
2. General Troubleshooting

2.1 Error Display (Indoor Unit)

When the indoor unit encounters a recognized error, the operation lamp will flash in a corresponding series, the timer lamp may turn on or begin flashing, and an error code will be displayed. These error codes are described in the following tables:

Operation Lamp	Timer Lamp	Display	Error Information	Solution
1 time	OFF	E0	Indoor unit EEPROM parameter error	TS15
2 times	OFF	E1	Indoor / outdoor unit communication error(for some models)	TS16
3 times	OFF	E2	Zero-crossing signal detection error	TS18
4 times	OFF	E3	The indoor fan speed is operating outside of the normal range	TS19
5 times	OFF	E4	Indoor room temperature sensor T1 is in open circuit or has short circuited	TS22
6 times	OFF	E5	Evaporator coil temperature sensor T2 is in open circuit or has short circuited	TS22
9 times	OFF	E7/EH0b	Communication error between display board and main board	TS23
7 times	OFF	E8	Refrigerant leak detected	TS24
3 times	ON	F2	Condenser coil temperature sensor T3 is in open circuit or has short circuited(for some models)	TS22
6 times	ON	F5	The outdoor fan speed is operating outside of the normal range (for some models)	TS19
7 times	FLASH	P6	High pressure protection(for some models)	TS25

For some models:

Operation Lamp	Timer Lamp	Display	Error Information	Solution
1 time	OFF	E400	Indoor unit EEPROM parameter error	TS15
2 times	OFF	E401	Indoor / outdoor unit communication error(for some models)	TS16
3 times	OFF	E402	Zero-crossing signal detection error	TS18
4 times	OFF	E403	The indoor fan speed is operating outside of the normal range	TS19
6 times	OFF	E600	Indoor room temperature sensor T1 is in open circuit or has short circuited	TS22
6 times	OFF	E601	Evaporator coil temperature sensor T2 is in open circuit or has short circuited	TS22
9 times	OFF	E40b	Communication error between display board and main board	TS23
8 times	OFF	E40c	Refrigerant leak detected	TS24
5 times	OFF	E452	Condenser coil temperature sensor T3 or Outdoor room temperature sensor T4 is in open circuit or has short circuited(for some models)	TS22
12 times	OFF	E407	The outdoor fan speed is operating outside of the normal range (for some models)	TS19
7 times	FLASH	PC03	High pressure protection(for some models)	TS25

For other errors:

The display board may show a garbled code or a code undefined by the service manual. Ensure that this code is not a temperature reading.

Troubleshooting:

Test the unit using the remote control. If the unit does not respond to the remote, the indoor PCB requires replacement. If the unit responds, the display board requires replacement.

7. Troubleshooting by Error Code

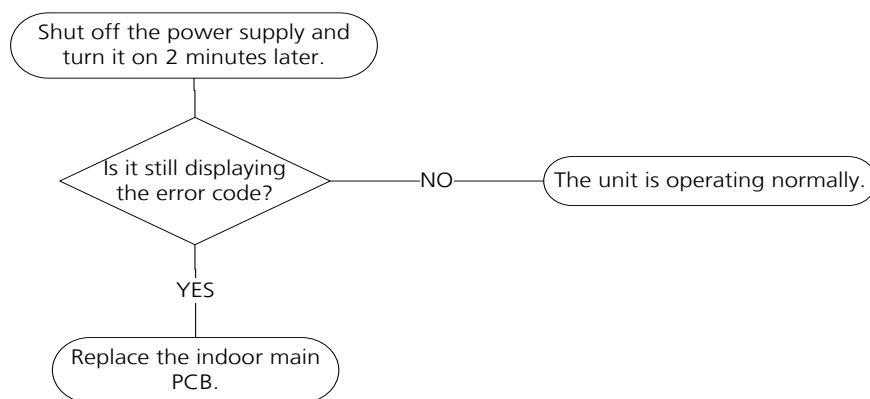
7.1 E0/EH 00 (Indoor EEPROM parameter error diagnosis and solution)

Description: Indoor PCB main chip does not receive feedback from EEPROM chip.

Recommended parts to prepare:

- Indoor PCB

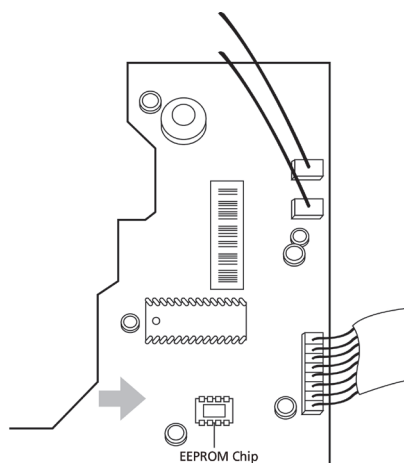
Troubleshooting and repair:



Remarks:

EEPROM: A read-only memory whose contents can be erased and reprogrammed using a pulsed voltage.

The location of the EEPROM chip on the indoor PCB is shown in the following image:



Note: The picture and the value are only for reference, actual condition and specific value may vary.

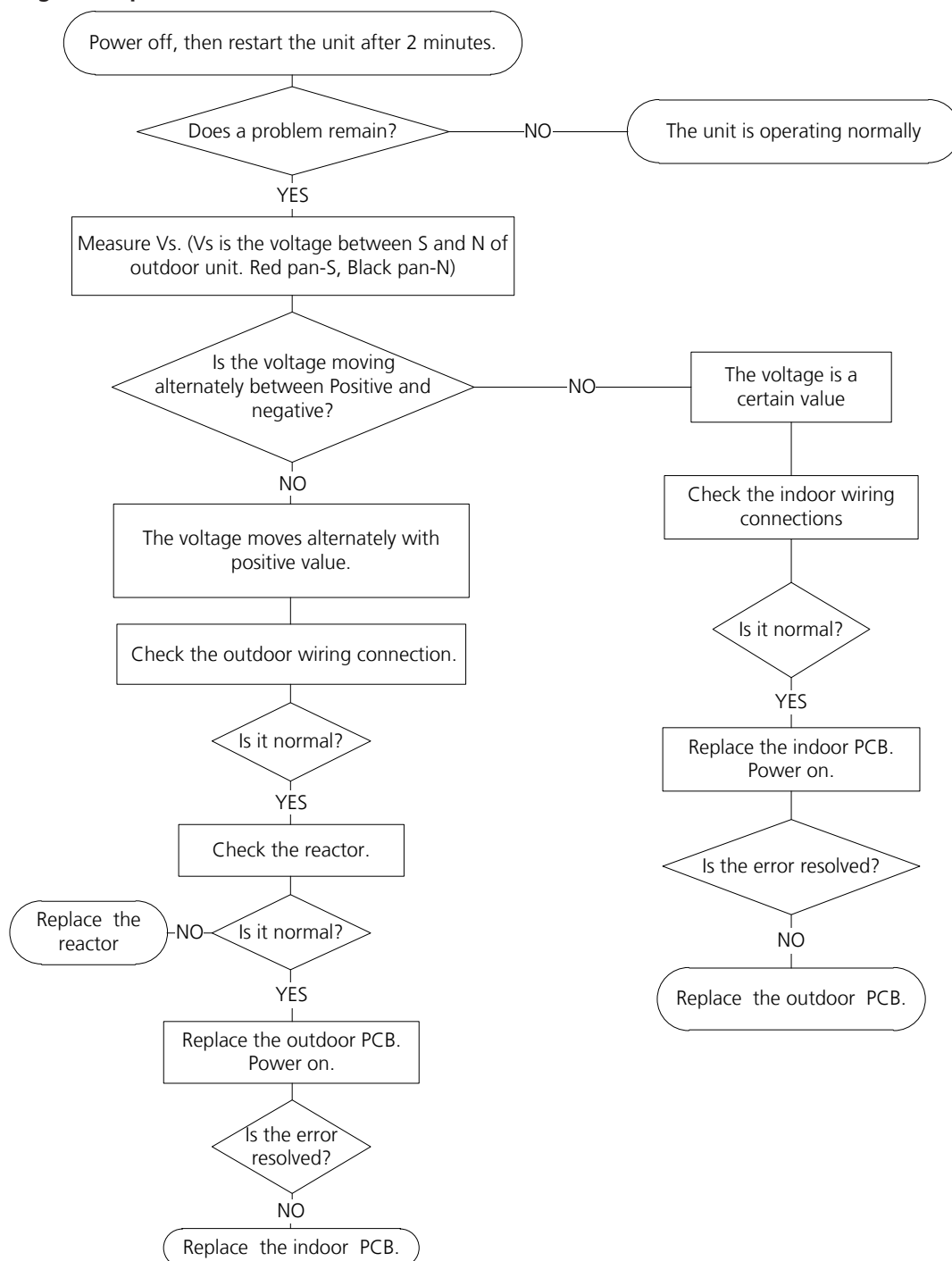
7.2 E1/EL 01 (Indoor / outdoor unit communication error diagnosis and solution)

Description: The indoor unit has not received feedback from the outdoor unit for 110 seconds, four consecutive times

Recommended parts to prepare:

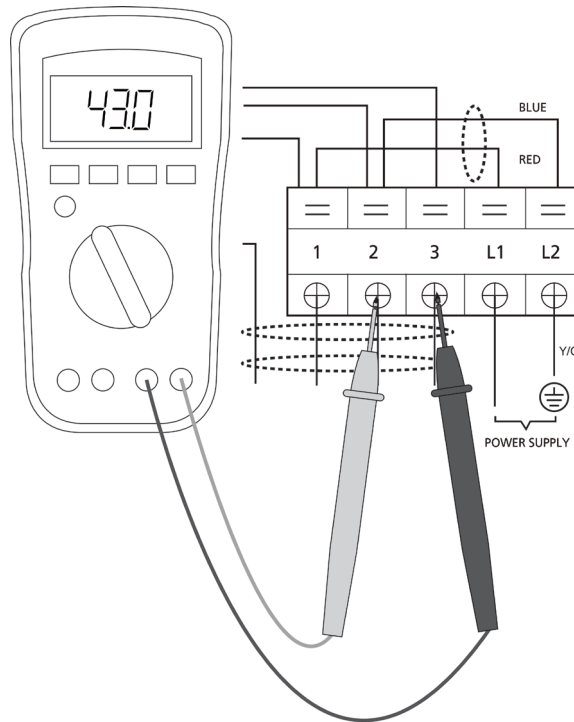
- Indoor PCB
- Outdoor PCB
- Reactor

Troubleshooting and repair:



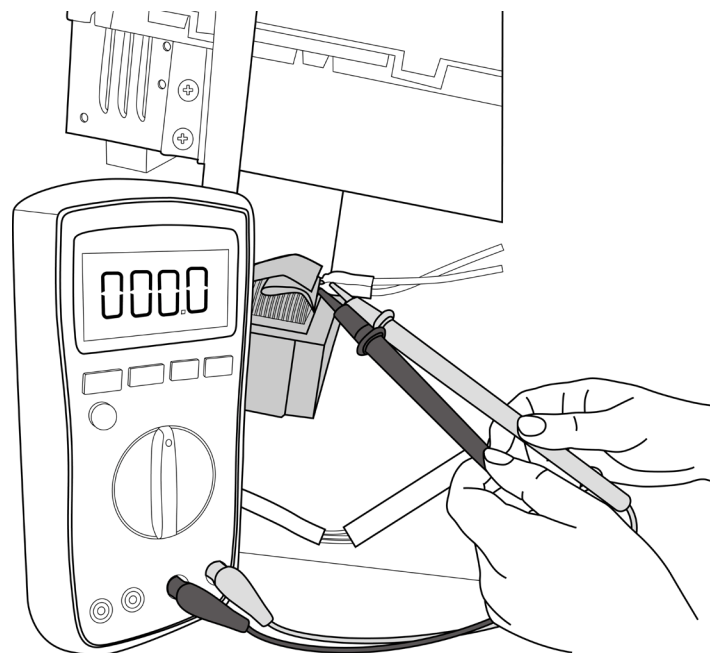
Remarks:

- Use a multimeter to test the DC voltage between 2 port(or S or L2 port) and 3 port(or N or S port) of outdoor unit. The red pin of multimeter connects with 2 port(or S or L2 port) while the black pin is for 3 port(or N or S port). When AC is normal running, the voltage will move alternately between -25V to 25V.
- If the outdoor unit has malfunction, the voltage will move alternately with positive value.
- While if the indoor unit has malfunction, the voltage will be a certain value.



**S and N
or
L2 and S
or
2 and 3**

- Use a multimeter 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.



Note: The picture and the value are only for reference, actual condition and specific value may vary.

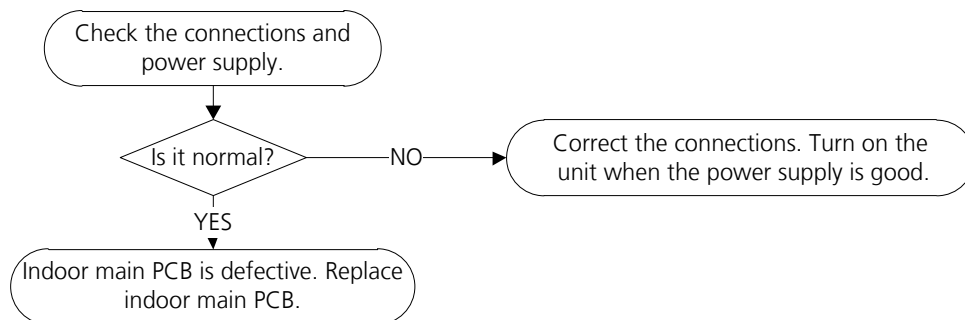
7.3 E2/EH 02 (Zero crossing detection error diagnosis and solution)

Description: When PCB does not receive zero crossing signal feedback for 4 minutes or the zero crossing signal time interval is abnormal.

Recommended parts to prepare:

- Connection wires
- Indoor PCB

Troubleshooting and repair:



Note: E2/EH 02 zero crossing detection error is only valid for the unit with AC fan motor, for other models, this error is invalid.

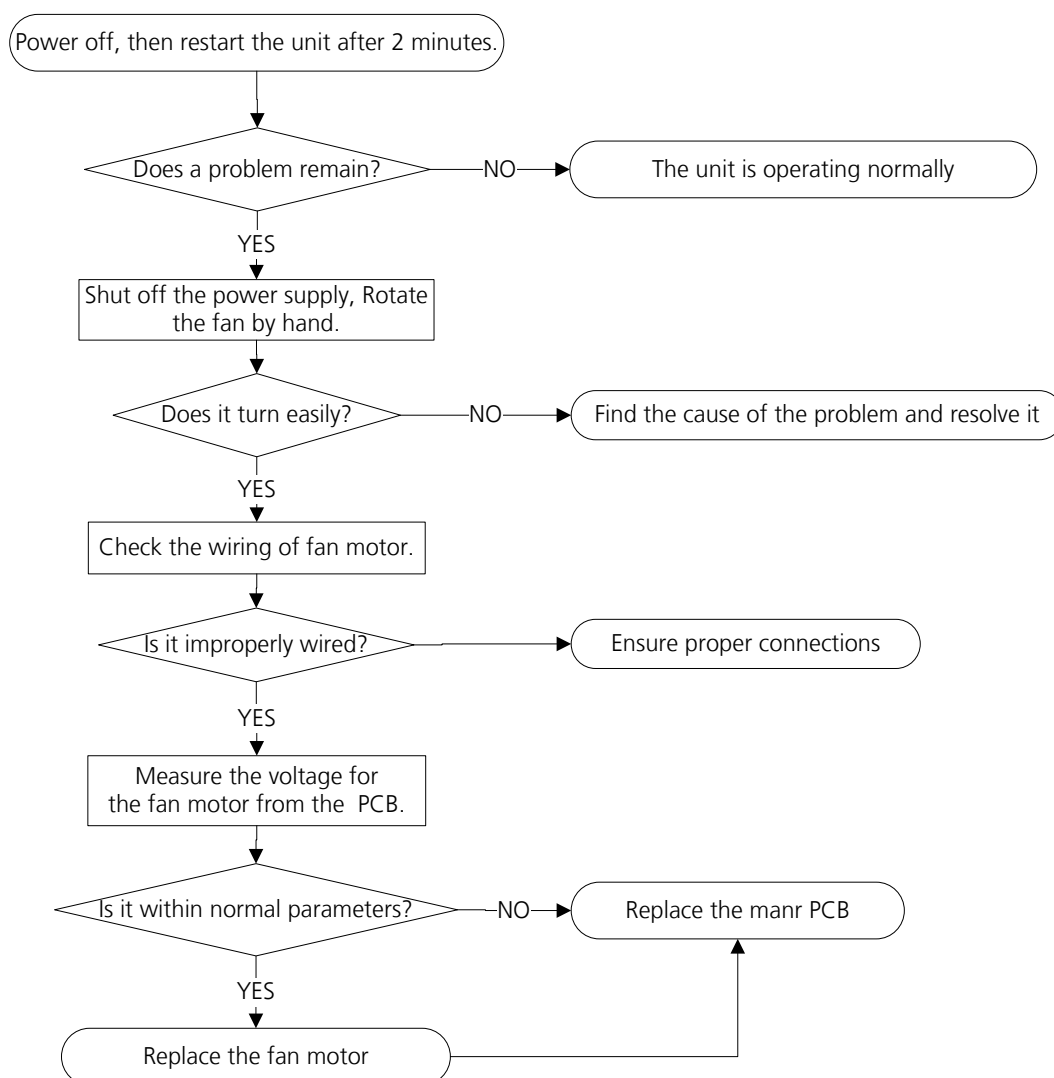
7.4 E3/EH 03 / F5/EC 07 (Fan speed is operating outside of the normal range diagnosis and solution)

Description: When indoor fan speed keeps too low (300RPM) for certain time, the LED displays the failure code and AC turns off.

Recommended parts to prepare:

- Connection wires
- Fan assembly
- Fan motor
- PCB

Troubleshooting and repair:



Index:

1. Indoor or Outdoor DC Fan Motor(control chip is in fan motor)

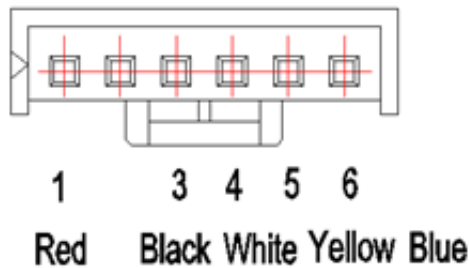
Power on and when the unit is in standby, measure the voltage of pin1-pin3, pin4-pin3 in fan motor connector. If the value of the voltage is not in the range showing in below table, the PCB must has problems and need to be replaced.

- 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

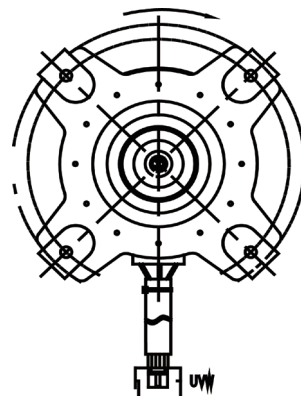
- DC motor voltage input and output (voltage: 115V~):

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



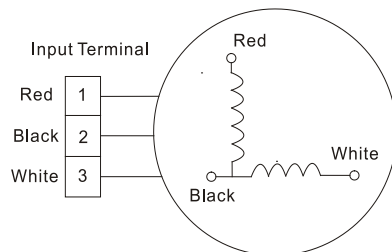
2. Outdoor DC Fan Motor (control chip is in outdoor PCB)

Release the UVW connector. Measure the resistance of U-V, U-W, V-W. If the resistance is not equal to each other, the fan motor must has 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.



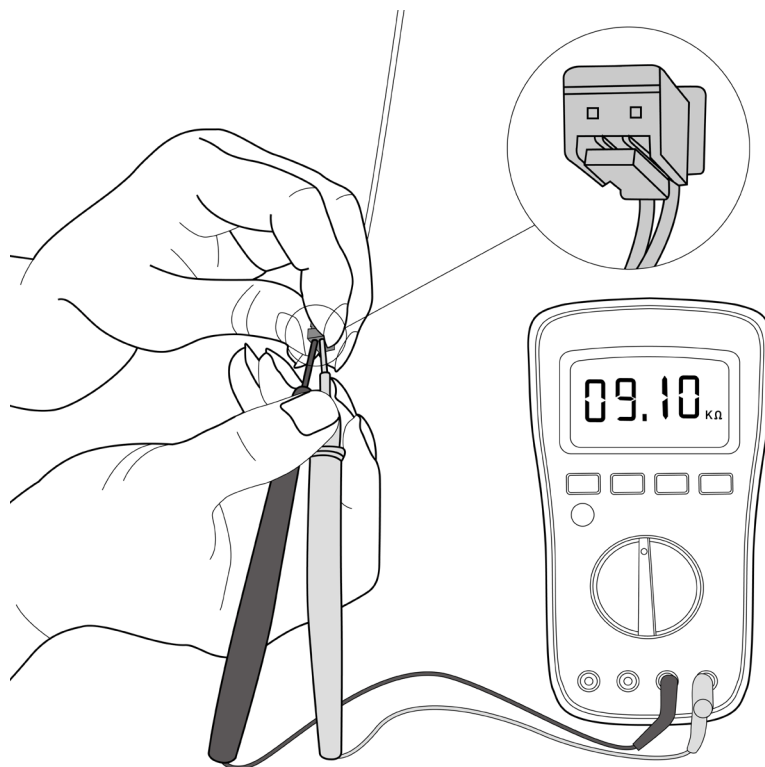
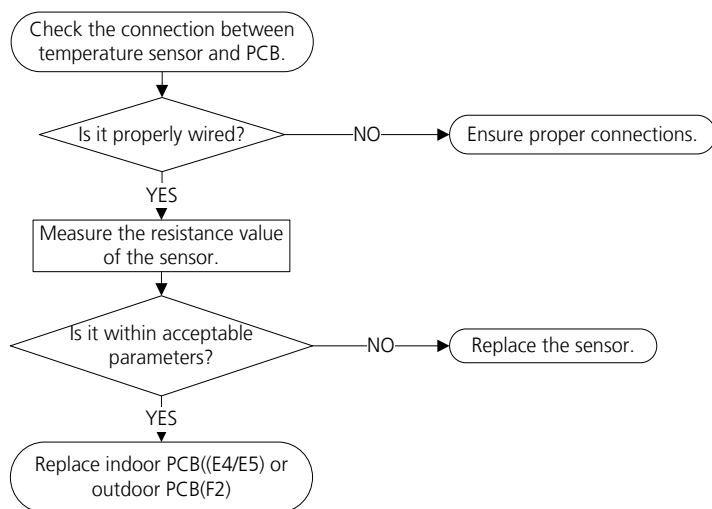
7.5 E4/EH 60/E5/EH 61/F2/EC 52 (Open or short circuit of temperature sensor diagnosis and solution)

Description: If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED displays the failure code.

Recommended parts to prepare:

- Connection wires
- Sensors
- PCB

Troubleshooting and repair:



Note: The picture and the value are only for reference, actual condition and specific value may vary.

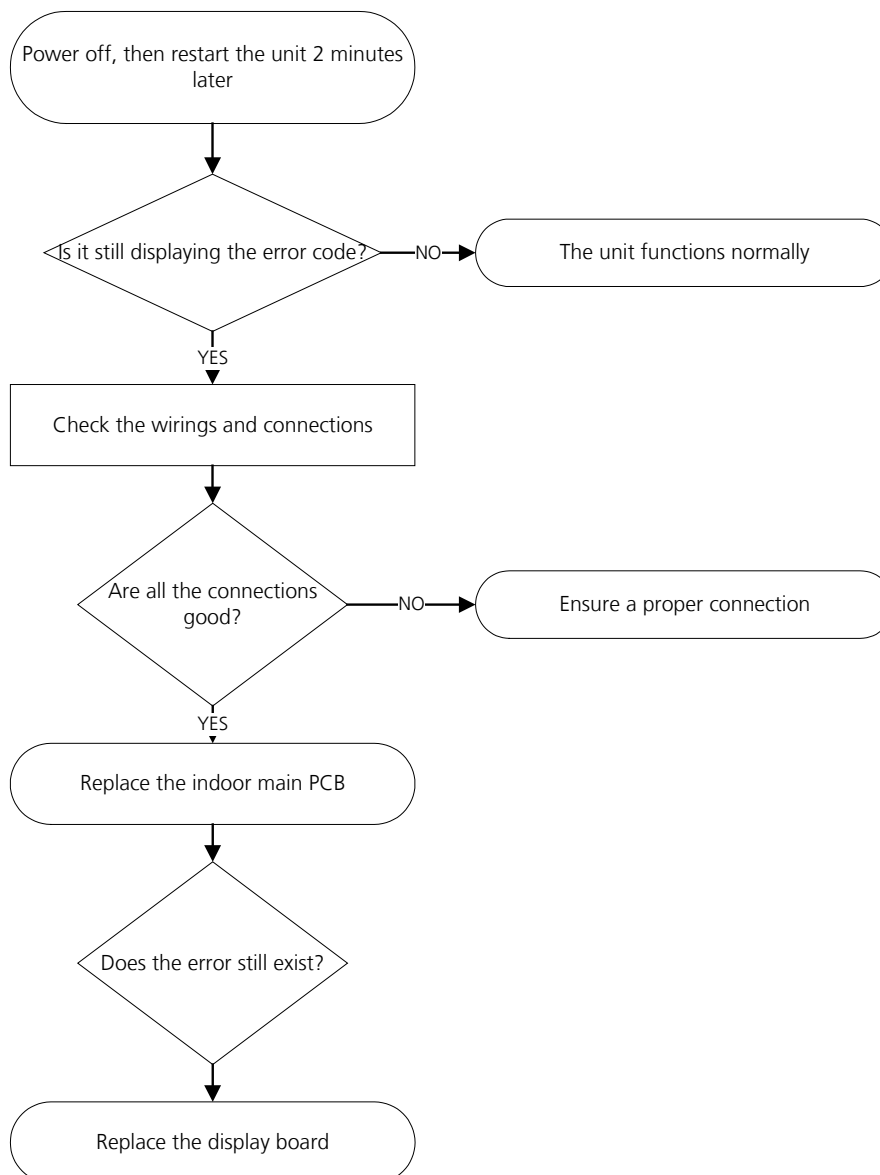
7.6 E7/EH 0b (Indoor PCB/display board communication error diagnosis and solution)

Description: The display board cannot communicate with the indoor PCB.

Recommended parts to prepare:

- Communication wire
- Indoor PCB
- Display board

Troubleshooting and repair:



7.7 EC/EL 0C (Refrigerant leakage detection diagnosis and solution)

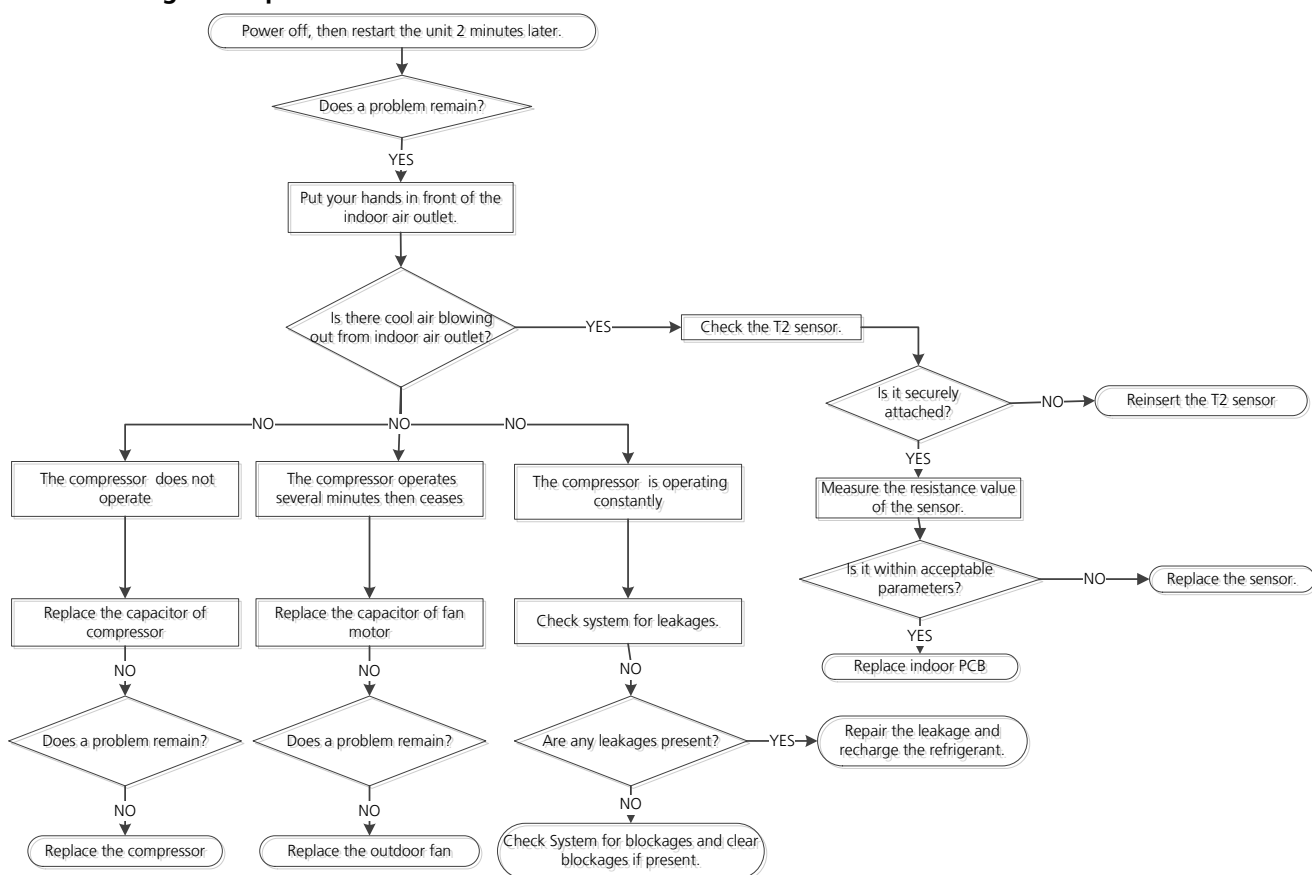
Description: Define the evaporator coil temperature T2 of the compressor just starts running as Tcool.

In the beginning 5 minutes after the compressor starts up, if $T2 < T_{cool} - 2^{\circ}\text{C}$ does not keep continuous 4 seconds and this situation happens 3 times, the LED displays the failure code and AC turns off.

Recommended parts to prepare:

- T2 sensor
- Compressor
- Capacitor of compressor
- Indoor PCB
- System problems, such as leakage or blockages
- Capacitor of fan motor
- Outdoor fan

Troubleshooting and repair:



7.8 P6/PC 03 (High pressure protection)

Description: If the current is less than setting value for 4 seconds, AC shuts off and restarts after 3 minutes in cooling mode or after 4 minutes in heating mode. If this happens 8 times, the LED displays the failure code and AC turns off.

Recommended parts to prepare:

- System blockages
- Dirty condenser

Troubleshooting and repair:

