# Trouble Shooting Guide
# Guide des Codes Erreurs

## WIM-18322.MH
## R32

**Updated on: 15 SEPT 21**

## Information Inquiry

- To enter engineer mode, in power-on or standby mode, and in non-locked state, press the key combination "ON/OFF + Air Speed" for 7s:
- After entering the engineer mode, the remote control will display icons of "Auto, Cool, Dry, Heat", and the Battery icon; at the same time, it will also display the numeric code of the current engineer mode (for the initial engineer mode, the numeric code displayed is 0), and all other icons are inactive.
- In engineer mode, the value of the current numeric code can be adjusted circularly through the Up/Down key, with the setting range of 0 to 30.

| Code | Query Content | Additional Notes |
|---|---|---|
| 0 | Error code | Refer to next list of error code |
| 1 | Room temperature | T1 temperature |
| 2 | Indoor coil temperature | T2 temperature |
| 3 | Outdoor coil temperature | T3 temperature |
| 4 | Ambient temperature | T4 temperature |
| 5 | Discharge temperature | TP temperature |
| 6 | Compressor Target Frequency FT | Targeted Frequency |
| 7 | Compressor Running Frequency Fr | Actual Frequency |
| 8 | Unit Current dL | N/A |
| 9 | Outdoor AC Voltage Uo | N/A |
| 10 | Current indoor capacity test state Sn | N/A |
| 11 | Reserve | |
| 12 | Set Speed Pr of the outdoor fan | Outdoor fan speed=value*8 |
| 13 | Opening Lr of EEV | EXV opening angle-value*8 |
| 14 | Actual Running Speed ir of the indoor fan | Indoor fan speed=value*8 |
| 15 | Indoor Humidity Hu | N/A |
| 16 | Set Temperature TT after compensation | N/A |
| 17 | Reserve | N/A |
| 18 | Reserve | N/A |
| 19 | / | N/A |
| 20 | Indoor Target Frequency oT | N/A |
| 21 | Reserve | |
| 22 | | |
| 23 | | |
| 24 | | |
| 25 | | |
| 26 | | |
| 27 | | |
| 28 | | |
| 29 | | |
| 30 | | |

Exit of engineer mode:
1)In engineer mode, press the key combination of "On/Off + Air speed" for 2s;

2)The engineer mode will be exited if there are no valid key operations for continuous 60s.

Error code

| Display | Error Information |
|---|---|
| EH00/EH0A | Indoor unit EEPROM parameter error |
| EL01 | Indoor / outdoor unit communication error |
| EH02 | Zero-crossing signal detection error |
| EH30 | Over low voltage protection of indoor external fan |
| EH31 | Over voltage protection of indoor external fan |
| EH03 | The indoor fan speed is operating outside of the normal range |
| EC51 | Outdoor unit EEPROM parameter error |
| EC52 | Condenser coil temperature sensor T3 is in open circuit or has short circuited |
| EC53 | Outdoor room temperature sensor T4 is in open circuit or has short circuited |
| EC54 | Compressor discharge temperature sensor TP is in open circuit or has short circuited |
| EC56 | Evaporator coil outlet temperature sensor T2B is in open circuit or has short circuited |
| EH60 | Indoor room temperature sensor T1 is in open circuit or has short circuited |
| EH61 | Evaporator coil temperature sensor T2 is in open circuit or has short circuited |
| EC07 | The outdoor fan speed is operating outside of the normal range( |
| EH0b | Indoor PCB/Display board communication error |
| EL0C | Refrigerant leak detected |
| PC00 | IPM malfunction or IGBT over-strong current protection |
| PC10 | Over low voltage protection |
| PC11 | Over voltage protection |
| PC12 | DC voltage protection |
| PC02 | Compressor top high temperature protection (OLP) |
| PC03 | Pressure protection |
| PC40 | Communication error between outdoor main chip and compressor driven chip |
| PC41 | Current Input detection protection |
| PC42 | Compressor start error |
| PC43 | Lack of phase (3 phase) protection |
| PC44 | No speed protection |
| PC45 | 341PWM error |
| PC46 | Compressor speed malfunction |
| PC49 | Compressor over current protection |
| -- | Indoor units mode conflict(match with multi outdoor unit) |
| PC0A | Condenser high temperature protection |

| | |
|---|---|
| PC06 | Compressor discharge temperature  protection |
| PC08 | Outdoor current protection |
| PH09 | Anti-cold air in heating mode |
| PC0F | PFC module malfunction |
| PC0L | Outdoor ambient tempreture too low |
| PH90 | Evaporator coil temperature over high protection |
| PH91 | Evaporator coil temperature over low Protection |
| LC05 | Frequency limit caused by voltage |
| LC03 | Frequency limit caused by current |
| LC02 | Frequency limit caused by TP |
| LC01 | Frequency limit caused by T3 |
| LH00 | Frequency limit caused by T2 |
| LC06 | Frequency limit caused by PFC |
| LH07 | Frequency limit caused by remote controller |
| NR | no malfuction or pretecion |

Error code

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| EC52 | Condenser coil temperature sensor T3 is in open circuit or has short circuited |
| EC53 | Outdoor room temperature sensor T4 is in open circuit or has short circuited |
| EC54 | Compressor discharge temperature sensor TP is in open circuit or has short circuited |
| EC56 | Evaporator coil outlet temperature sensor T2B is in open circuit or has short circuited |
| EH60 | Indoor room temperature sensor T1 is in open circuit or has short circuited |
| EH61 | Evaporator coil temperature sensor T2 is in open circuit or has short circuited |
| EC07 | The outdoor fan speed is operating outside of the normal range( |
| EH0b | Indoor PCB/Display board communication error |
| EL0C | Refrigerant leak detected |
| PC00 | IPM malfunction or IGBT over-strong current protection |
| PC10 | Over low voltage protection |
| PC11 | Over voltage protection |
| PC12 | DC voltage protection |
| PC02 | Compressor top high temperature protection (OLP) |
| PC03 | Pressure protection |
| PC40 | Communication error between outdoor main chip and compressor driven chip |
| PC41 | Current Input detection protection |
| PC42 | Compressor start error |
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| PC45 | 341PWM error |
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| PC49 | Compressor over current protection |
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|---|---|
| PC06 | Compressor discharge temperature  protection |
| PC08 | Outdoor current protection |
| PH09 | Anti-cold air in heating mode |
| PC0F | PFC module malfunction |
| PC0L | Outdoor ambient tempreture too low |
| PH90 | Evaporator coil temperature over high protection |
| PH91 | Evaporator coil temperature over low Protection |
| LC05 | Frequency limit caused by voltage |
| LC03 | Frequency limit caused by current |
| LC02 | Frequency limit caused by TP |
| LC01 | Frequency limit caused by T3 |
| LH00 | Frequency limit caused by T2 |
| LC06 | Frequency limit caused by PFC |
| LH07 | Frequency limit caused by remote controller |
| NR | no malfuction or pretecion |

## Quick Maintenance by Error Code

If you do not have the time to test which specific parts are faulty, you can directly change the required parts according the error code. You can find the parts to replace by error code in the following table.

| Part requiring replacement | Error Code | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | EH00/ EH0A | EL01 | EH02 | EH03 | EH60 | EH61 | EH0b | EL0C | EC56 | PC08 |
| Indoor PCB | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | x | x |
| Outdoor PCB | x | ✓ | x | x | x | x | x | x | ✓ | ✓ |
| Display board | x | x | x | x | x | x | ✓ | x | x | x |
| Indoor fan motor | x | x | x | ✓ | x | x | x | x | x | x |
| T1 sensor | x | x | x | x | ✓ | x | x | x | x | x |
| T2 Sensor | x | x | x | x | x | ✓ | x | ✓ | x | x |
| T2B Sensor | x | x | x | x | x | x | x | x | ✓ | x |
| Reactor | x | ✓ | x | x | x | x | x | x | x | x |
| Compressor | x | x | x | x | x | x | x | x | x | ✓ |
| Additional refrigerant | x | x | x | x | x | x | x | ✓ | x | x |

| Part requiring replacement | EC53 | EC52 | EC54 | EC51 | EC07 | PC00 | PC01 | PC02 | PC03 | PC04 |
|---|---|---|---|---|---|---|---|---|---|---|
| Outdoor PCB | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Indoor fan motor | x | x | x | x | x | x | x | x | x | x |
| Outdoor fan motor | x | x | x | x | ✓ | ✓ | x | ✓ | x | ✓ |
| T3 Sensor | x | ✓ | x | x | x | x | x | x | x | x |
| T4 Sensor | ✓ | x | x | x | x | x | x | x | x | x |
| TP Sensor | x | x | ✓ | x | x | x | x | x | x | x |
| Reactor | x | x | x | x | x | x | ✓ | x | x | x |
| Compressor | x | x | x | x | x | ✓ | x | x | x | ✓ |
| IPM module board | x | x | x | x | x | ✓ | ✓ | ✓ | x | ✓ |
| High pressure protector | x | x | x | x | x | x | x | ✓ | x | x |
| Low pressure protector | x | x | x | x | x | x | x | x | ✓ | x |
| Additional refrigerant | x | x | x | x | x | x | x | x | ✓ | x |

**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**

# Troubleshooting by Error Code

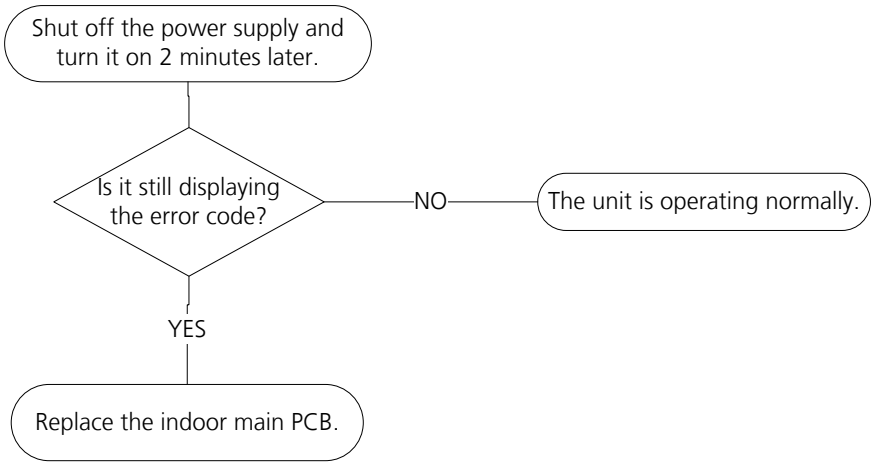
## TS01-IDU: Indoor EEPROM parameter error diagnosis and solution

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

**Recommended parts to prepare:**

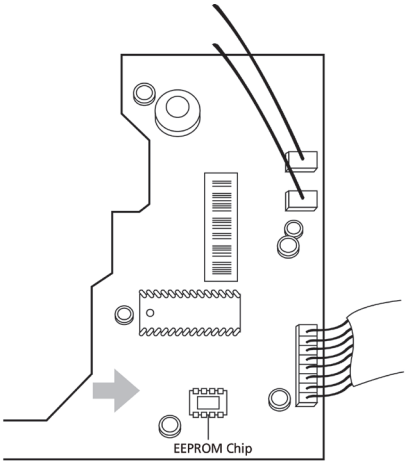
- Indoor PCB

**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: This pictures are only for reference, actual appearance may vary.**

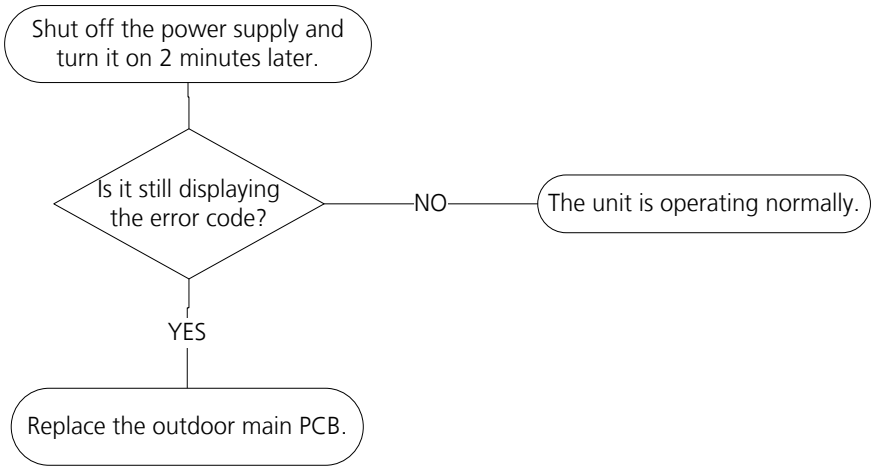
## TS01-ODU: Outdoor EEPROM parameter error or Compressor driven chip EEPROM parameter error diagnosis and solution

**Description**: Outdoor PCB main chip does not receive feedback from EEPROM chip or compressor driven chip.

**Recommended parts to prepare:**

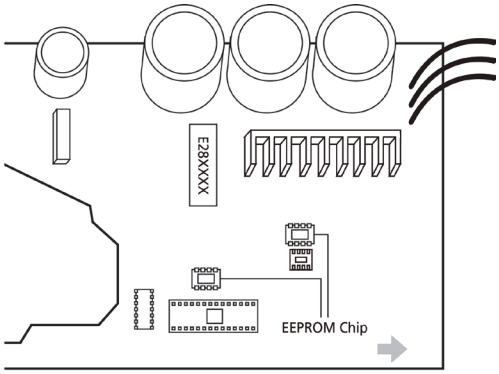
- Outdoor PCB

**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 outdoor PCB is shown in the following image:




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole. This pictures are only for reference, actual appearance may vary.**

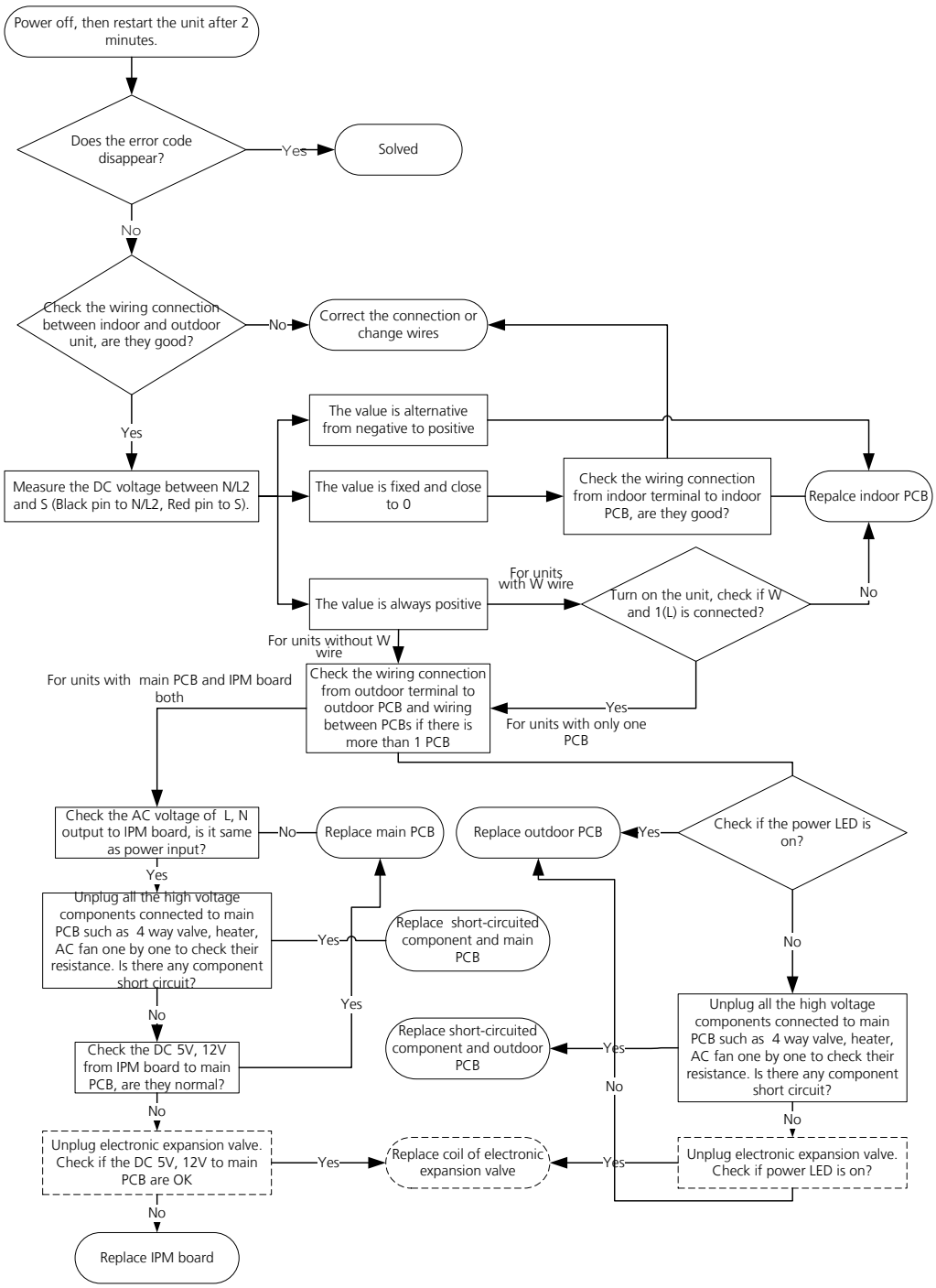
## TS02-S-INV: Indoor and outdoor unit communication error diagnosis and solution

**Description**: Indoor unit can not communicate with outdoor unit

**Recommended parts to prepare:**

- Indoor PCB
- Outdoor PCB
- Short-circuited component

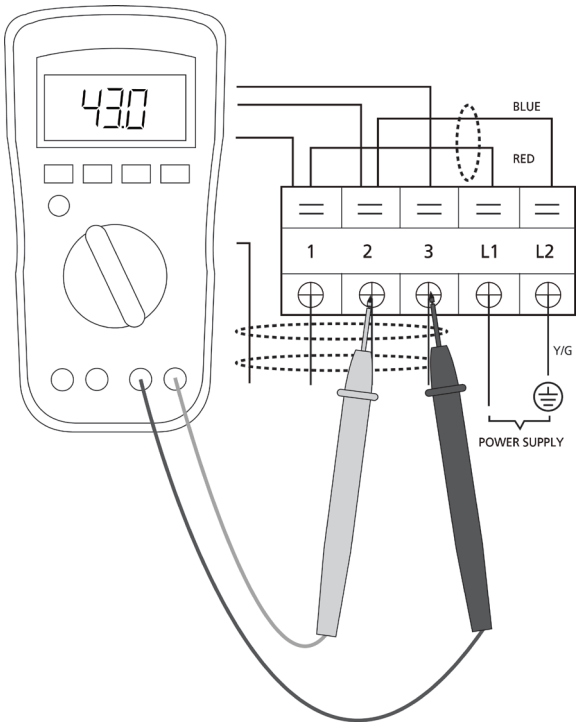
**Troubleshooting and repair:**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**

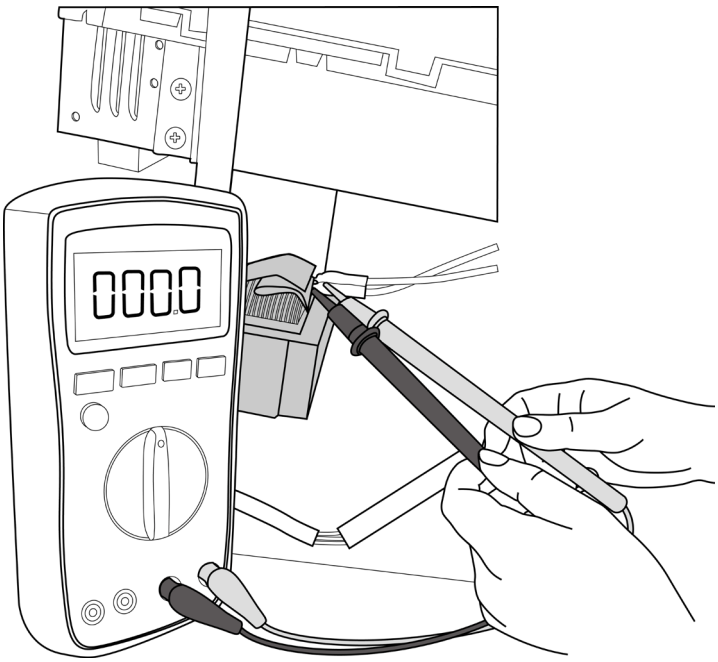
**Remarks:**

- 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 is moving alternately as positive values and negative values
- If the outdoor unit has malfunction, the voltage has always been the positive value.
- While if the indoor unit has malfunction, the voltage has always been 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.**

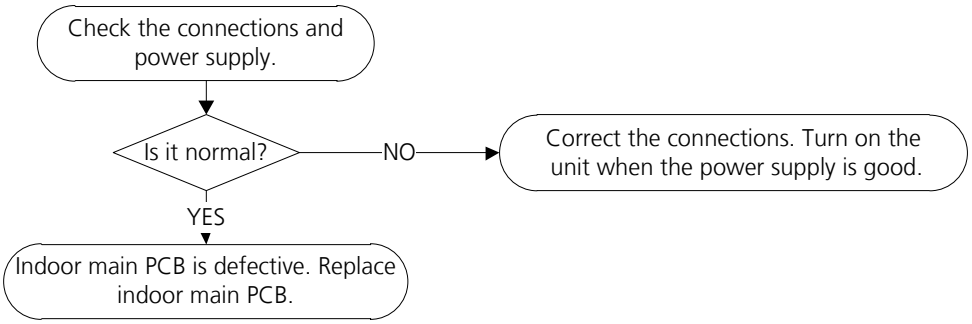
## TS03: Zero crossing detection error diagnosis and solution

**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 main PCB

**Troubleshooting and repair:**




**Note: Zero crossing detection error is only valid for the unit with AC fan motor, for other models, this error is invalid.**

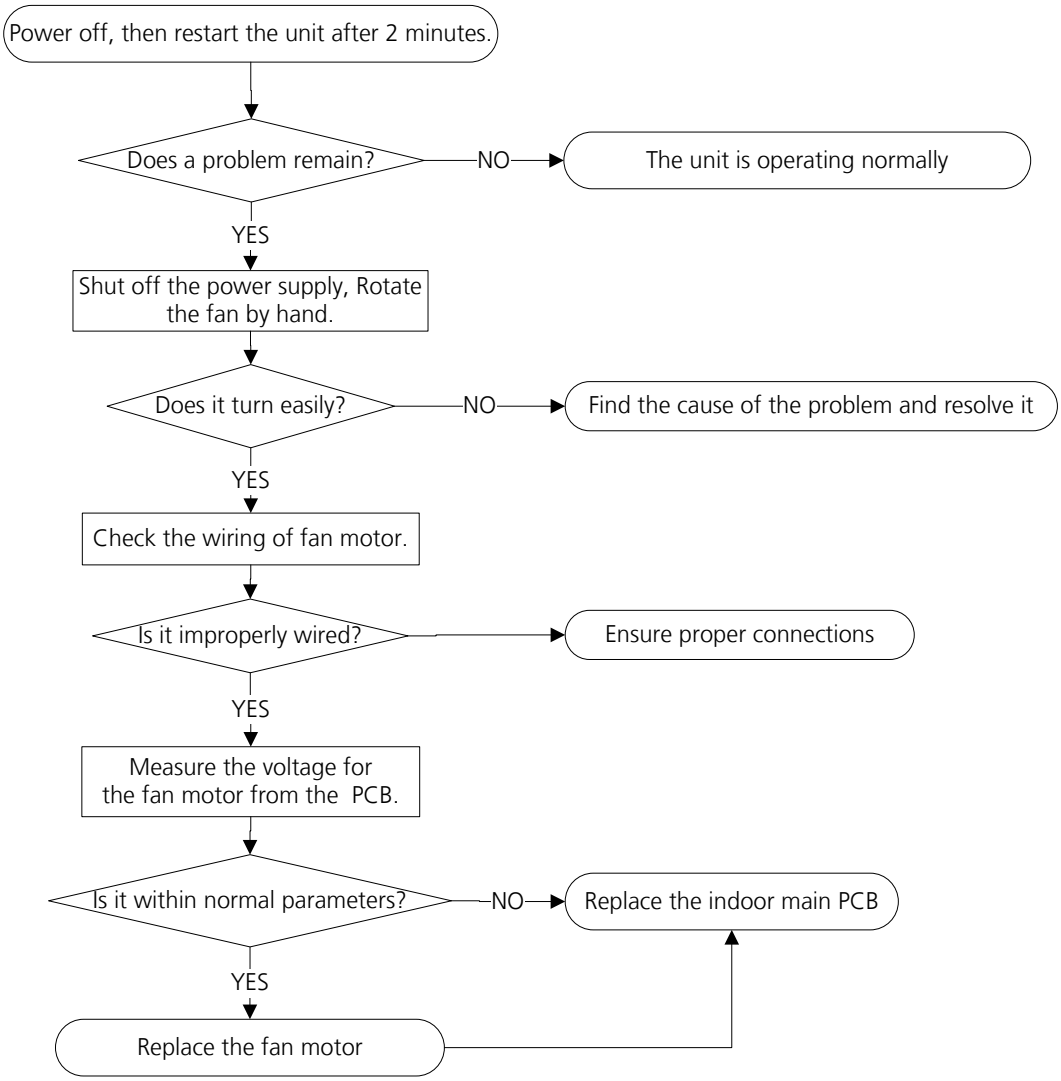
## TS04-S-IDU: The Indoor fan speed is operating outside of normal range diagnosis and solution)

**Description**: When indoor fan speed keeps too low or too high for a certain time, the LED displays the failure code and the AC turns off.

**Recommended parts to prepare:**

- Connection wires
- Fan assembly
- Fan motor
- Indoor main PCB

**Troubleshooting and repair:**



**Index:**

**1. DC Fan Motor(control chip is in fan motor)**

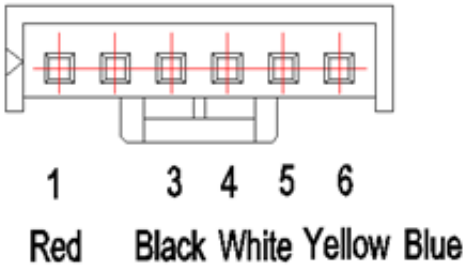
Power on and when the unit is in standby, measure the voltage of pin1-pin3, pin4-pin3 in fan motor connector. If the value of the voltage is not in the range showing in below table, the PCB must has problems and need to be replaced.

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

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

- 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 | 13.5-16.5V |
| 5 | Yellow | Vsp | 0~6.5V |
| 6 | Blue | FG | 13.5-16.5V |



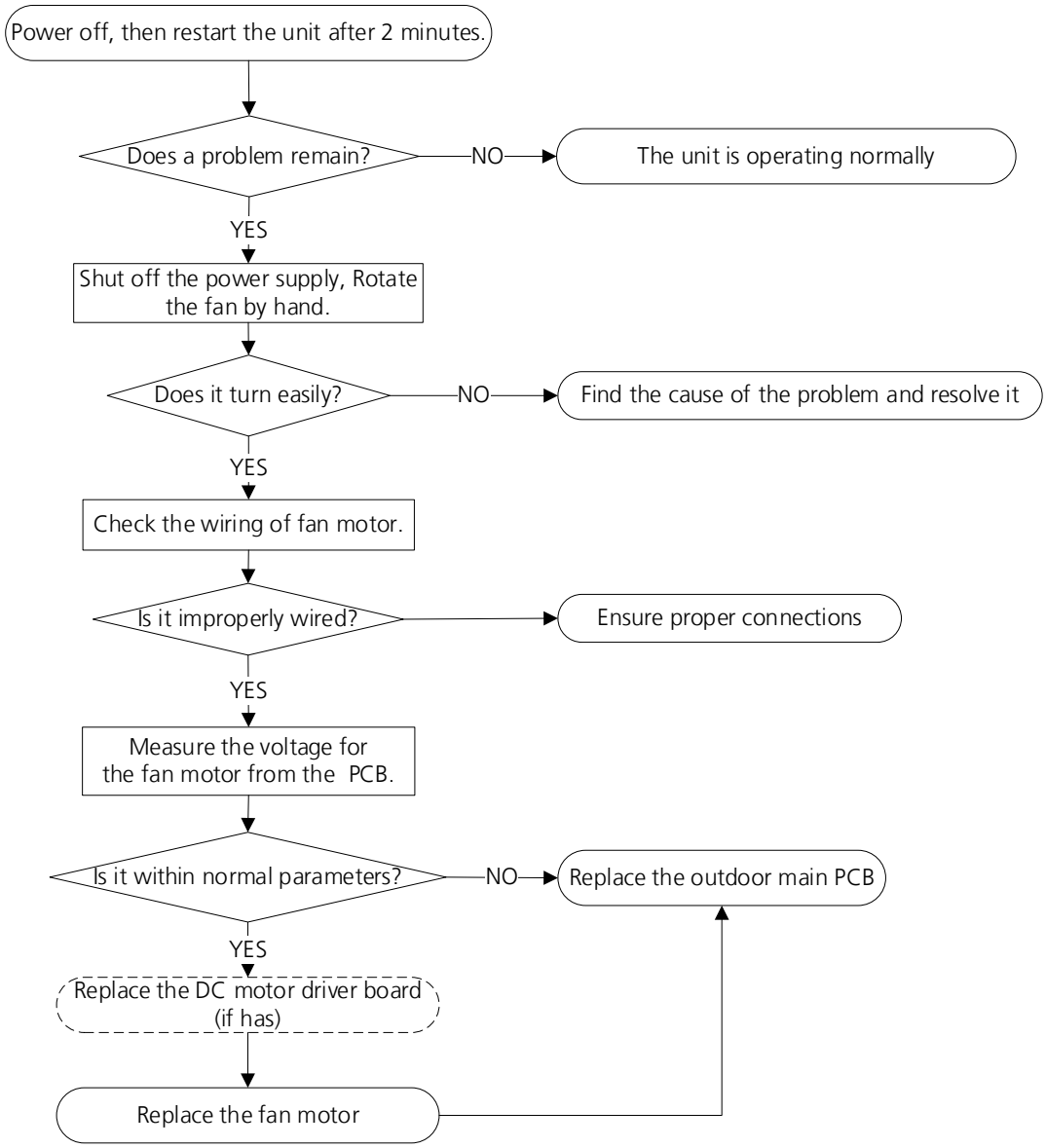
## TS04-ODU: The outdoor fan speed is operating outside of normal range diagnosis and solution)

**Description**: When outdoor fan speed keeps too low or too high for a certain time, the LED displays the failure code and the AC turns off.

**Recommended parts to prepare:**

- Connection wires
- Fan assembly
- Fan motor
- Outdoor main PCB

**Troubleshooting and repair:**

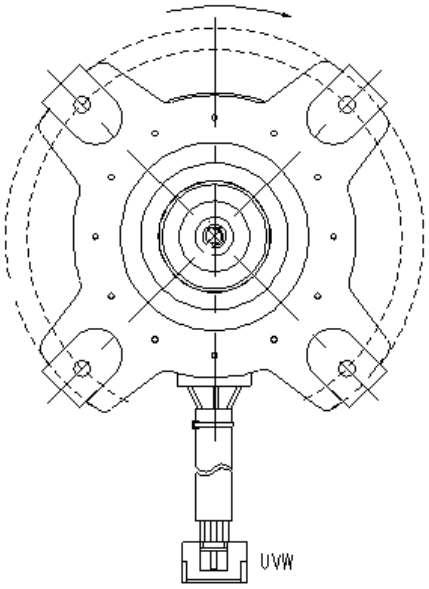



**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**

**Index:**

**1. DC Fan Motor (control chip is in outdoor PCB)**

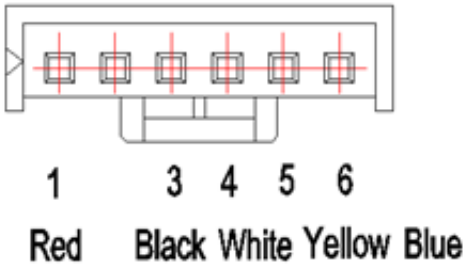
Release the UVW connector. Measure the resistance of U-V, U-W, V-W. If the resistance is not equal to each other, the fan motor must has problems and need to be replaced. otherwise the PCB must has problems and need to be replaced.




**2. DC Fan Motor(control chip is in fan motor, single fan)**

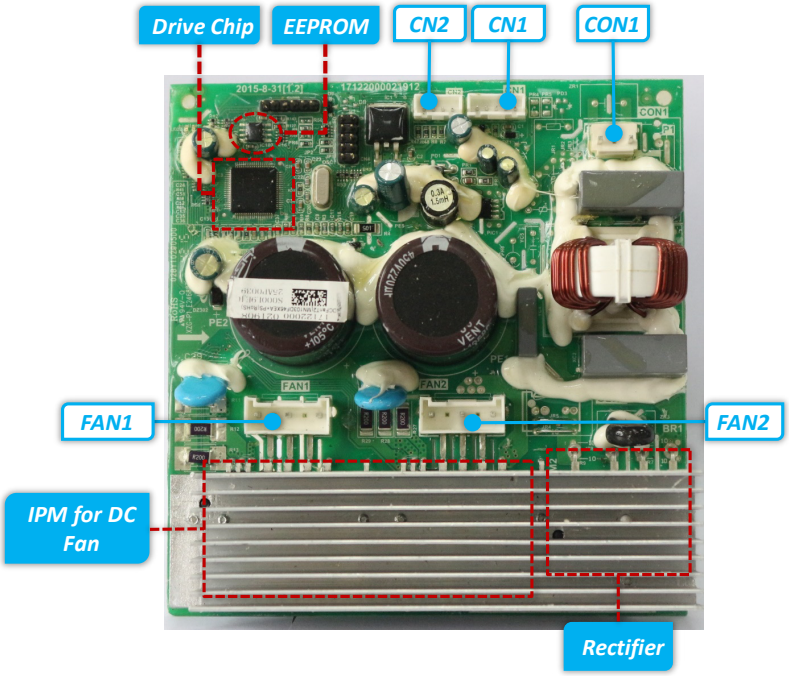
Power on and when the unit is in standby, measure the voltage of pin1-pin3, pin4-pin3 in fan motor connector. If the value of the voltage is not in the range showing in below table, the PCB must has problems and need to be replaced.

| 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 | 13.5-16.5V |



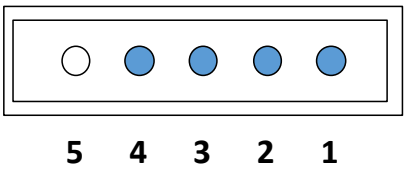
### 3. DC Fan Motor(for some double fan models)

Power on and when the unit is in standby, measure the voltage of CON1, pin1-pin2 and pin3-pin2 of CN1 in DC motor driver board. If the value of the voltage is not in the range showing in below tables, the outdoor main PCB must has problems and need to be replaced.




| Part | Description | Parameter | Remark |
|---|---|---|---|
| CON1 | Power input for the PCB | 192-380V/DC | |
| CN1 | Communication with main PCB | DC | |
| CN2 | Test port | 5V/DC | For debugging board |
| FAN1 | UVW output for DC fan motor | | |
| FAN2 | UVW output for DC fan motor | | |

CN1 Communication with main PCB




| No. | Signal | Voltage |
|---|---|---|
| 1 | Vcc | 13.5-16.5V |
| 2 | GND | 0V |
| 3 | Vsp | 0~6.5V |
| 4 | FG | 13.5-16.5V |
| 5 | --- | --- |

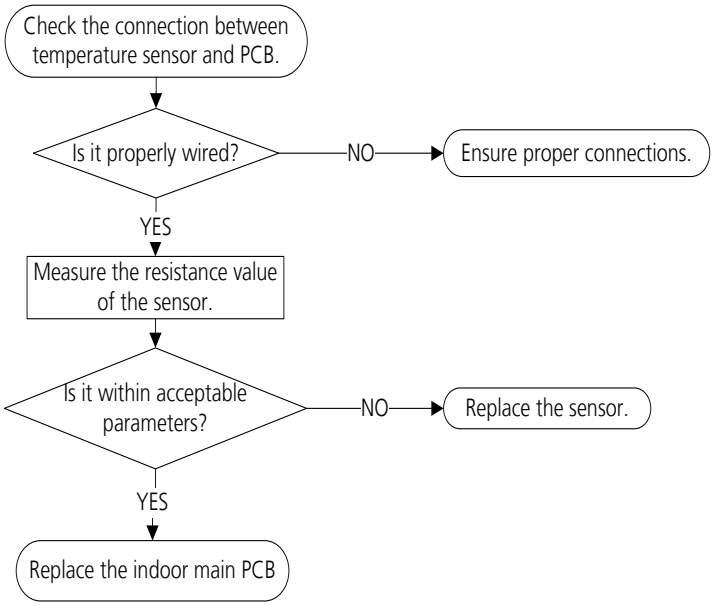
## TS05-IDU: Open circuit or short circuit of indoor temperature sensor(T1, T2) diagnosis and solution

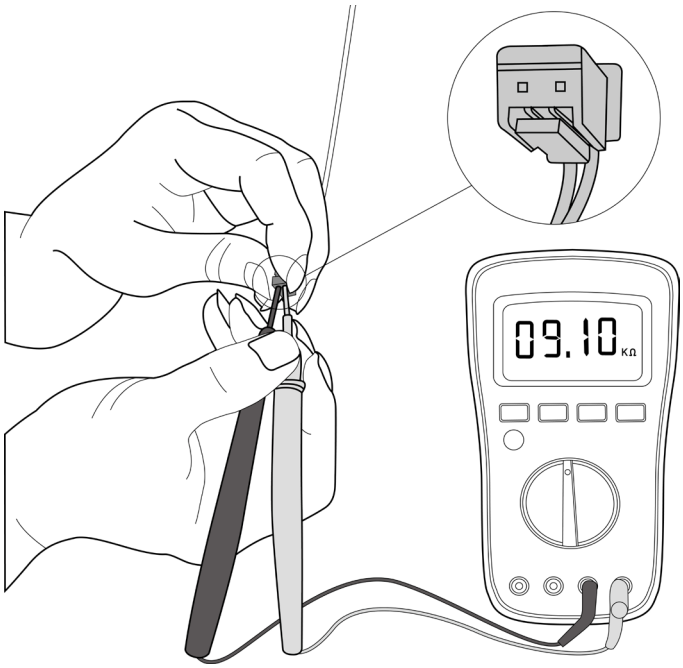
**Description**: If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED displays the failure code.

**Recommended parts to prepare:**

- Connection wires
- Sensors
- Indoor main PCB

**Troubleshooting and repair:**




**Note: This picture and the value are only for reference, actual appearance and value may vary.**

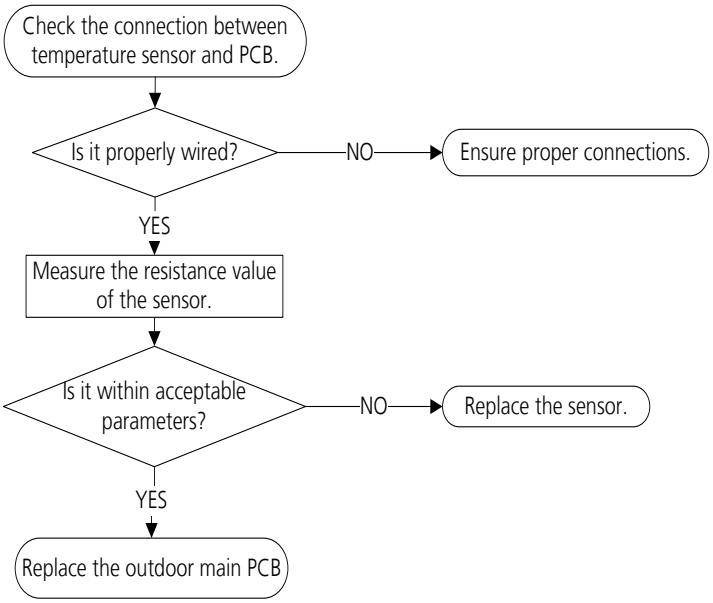
## TS05-ODU: Open circuit or short circuit of outdoor temperature sensor(T3, T4, TP, T2B,TH) diagnosis and solution

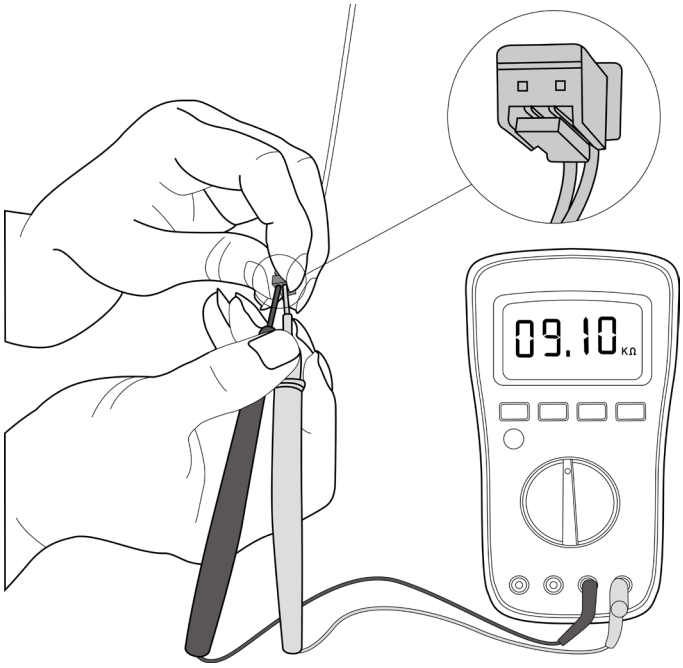
**Description**: If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED displays the failure code.

**Recommended parts to prepare:**

- Connection wires
- Sensors
- Outdoor main PCB

**Troubleshooting and repair:**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole. For certain models, outdoor unit uses combination sensor, T3,T4 and TP are the same of sensor. This picture and the value are only for reference, actual appearance and value may vary.**

## TS06-INV: Refrigerant Leakage Detection diagnosis and solution

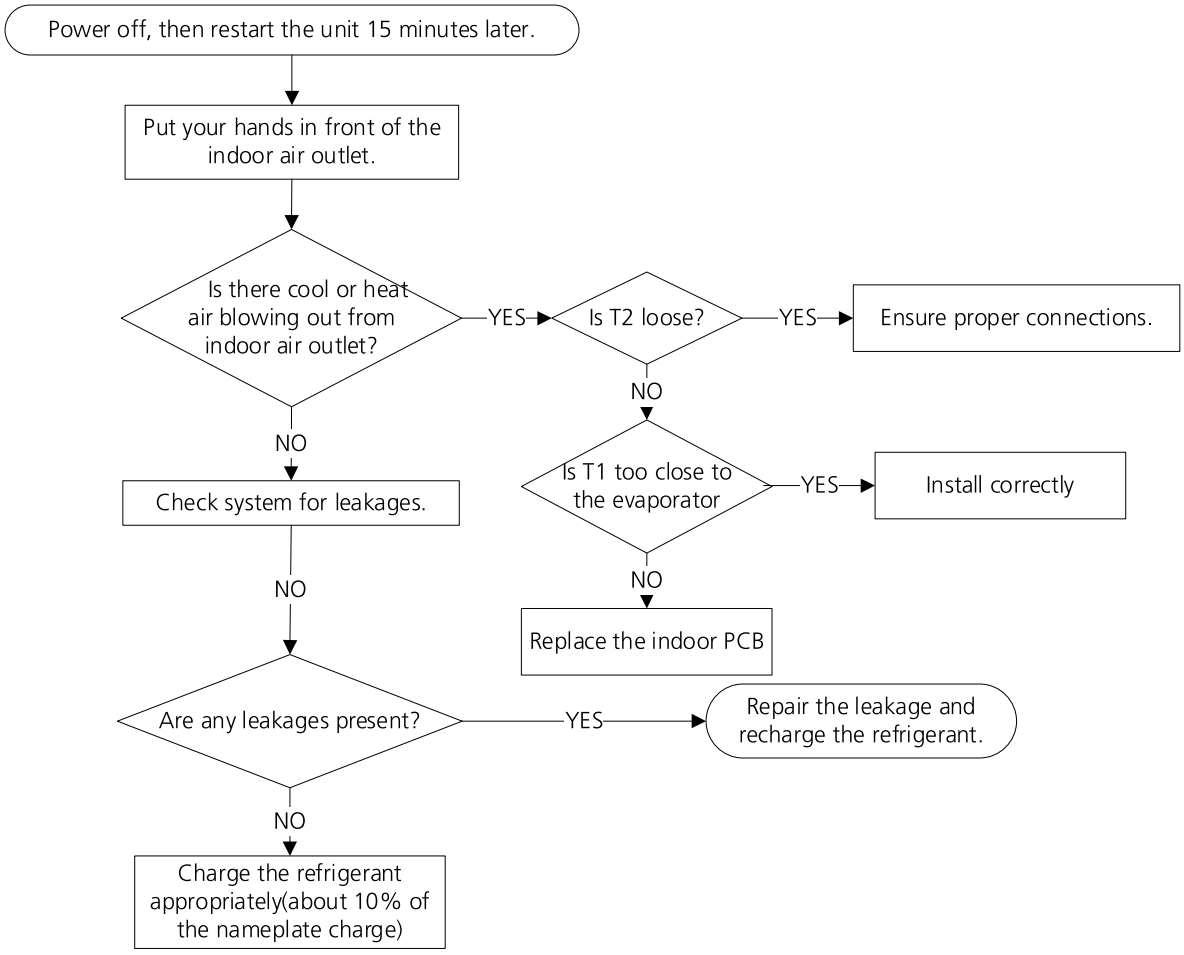
**Description**:

Judging the abnormality of the refrigeration system according to the number of compressor stops and the changes in operating parameters caused by excessive exhaust temperature.

**Recommended parts to prepare:**

- Indoor PCB
- Additional refrigerant

**Troubleshooting and repair:**



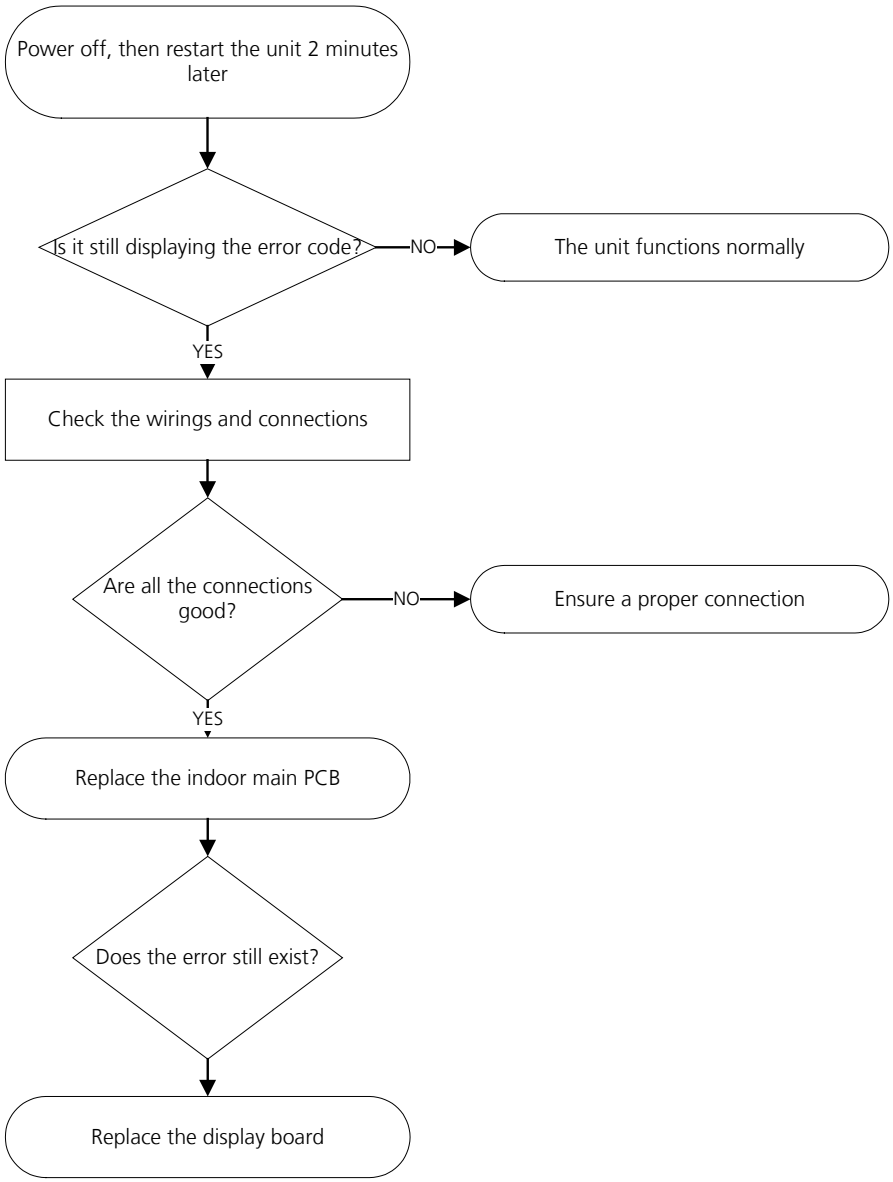
## TS07: Indoor PCB / Display board communication error diagnosis and solution

**Description**: Indoor PCB does not receive feedback from the display board.

**Recommended parts to prepare:**

- Communication wire
- Indoor PCB
- Display board

**Troubleshooting and repair:**



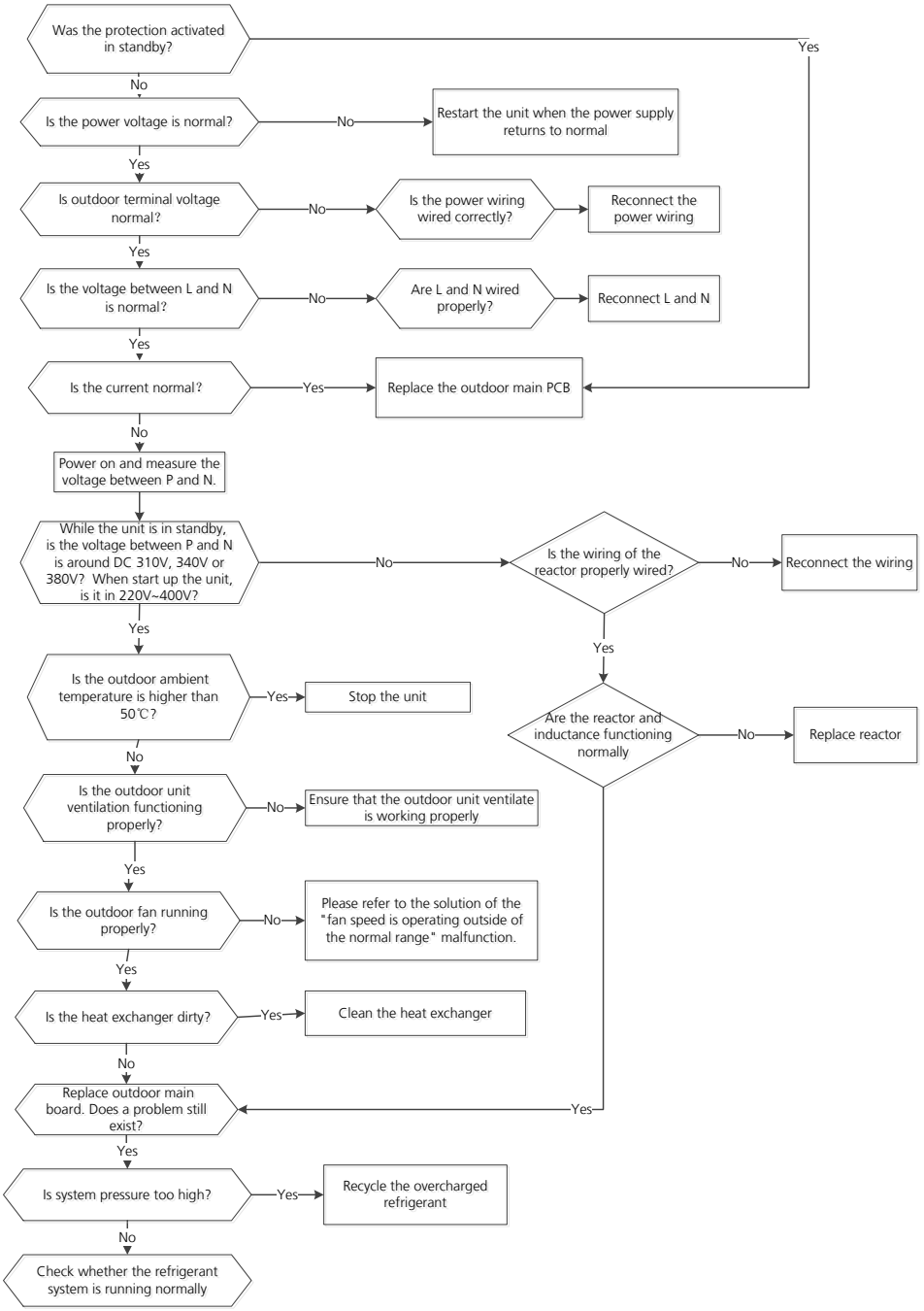
## TS08-S: Current overload protection diagnosis and solution

**Description**: An abnormal current rise is detected by checking the specified current detection circuit.

**Recommended parts to prepare:**

- Connection wires
- Reactor
- Outdoor fan
- Outdoor PCB

**Troubleshooting and repair:**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**

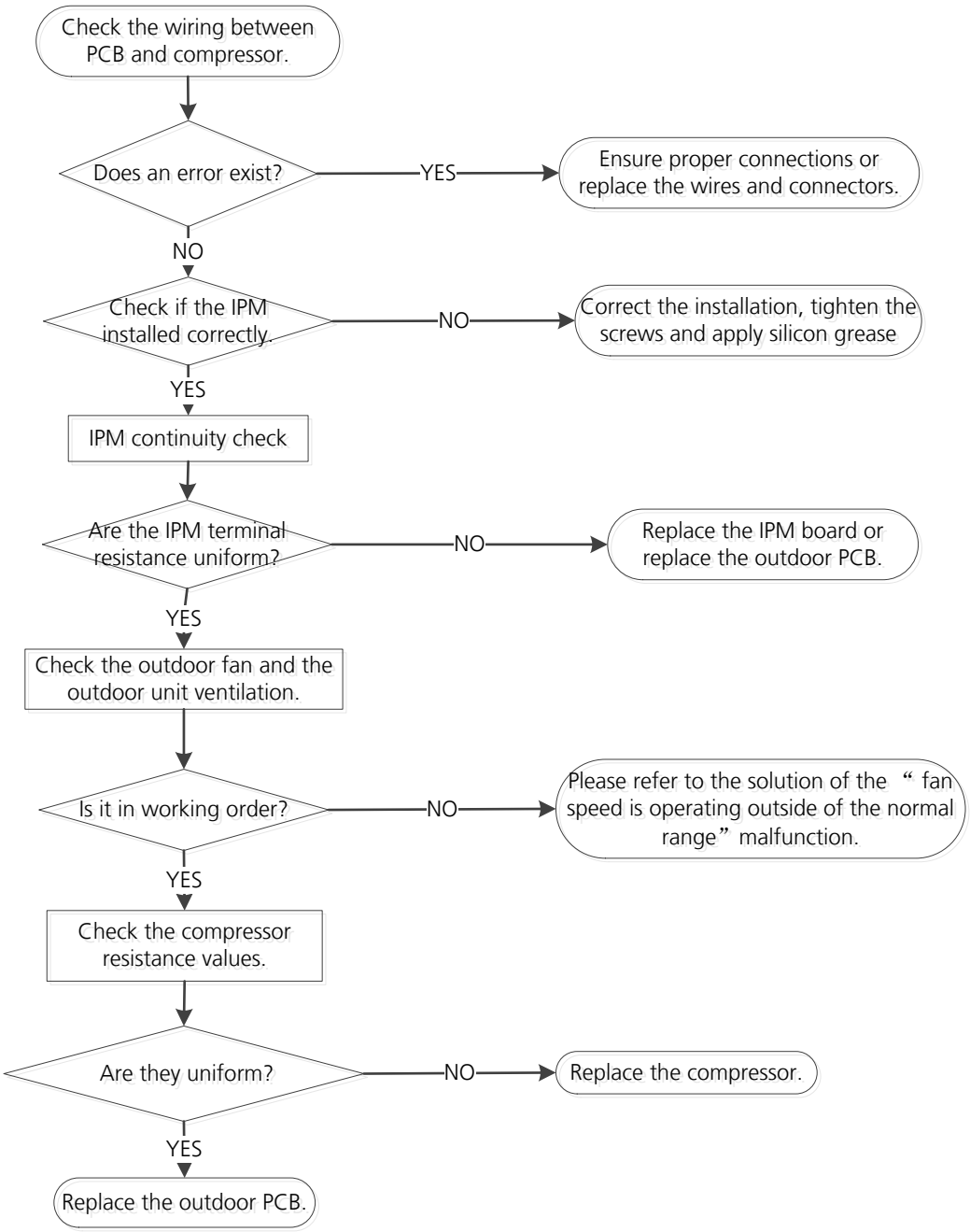
## TS09-S: IPM malfunction or IGBT over-strong current protection diagnosis and solution

**Description:** When the voltage signal the IPM sends to the compressor drive chip is abnormal, the LED displays the failure code and the AC turns off.

**Recommended parts to prepare:**

- Connection wires
- IPM module board
- Outdoor fan assembly
- Compressor
- Outdoor PCB

**Troubleshooting and repair:**



**Index:**

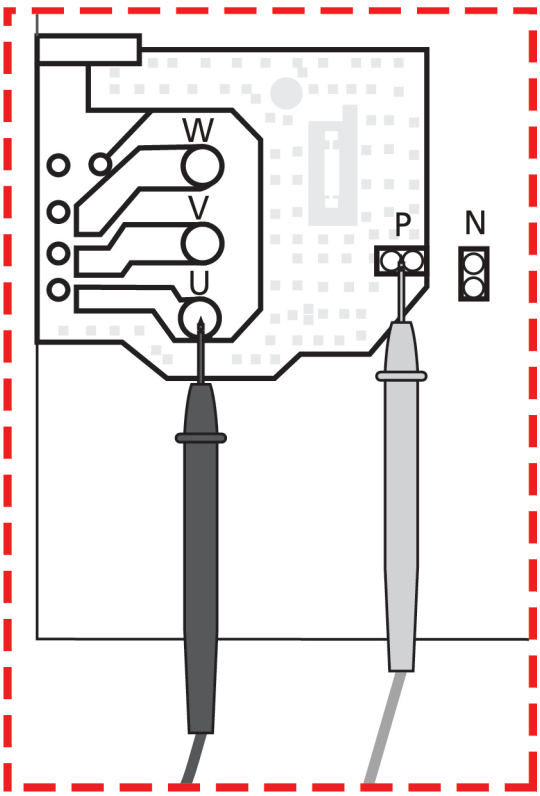
**1. IPM Continuity Check**

**WARNING**

**Electricity remains in capacitors even when the power supply is off.**
**Ensure the capacitors are fully discharged before troubleshooting.**

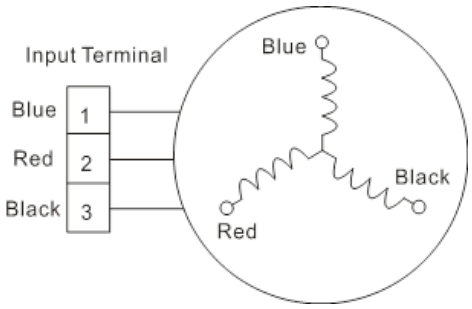
1. Turn off outdoor unit and disconnect power supply.
2. Discharge electrolytic capacitors and ensure all energy-storage unit has been discharged.
3. Disassemble outdoor PCB or disassemble IPM board.
4. Measure the resistance value between P and U(V, W, N); U(V, W) and N.

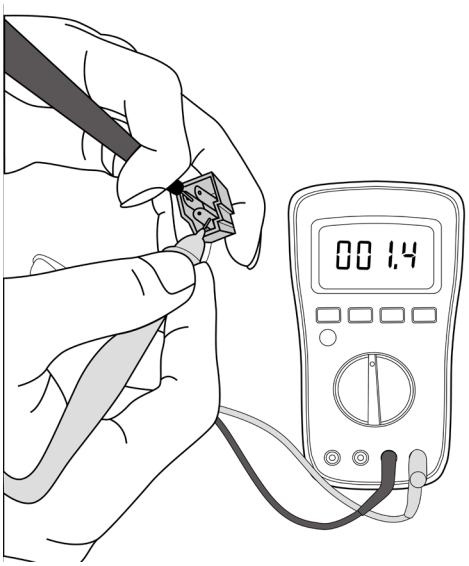
| Digital tester | | Resistance value | Digital tester | | Resistance value |
|---|---|---|---|---|---|
| (+)Red | (-)Black | | (+)Red | (-)Black | |
| P | N | ∞ (Several MΩ) | U | N | ∞ (Several MΩ) |
| | U | | V | | |
| | V | | W | | |
| | W | | - | | |



**4. Compressor check**

Disconnect the compressor and check the resistance between U-V, V-W and U-W, and all 3 values should be equal. If not, the compressor is faulty and should be replaced.




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

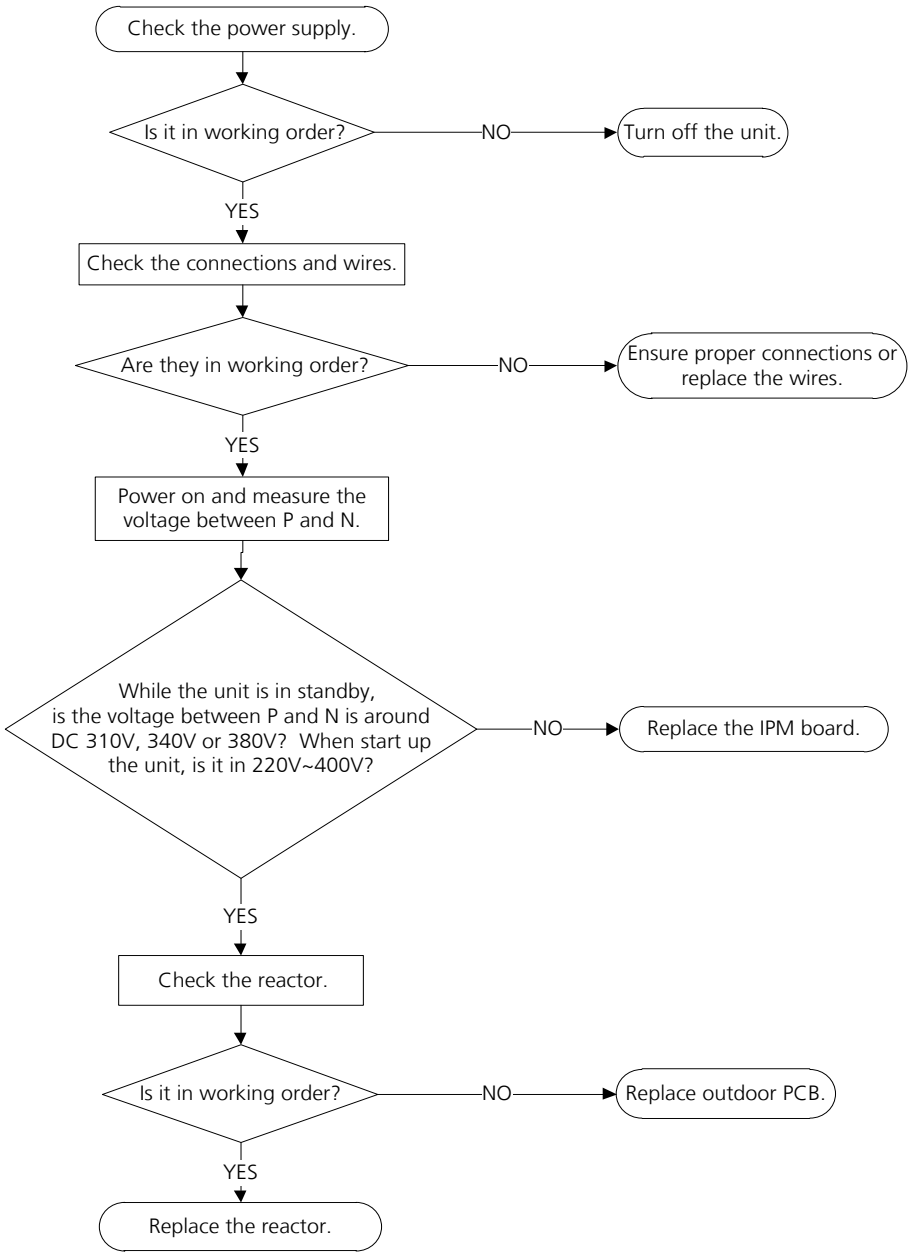
## TS10-S: Over voltage or too low voltage protection diagnosis and solution

**Description:** Abnormal increases or decreases in voltage are detected by checking the specified voltage detection circuit.

**Recommended parts to prepare:**

- Power supply wires
- IPM module board
- PCB
- Reactor

**Troubleshooting and repair:**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**

## TS11-S-INV: Top temperature protection of compressor or High temperature protection of IPM module or High pressure protection diagnosis and solution

**Description:** For some models with overload protection, If the sampling voltage is not 5V, the LED will display the failure.

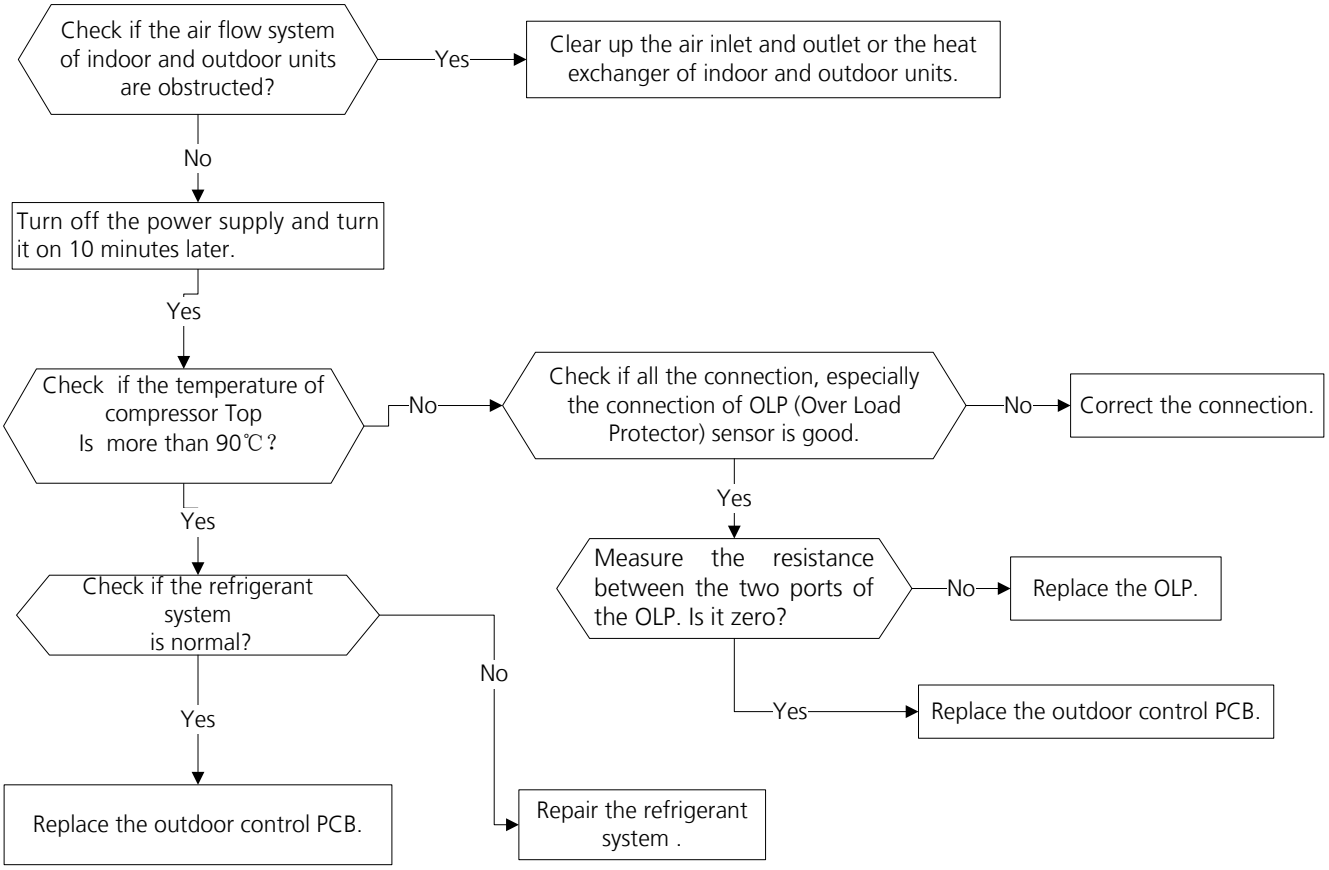
If the temperature of IPM module is higher than a certain value, the LED displays the failure code.

For some models with high pressure switch, outdoor pressure switch cut off the system because high pressure is higher than 4.4 MPa, the LED displays the failure code.

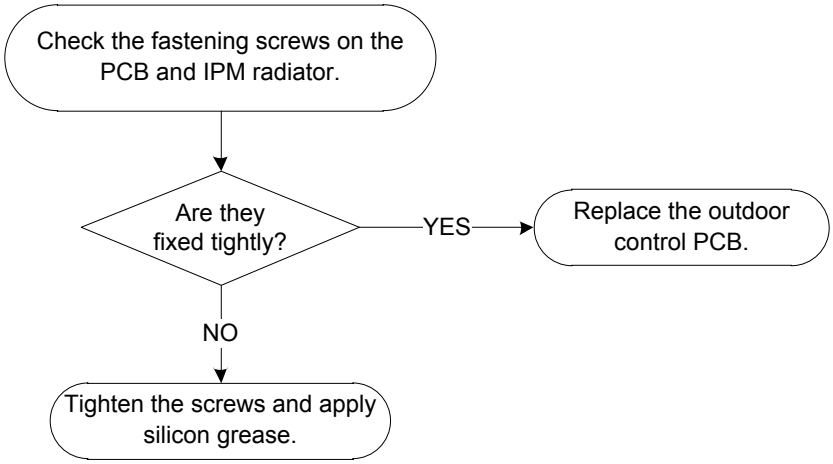
**Recommended parts to prepare:**

- Connection wires
- Outdoor PCB
- IPM module board
- High pressure protector
- System blockages

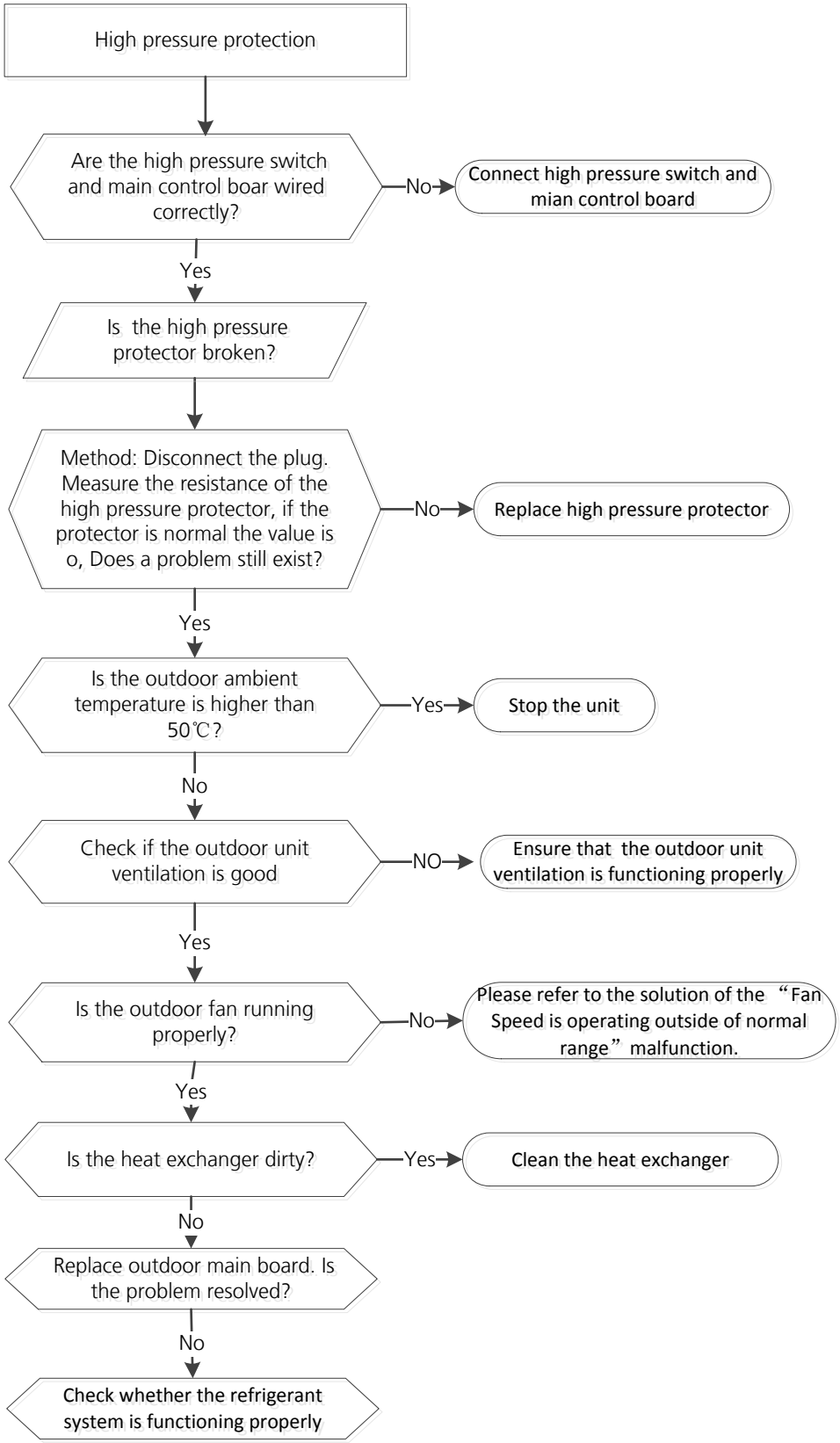
**Troubleshooting and repair:**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**

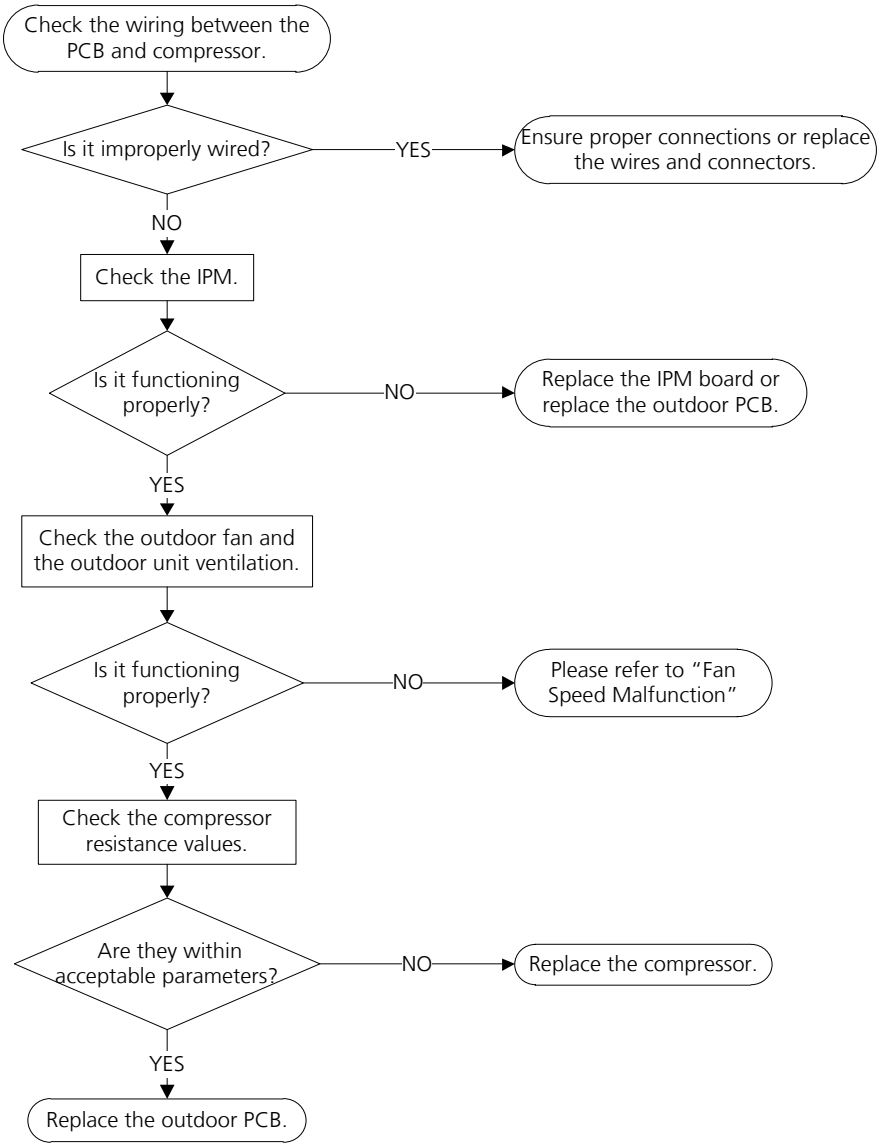
## TS12-S: Inverter compressor drive error diagnosis and solution

**Description:** 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.

**Recommended parts to prepare:**

- Connection wires
- IPM module board
- Outdoor fan assembly
- Compressor
- Outdoor PCB

**Troubleshooting and repair:**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**

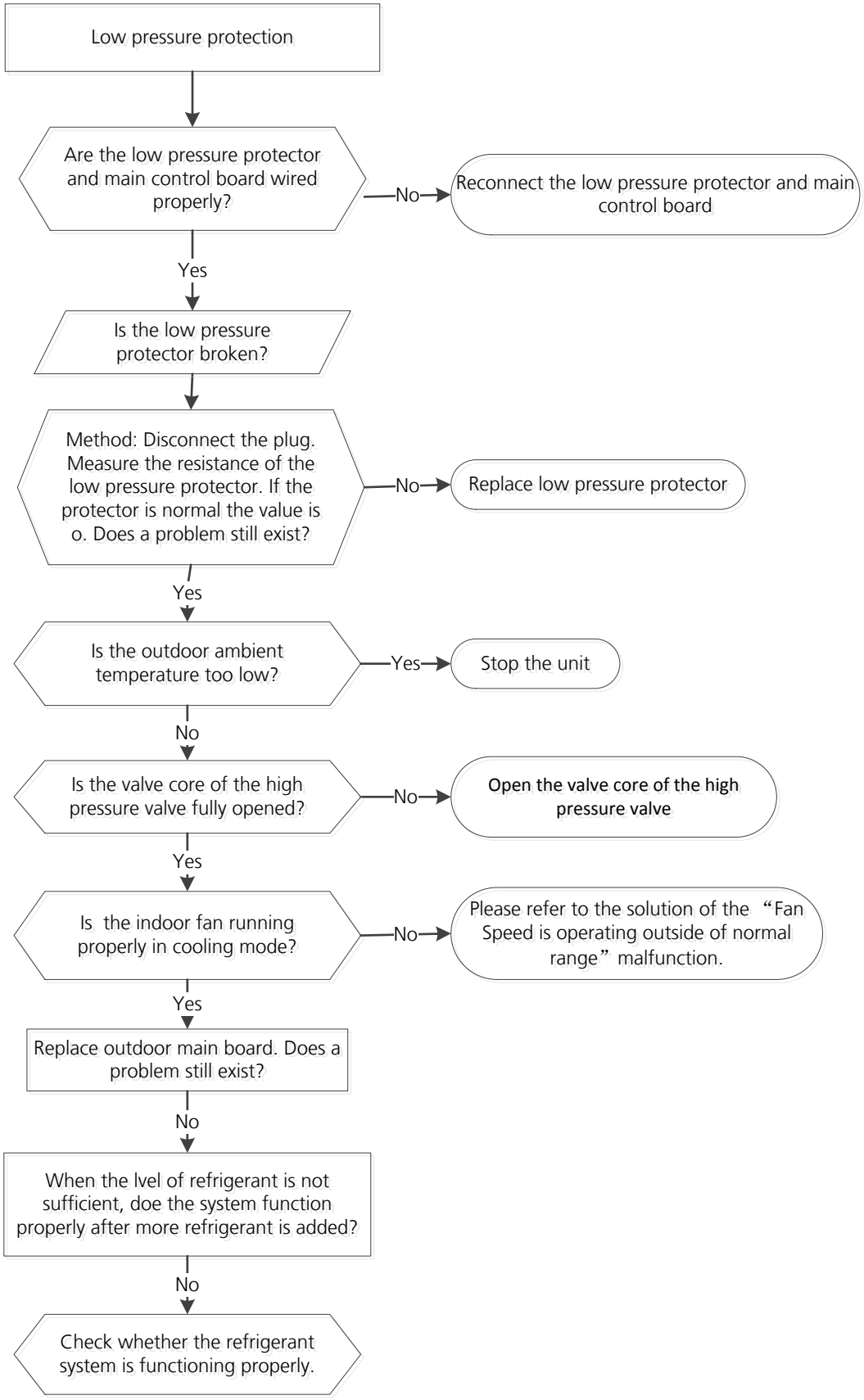
## TS13-INV: Low pressure protection diagnosis and solution

**Description:** Outdoor pressure switch cut off the system because low pressure is lower than 0.13 MPa, the LED displays the failure code.

**Recommended parts to prepare:**

- Connection wires
- Outdoor PCB
- Low pressure protector
- Refrigerant

**Troubleshooting and repair:**




**Note: For certain models, outdoor PCB could not be removed separately. In this case, the outdoor electric control box should be replaced as a whole.**

### TS14: Indoor units mode conflict (match with multi outdoor unit)

**Description:** The indoor units cannot work cooling mode and heating at same time. Heating mode has a priority.

- Suppose 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.
- Suppose 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 be 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 |

**Note:**

**No**: No mode conflict

**Yes**: Mode conflict

## TS33: Communication error between outdoor main chip and compressor driven chip diagnosis and solution

**Description**: The main chip cannot detect the compressor driven chip

**Recommended parts to prepare:**

- Outdoor main PCB
- Electric control box

**Troubleshooting and repair:**