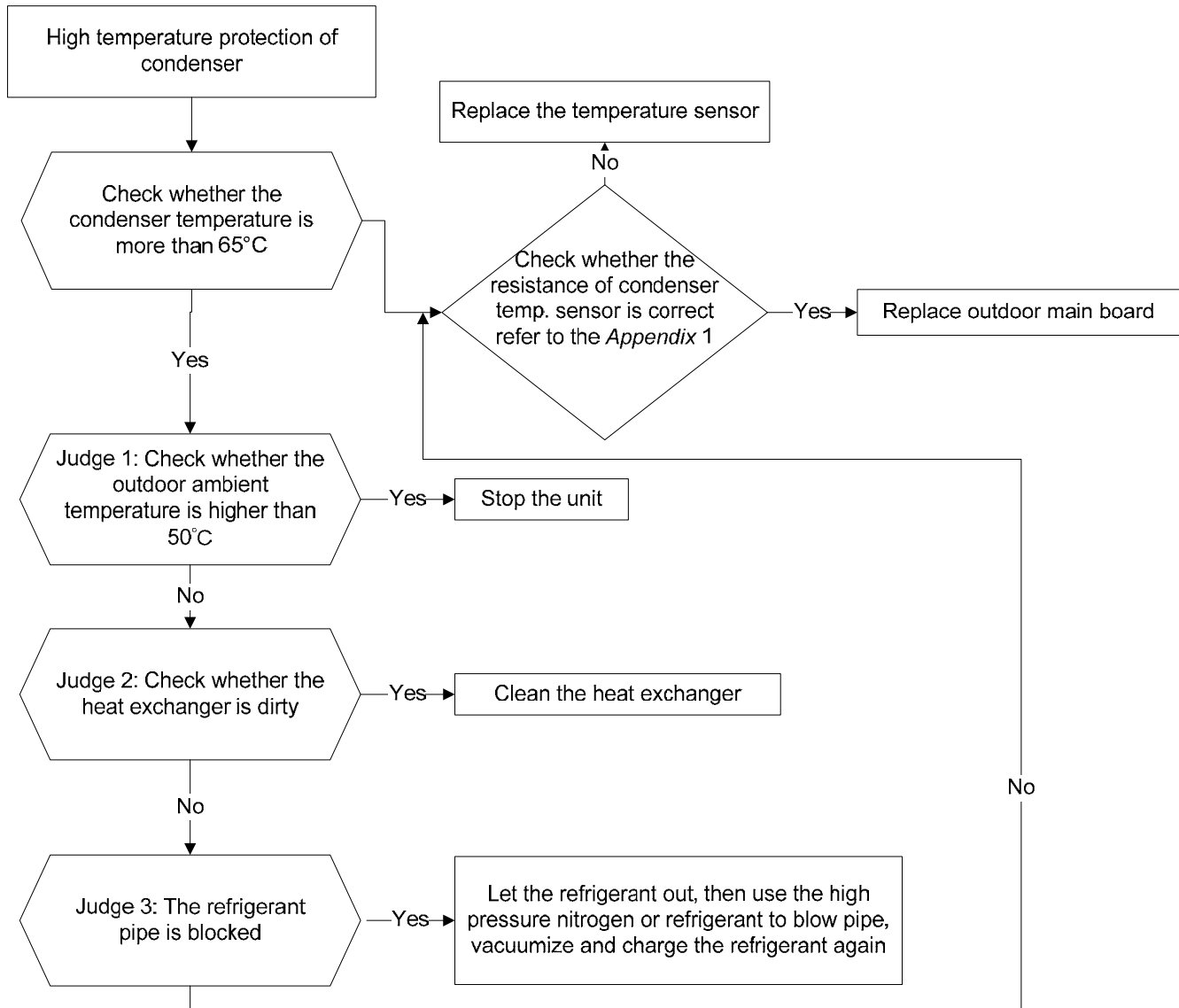
Trouble shooting:



9.4.2.13 P5 (High temperature protection of condenser) error diagnosis and solution.

Error Code	P5
Malfunction decision conditions	When outdoor pipe temperature is more than 65°C, the unit will stop, and unit runs again when outdoor pipe temperature is less than 52°C
Supposed causes	<ul style="list-style-type: none"> ● The condenser temperature sensor faulty ● Heat exchanger dirty ● System block

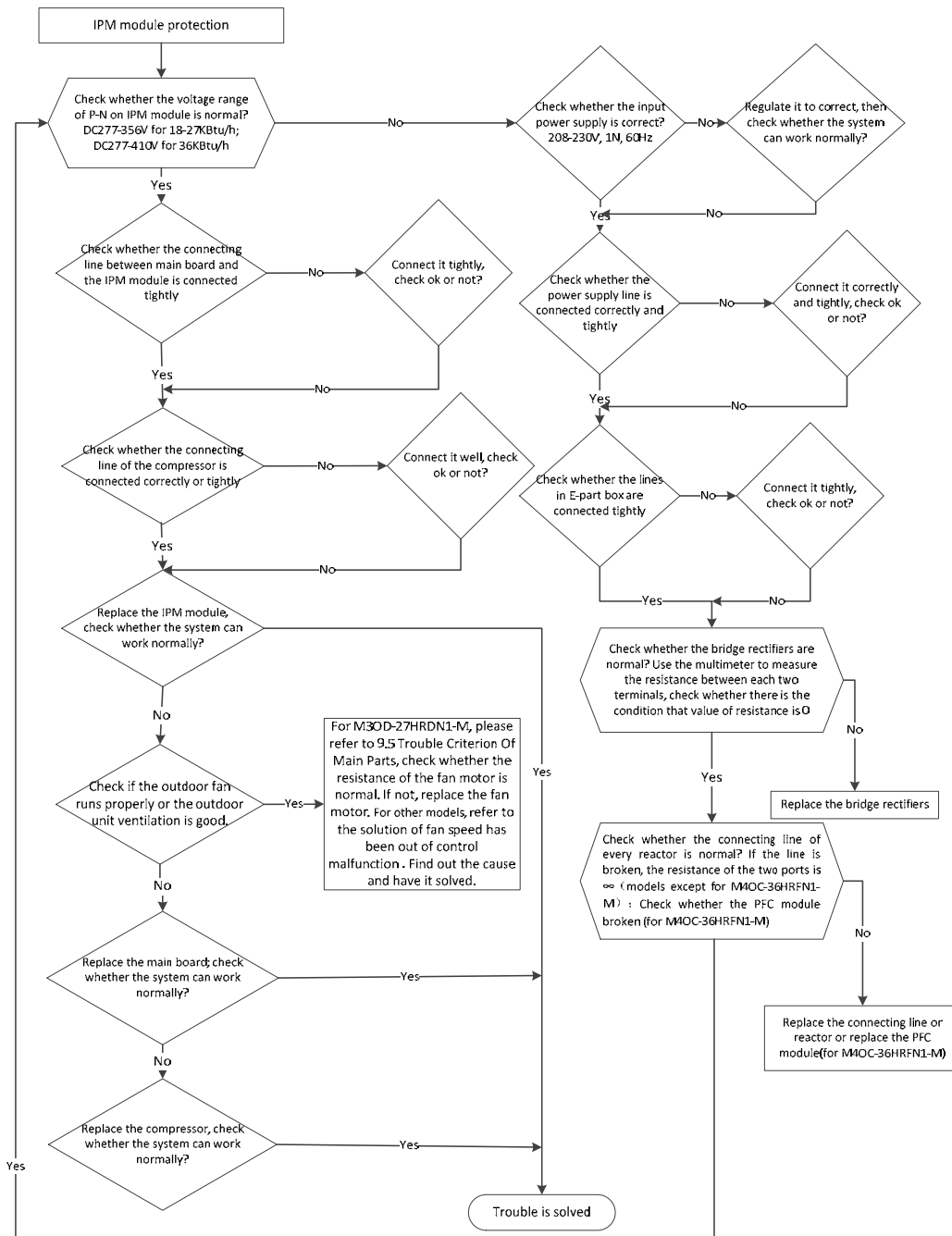
Trouble shooting:



9.4.2.14 P6 (IPM module protection) error diagnosis and solution.

Error Code	P6
Malfunction decision conditions	When the voltage signal that IPM send to compressor drive chip is abnormal, the display LED will show “P6” and AC will turn off.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● IPM malfunction ● Outdoor fan ass’y faulty ● Compressor malfunction ● Outdoor PCB faulty

Trouble shooting:

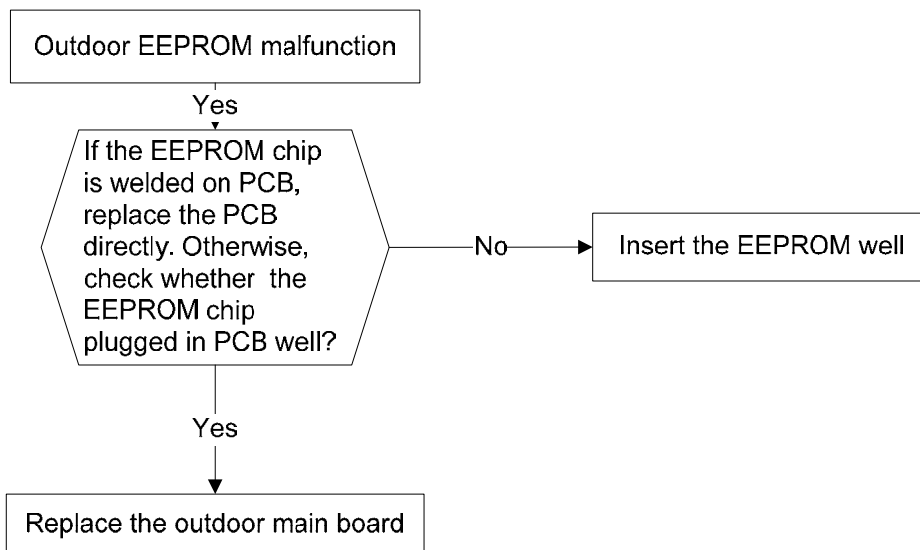


9.4.3 Outdoor unit trouble shooting (For PRE 2014 Models YN018GMFI16M2D, YN027GMFI16M3D and YN036GMFI16M4D)

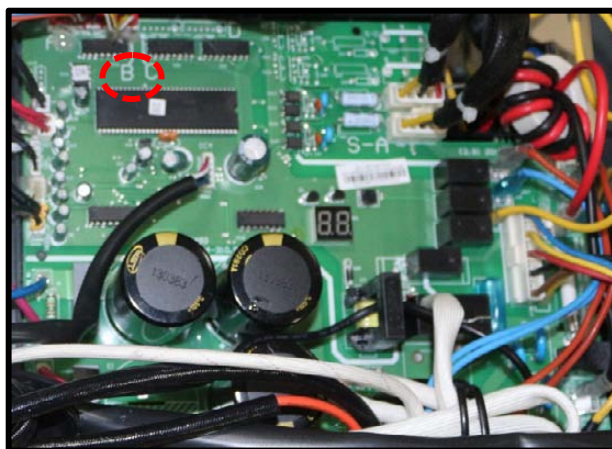
9.4.3.1 E0 (Outdoor EEPROM malfunction) error diagnosis and solution

Error Code	E0
Malfunction decision conditions	PCB main chip does not receive feedback from EEPROM chip
Supposed causes	<ul style="list-style-type: none"> ● Installation mistake ● PCB faulty

Trouble shooting:



EEPROM: a read-only memory whose contents can be erased and reprogrammed using a pulsed voltage. For the location of EEPROM chip, please refer to the below photos.



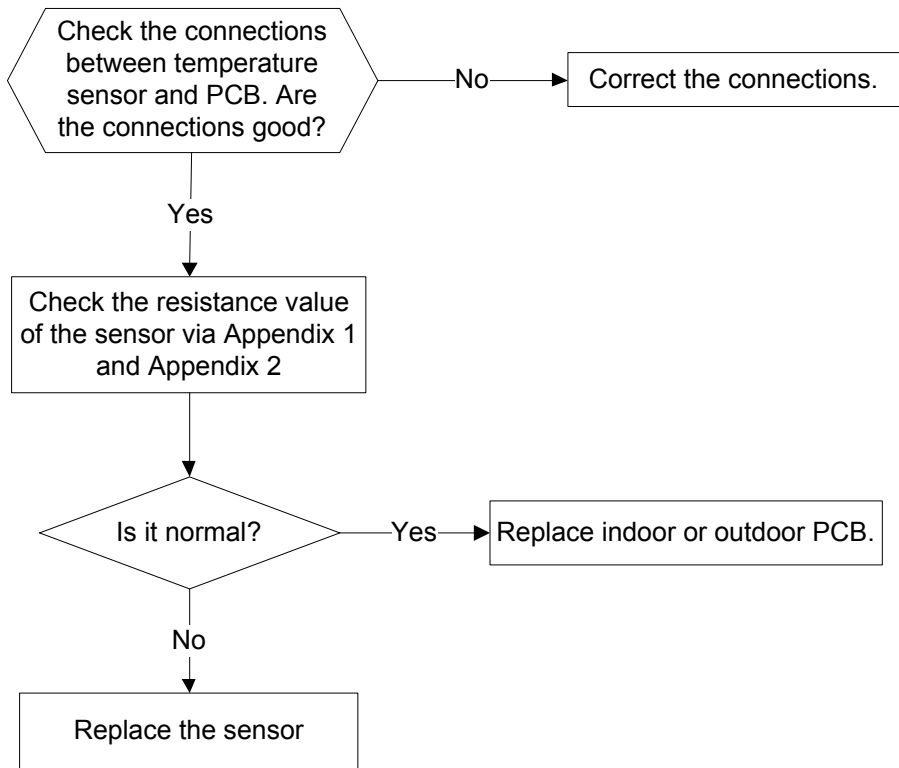
Outdoor PCB(DUAL Zone)

9.4.3.2 E4 (open or short circuit of outdoor temperature sensor) diagnosis and solution

E1/E2/E3/E6 (open or short circuit of indoor coil temperature sensor) diagnosis and solution.

Error Code	E1/E2/E3/E4/E6
Malfunction decision conditions	If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Sensor faulty ● PCB faulty

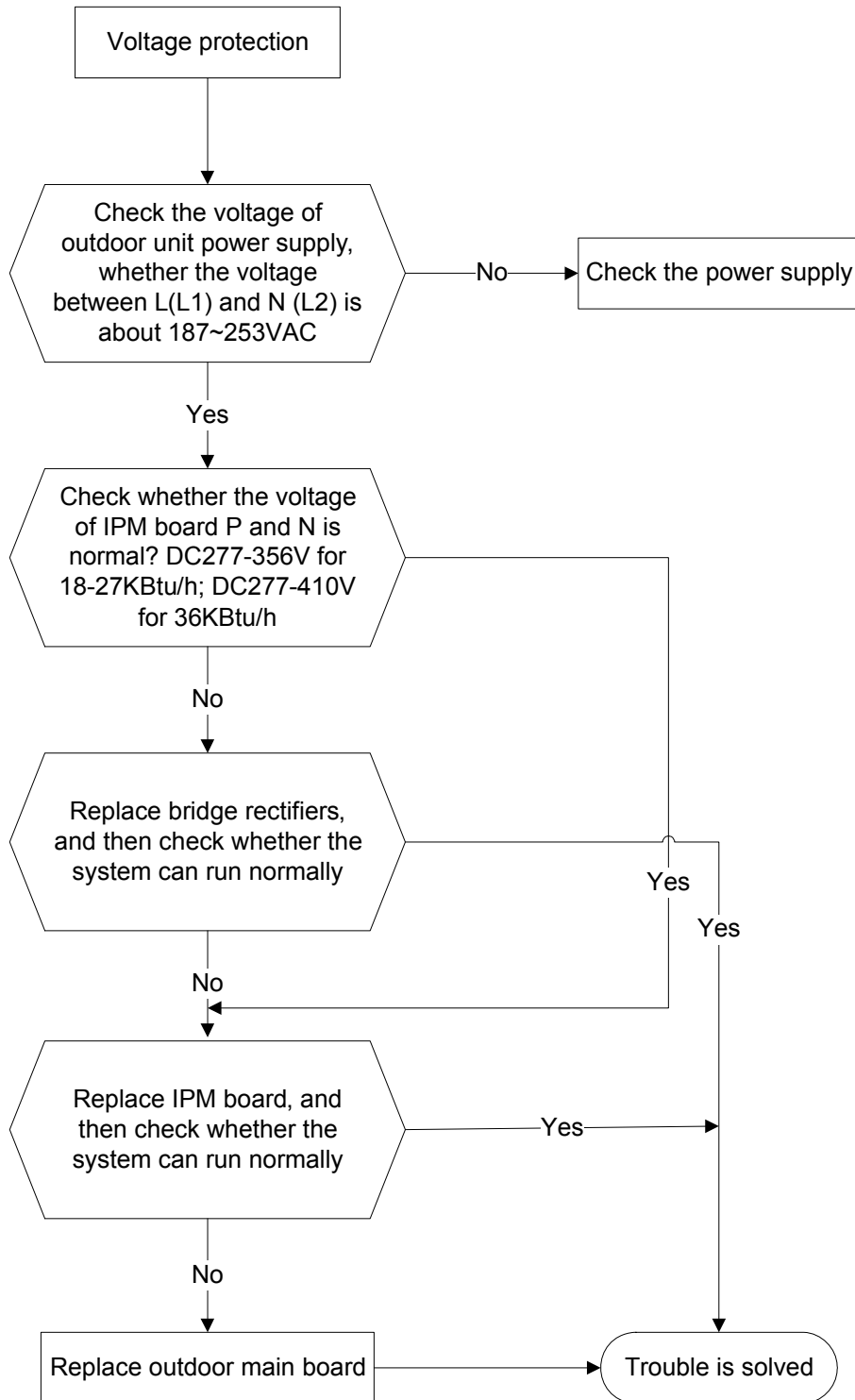
Trouble shooting:

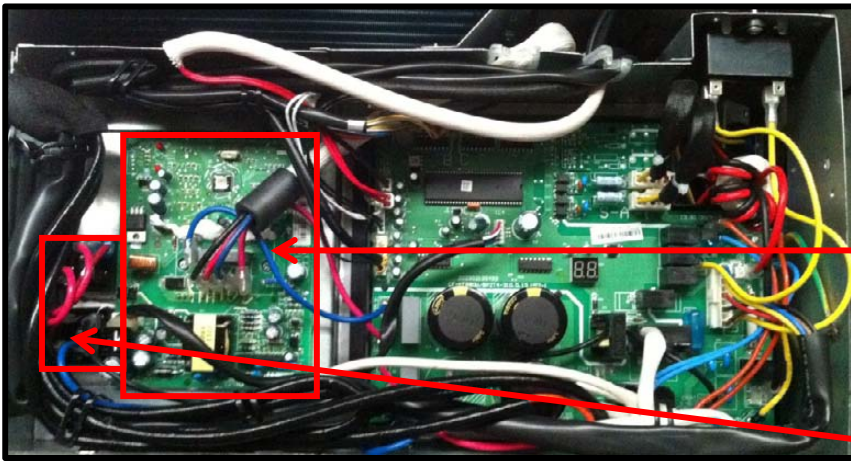


9.4.3.3 E5 (Voltage protection) error diagnosis and solution.

Error Code	E5
Malfunction decision conditions	An abnormal voltage rise or drop is detected by checking the specified voltage detection circuit.
Supposed causes	<ul style="list-style-type: none"> ● Power supply problems. ● System leakage or block ● PCB faulty

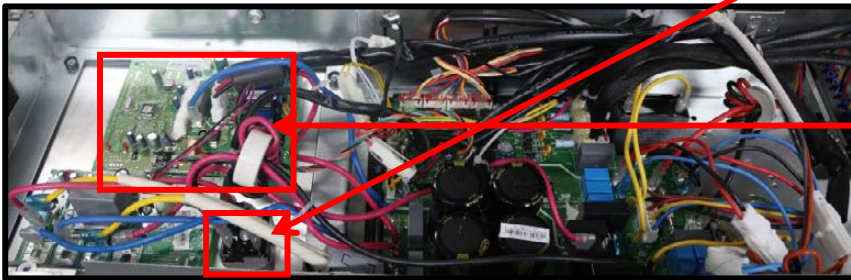
Trouble shooting:



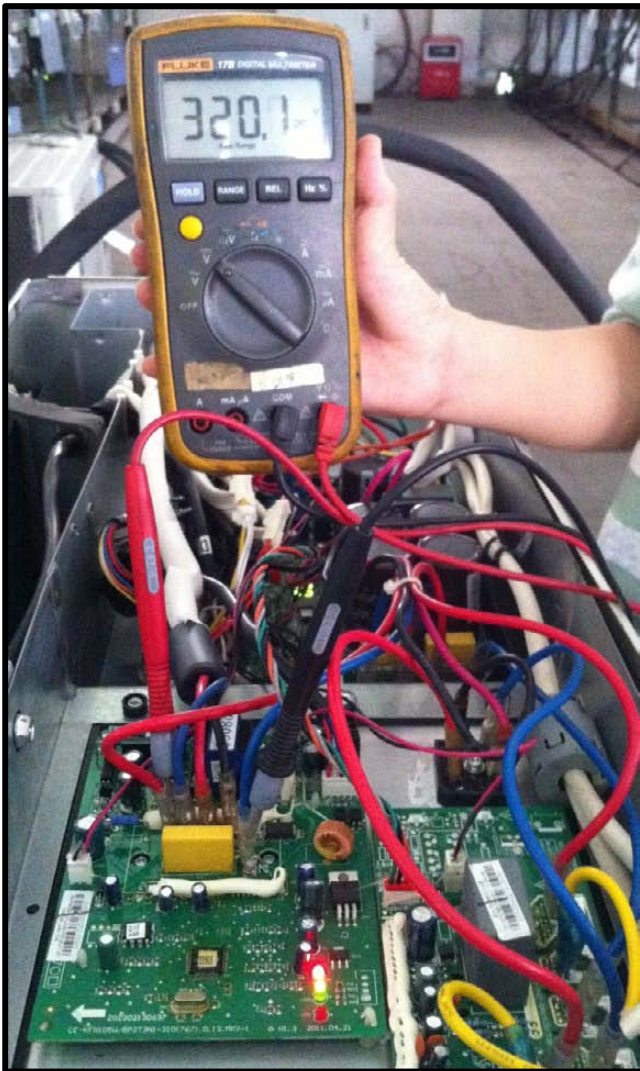


IPM (for dual/trio-zone)

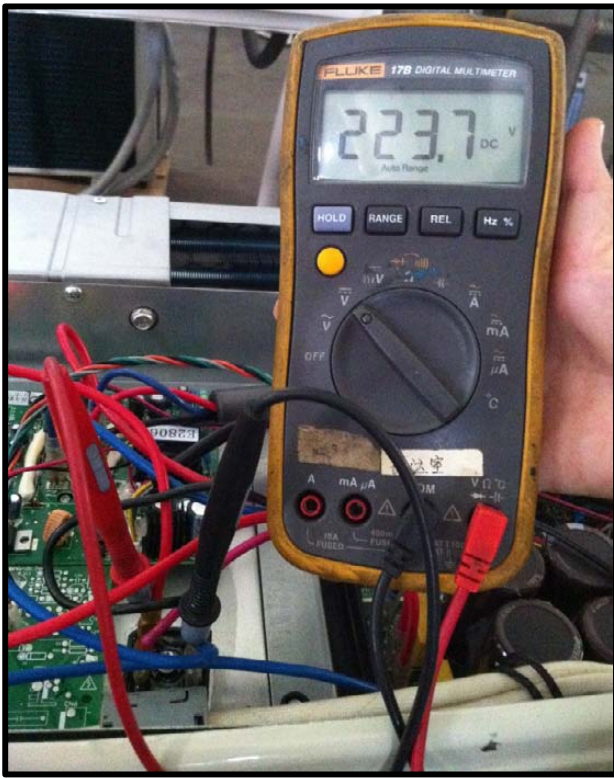
bridge rectifier



IPM (for quad-zone)



P-N



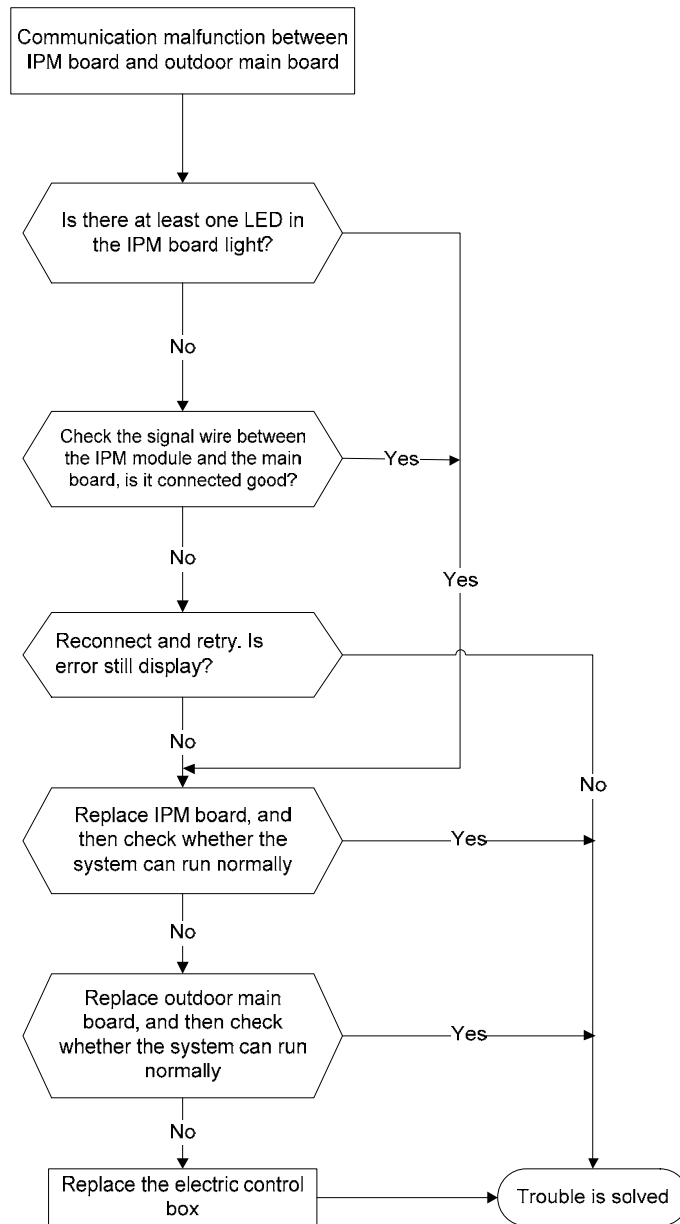
Remark:

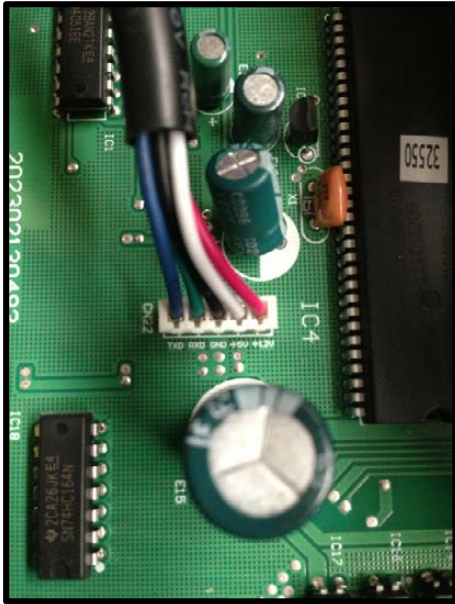
Measure the DC voltage between + and - port. The normal value should be 190V~250V.

9.4.3.4 E7 (Communication malfunction between IPM board and outdoor main board) error diagnosis and .

Error Code	E7
Malfunction decision conditions	PCB main chip does not receive feedback from IPM module during 60 seconds.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● PCB faulty

Trouble shooting:

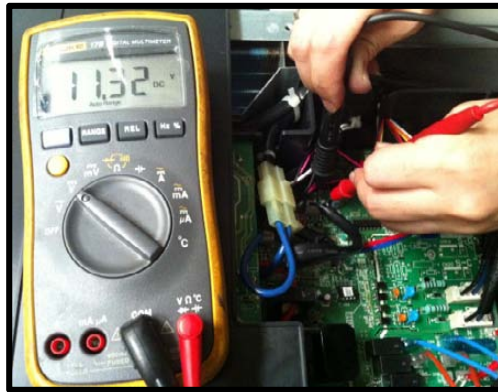
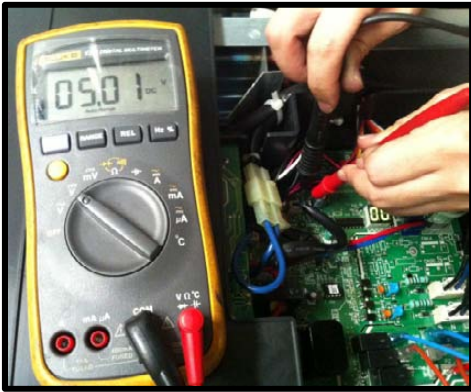




Remark:

Use a multimeter to test the DC voltage between black pin and white pin of signal wire. The normal value should be around 5V.

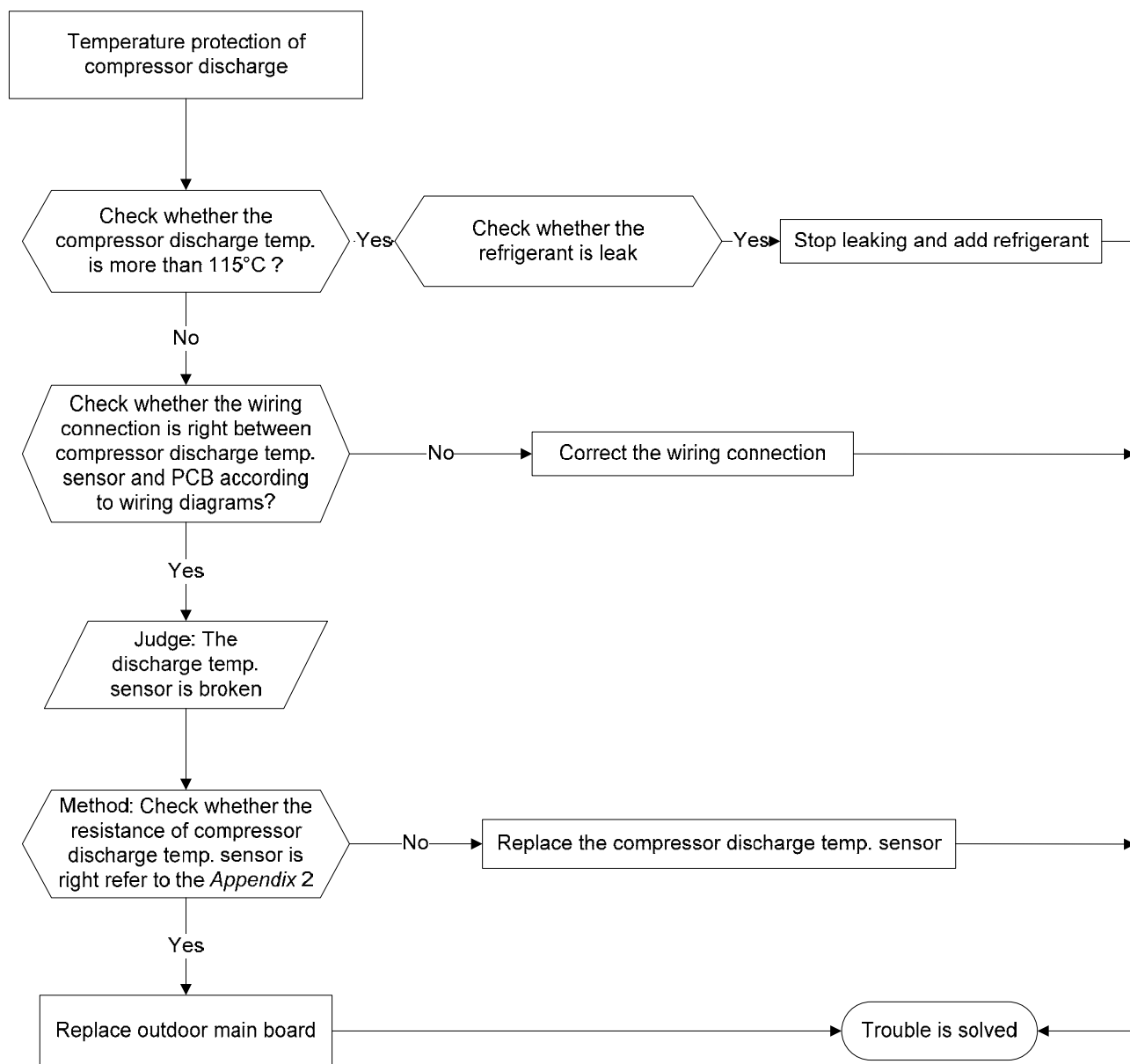
Use a multimeter to test the DC voltage between black pin and red pin of signal wire. The normal value should be around 12V.



9.4.3.5 P0 (Temperature protection of compressor discharge) error diagnosis and solution.

Error Code	P0
Malfunction decision conditions	When the compressor discharge temperature(T_p) is more than 115°C for 10 seconds, the compressor will stop and restart till T_p is less than 90°C .
Supposed causes	<ul style="list-style-type: none"> ● Refrigerant leakage ● Wiring mistake ● The discharge temperature sensor faulty ● Outdoor PCB faulty

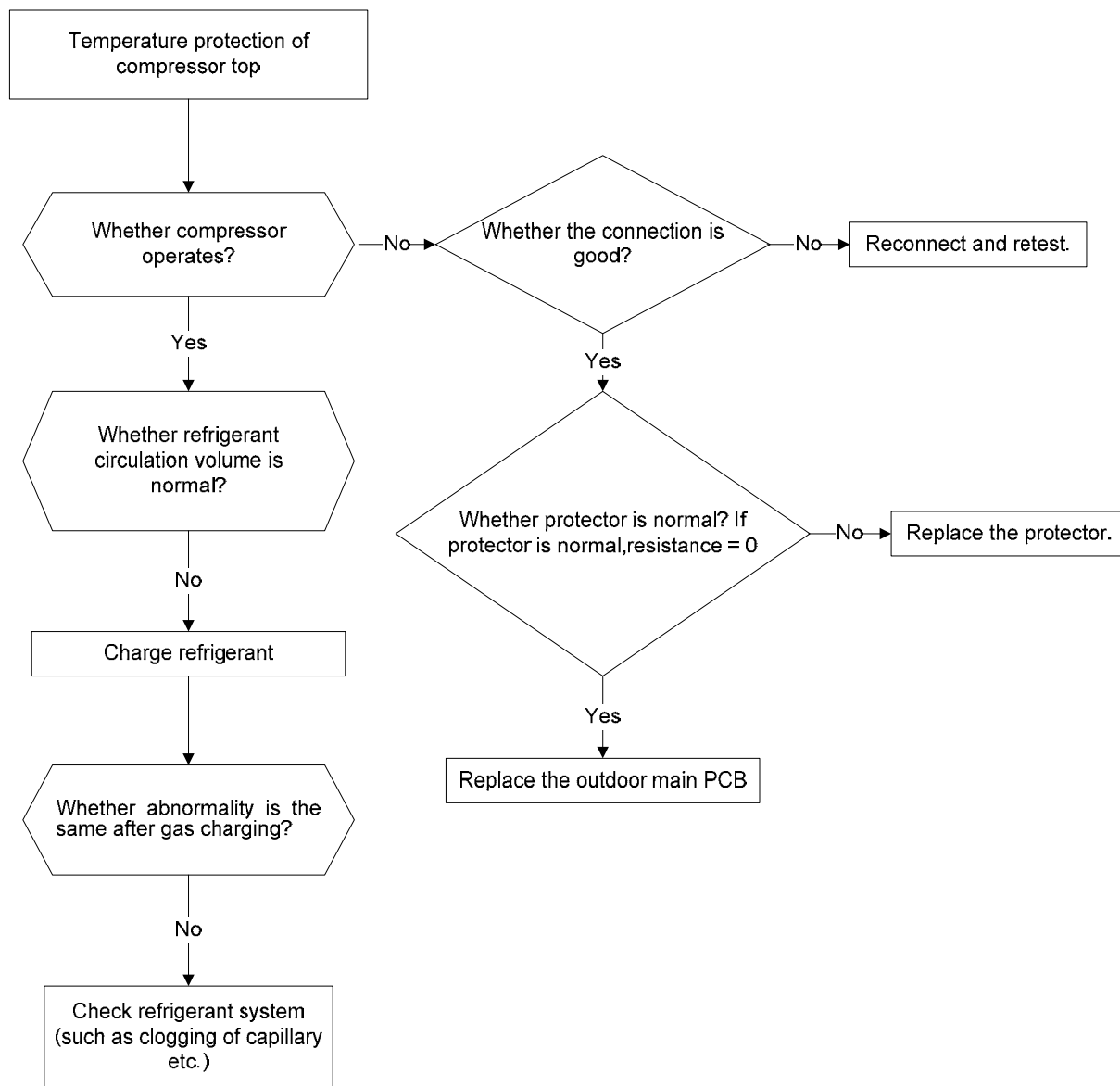
Trouble shooting:

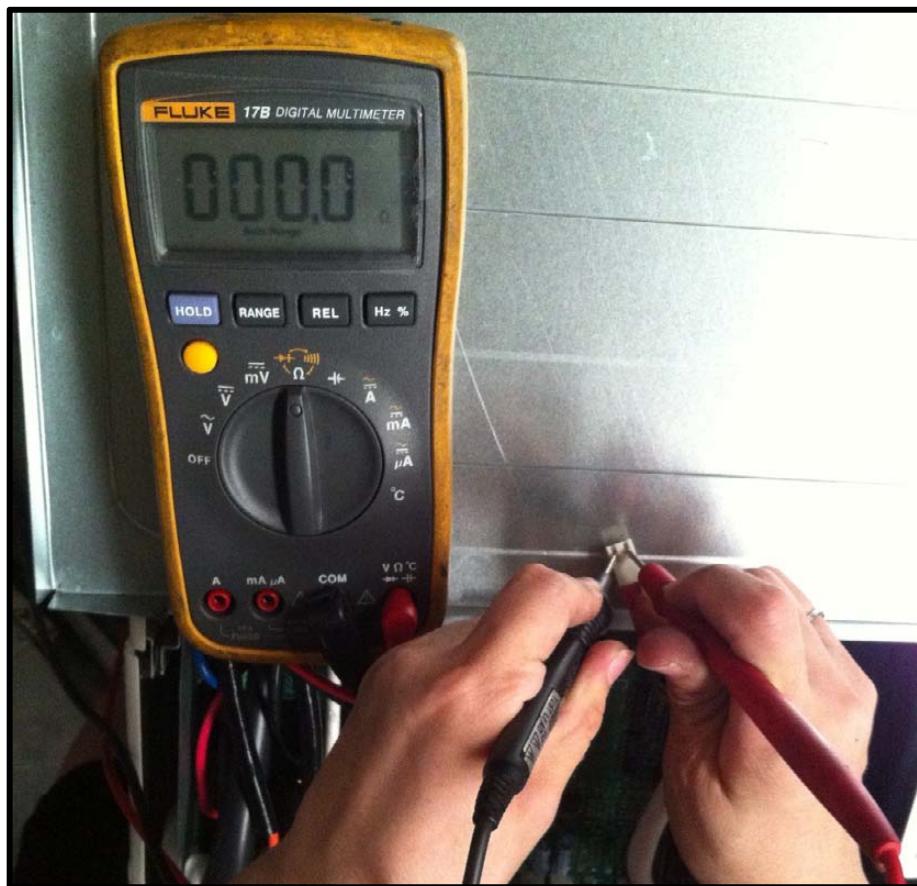
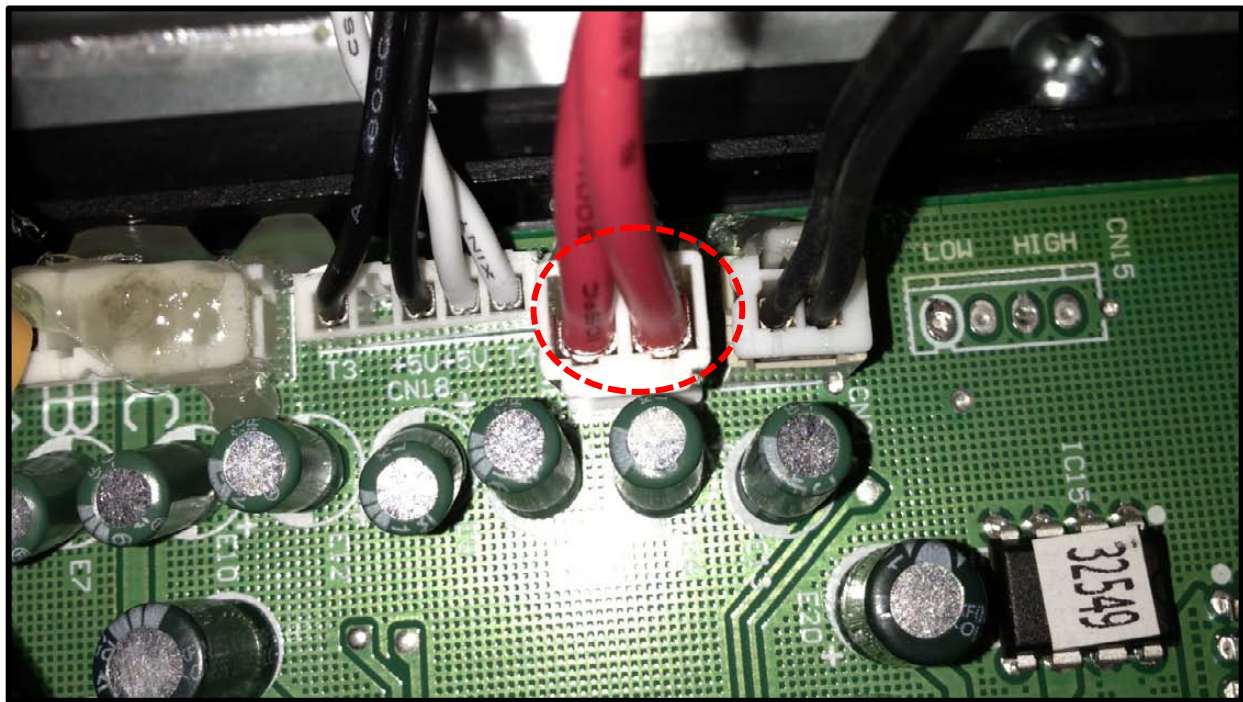


9.4.3.6 P0 (Temperature protection of compressor top) error diagnosis and solution. (Only for PRE 2014 YN018GMFI16M2D DUAL AND YN027GMFI16M3D TRIPLE Zone)

Error Code	P0
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

Trouble shooting:

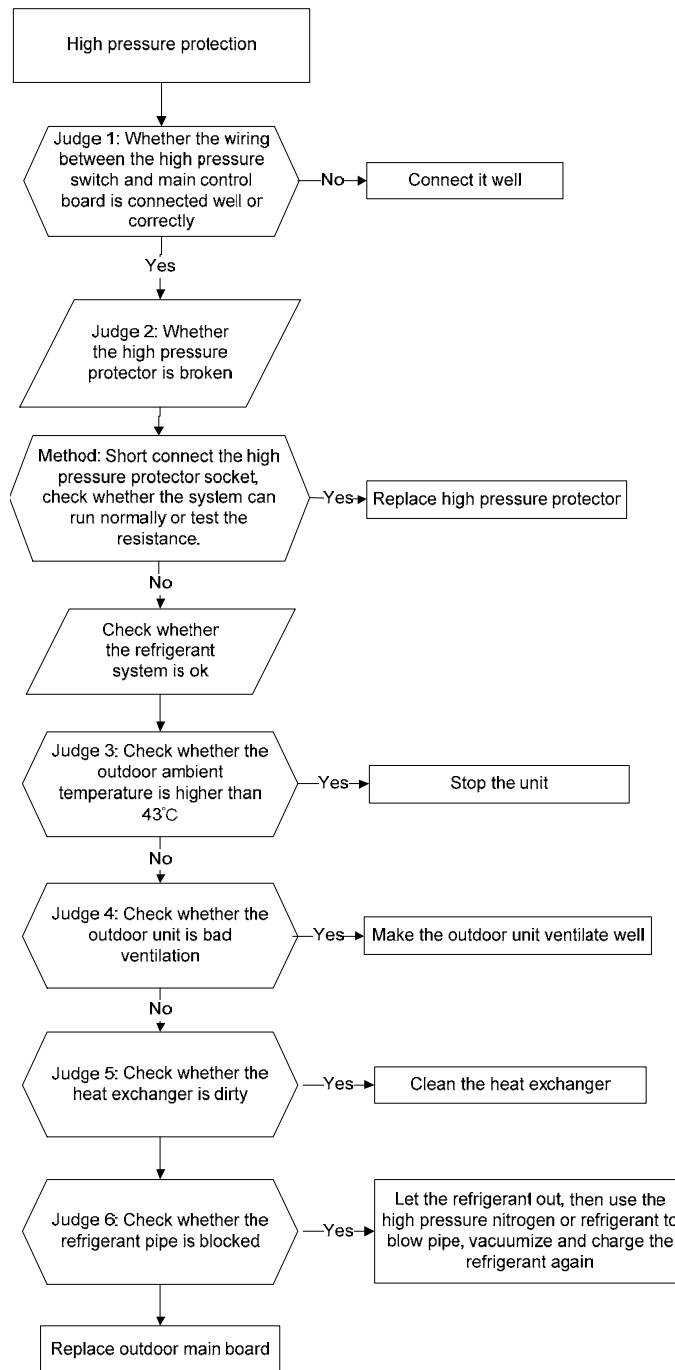


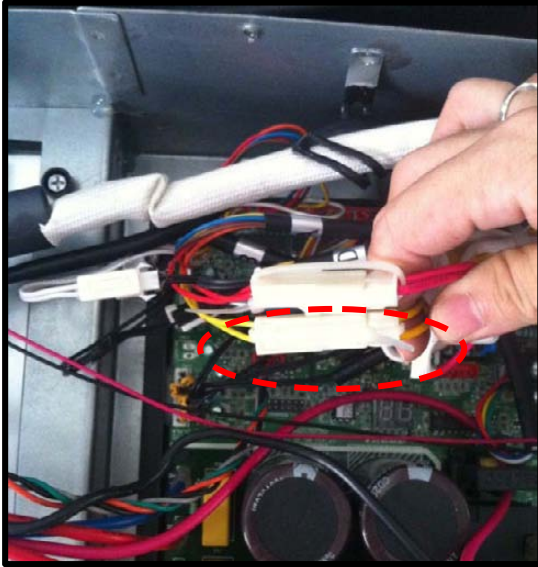
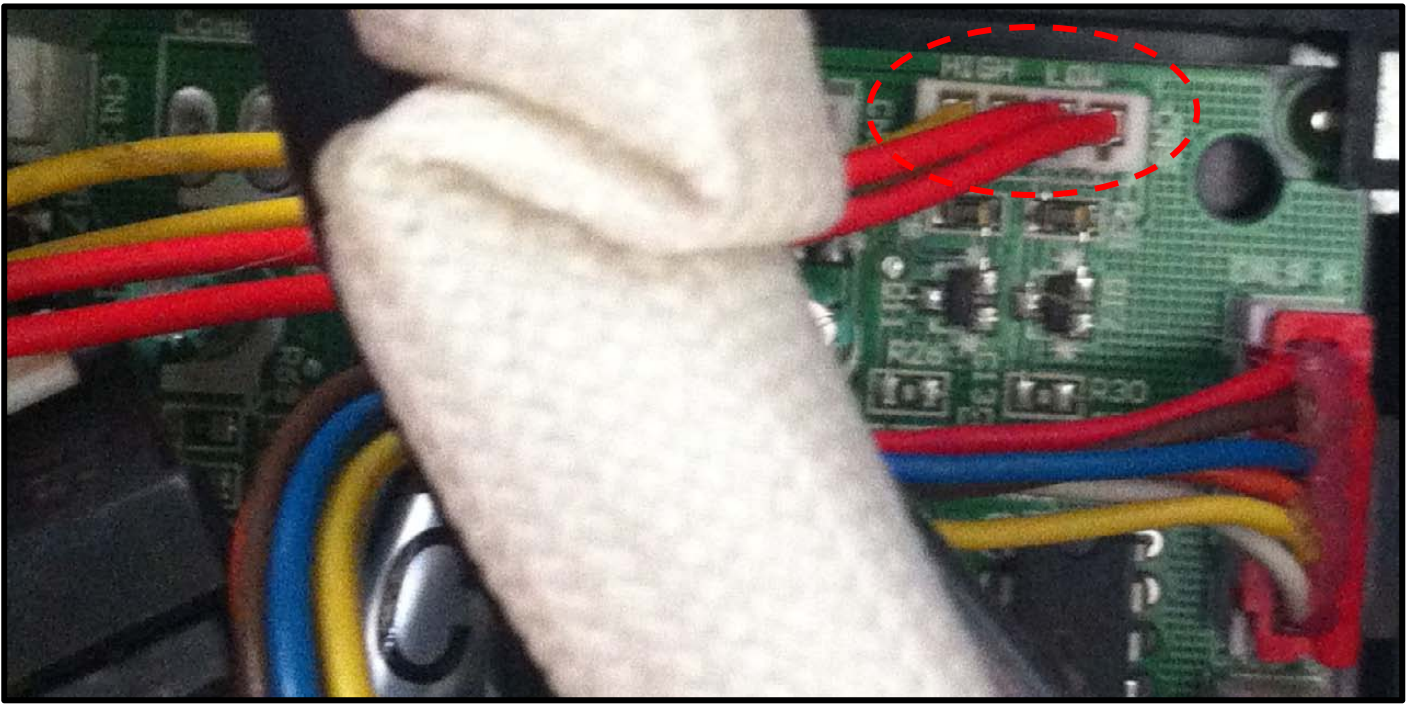


9.4.3.7 P1(High pressure protection) error diagnosis and solution. (Only for PRE 2014 YN036GMFI16M4D QUAD ZONE)

Error Code	P1
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

Trouble shooting:

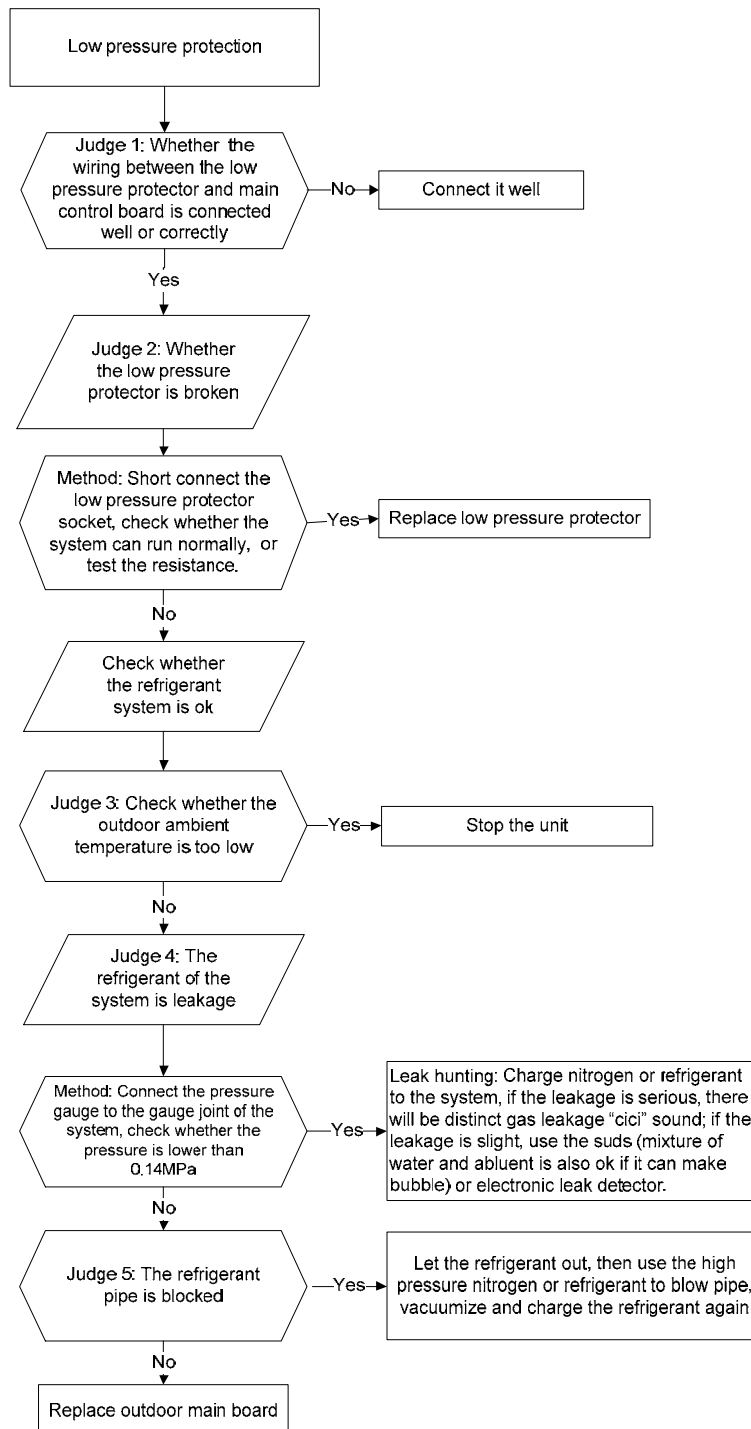


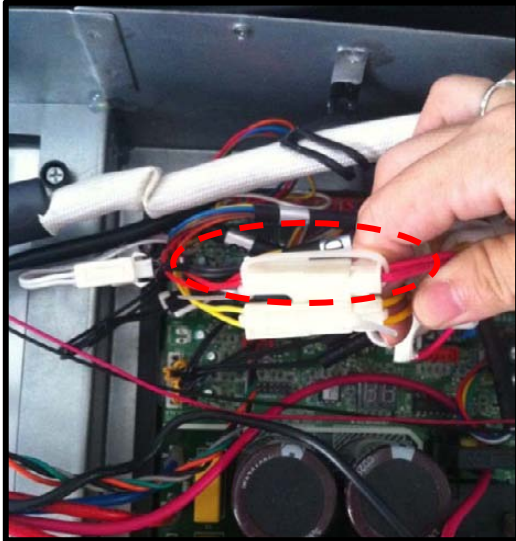
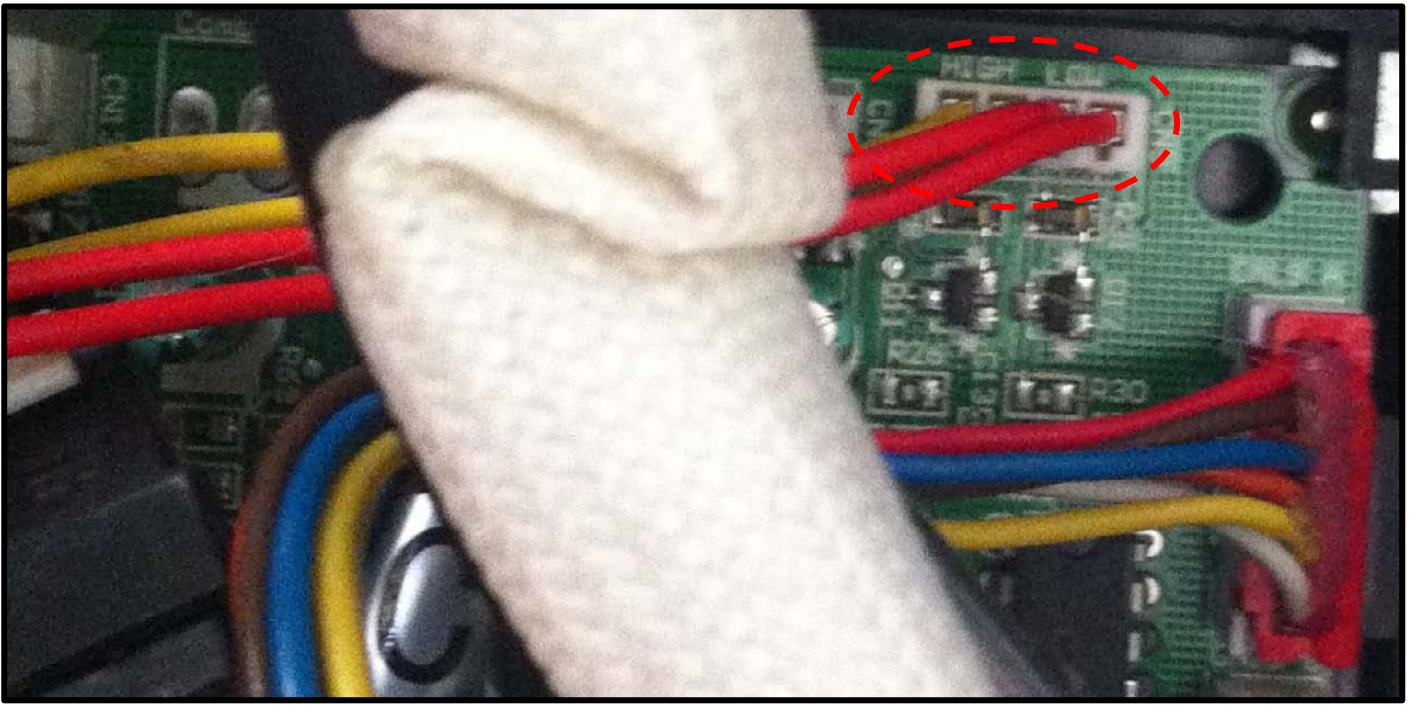


9.4.3.8 P2 (Low pressure protection) error diagnosis and solution. (Only for PRE 2014 YN036GMFI16M4D QUAD ZONE)

Error Code	P2
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

Trouble shooting:

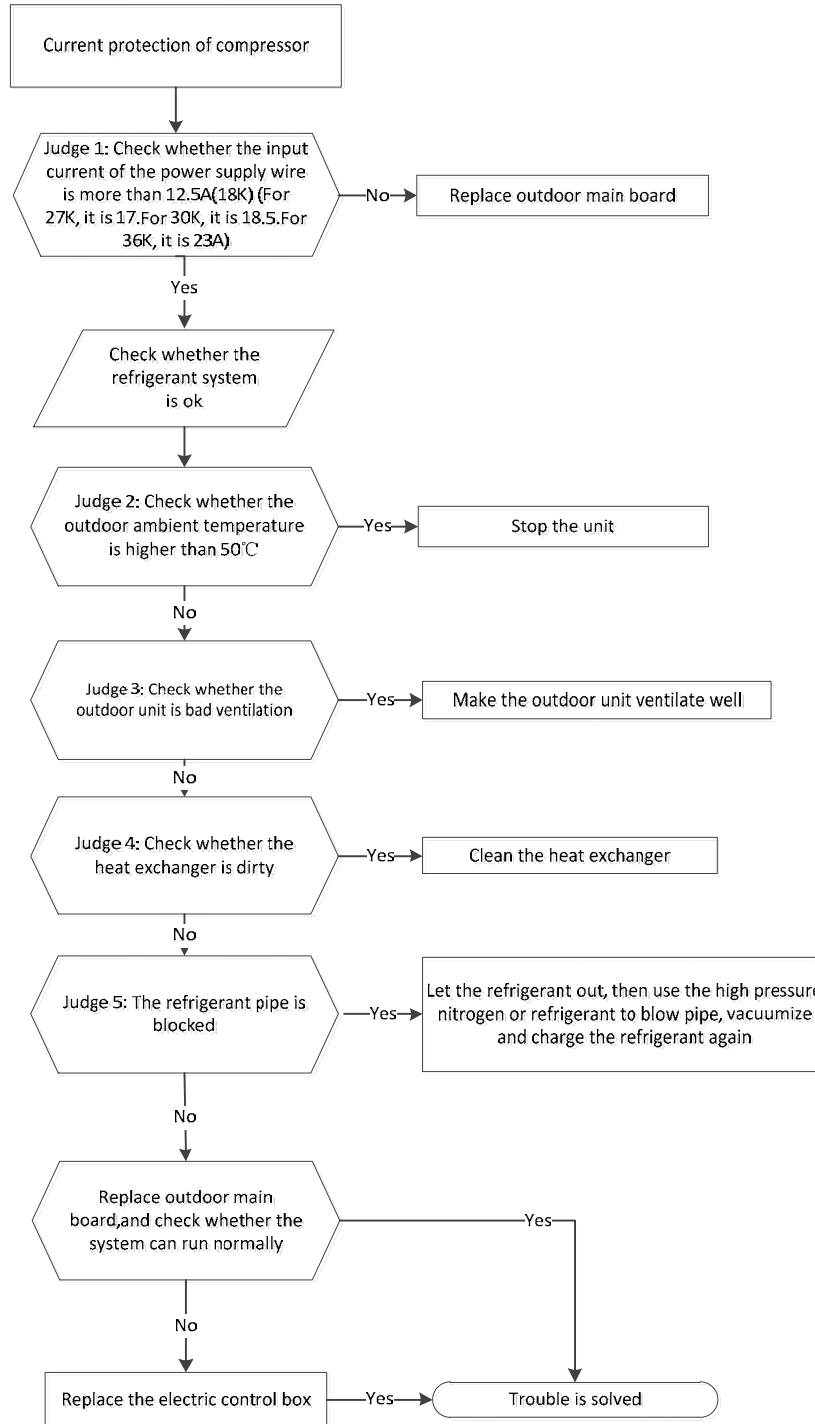




9.4.3.9 P3 (Current protection of compressor) error diagnosis and solution.

Error Code	P3
Malfunction decision conditions	If the compressor current exceeds the current limit value for 10 seconds, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Over load protector faulty ● System block ● Outdoor PCB faulty

Trouble shooting:

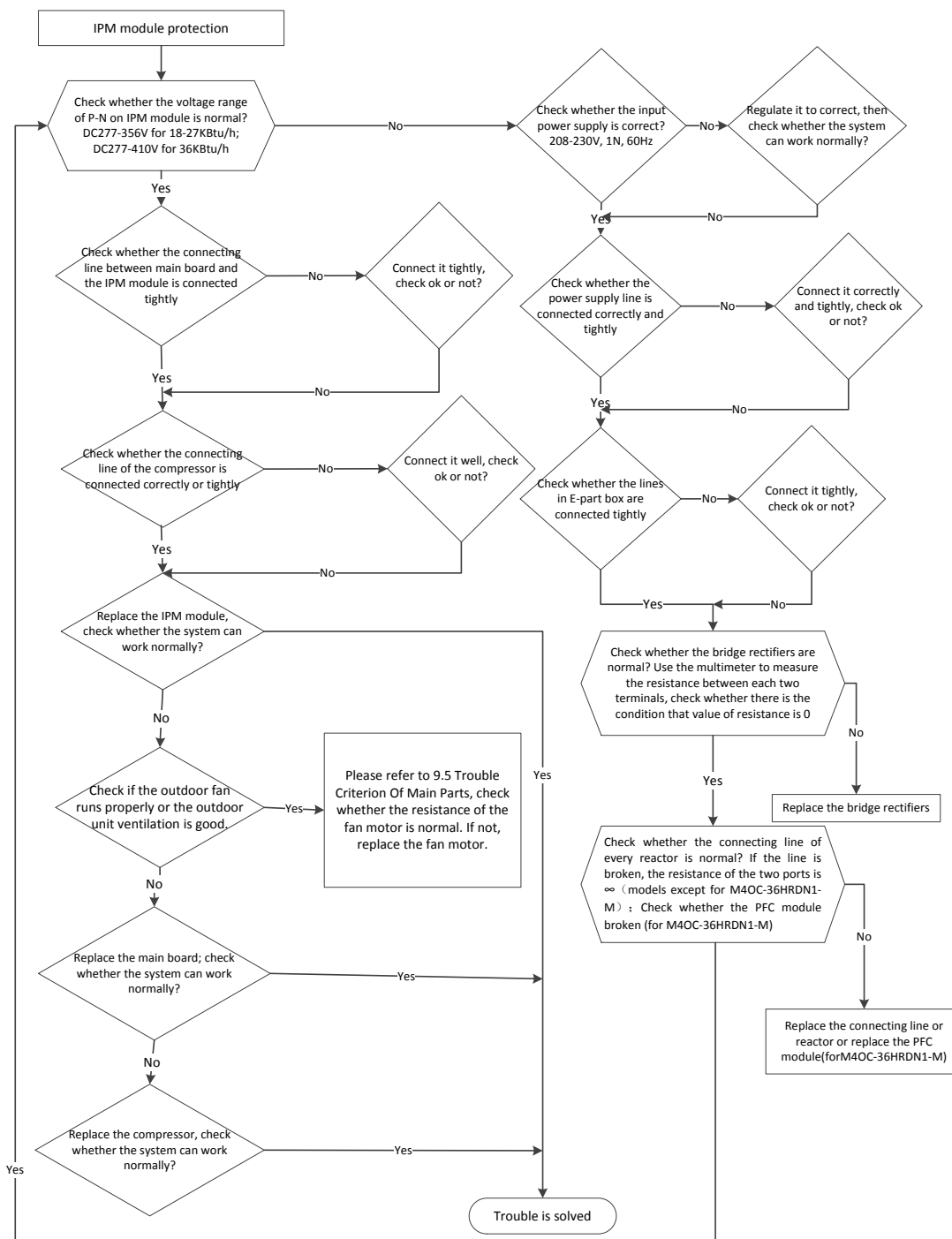




9.4.3.10 P4 (IPM module protection) error diagnosis and solution.

Error Code	P4
Malfunction decision conditions	When the voltage signal that IPM send to compressor drive chip is abnormal, the display LED will show “P4” and AC will turn off.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● IPM malfunction ● Outdoor fan ass’y faulty ● Compressor malfunction ● Outdoor PCB faulty

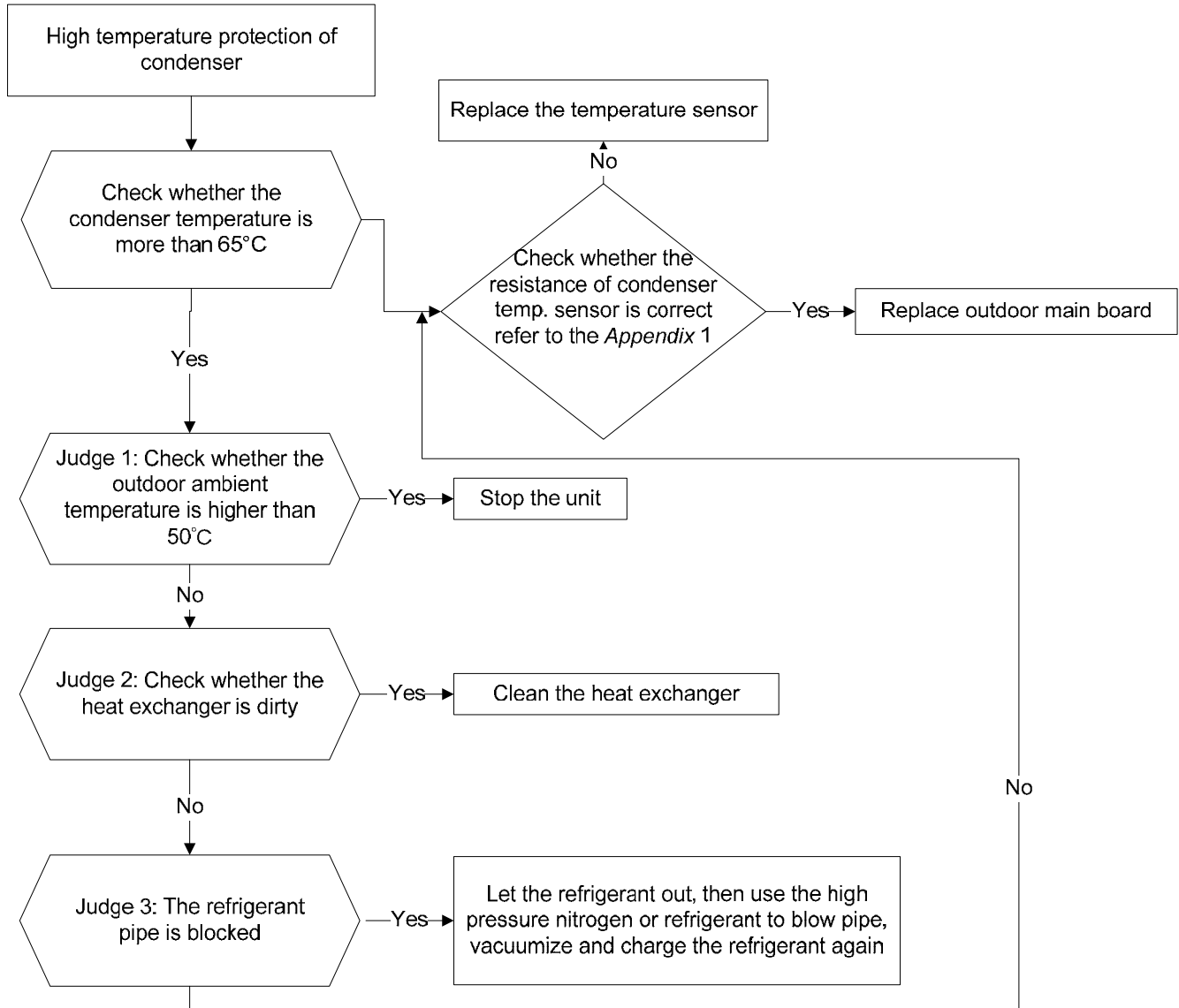
Trouble shooting:



9.4.3.11 P6 (High temperature protection of condenser) error diagnosis and solution.

Error Code	P6
Malfunction decision conditions	When outdoor pipe temperature is more than 65°C, the unit will stop, and unit runs again when outdoor pipe temperature is less than 52°C
Supposed causes	<ul style="list-style-type: none"> ● The condenser temperature sensor faulty ● Heat exchanger dirty ● System block

Trouble shooting:



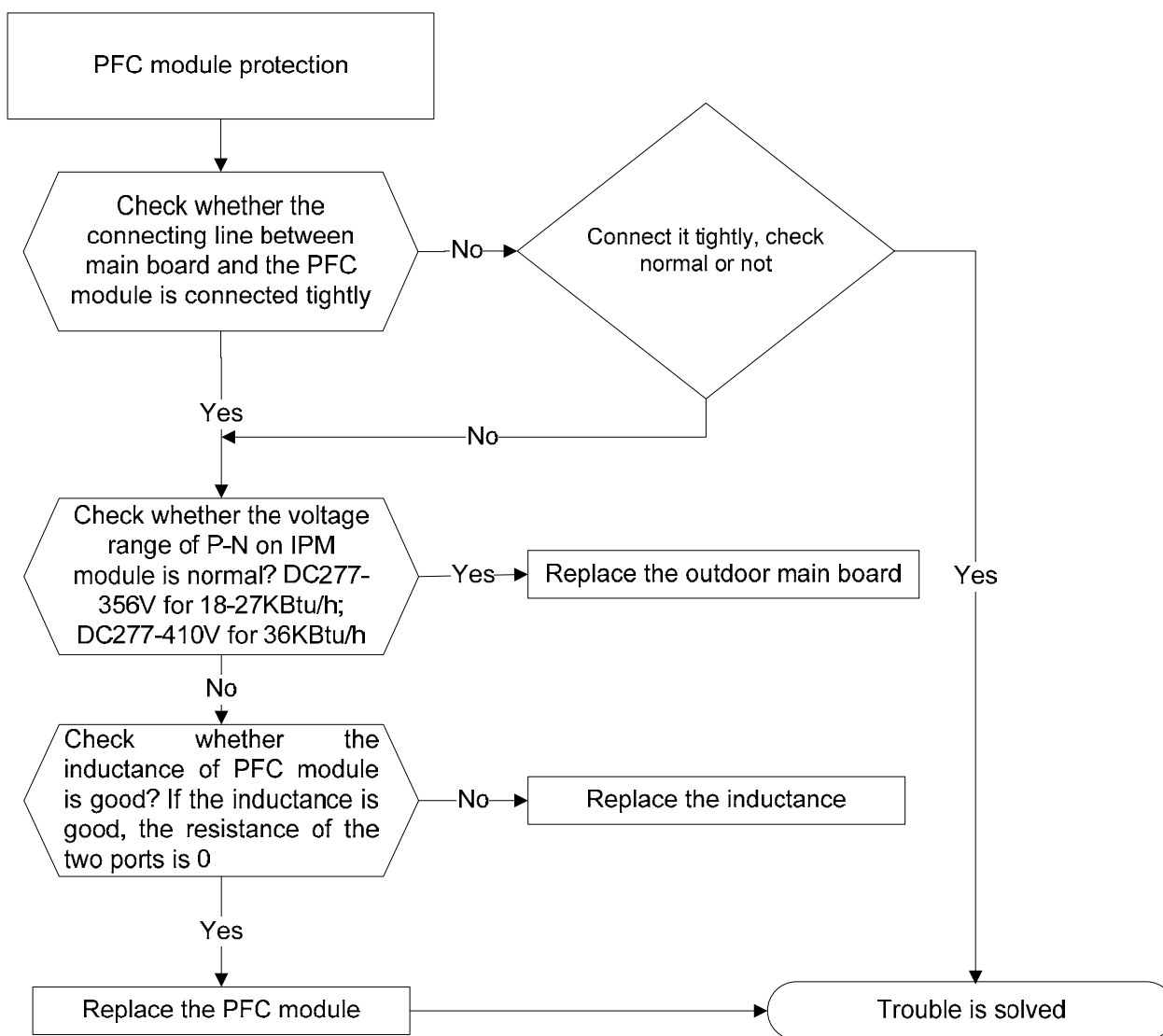
9.4.3.12 P7(Inverter compressor drive protection) error diagnosis and solution.

The same as P4(IPM module protection)

9.4.3.13 PF (PFC module protection) error diagnosis and solution. (Only for PRE 2014 YN036GMF116M4D QUAD ZONE)

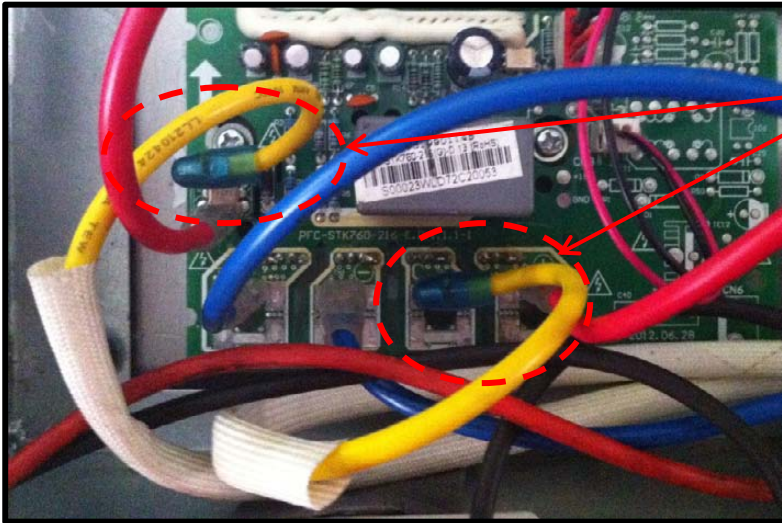
Error Code	PF
Malfunction decision conditions	When the voltage signal that PFC sends to main control board is abnormal, the display LED will show “PF” and AC will turn off.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Outdoor PCB faulty ● Inductance of PFC module faulty ● PFC module malfunction

Trouble shooting:





Inductance



Two ports of the inductance



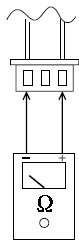
9.5 Trouble Criterion Of Main Parts.

Spec.

Indoor unit				
Wall Mount		WB009	WB012	WB018
Indoor fan motor		RPG20B	RPG20B	RPG28H
Ceiling Recesses DUCT			RB012	RB018
Indoor fan motor			YSK27-4G	YSK68-4B
Cassette			CB012	CB018
Indoor fan motor			WZDK37-38G	WZDK37-38G
Floor-Ceiling			UB012	UB018
Indoor fan motor			WZDK55-38GS-W	WZDK55-38GS-W
Floor COnsole			FB012	
Indoor fan motor			RD-280-20-8A	
Outdoor unit				
2014 AND Newer	YN018GMFI16M2D	YN027GMFI16M3D	YN030GMFI16M3D	YN036GMFI16M4D
Compressor	DA130S1C-20FZ	DA150S1C-20FZ	DA250S2C-30MT	TNB306FPGMC-L
Outdoor fan motor	WZDK50-38G	YDK53-6FB(B)	WZDK72-38G	WZDK180-38G
PRE 2014 Models	YN018GMFI16M2D	YN027GMFI16M3D		YN036GMFI16M4D
Compressor	DA130S1C-20FZ	DA150S1C-20FZ		TNB306FPGMC-L
Outdoor fan motor	YDK70-6FB	YDK53-6FB(B)		YDK180-8GB

1. Temperature sensor checking

Disconnect the temperature sensor from PCB, measure the resistance value with a tester.



Tester

Temperature Sensors.

Room temp.(T1) sensor,

Indoor coil temp.(T2) sensor,

Outdoor coil temp.(T3) sensor,

Outdoor ambient temp.(T4) sensor,

Compressor discharge temp.(Tp) sensor.

Measure the resistance value of each winding by using the multi-meter.

Appendix 1 Temperature Sensor Resistance Value Table (°C--K)

°C	K Ohm	°C	K Ohm	°C	K Ohm	°C	K Ohm
-20	115.266	20	12.6431	60	2.35774	100	0.62973
-19	108.146	21	12.0561	61	2.27249	101	0.61148
-18	101.517	22	11.5000	62	2.19073	102	0.59386
-17	96.3423	23	10.9731	63	2.11241	103	0.57683
-16	89.5865	24	10.4736	64	2.03732	104	0.56038
-15	84.2190	25	10.000	65	1.96532	105	0.54448
-14	79.3110	26	9.55074	66	1.89627	106	0.52912
-13	74.5360	27	9.12445	67	1.83003	107	0.51426
-12	70.1698	28	8.71983	68	1.76647	108	0.49989
-11	66.0898	29	8.33566	69	1.70547	109	0.48600
-10	62.2756	30	7.97078	70	1.64691	110	0.47256
-9	58.7079	31	7.62411	71	1.59068	111	0.45957
-8	56.3694	32	7.29464	72	1.53668	112	0.44699
-7	52.2438	33	6.98142	73	1.48481	113	0.43482
-6	49.3161	34	6.68355	74	1.43498	114	0.42304
-5	46.5725	35	6.40021	75	1.38703	115	0.41164
-4	44.0000	36	6.13059	76	1.34105	116	0.40060
-3	41.5878	37	5.87359	77	1.29078	117	0.38991
-2	39.8239	38	5.62961	78	1.25423	118	0.37956
-1	37.1988	39	5.39689	79	1.21330	119	0.36954
0	35.2024	40	5.17519	80	1.17393	120	0.35982
1	33.3269	41	4.96392	81	1.13604	121	0.35042
2	31.5635	42	4.76253	82	1.09958	122	0.3413
3	29.9058	43	4.57050	83	1.06448	123	0.33246
4	28.3459	44	4.38736	84	1.03069	124	0.32390
5	26.8778	45	4.21263	85	0.99815	125	0.31559
6	25.4954	46	4.04589	86	0.96681	126	0.30754
7	24.1932	47	3.88673	87	0.93662	127	0.29974
8	22.5662	48	3.73476	88	0.90753	128	0.29216
9	21.8094	49	3.58962	89	0.87950	129	0.28482
10	20.7184	50	3.45097	90	0.85248	130	0.27770
11	19.6891	51	3.31847	91	0.82643	131	0.27078
12	18.7177	52	3.19183	92	0.80132	132	0.26408
13	17.8005	53	3.07075	93	0.77709	133	0.25757
14	16.9341	54	2.95896	94	0.75373	134	0.25125
15	16.1156	55	2.84421	95	0.73119	135	0.24512
16	15.3418	56	2.73823	96	0.70944	136	0.23916
17	14.6181	57	2.63682	97	0.68844	137	0.23338
18	13.9180	58	2.53973	98	0.66818	138	0.22776
19	13.2631	59	2.44677	99	0.64862	139	0.22231

Appendix 2

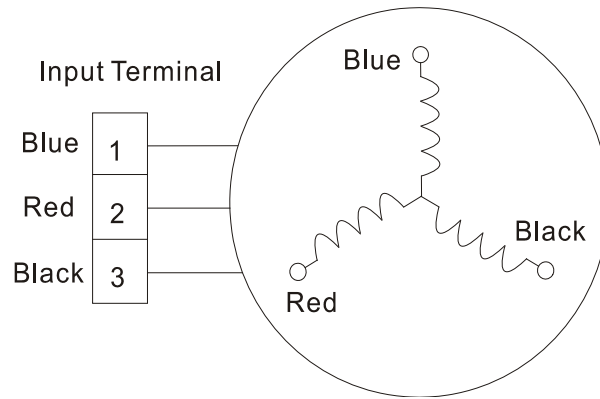
		Unit: °C---K		Discharge temp. sensor table			
-20	542.7	20	68.66	60	13.59	100	3.702
-19	511.9	21	65.62	61	13.11	101	3.595
-18	483	22	62.73	62	12.65	102	3.492
-17	455.9	23	59.98	63	12.21	103	3.392
-16	430.5	24	57.37	64	11.79	104	3.296
-15	406.7	25	54.89	65	11.38	105	3.203
-14	384.3	26	52.53	66	10.99	106	3.113
-13	363.3	27	50.28	67	10.61	107	3.025
-12	343.6	28	48.14	68	10.25	108	2.941
-11	325.1	29	46.11	69	9.902	109	2.86
-10	307.7	30	44.17	70	9.569	110	2.781
-9	291.3	31	42.33	71	9.248	111	2.704
-8	275.9	32	40.57	72	8.94	112	2.63
-7	261.4	33	38.89	73	8.643	113	2.559
-6	247.8	34	37.3	74	8.358	114	2.489
-5	234.9	35	35.78	75	8.084	115	2.422
-4	222.8	36	34.32	76	7.82	116	2.357
-3	211.4	37	32.94	77	7.566	117	2.294
-2	200.7	38	31.62	78	7.321	118	2.233
-1	190.5	39	30.36	79	7.086	119	2.174
0	180.9	40	29.15	80	6.859	120	2.117
1	171.9	41	28	81	6.641	121	2.061
2	163.3	42	26.9	82	6.43	122	2.007
3	155.2	43	25.86	83	6.228	123	1.955
4	147.6	44	24.85	84	6.033	124	1.905
5	140.4	45	23.89	85	5.844	125	1.856
6	133.5	46	22.89	86	5.663	126	1.808
7	127.1	47	22.1	87	5.488	127	1.762
8	121	48	21.26	88	5.32	128	1.717
9	115.2	49	20.46	89	5.157	129	1.674
10	109.8	50	19.69	90	5	130	1.632
11	104.6	51	18.96	91	4.849		
12	99.69	52	18.26	92	4.703		
13	95.05	53	17.58	93	4.562		
14	90.66	54	16.94	94	4.426		
15	86.49	55	16.32	95	4.294	B(25/50)=3950K	
16	82.54	56	15.73	96	4.167		
17	78.79	57	15.16	97	4.045	R(90°C)=5KΩ±3%	
18	75.24	58	14.62	98	3.927		
19	71.86	59	14.09	99	3.812		

Appendix 3:

°C	10	11	12	13	14	15	16	17	18	19	20	21	22
°F	48	50	52	54	56	58	60	62	64	66	68	70	72
°C	23	24	25	26	27	28	29	30	31	32	33	34	35
°F	74	76	78	80	82	84	86	88	90	92	94	96	98

2. Compressor check

Measure the resistance value of each winding by using the tester.



Position	Resistance Value			
	DA130S1C-20FZ	DA150S1C-20FZ	DA250S2C-30MT	TNB306FPGMC-L
Blue - Red	0.95Ω(20°C)	0.95Ω(20°C)	0.55Ω(20°C)	0.53Ω(20°C)



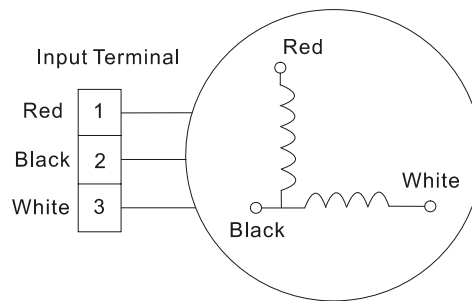
3. IPM continuity check

Turn off the power, let the large capacity electrolytic capacitors discharge completely, and dismount the IPM. Use a digital tester to measure the resistance between P and UVWN; UVW and N.

Digital tester		Normal resistance value	Digital tester		Normal resistance value
(+)Red	(-)Black		(+)Red	(-)Black	
P	N	∞ (Several M Ω)	U	N	∞ (Several M Ω)
	U				
	V				
	W				
			(+)Red		

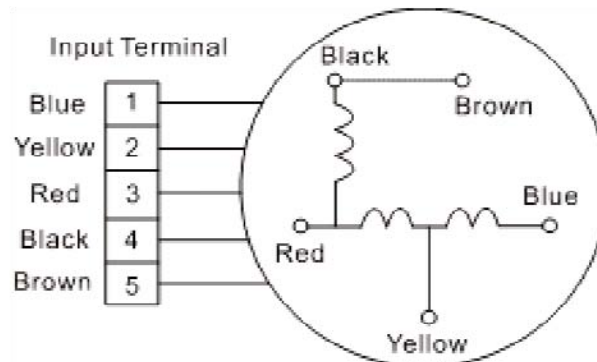
4. AC Fan Motor.

Measure the resistance value of each winding by using the tester.



Position	Resistance Value			
	RPG20B		RPG28H	
Black - Red	381 Ω ±8% (20°C) (Brand: Weiling)	342 Ω ±8% (20°C) (Brand: Dayang)	183.6 Ω ±8% (20°C) (Brand: Weiling)	180 Ω ±8% (20°C) (Brand: Wolong)
White - Black	267 Ω ±8% (20°C) (Brand: Weiling)	253 Ω ±8% (20°C) (Brand: Dayang)	206 Ω ±8% (20°C) (Brand: Weiling)	190 Ω ±8% (20°C) (Brand: Wolong)

Measure the resistance value of each winding by using the tester.

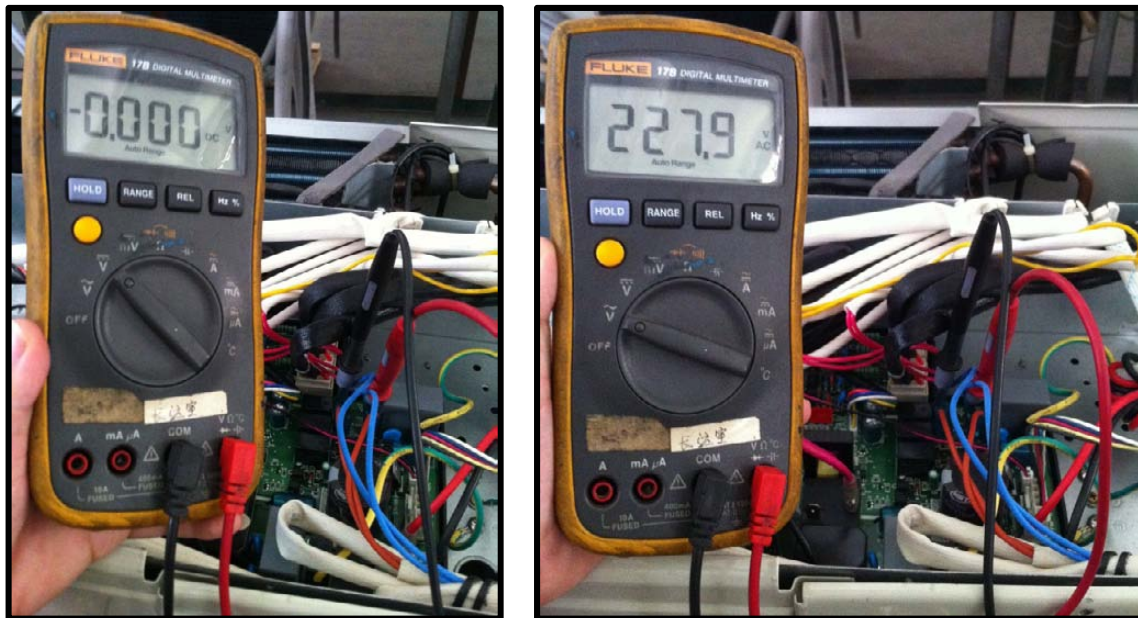


Position	Resistance Value						
	YDK70-6FB	YDK180-8GB	YSK27-4G	YSK68-4B	YDK45-6B	YSK25-6L	YDK53-6FB(B)
Black - Red	56Ω±8% (20°C)	24.5Ω±8% (20°C)	317Ω±8% (20°C)	145Ω±8% (20°C)	345Ω±8% (20°C)	627Ω±8% (20°C)	88.5Ω±8% (20°C)
Red - Yellow	76Ω±8% (20°C)	19Ω±8% (20°C)	252Ω±8% (20°C)	88Ω±8% (20°C)	150Ω±8% (20°C)	374.3Ω±8% (20°C)	138Ω±8% (20°C)
Yellow - Blue	76Ω±8% (20°C)	19Ω±8% (20°C)	252Ω±8% (20°C)	88Ω±8% (20°C)	150Ω±8% (20°C)	374.3Ω±8% (20°C)	138Ω±8% (20°C)

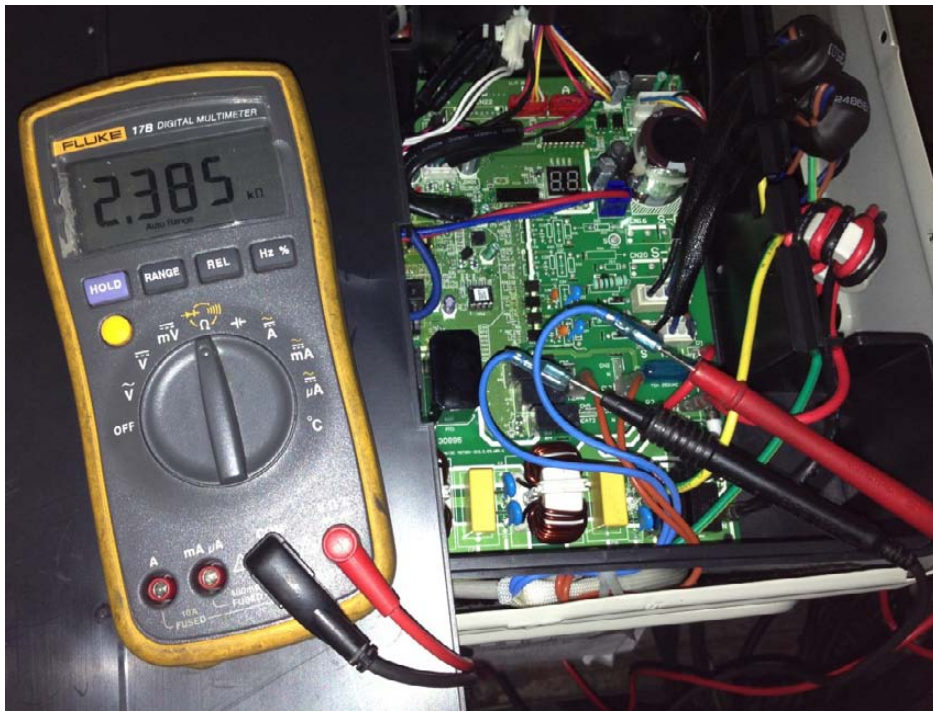
5.4-way valve

1. Power on, use a digital tester to measure the voltage, when the unit operates in cooling, it is 0V. When the unit operates in heating, it is about 230VAC.

If the value of the voltage is not in the range, the PCB must have problems and need to be replaced.

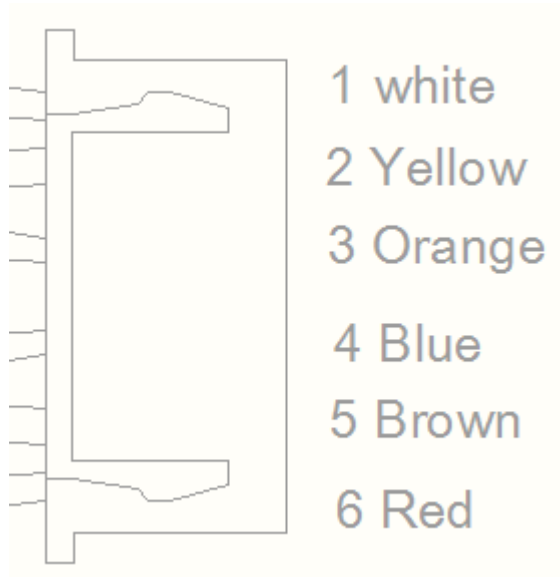


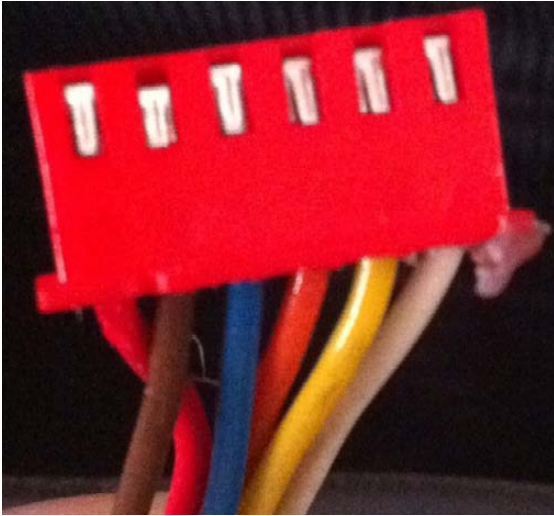
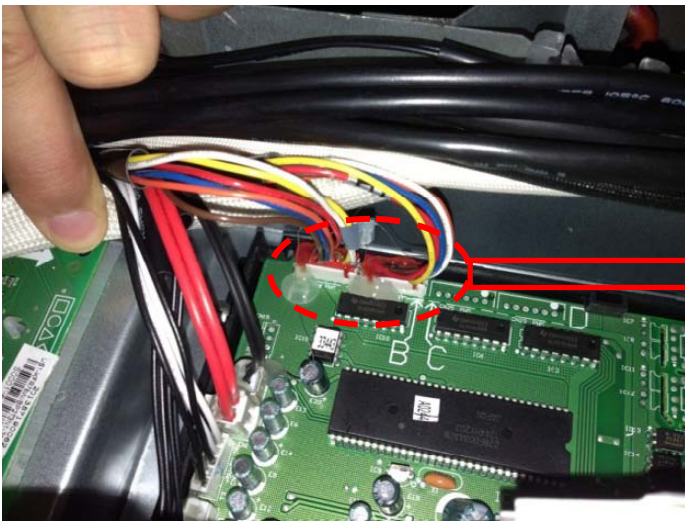
- 2 Turn off the power, use a digital tester to measure the resistance. The value should be 1.8~2.5 KΩ.



6.EXV check

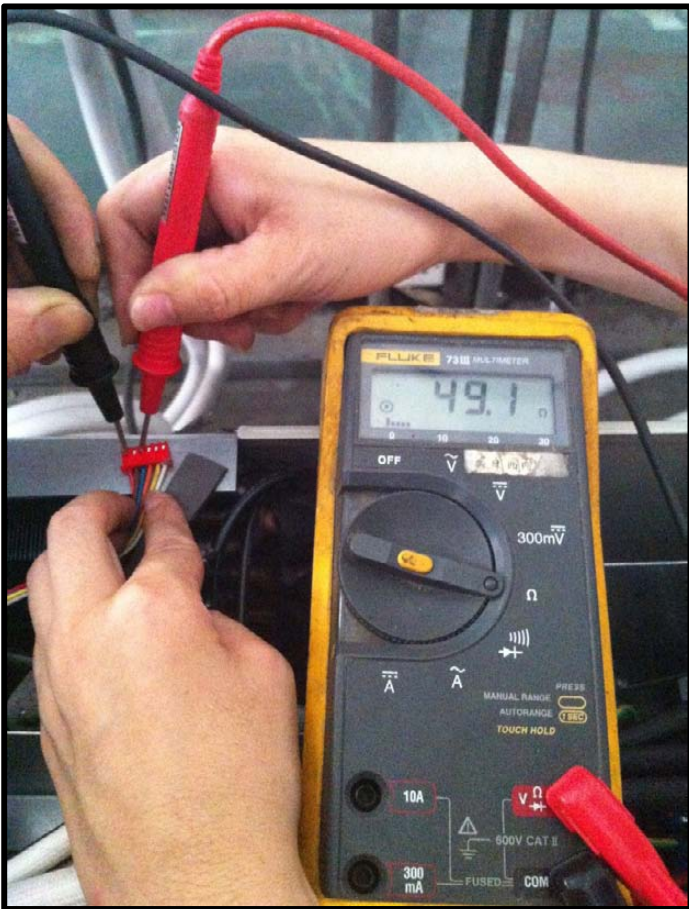
Disconnect the connectors.



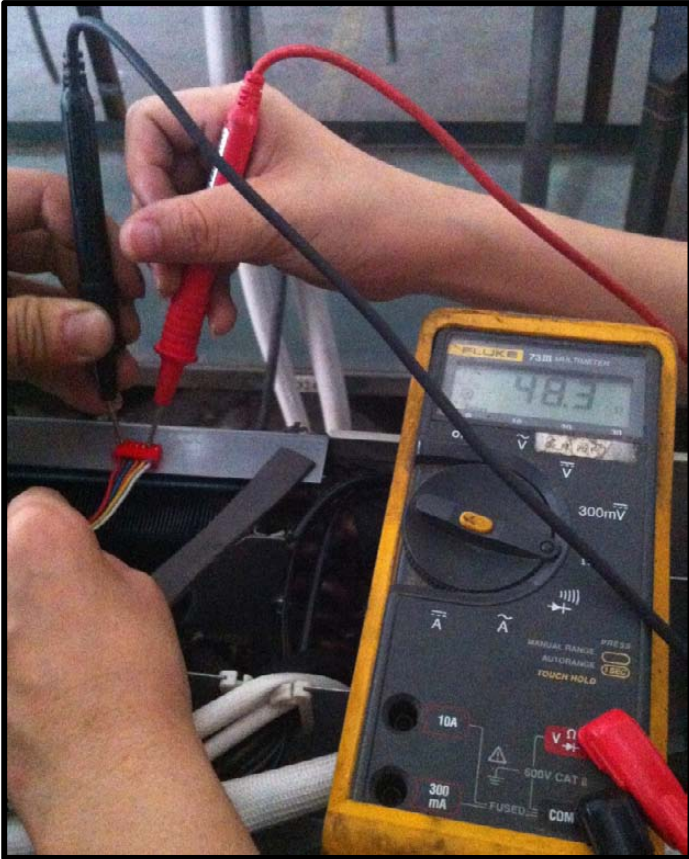


Resistance to EXV coil

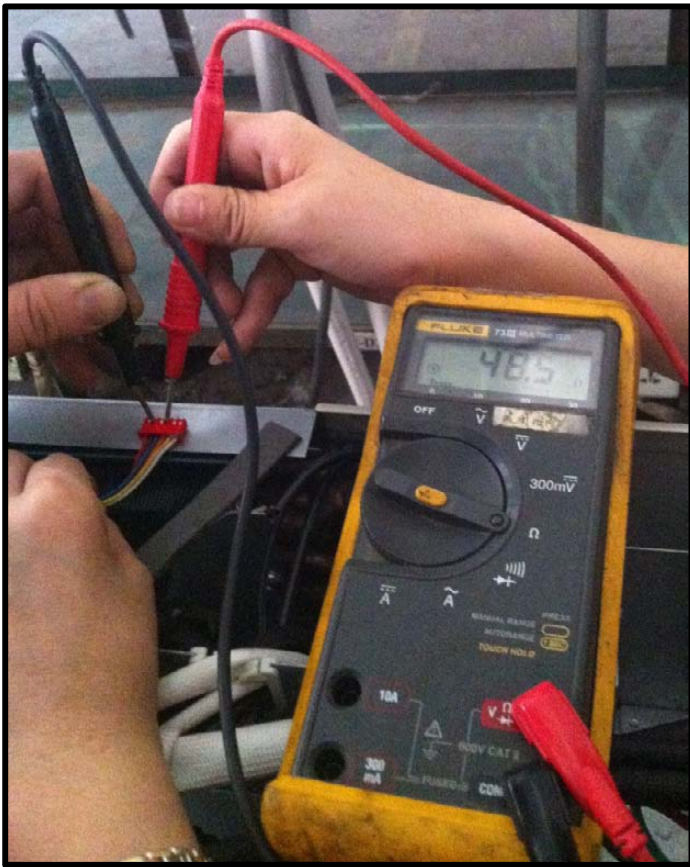
Color of lead wire	Normal Value
Red- Blue	About 50Ω
Red - Yellow	
Brown-Orange	
Brown-White	



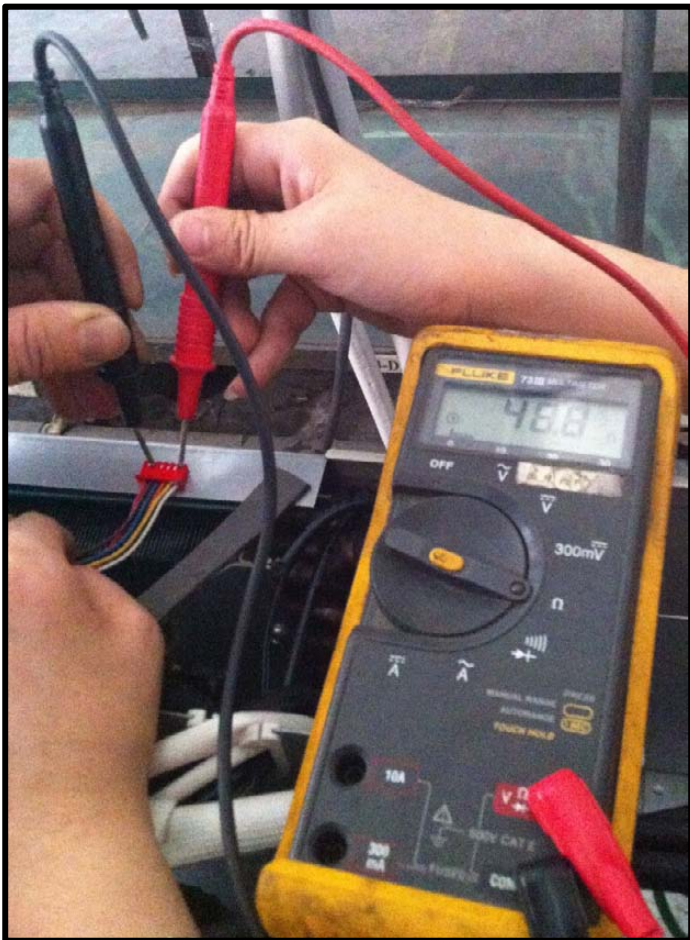
Red- Blue



Red - Yellow



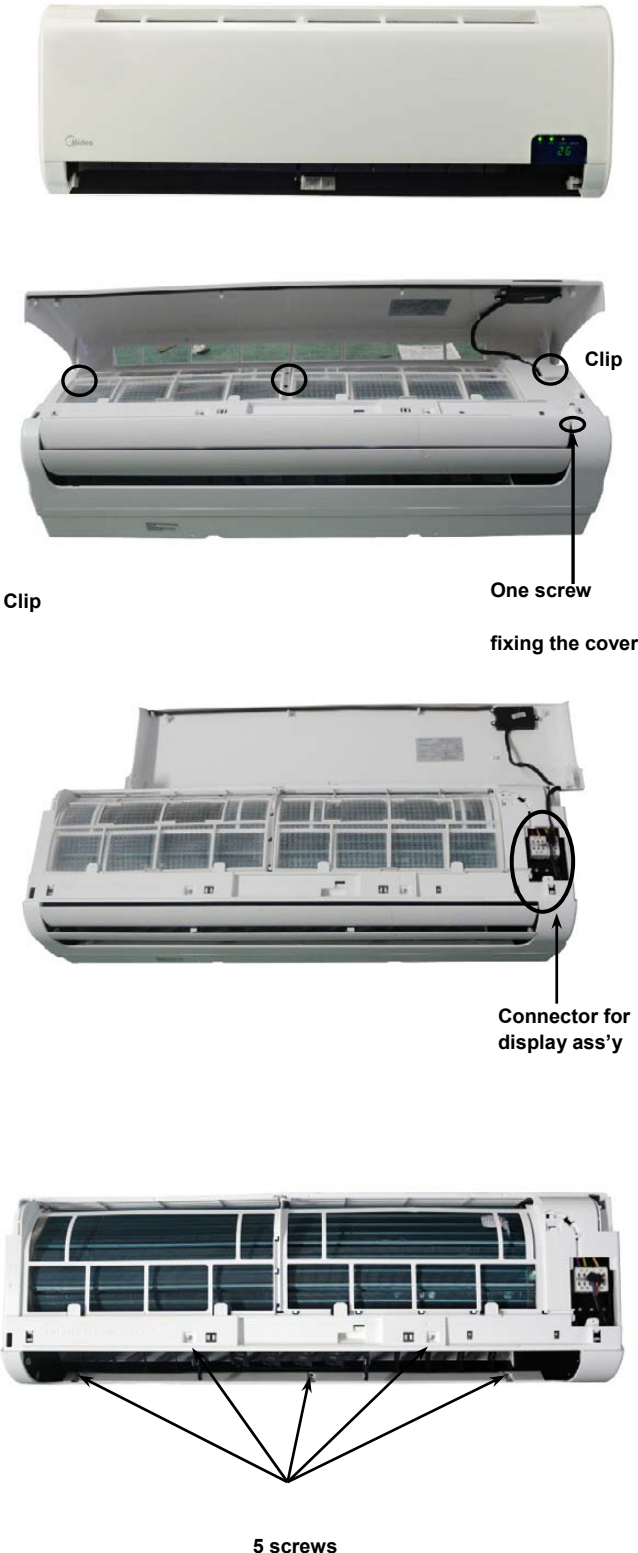
Brown-Orange



Brown-White

9. Disassembly Instructions

Wall Mount Units.

No.	Parts name	Procedures	Remarks
1	Front panel	<p>How to remove the front panel.</p> <ol style="list-style-type: none"> 1) Pull the below side of the panel and release the clips. Remove the filter and horizontal louver. 2) Remove the fixing screw and open the cover. 3) Lift the panel and release the connector of display ass'y. Then remove the front panel. 4) Remove the five screws and release the panel frame ass'y. 	<p>Overview:</p>  <p>The diagrams illustrate the following steps:</p> <ul style="list-style-type: none"> Diagram 1: Overview of the wall-mounted air conditioner unit. Diagram 2: Front view of the unit with the top cover open. Three clips are circled, and one screw is labeled 'One screw fixing the cover'. Diagram 3: Back view of the unit with the top cover open. A connector for the display assembly is circled and labeled 'Connector for display ass'y'. Diagram 4: Bottom view of the unit with five screws circled and labeled '5 screws'.

2 Electrical parts

How to remove the electrical parts.

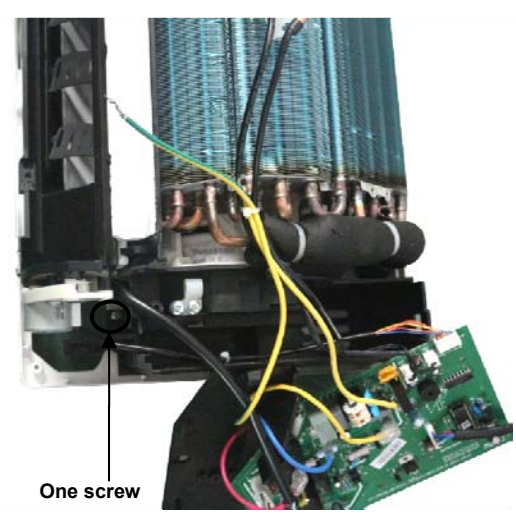
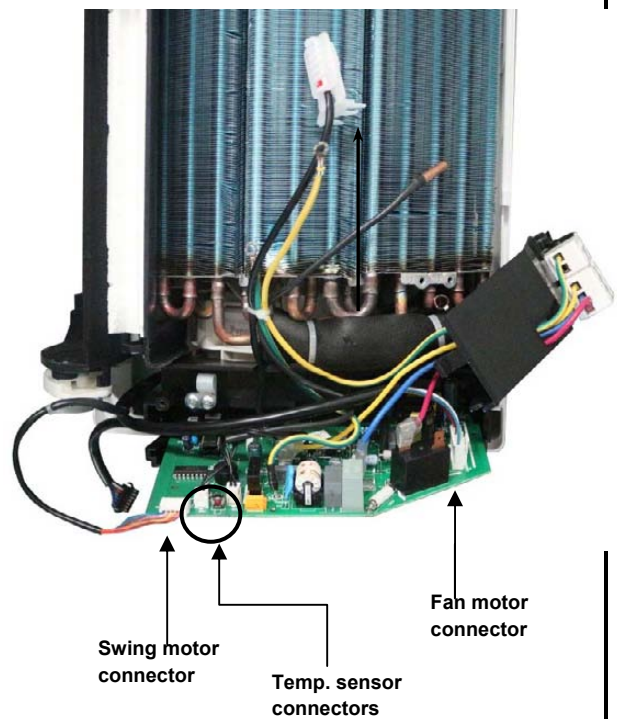
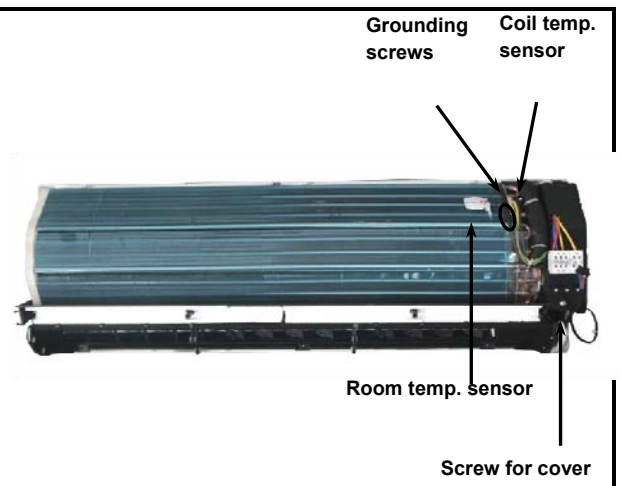
1) After remove the front panel from procedure 1, pull out the room temp. sensor and evaporator coil sensor.

Remove the grounding screws.

2) Remove the fixing screw and open the cover of electronic control box.

3) Pull out the connectors of swing motor, fan motor, room temp. sensor and coil temp. sensor. .

4) Remove the fixing screw and then remove the electronic control box and air outlet ass'y.



3 Evaporator

How to remove the evaporator.

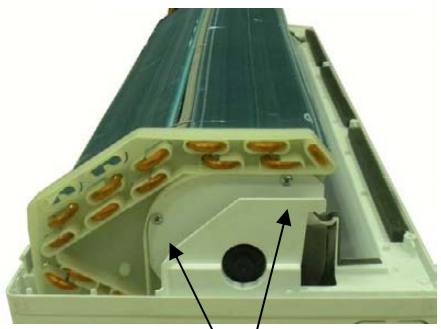
1) After remove the front panel ass'y and electrical parts following procedure 1 and procedure 2, remove the pipe holder at the rear side of the unit.

2) Remove the three screws on the evaporator at the base bearing side.

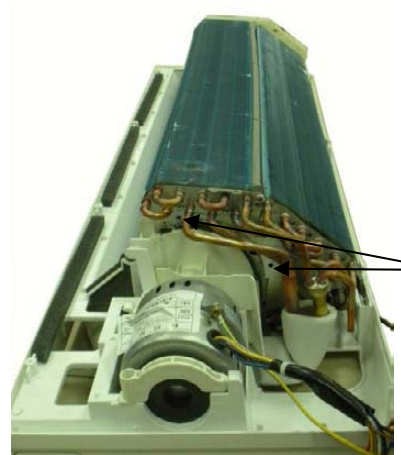
3) Remove two screws on the evaporator at the fixed plates and then lift the evaporator ass'y.



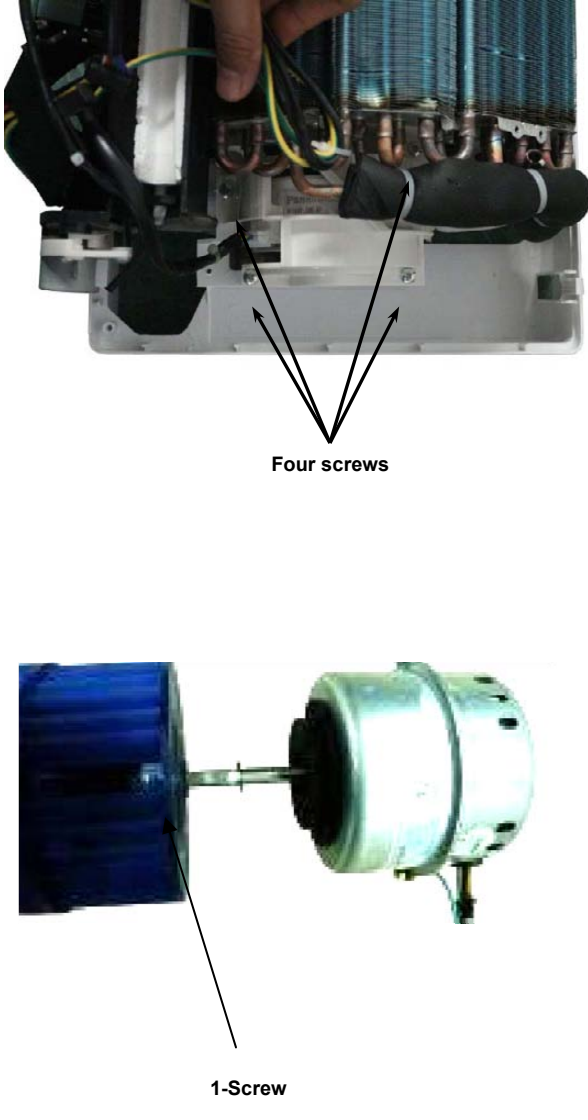
Screw of pipe holder



3 screws

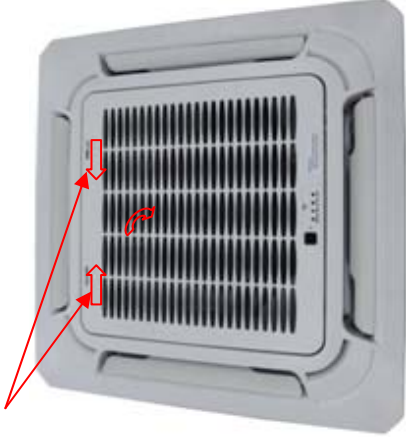


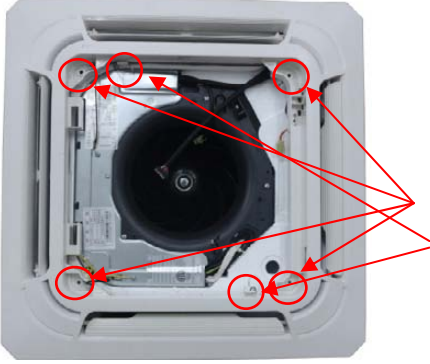


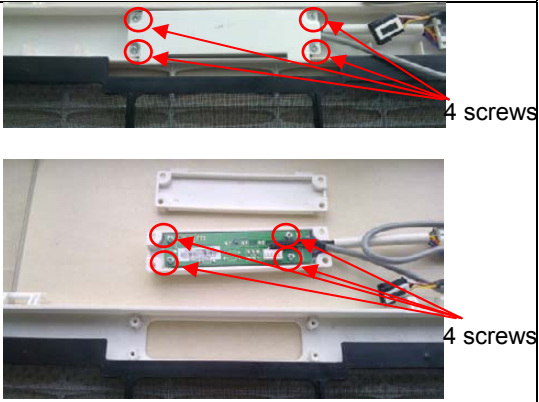
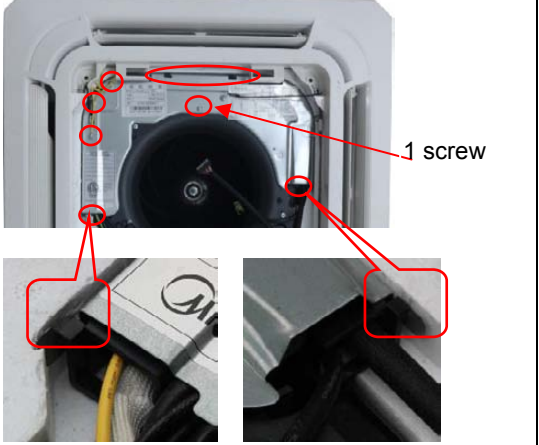
2 screws

4	Fan and motor	<p>How to remove the fan and motor.</p> <p>1) After remove the evaporator ass'y following procedure 1, procedure 2 and procedure 3, remove the four screws fixing the cover</p> <p>2) Remove the screw fixing the motor and then pull out the motor.</p>	 <p>The top image shows a close-up of the internal components of a unit, including the evaporator and fan assembly. Four screws are indicated by arrows and labeled 'Four screws'. The bottom image shows the fan and motor assembly, with one screw being removed, labeled '1-Screw'.</p>
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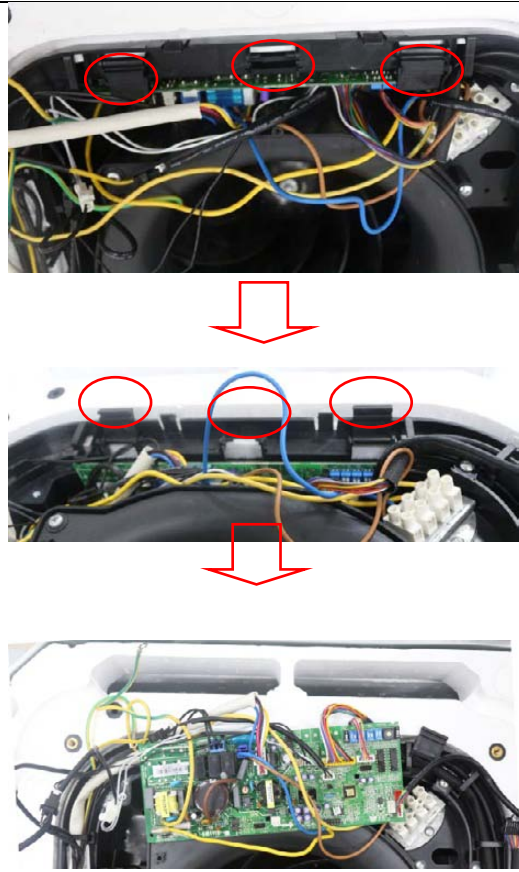
➤ **Eight-Way cassette type (compact)**

❖ **All the operations should be performed after powered off.**

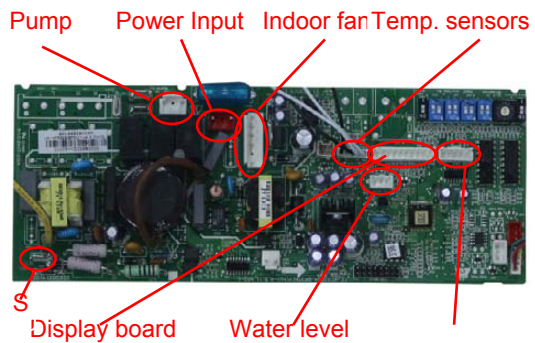
No.	Parts name	Procedures	Remarks
1	Remove the filter	1) Open the grille	
		2) Remove the filter Note: the filter is easy to be damaged, be careful when removing it.	
2	Remove the panel	1) Open the grille	Repeat the operation of step1 of No.1
		2) Remove the grille <ul style="list-style-type: none"> ● Screw off two screws. ● Disconnect the display board wire and swing motor wire connected to the PCB. ● Remove the grille. 	
		3) Loose the four screws and two wireropes, then the panel can be disassembled.	

3	Remove the display board	1) Open the grille	Repeat the operation of step1 of No.1
		2) Remove the grille	Repeat the operation of step2 of No.2
		3) Disassemble the display board <ul style="list-style-type: none"> Remove the display board cover(4 screws) Remove the display board(4 screws) 	 <p>4 screws</p> <p>4 screws</p>
4	Remove the PCB	1) Open the grille	Repeat the operation of step1 of No.1(No need to remove the panel)
		2) Disassemble the electronic control box cover <p>Remove the 1 fixing screw and 3 grounding wires, and be careful of the lockers of both sides and the bottom.</p>	 <p>1 screw</p>

3) There are 3 buckles fixing the PCB. To draw out the PCB, you should open them.



4) Pull out all the connection wires to other parts, then the PCB can be replaced.



5 Remove the electronic control box

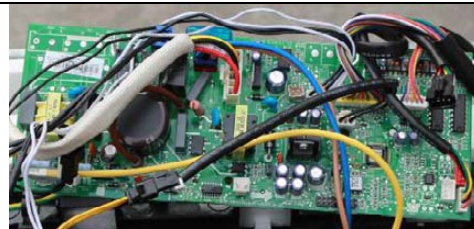
1) Open the grille


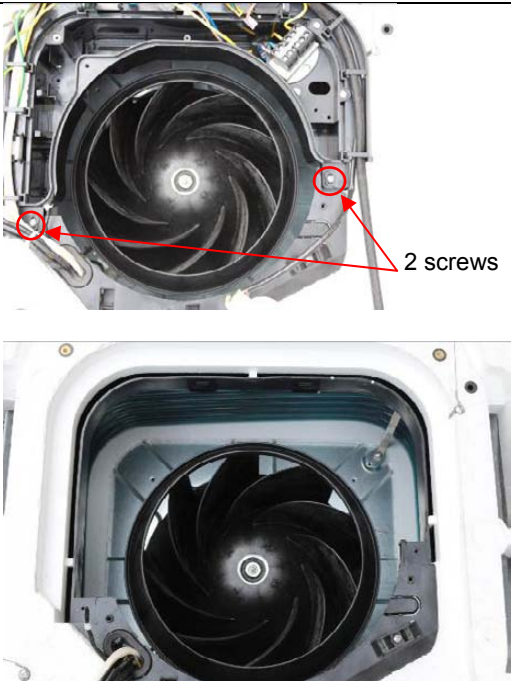

Repeat the operation of step1 of No.1(No need to take down the panel)


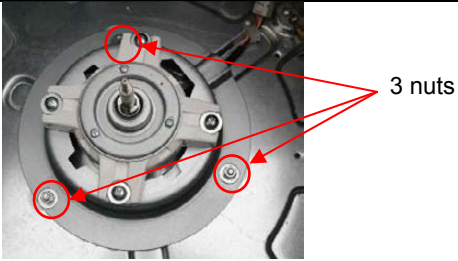
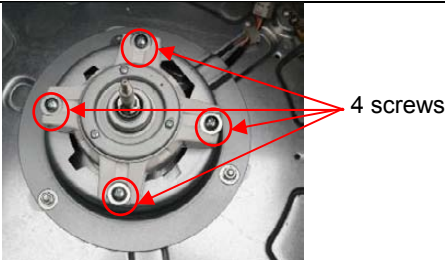
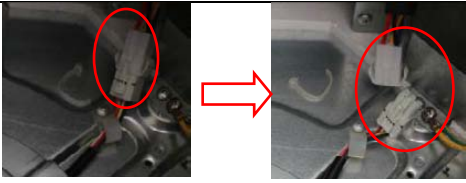
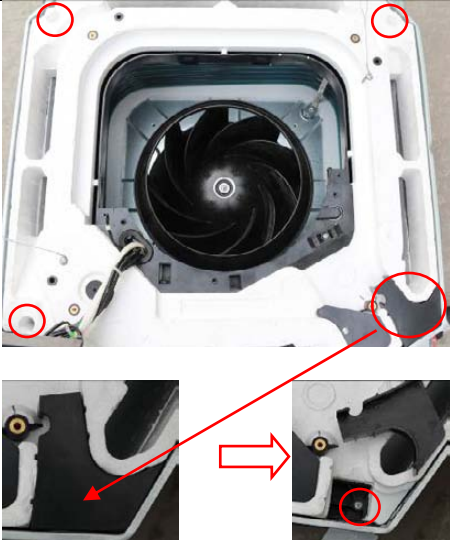
2) Remove the electronic control box cover



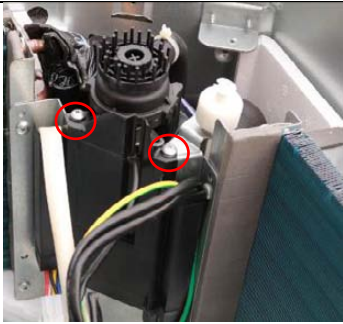

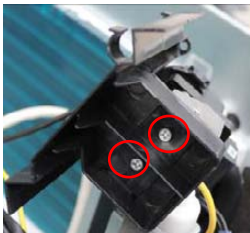

Repeat the operation of step 2 of No.4


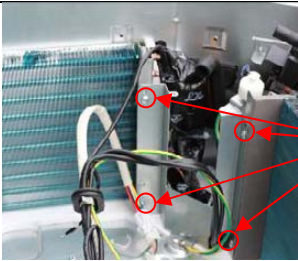
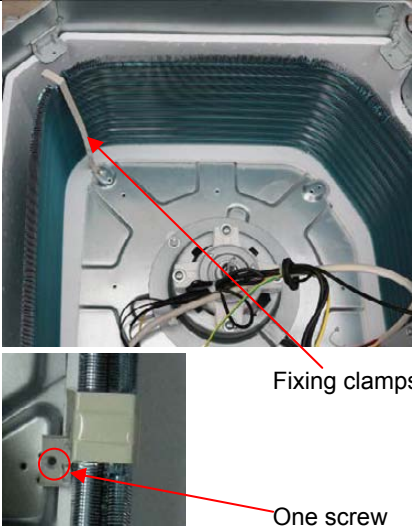
3) Pull out all the plugs or connectors connected to the electronic control box



		<p>4) Remove the ventilation ring Release the 4 screws to disassemble it. Be careful of the indoor temperature sensor.</p>	
		<p>5) Remove the electronic control box Remove the 2 screws to disassemble the electronic control box</p>	
<p>6</p>	<p>Remover the fan wheel</p>	<p>1) Repeat the operation of No.5 2) Remove the fixing nut to disassemble the fan wheel</p>	






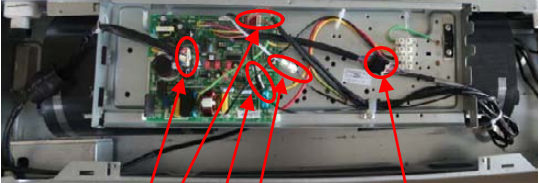
		3) Pull out the fan wheel	
7	Remove the fan motor	1) Repeat the operation of No.6	
		2) Remove the fixing board of fan motor wire	
		3) Remove the 4 screws to disassemble the fan motor	
		4) Pull out the connection plugs of the motor wires.	
8	Remove the water collecting assembly	1) Remove the panel	Repeat the operation of No.2
		2) Remove the electronic control box	Repeat the operation of No.5
		3) Screw off the 4 screws inside 4 holes (1 is under a protection cover) to remove the water collecting assembly.	

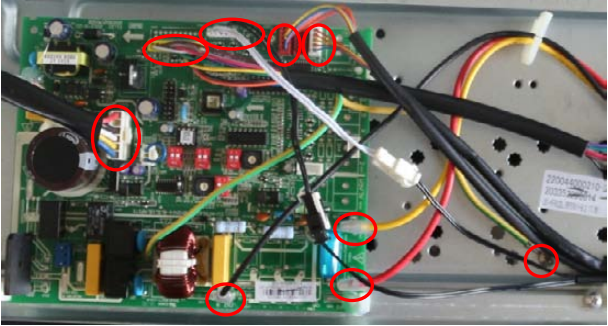
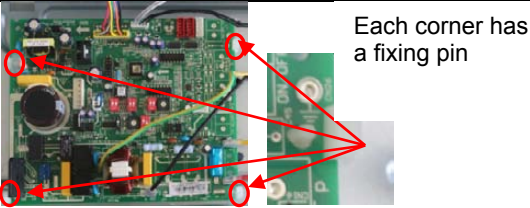


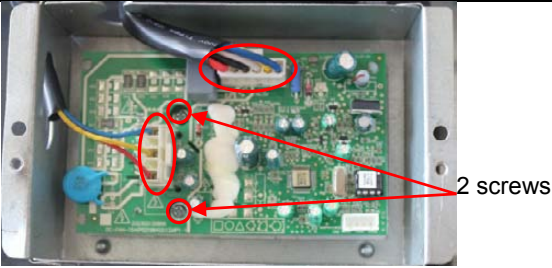
		4) Take out the water collecting assembly	
9	Remove the draining pump	1) Remove the panel	Repeat the operation of No.2
		2) Remove the electronic control box	Repeat the operation of No.5
		3) Remove the water collecting assembly	Repeat the operation of No.8
		4) Disconnect the drain pipe.	
	5) Release 2 screws to remove the pump supporter. Be careful of the connection wires.	 	
	6) There are 2 screws under the supporter to fixing the pump. Release them to take the pump out of the supporter.	 	
10	Remove	1) Remove the water collecting assembly	Repeat the operation of No.8

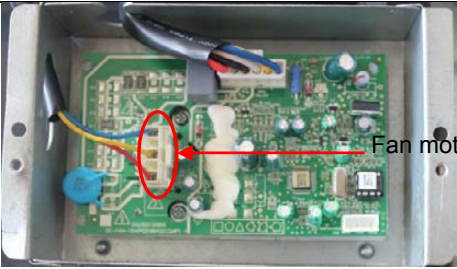
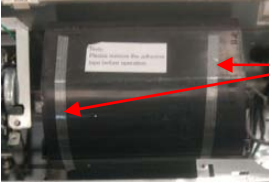
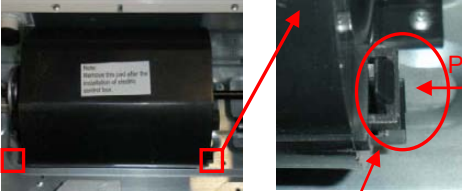
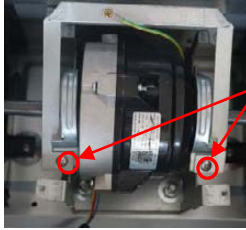

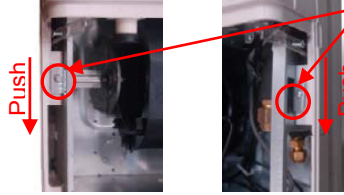
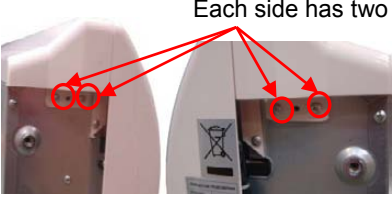
<p>the evaporator</p>	<p>2) Remove the seal board of evaporator</p>	 <p>2 screws</p>
	<p>3) Remove the evaporator fixing board</p>	 <p>4 screws</p>
	<p>4) Remove the evaporator fixing clamps to disassemble the evaporator.</p>	 <p>Fixing clamps</p> <p>One screw</p>

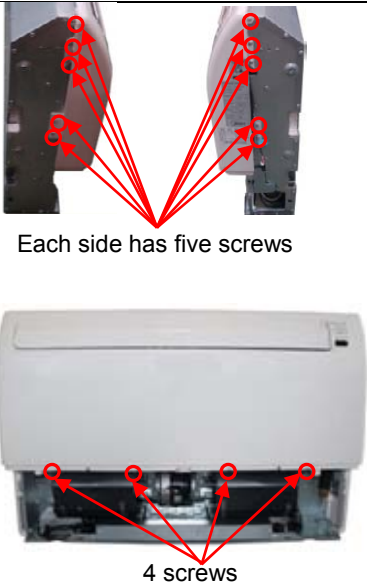
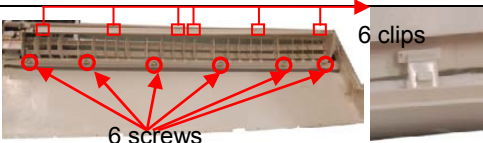
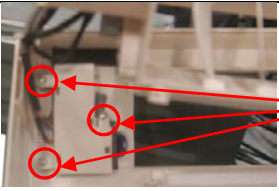
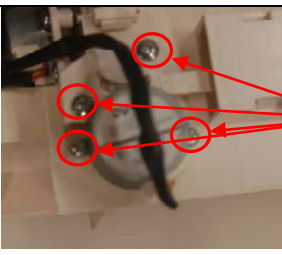
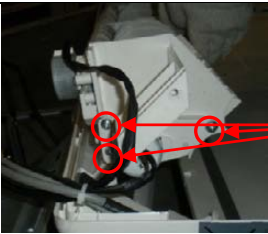
➤ Ceiling & Floor

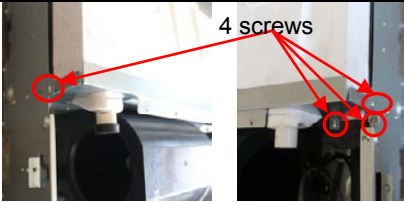
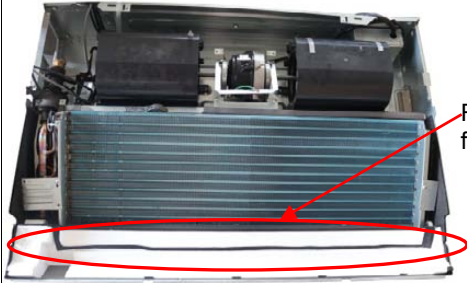
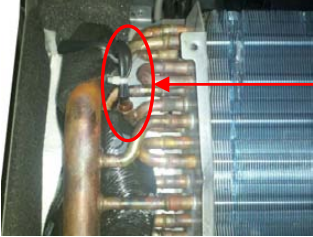
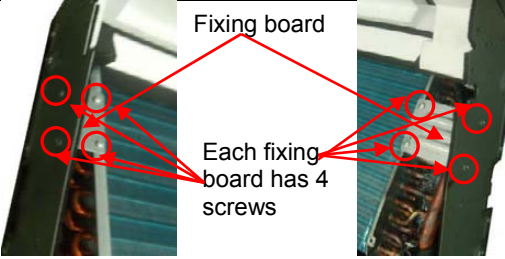
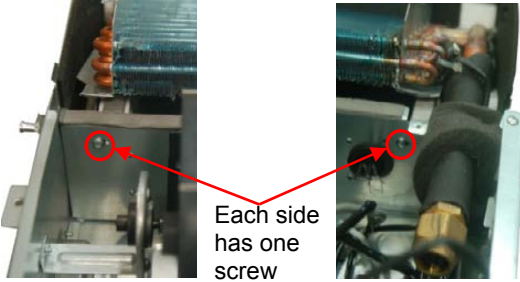
✧ All the operations should be performed after powered off.

No.	Parts name	Procedures	Remarks
1	Remove the Filter	1) Open the air return grille	
		2) Remove the filter from the grille	
2	Remove the electronic control box	1) Remove the air return grille	<ul style="list-style-type: none"> ● Open the air return grille Repeat the operation of step1 of No.1 ● Screw off the screw connected to the left and right guide beam. 2 screws 
		2) Screw off the screws to take out the electronic control box from the body	 <p style="text-align: right;">4 screws</p>
		3) Remove the cover of electronic control box	 <p style="text-align: right;">3 screws</p>
		4) Disconnect the outer driver DC motor wire, louver motor wire, room temperature sensor(T1) and evaporator coil temperature sensor(T2) wire, and display board wire to remove the electronic control	 <p>Louver motor connector T2 T1 Display board wire</p> <p>Outer driver DC motor connector</p>

		box	
3	Remove the PCB	4) Take out the electronic control box from the body and remove its cover	Repeat the operation of step1, step2 and step3 of No2.
		5) Disconnect all the wires of plugs connected to the PCB	
		6) Remove the PCB from the fixing pins	 Each corner has a fixing pin
4.	Remove the PCB of outer driver DC motor	1) Remove the air return grille	Repeat the operation of step1 of No2.
		2) Screw off the screws to take out the electronic control box from the body	 Electronic control box  2 screws
		3) Disconnect all the wires of plugs connected to the PCB 4) Screw off the screws to remove the PCB	 2 screws
5.	Remove the fan motor	6) Take out the electronic control box from the body	Repeat the operation of step1 and step2 of No4.

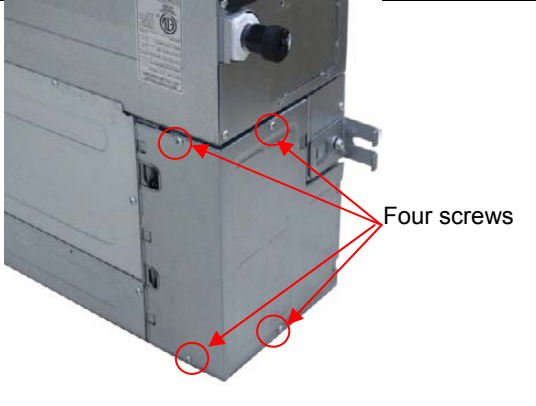
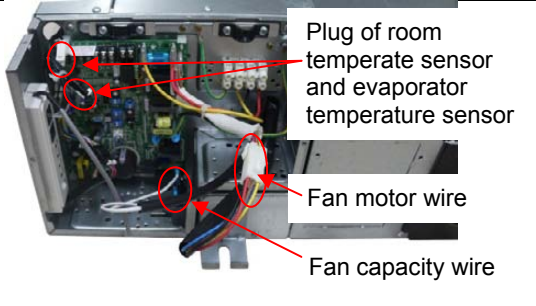
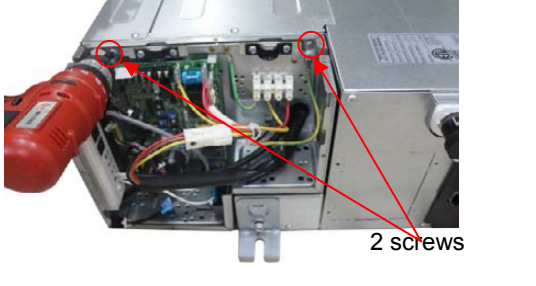
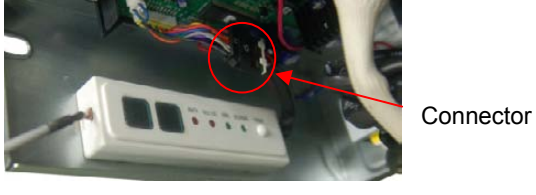

		<p>7) Remove the fan motor wire from the PCB of outer driver DC motor</p>	
		<p>8) Remove the stickers stick to the volute shell</p>	
		<p>9) Remove the below volute shell</p>	 <p>Press the clips to take off the volute shell</p>
		<p>10) Disassemble the fan motor fixing clamps to remove the fan motor assembly and fan wheel assembly</p>	 <p>The fan motor assembly and fan wheel assembly can be removed after took off the 2screws used to fix the fan motor fixing clamps.</p>
		<p>11) Disassemble the fan wheels, then you can remove the fan motor</p>	 <p>Take off the screw to remove the fan wheel</p>
<p>6</p>	<p>Remove the front panel assembly</p>	<p>3) Remove the air return grille</p>	<p>Repeat the operation of step1 of No.2</p>
		<p>4) Remove the left and right cover by screwing off the screw and moving them according to the arrow direction</p>	
		<p>5) Remove the top cover by screwing of the fixing screws</p>	 <p>Each side has two screws</p>

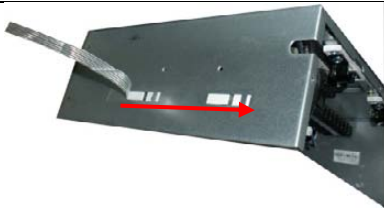
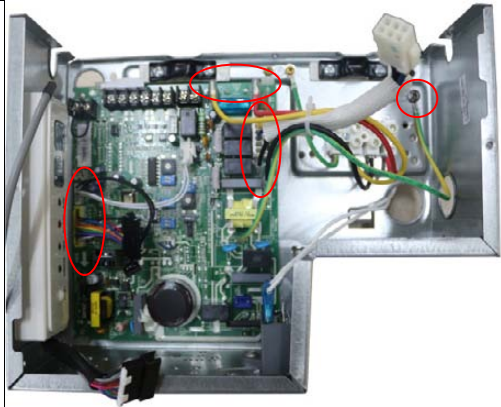


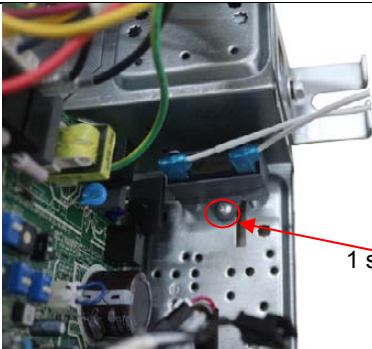
		<p>6) Remove the front panel assembly by screwing of the fixing screws</p>	 <p>Each side has five screws</p> <p>4 screws</p>
7	<p>Remove the air outlet grille assembly</p>	<p>1) Remove the front panel assembly</p> <p>2) Remove the air outlet grille assembly by screwing of the screws and taking out the clips</p>	<p>Repeat the operation of No.6 to remove the front panel assembly</p>  <p>6 screws</p> <p>6 clips</p>
8	<p>Remove the display board</p>	<p>1) Remove the air outlet grille assembly</p> <p>2) Screw off the fixing screws to remove the display board</p>	<p>Repeat the operation of No.7 to remove the air outlet grille assembly</p>  <p>3 screws</p>
9	<p>Remove the horizontal louver motor</p>	<p>1) Remove the front panel assembly</p> <p>2) Screw off the screws to remove the motor</p>	<p>Repeat the operation of No.6 to remove the front panel assembly</p>  <p>4 screws</p>
10	<p>Remove the vertical louver motor</p>	<p>1) Remove the air outlet grille assembly</p> <p>2) Screw off the screws to remove the motor</p>	<p>Repeat the operation of No.7 to remove the air outlet grille assembly</p>  <p>3 screws</p>

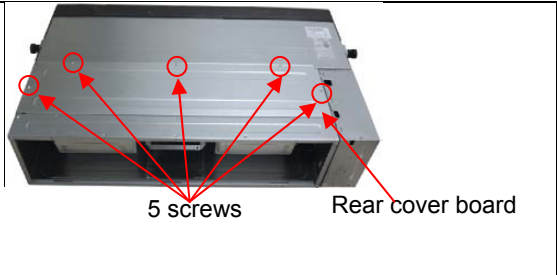
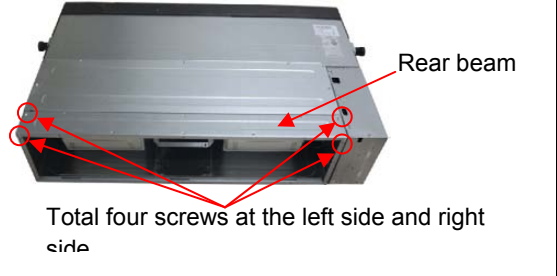
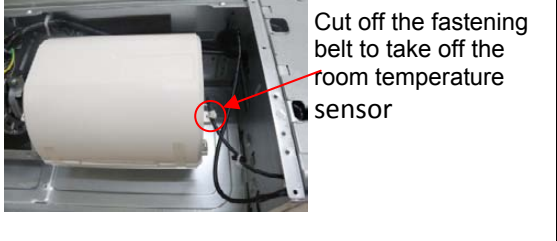

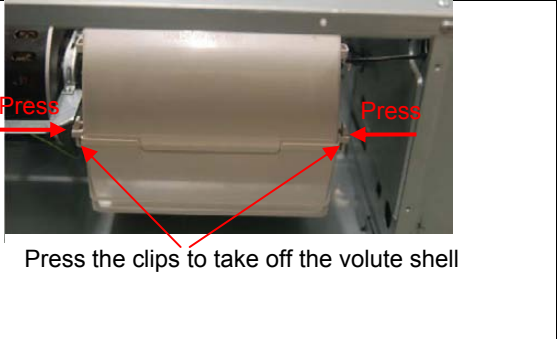
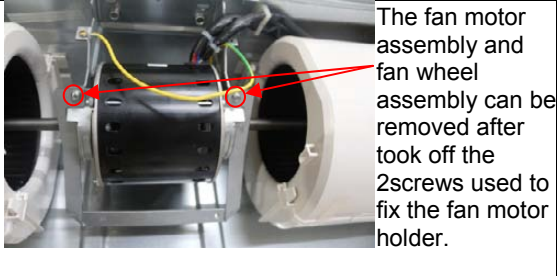
11	Remove the water collector	<p>1) Remove the front panel assembly</p> <p>2) Screw off the fixing screws to disassemble the water collector</p>	<p>Repeat the operation of No.6 to remove the front panel assembly</p>  <p>4 screws</p>
12	Remove the evaporator assembly	<p>1) Remove the water collector</p> <p>2) Remove the fixing foam of evaporator</p> <p>3) Remove the evaporator sensor</p> <p>4) Remove the fixing boards of evaporator</p> <p>5) Remove the fixing screws to disassemble the evaporator assembly</p>	<p>Repeat the operation of No.11 to remove water collector</p>  <p>Fixing foam</p> <p>It's has no fixing part to fasten the foam, just pull to remove it.</p>  <p>Evaporator sensor</p>  <p>Fixing board</p> <p>Each fixing board has 4 screws</p>  <p>Each side has one screw</p>



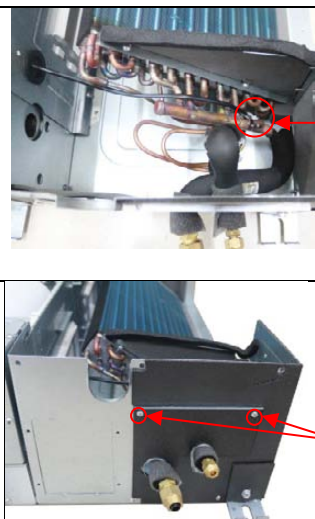
➤ Ceiling Concealed Ducted

❖ All the operations should be performed after powered off.

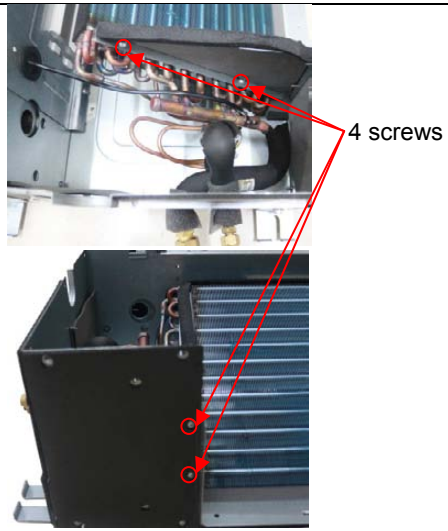
No	Parts name	Procedures	Remarks
1	Remove the electronic control box	3) Screw off the screws to remove the cover of electronic control box	
		4) Disconnect the fan motor wire, fan capacity wire, room temperature sensor wire and evaporator temperature sensor wire	
		5) Screw off the screws to remove electronic control box	
2	Remove the display board	5) Remove the cover of electronic control box	Repeat the operation of step1 of No1
		6) Disconnect the display board wire connected to PCB	
		7) Remove the sticker	

		<p>3) Move the display board according to the arrow direction to disassemble it.</p>	
<p>3</p> <p>Remove the PCB</p>		<p>7) Remove the cover of electronic control box</p>	<p>Repeat the operation of step1 of No1</p>
		<p>1) Pull out all the plugs or connectors connected to the PCB and remove the ground wire after remove the screw.</p>	
		<p>8) Remove the PCB from the electronic control box</p>	 <p>Press the four fixing holders from four corners to remove the PCB</p>  <p>PCB</p>
<p>4</p> <p>Remove the fan capacitor</p>		<p>7) Remove the cover of electronic control box</p>	<p>Repeat the operation of step1 of No1</p>
		<p>8) Disconnect the fan capacity wire.</p>	<p>Repeat the operation of step2 of No1</p>
		<p>9) Screw off the screw to remover it</p>	 <p>1 screw</p>

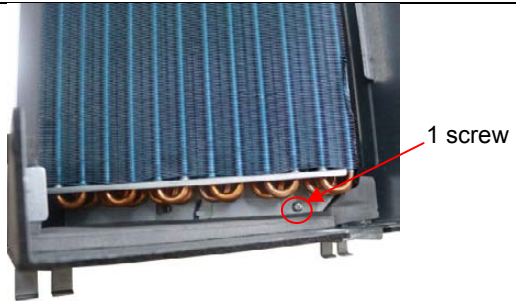
5	Remover the fan motor	1) Screw off the fixing screws to remove the rear cover board	 <p style="text-align: center;">5 screws Rear cover board</p>
		2) Screw off the fixing screws to remove the rear beam	 <p style="text-align: center;">Rear beam</p> <p style="text-align: center;">Total four screws at the left side and right side</p>
		3) Remove room temperature sensor	 <p style="text-align: right;">Cut off the fastening belt to take off the room temperature sensor</p>
		4) Remove the sticker	 <p style="text-align: right;">Stickers</p>
		5) Remove the below volute shell	 <p style="text-align: center;">Press the clips to take off the volute shell</p>
		6) Remove the fan motor wire from the electronic control box	Refer the operation of step2 of No.1
		7) Disassemble the fan motor fixing clamps to remove the fan motor assembly and fan wheel assembly	 <p style="text-align: right;">The fan motor assembly and fan wheel assembly can be removed after took off the 2screws used to fix the fan motor holder.</p>

		<p>8) Disassemble the fan wheels, then you can remove the fan motor</p>	 <p>Take off the screw to remove the fan wheel</p>
<p>6</p>	<p>Remove the water collector assembly</p>	<p>3) Remove the rear cover board</p> <p>4) Screw off the screws to remove the water collector assembly</p>	<p>Repeat the operation of step1 of No.5</p>  <p>4 screws</p> <p>3 screws</p> <p>3 screws</p> <p>3 screws</p> <p>Water collector assembly</p>
<p>7</p>	<p>Remove the evaporator</p>	<p>5) Remove the water collector</p> <p>6) Remove the evaporator sensor</p> <p>7) Remove the pipe clamp board</p>	<p>Repeat the operation of No.6</p>  <p>Evaporator sensor</p> <p>2 screws</p>

8) Remove the evaporator support board

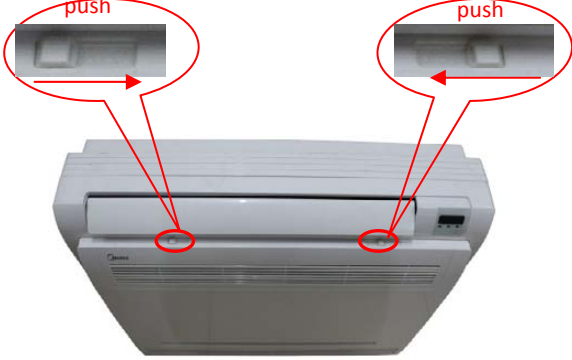




9) Screw off the fixing screws to remove the evaporator

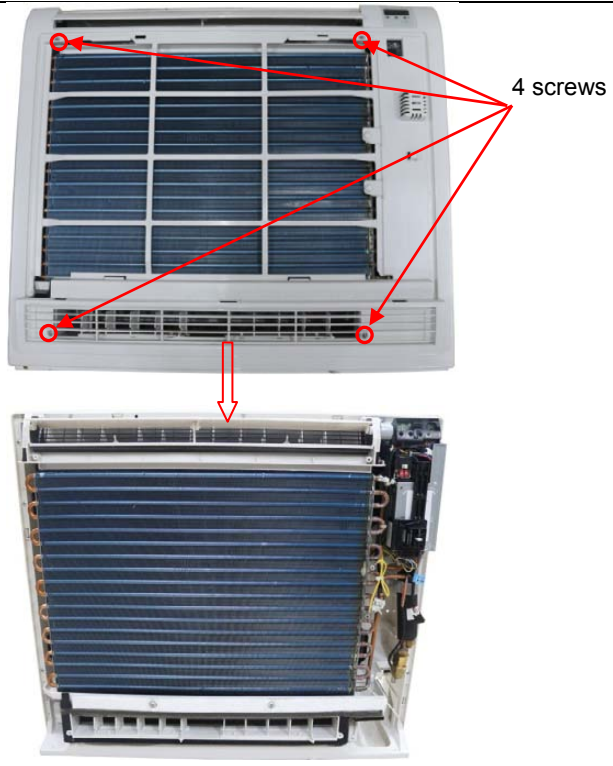


➤ Floor Console

❖ All the operations should be performed after powered off.

No.	Parts name	Procedures	Remarks
1	Remove the Filter	6) Slide the two stoppers on the left and right sides to open the front panel	
		7) Remove the filter.	
2	Remove the electronic control box	8) Remove the air front panel	<ul style="list-style-type: none"> ● Open the front panel Repeat the operation of step1 of No.1 ● Remove the string.  <ul style="list-style-type: none"> ● Allowing the front panel to fall forward will enable you to remove it.
		9) Remove the filter.	Repeat the operation of step 2 of No.1

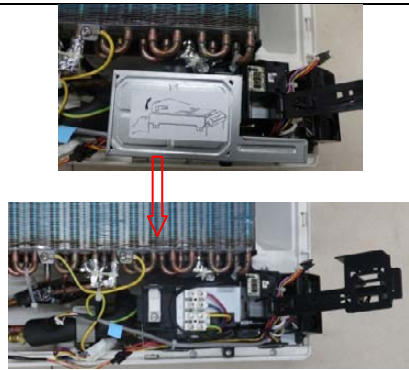
10) Remove four fixing screws to remove the panel frame assembly



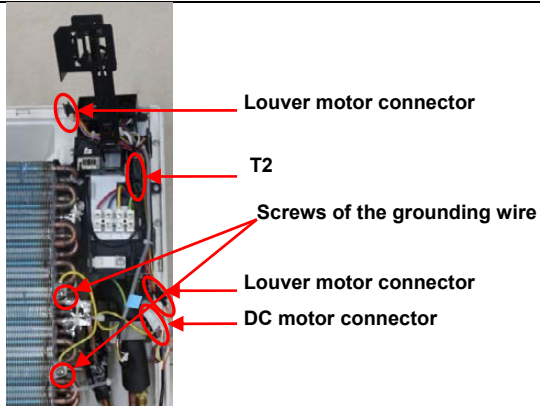
11) Remove the installation plate of electric parts



12) Remove the fixing board of electronic control box



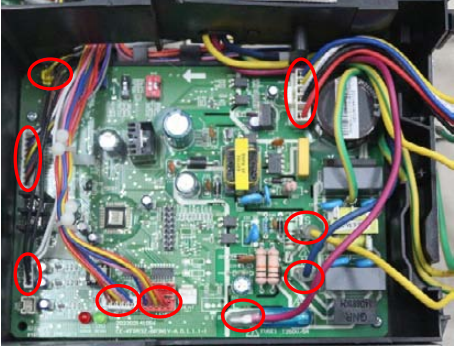


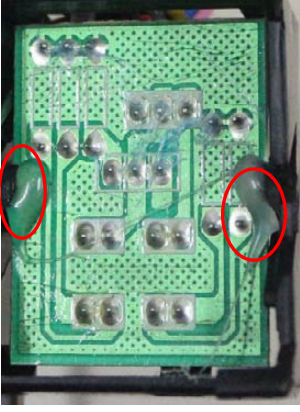
13) Disconnect the DC motor wire, 2 louver motor wires, evaporator coil temperature sensor(T2) wire, and two grounding wire (yellow-green) to remove the electronic control box



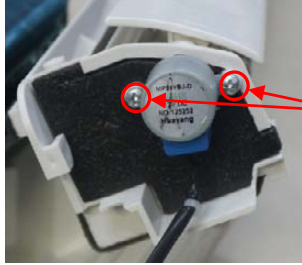
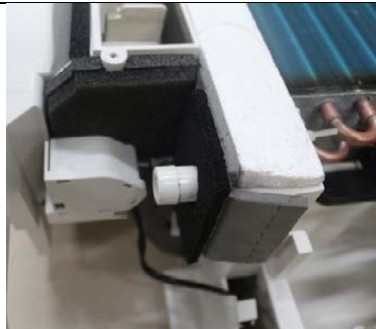
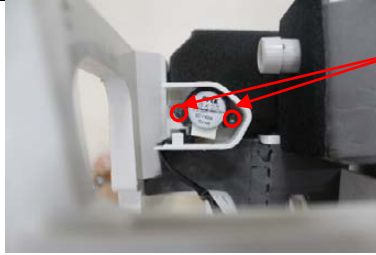


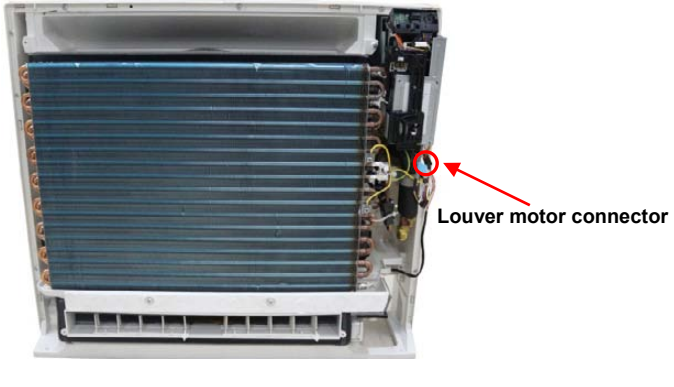
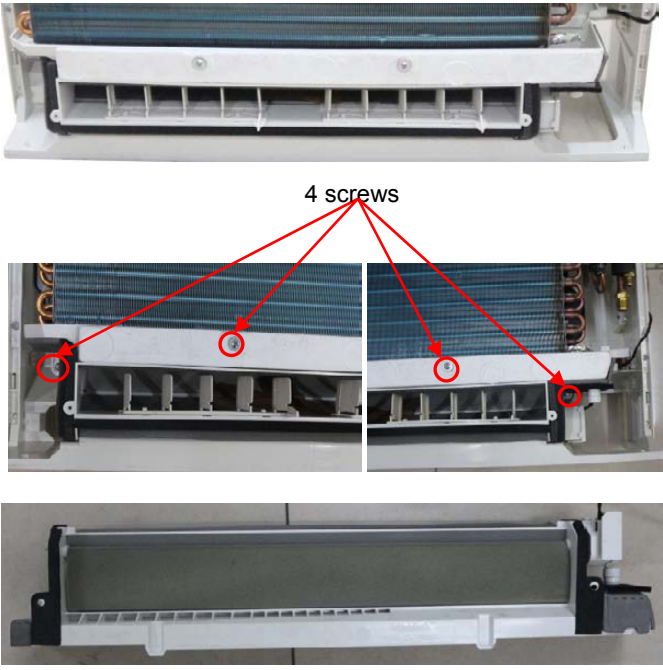

3 Remove


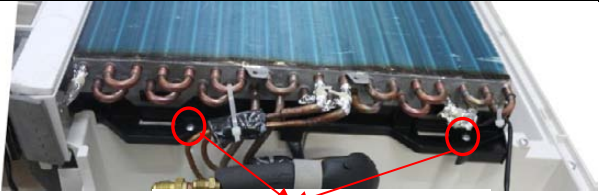

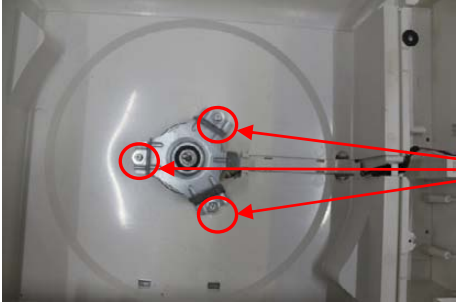
9) Take out the electronic

Repeat the operation of step1~ step6 of No2.

	<p>the PCB</p>	<p>control box from the body and remove its cover</p>	
		<p>10) Disconnect all the wires of plugs connected to the PCB</p>	
		<p>11) Remove two fixing screws to remove the PCB</p>	 <p>2 screws</p>
<p>4.</p>	<p>Remove the display board</p>	<p>3) Remove the electronic control box</p>	<p>Repeat the operation of step1~step of No2.</p>
		<p>4) Remove the fixing glue to remove the display board</p>	
<p>5</p>	<p>Remove the switch board</p>	<p>1) Remove the electronic control box</p>	<p>Repeat the operation of step1~step of No2.</p>
		<p>2) Remove the fixing glue to remove the display board</p>	
<p>7</p>	<p>Remove the air</p>	<p>3) Remove the front panel assembly and</p>	<p>Repeat the operation of step1, step2 and step3 of No 2.</p>

	outlet grille assembly	the panel frame assembly	
		4) Remove the 1 fixing screw to remove air outlet grille assembly	 <p>1 screw</p>
		5) Disconnect louver motor wire	
8	Remove the louver motor of air outlet assembly	3) Remove the air outlet grille assembly	Repeat the operation of No.7 to remove the air outlet grille assembly
		4) Screw off the screws to remove the motor	 <p>2 screws</p>
9	Remove the louver motor of the water collector	1) Remove the front panel assembly and the panel frame assembly	Repeat the operation of step1, step2 and step3 of No 2.
		2) Remove the cover of louver motor	
		3) Screw off the screws to remove the motor	 <p>2 screws</p>
10	Remove the water	5) Remove the front panel assembly and the panel	Repeat the operation of step1, step2 and step3 of No 2.

	<p>collector</p>	<p>frame assembly</p>	<div data-bbox="391 123 683 516"> <p>6) Disconnect louver motor wire</p>  </div> <div data-bbox="391 516 683 1241"> <p>7) Remove 4 fixing screws to disassemble the water collector</p>  </div>
<p>11</p>	<p>Remove the evaporator assembly</p>	<p>6) Remove the electronic control box</p> <p>7) Remove the air outlet grille assembly</p> <p>8) Remove the evaporator sensor and release the pipe strap.</p>	<p>Repeat the operation of No.2 to remove the electronic control box</p> <p>Repeat the operation of No.7 to remove the air outlet grille assembly</p> 

		9) Remove the evaporator assembly	
12	Remove the centrifugal fan	1) Remove the electronic control box	Repeat the operation of No.2 to remove the electronic control box
		2) Remove the air outlet grille assembly	Repeat the operation of No.7 to remove the air outlet grille assembly
		3) Remove four fixing screws to remove the ventilation assembly	 Each side has two screws
		4) Remove the hex nut fixing the fan to remove the fan.	
13	Remove the fan motor	12) Remove the centrifugal fan	Repeat the operation of No.12 to remove the centrifugal fan
		13) Remove the fan motor after unfastening three fixing screws.	 3 screws

➤ Exploded Views

Available under a separate document file.