

8.1 Indoor Unit Error Display

Operation lamp	Timer lamp	Display	LED STATUS
☆ 1 time	X	E0	Indoor unit EEPROM parameter error
☆ 2 times	X	E1	Indoor / outdoor units communication error
☆ 3 times	X	E2	Zero-crossing signal detection error
☆ 4 times	X	E3	Indoor fan speed has been out of control
☆ 5 times	X	E4	Indoor room temperature sensor T1 open circuit or short circuit
☆ 6 times	X	E5	Evaporator coil temperature sensor T2 open circuit or short circuit
☆ 7 times	X	EC	Refrigerant leakage detection
☆ 1 times	O	F0	Overload current protection
☆ 2 times	O	F1	Outdoor ambient temperature sensor T4 open circuit or short circuit
☆ 3 times	O	F2	Condenser coil temperature sensor T3 open circuit or short circuit
☆ 4 times	O	F3	Compressor discharge temperature sensor TP open circuit or short circuit
☆ 5 times	O	F4	Outdoor unit EEPROM parameter error
☆ 6 times	O	F5	Outdoor fan speed has been out of control
☆ 1 times	☆	P0	IPM malfunction or IGBT over-strong current protection
☆ 2 times	☆	P1	Over voltage or over low voltage protection
☆ 3 times	☆	P2	High temperature protection of IPM module or compressor top
☆ 4 times	☆	P3*	Outdoor ambient temperature too low.
☆ 5 times	☆	P4	Inverter compressor drive error
☆ 6 times	☆	P5	Indoor units mode conflict (multi-zone ONLY)
☆ 7 times	☆	P6	Low pressure protection

O (light) X (off) ☆ (flash)

*P3

- 1) In heating mode, when the outdoor temperature is lower than -25°C for 1 hour, the indoor unit display error code P3.
- 2) If the outdoor temperature is higher than -22°C for 10 minutes and compressor stop for 1 hour or outdoor temperature is higher than -5°C for 10 minutes, then the unit will return to work.

* **Fault Symptom:** The display board shows a garbled code or a code that is not an error code found in the service manual nor a temperature reading.

Trouble shooting:

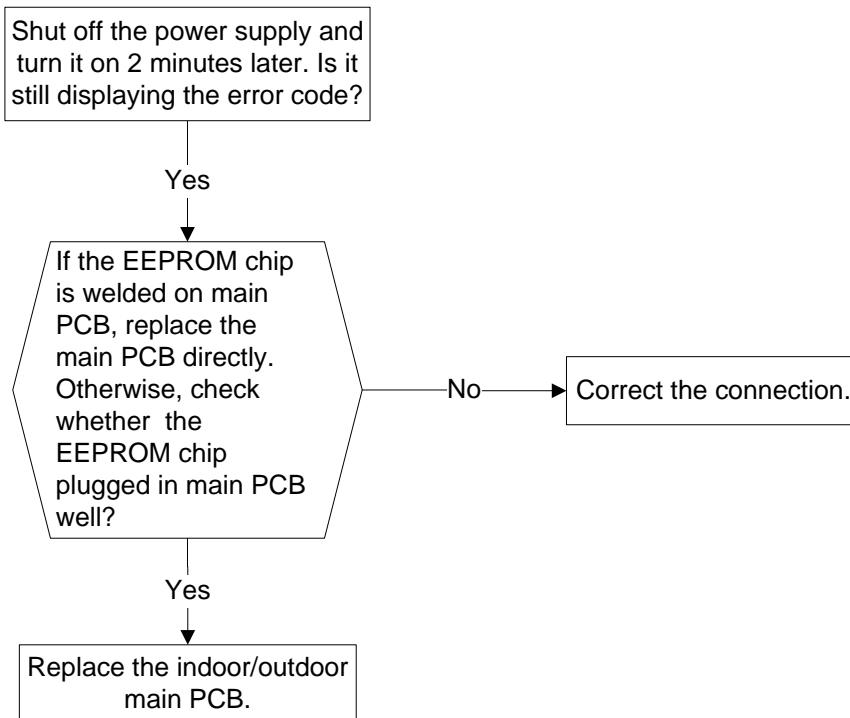
Use the remote controller. If the unit does not respond to the remote, the indoor PCB needs to be replaced; if the unit does respond, then the display board needs to be replaced.

8.2 Trouble shooting

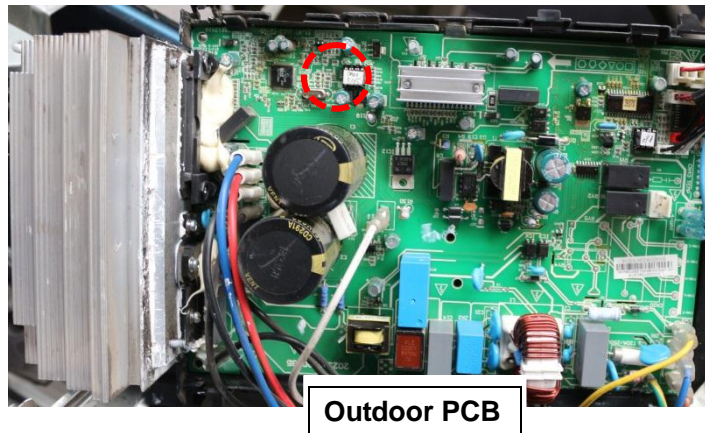
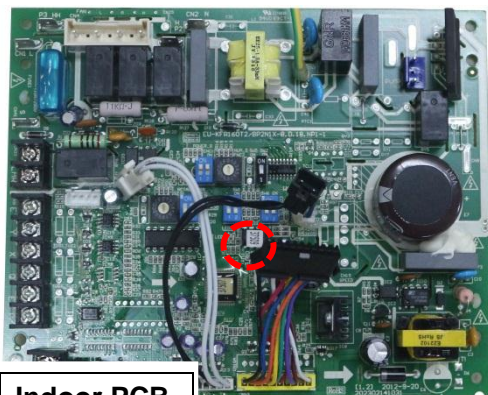
8.2.1 EEPROM parameter error diagnosis and solution(E0/F4)

Error Code	E0/F4
Malfunction decision conditions	Indoor or outdoor 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.



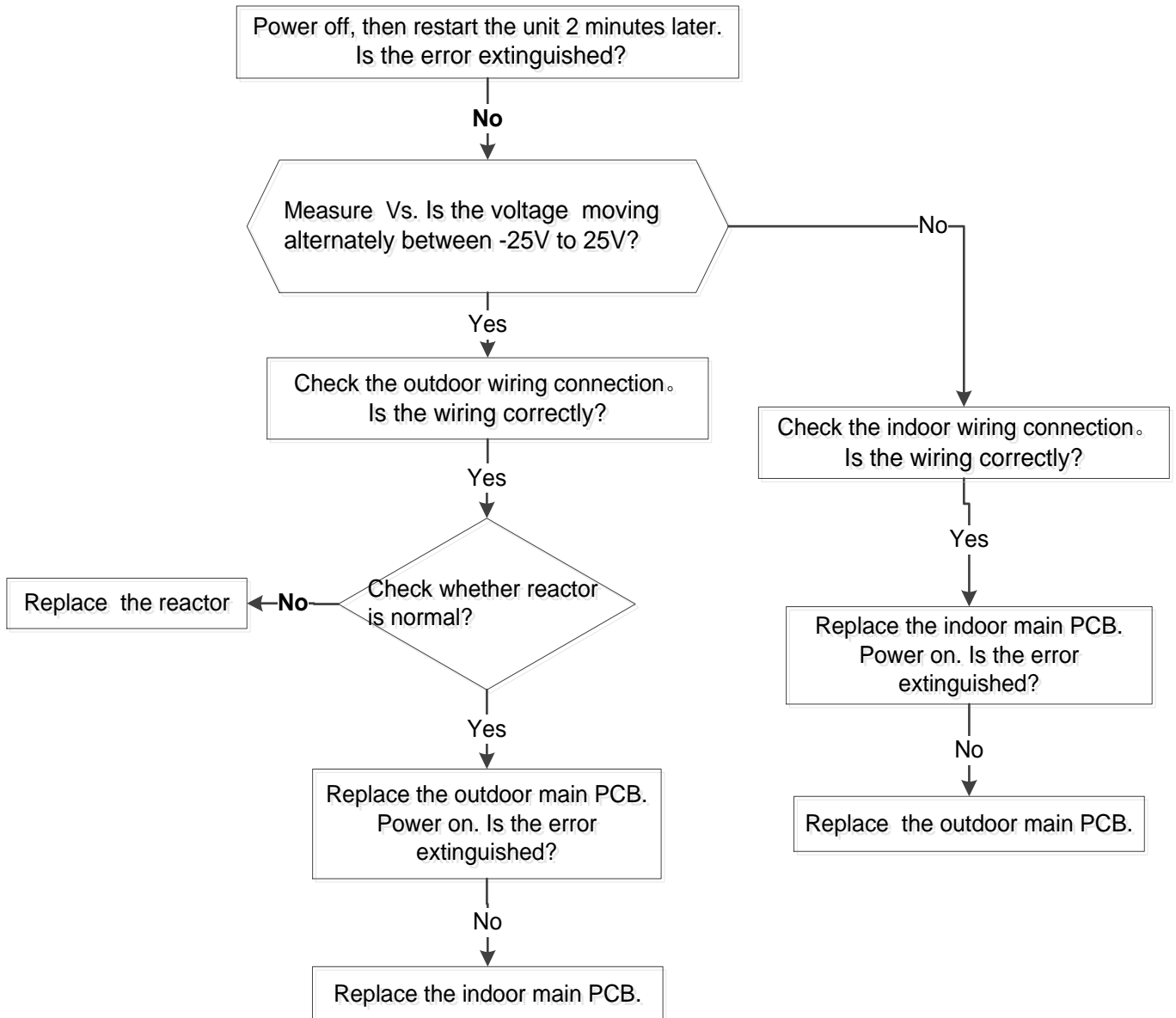
Note: The two photos above are only for reference, it's may be not same totally with the ones

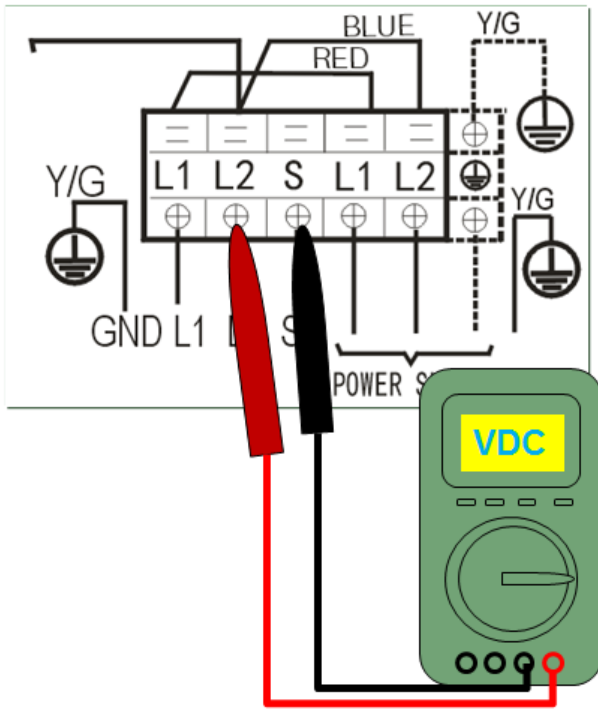
on your side.

8.2.2 Indoor / outdoor unit's communication diagnosis and solution(E1)

Error Code	E1
Malfunction decision conditions	Indoor unit does not receive the feedback from outdoor unit during 110 seconds and this condition happens four times continuously.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● Indoor or outdoor PCB faulty

Troubleshooting:





Vs :S and N
or
L2 and S
Or
2 and S

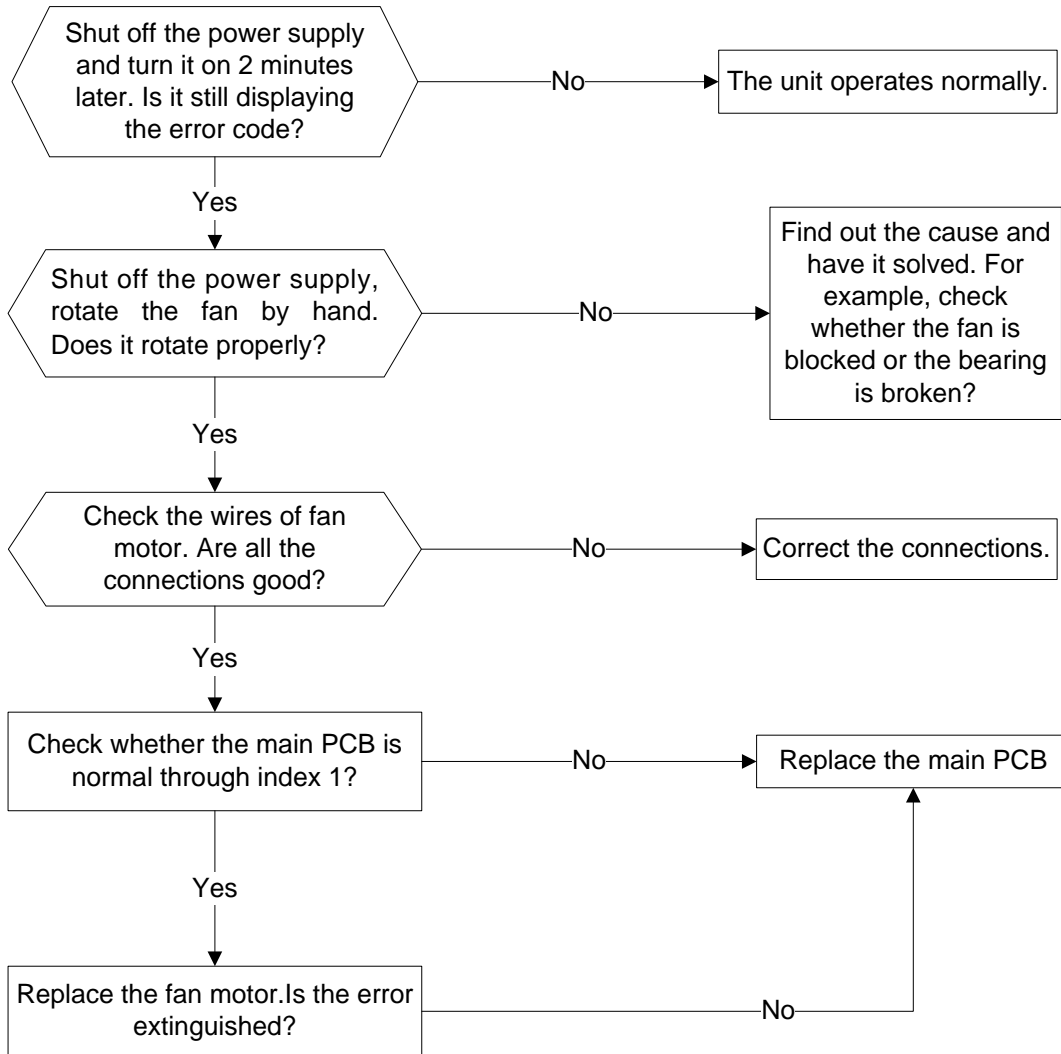


Remark:
Use a multi meter to test the resistance of the reactor which does not connect with capacitor. The normal value should be around zero ohm. Otherwise, the reactor must have malfunction and need to be replaced.

8.2.3 Fan speed has been out of control diagnosis and solution(E3)

Error Code	E3/F5
Malfunction decision conditions	When fan speed keeps too low or too high 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

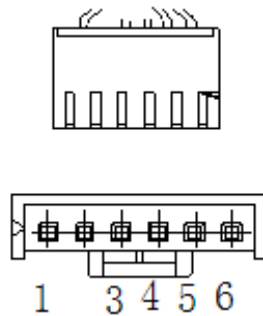
Trouble shooting:



Index1:

1:Indoor or Outdoor DC Fan Motor(control chip is in 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 has problems and need to be replaced.



DC motor voltage input and output(voltage: 220-240V~)

NO.	Color	Signal	Voltage
1	Red	Vs/Vm	280V~380V
2	---	---	---
3	Black	GND	0V
4	White	Vcc	14-17.5V
5	Yellow	Vsp	0~5.6V
6	Blue	FG	14-17.5V

DC motor voltage input and output(voltage :115V~)

NO.	Color	Signal	Voltage
1	Red	Vs/Vm	140V~190V
2	---	---	---
3	Black	GND	0V
4	White	Vcc	14-17.5V
5	Yellow	Vsp	0~5.6V
6	Blue	FG	14-17.5V

2. Outdoor DC Fan Motor (control chip is in outdoor PCB)

Power on ,and check if the fan can run normally, if the fan can run normally, the PCB must has problems and need to be replaced, If the fan can't run normally, measure the resistance of each two pins. If the resistance is not equal to each other, the fan motor must have problems and need to be replaced, otherwise the PCB must has problems and need to be replaced.

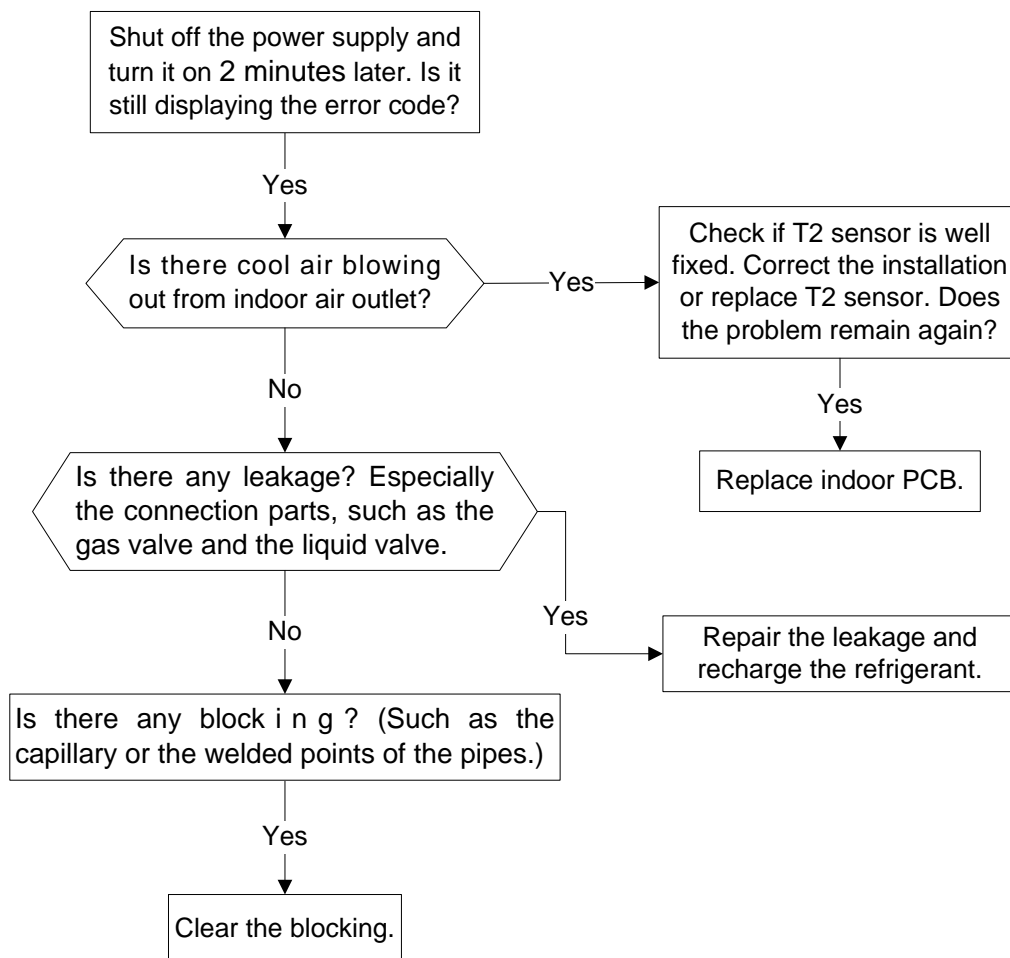
3. Indoor AC Fan Motor

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 has problems and need to be replaced.

8.2.4 Refrigerant Leakage Detection diagnosis and solution(EC)

Error Code	EC
Malfunction decision conditions	<p>Define the evaporator coil temp.T2 of the compressor just starts running as Tcool.</p> <p>In the beginning 8 minutes after the compressor starts up, if $T2 < T_{cool} - 2^{\circ}\text{C}$ does not keep continuous 4 seconds and compressor running frequency higher than 50Hz does not keep continuous 3 minutes, and this situation happens 3 times, the display area will show “EC” and AC will turn off.</p>
Supposed causes	<ul style="list-style-type: none"> ● T2 sensor faulty ● Indoor PCB faulty ● System problems, such as leakage or blocking.

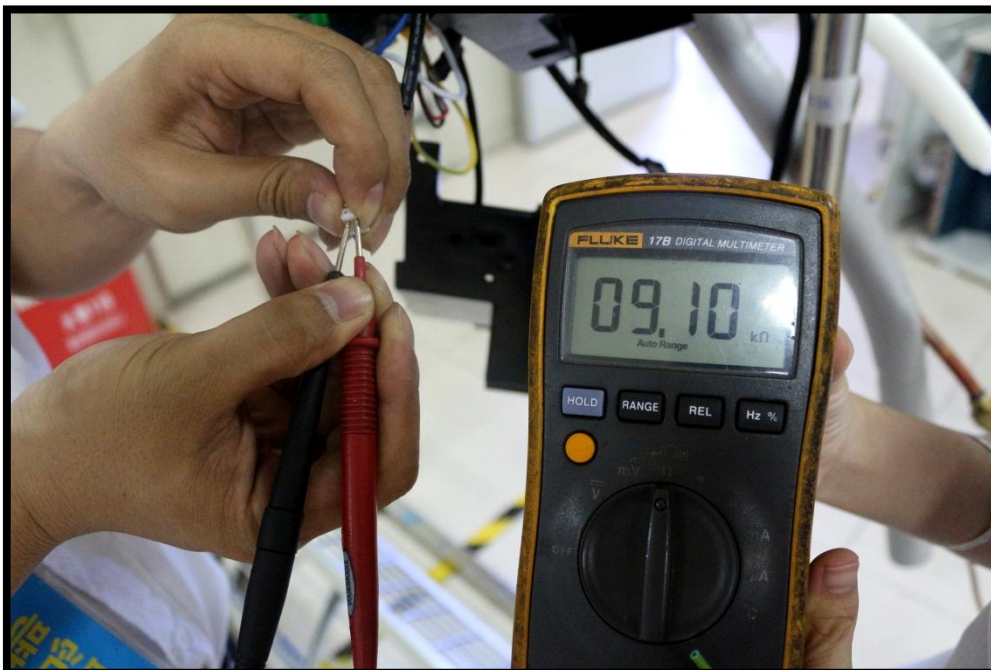
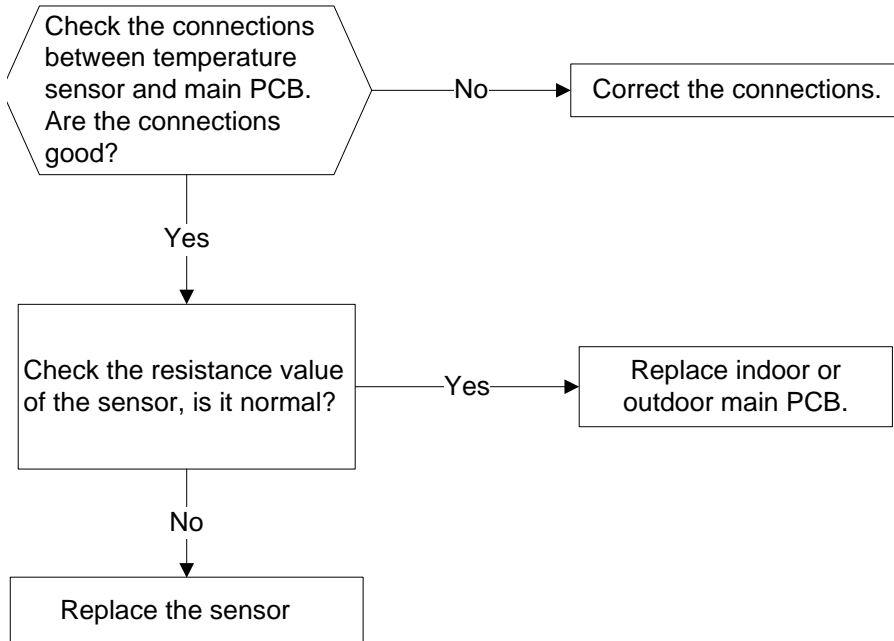
Trouble shooting:



8.2.5 Open circuit or short circuit of temperature sensor diagnosis and solution(E5)

Error Code	E4/E5/F1/F2/F3
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

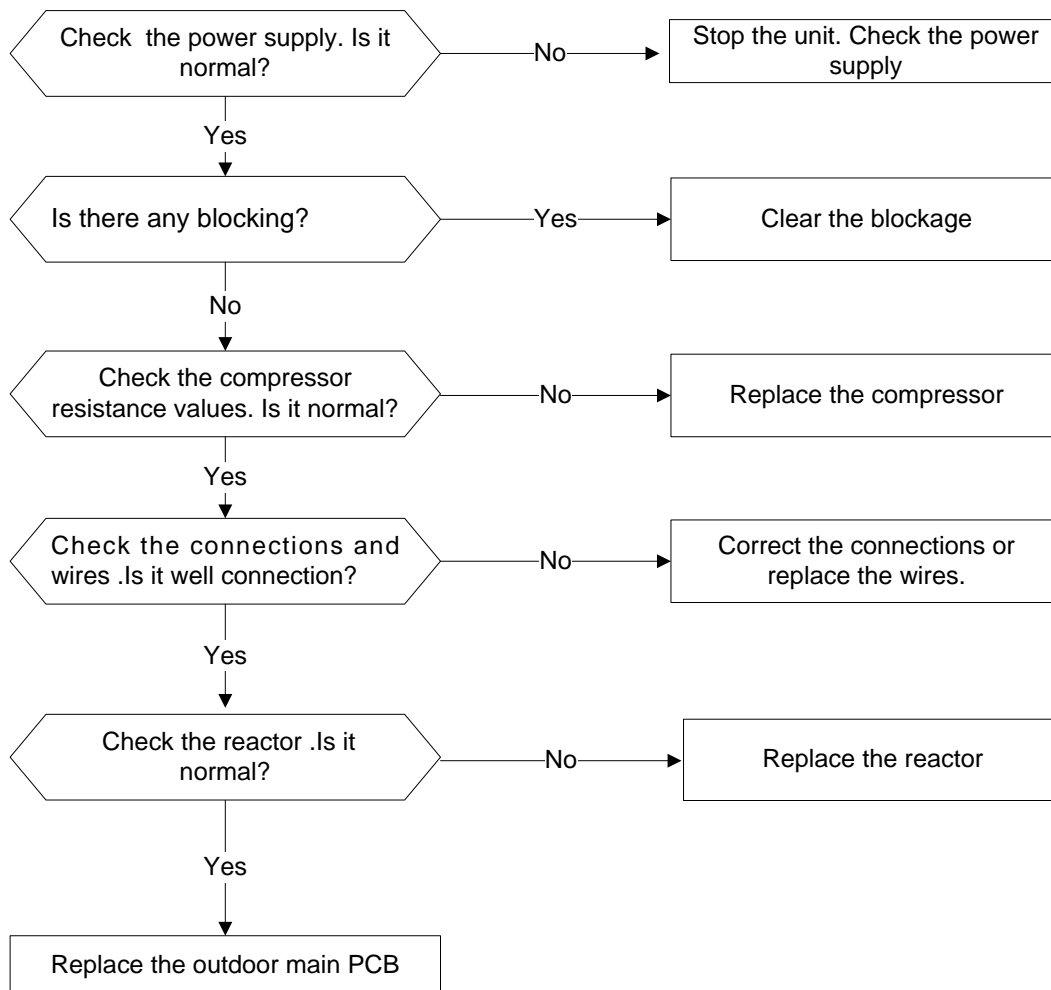
Trouble shooting:



8.2.6 Overload current protection diagnosis and solution(F0)

Error Code	F0
Malfunction decision conditions	An abnormal current rise is detected by checking the specified current detection circuit.
Supposed causes	<ul style="list-style-type: none"> ● Power supply problems. ● System blockage ● PCB faulty ● Wiring mistake ● Compressor malfunction

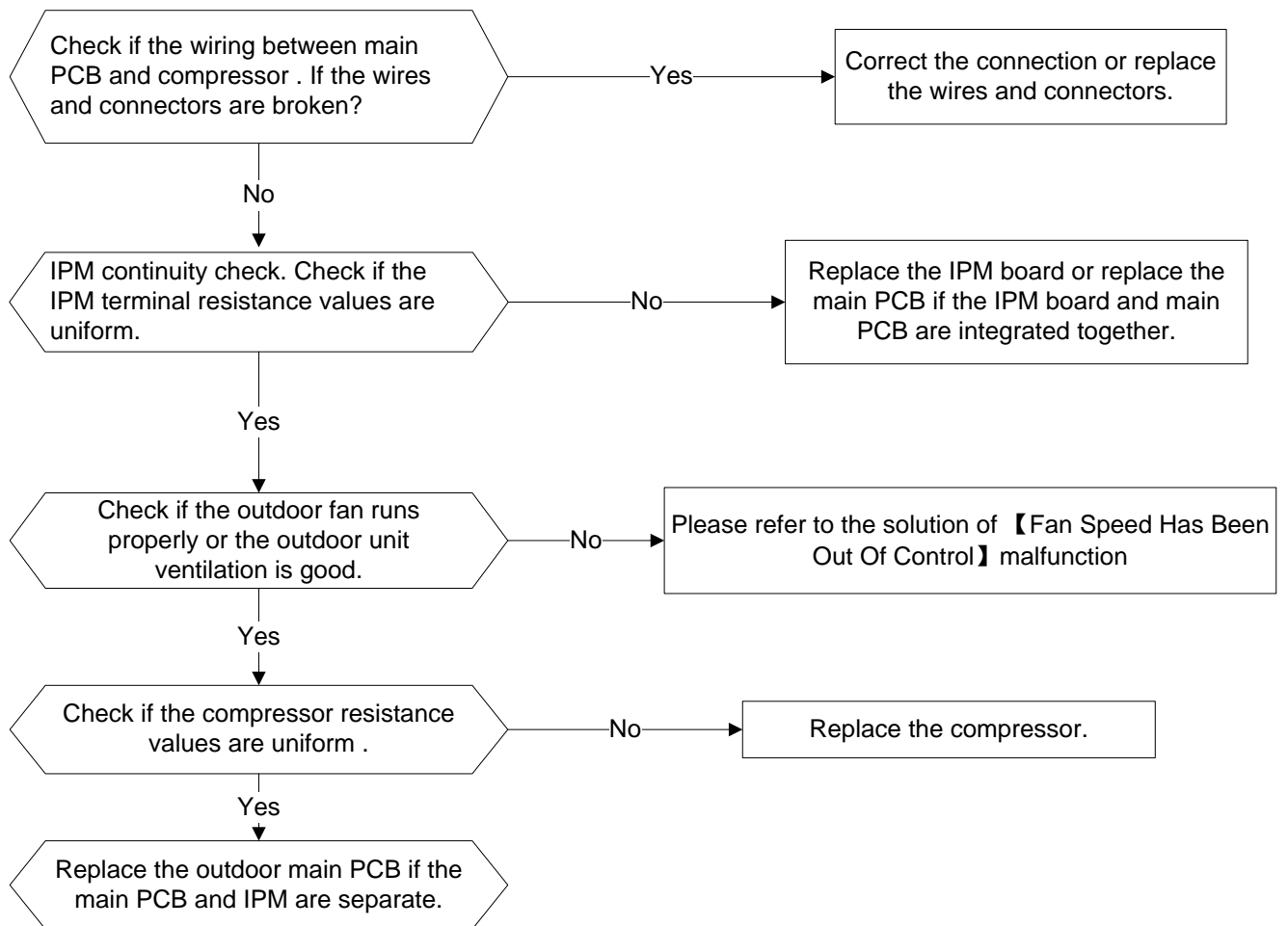
Trouble shooting:



8.2.7 IPM malfunction or IGBT over-strong current protection diagnosis and solution(P0)

Error Code	P0
Malfunction decision conditions	When the voltage signal that IPM send to compressor drive chip is abnormal, the display LED will show “P0” 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:



➤ **IPM continuity check**

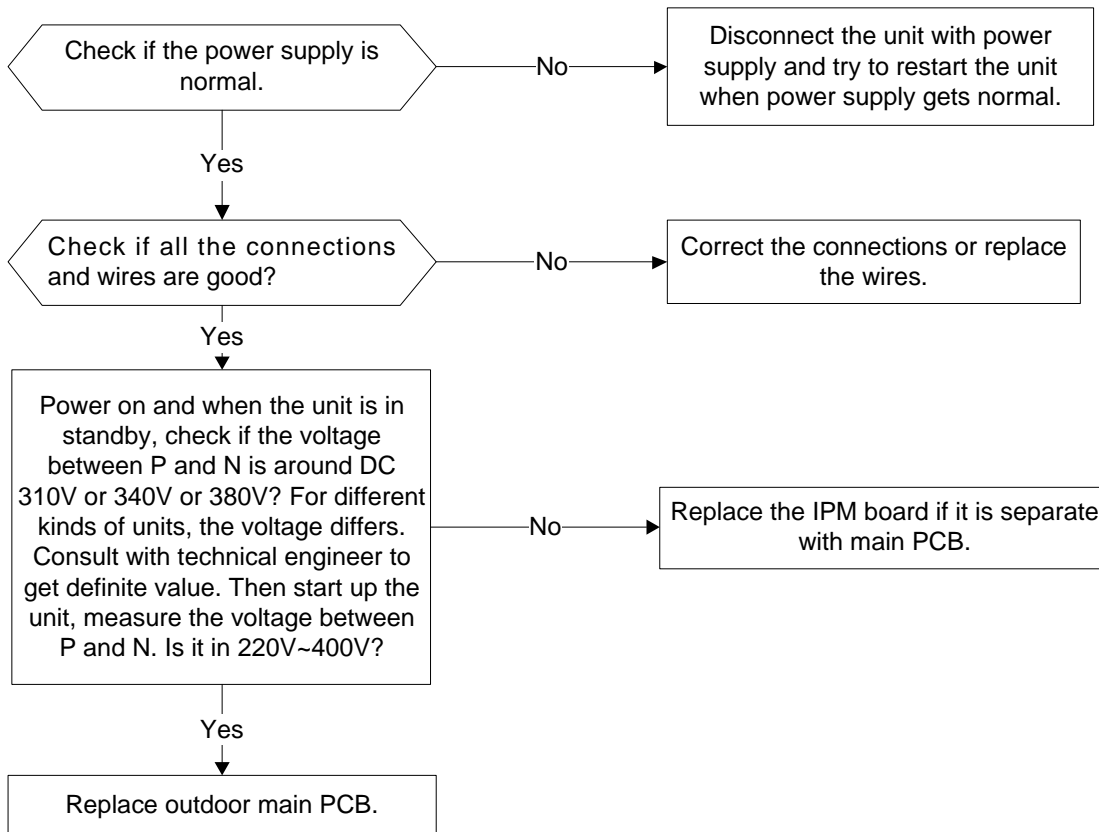
Turn off the power, let the large capacity electrolytic capacitors discharge completely, and dismount the IPM. Use a digital tester to measure the resistance between P and UVWN; UVW and N.

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

8.2.8 Over voltage or too low voltage protection diagnosis and solution(P1)

Error Code	P1
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. ● Wiring mistake ● PCB faulty

Trouble shooting:

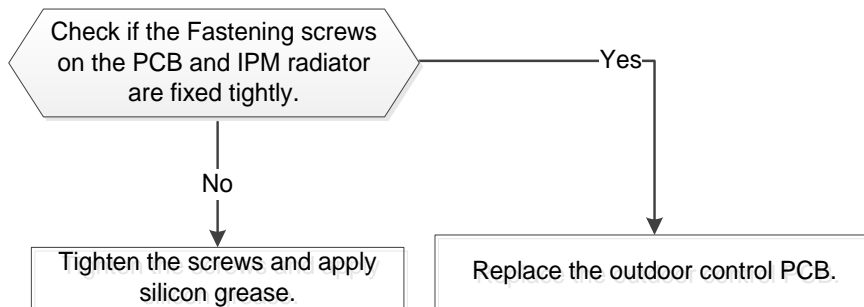


8.2.9 High temperature protection of IPM or compress top diagnosis and solution (P2)

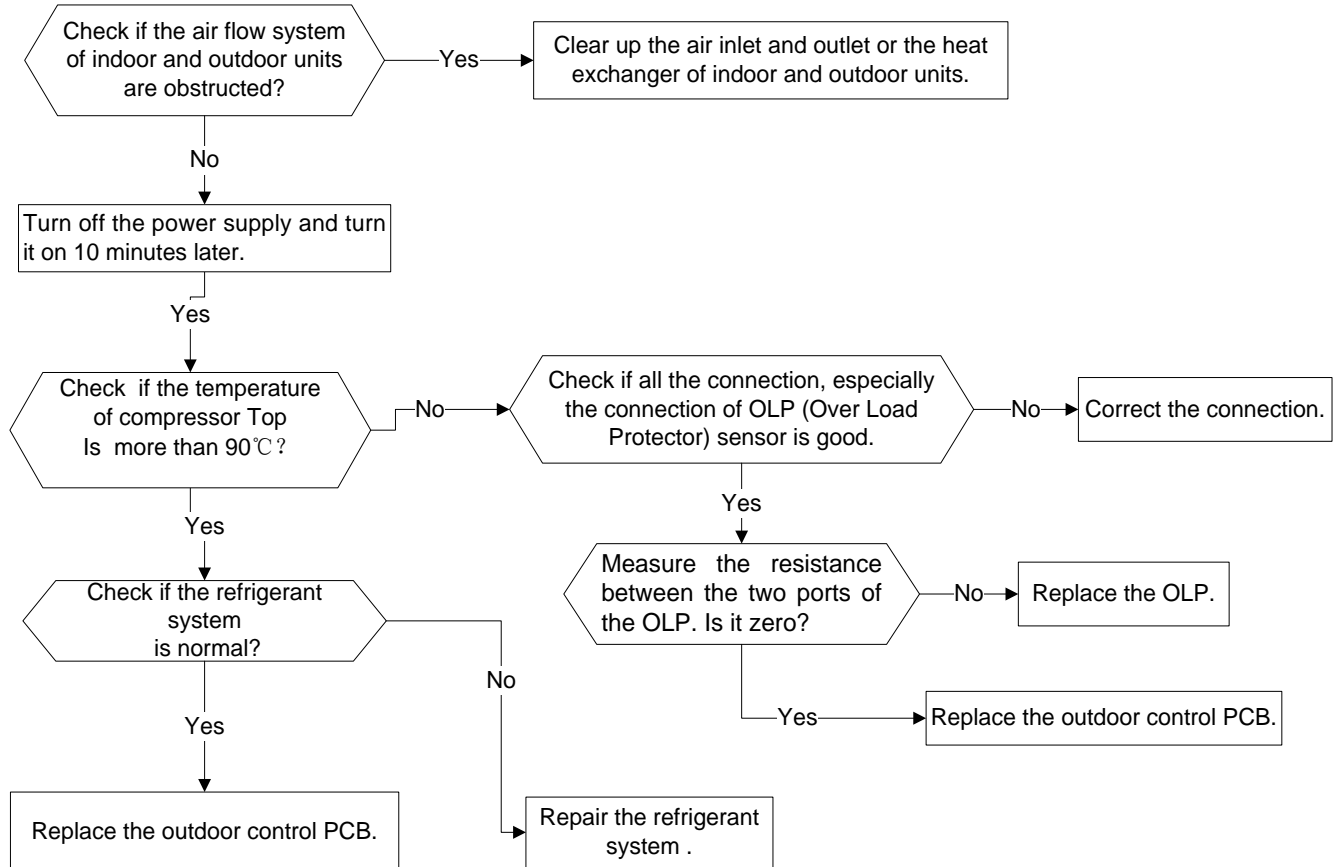
Error Code	P2
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"> ● Installation mistake ● Power supply problems. ● System leakage or block ● PCB faulty ● Connection problems

Trouble shooting:

For 18K, 24K,



For other models,



8.2.10 Inverter compressor drive error diagnosis and solution (P4)

Error Code	P4
Malfunction decision conditions	An abnormal inverter compressor drive is detected by a special detection circuit, including communication signal detection, voltage detection, compressor rotation speed signal detection and so on.
Supposed causes	<ul style="list-style-type: none"> ● Wiring mistake ● IPM malfunction ● Outdoor fan ass'y faulty ● Compressor malfunction ● Outdoor PCB faulty

Trouble shooting:

