

Error code troubleshooting guide

故障代码排查

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故障代码排查方法



One

Error Code List

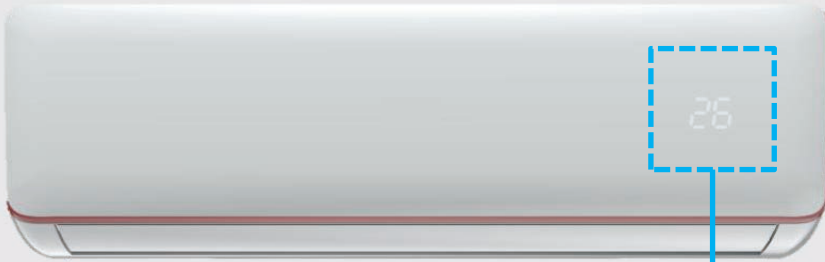
故障代码清单

1. Error code of IDU



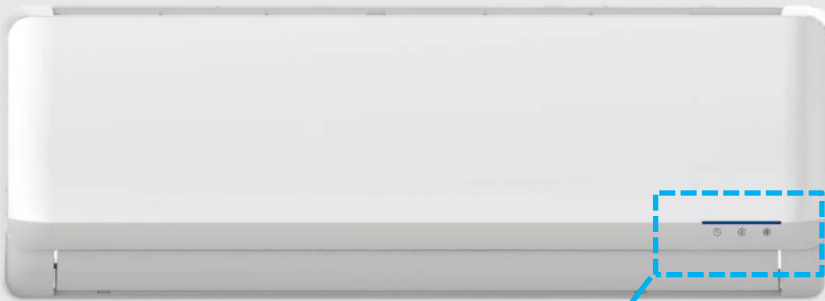
Wall-mounted AC

Pattern 1



ES

Pattern 2

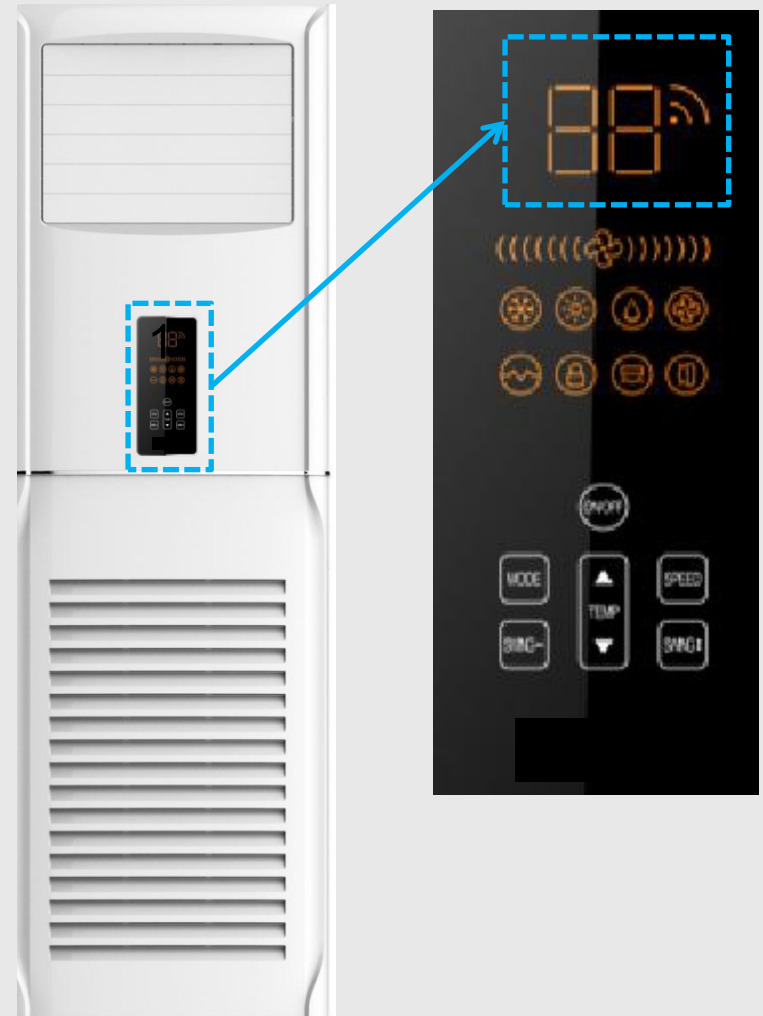


Timing

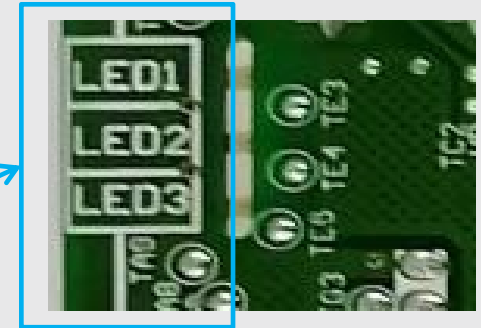
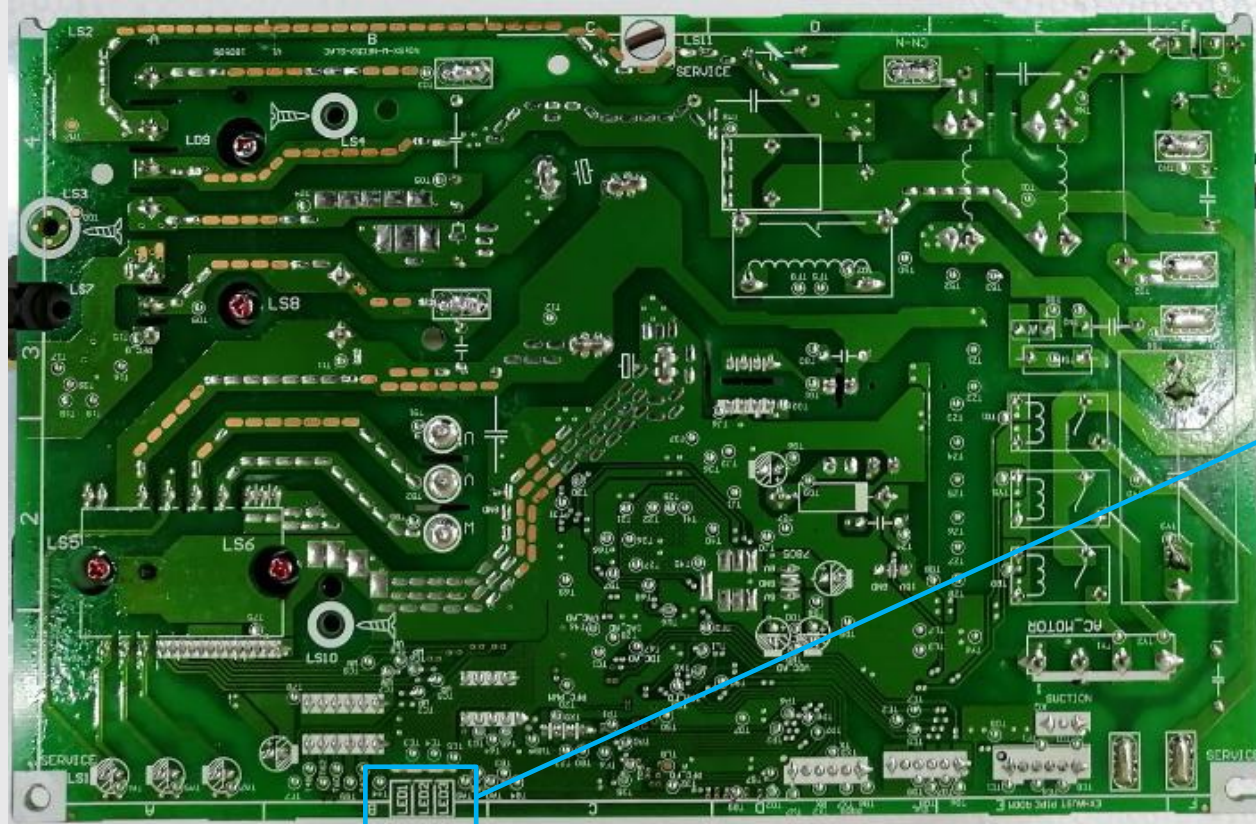
Heating

Cooling

Floor standing AC



2. Error LED indicator of ODU



3. IDU Error Code List-1

内机故障代码清单-1



Error Code	Explanation	IDU LED Display	Wall-Mounted		Floor Standing	
			ON/OFF	Inverter	ON/OFF	Inverter
E0	IDU overcurrent protection 室内电流互感器过流保护	Cooling : Flash 8 times	√	√	√	√
E1	IDU room sensor error 室温传感器故障	Heating : Flash once	√	√	√	√
E2	ODU condenser sensor error 室外盘管传感器故障	Timing : Flash twice	√	√	√	√
E3	IDU evaporator sensor error 室内盘管传感器故障	Heating : Flash 3 times	√	√	√	√
E4	AC or DC motor error 挂机内电机故障 (AC/DC电机)	Heating : Flash 4 times	√	√		
E5	ODU and IDU communication error 内外机通讯故障	Heating : Flash 5 times		√	√	√
E8	Communication fault between display board and PCB board 变频柜机显示面板和主控板通讯故障	/				√
Eb	IDU PCB EE error 室内EE故障		√	√	√	√
F0	ODU fan motor error 室外风机故障	Heating : Flash 11 times		√		√

3. IDU Error Code List-2

内机故障代码清单-2



Error Code	Explanation	IDU LED Display	Wall-Mounted		Floor Standing	
			ON/OFF	Inverter	ON/OFF	Inverter
F1	ODU Module protection error 模块保护故障	Timing : Flash once		√	√	√
F2	ODU PFC Protection Error PFC保护故障	Cooling : Flash twice		√	√	√
F3	Compressor start failure or out-of-step Error 压缩机启动失败或运行失	Timing : Flash 3 times		√		√
F4	ODU discharge sensor error 室外排气传感器故障	Timing : Flash 4 times		√		√
F6	ODU room sensor error 室外环温传感器故障	Timing : Flash 6 times		√		√
F8	ODU communication error between main PCB board and module board 室外主控板和模块板通讯故障	/		√		√
F9	ODU PCB EE error 室外EE故障	Timing : Flash 9 times		√		√
FA	Suction sensor error 回气传感器故障	Timing : Flash10 times		√		√

3. IDU Error Code List-3



Error Code	Explanation	IDU LED Display	Wall-Mounted		Floor Standing	
			ON/OFF	Inverter	ON/OFF	Inverter
Fb	IDU DC motor error(Floor Standing) 室内直流电机（柜机）	Heating : Flash 4 times			√	√
P2	High-pressure switch protection 高压保护	Timing : Flash 5 times	√	√	√	√
P3	Lack of refrigerant Protection 缺液保护	Heating : Flash 6 times	√	√	√	√
P4	Condenser overload Protection (Cooling mode) 外盘防过载保护（制冷）	Cooling : Flash 4 times		√		√
P5	Discharge temperature protection 排气保护	Cooling : Flash 5 times		√		√
P6	Evaporator overload Protection (Heating mode) 室内防高温保护（制热）	Cooling : Flash 6 times		√		√
P7	IDU anti-freezing protection (Cooling mode) 室内防冻结保护（制冷）	Cooling : Flash 7 times		√		√
P8	ODU overcurrent protection 室外过流保护	Cooling : Flash 8 times		√		√

4. Inverter ODU error code list 变频外机故障



LED1	LED2	LED3	Error	IDU error code
★	○	○	ODU fan motor error 室外风机	F0
★	★	●	ODU Module protection error 模块保护	F1
★	★	○	PFC protection error PFC保护	F2
★	●	★	Compressor start failure or out-of-step Error 压缩机启动失败或运行失步	F3
★	○	★	ODU discharge sensor error 室外排气传感器	F4
○	★	★	ODU room sensor error 室外环温传感器	F6
★	●	○	ODU communication error between main PCB board and module board 室外主控板和模块板通讯	F8
○	○	●	Voltage threshold protection error 过欠电压保护	F7
★	○	●	ODU PCB EE error 室外EE	F9

○ is off、● is on、★ is twinkle

4. Inverter ODU error code list 变频外机故障



LED1	LED2	LED3	Error	IDU error code
●	★	●	IDU room sensor error 室内温传感器	E1
●	★	★	ODU condenser sensor error 室外盘管传感器	E2
●	★	○	IDU evaporator sensor error 室内盘管传感器	E3
○	★	●	AC or DC motor error AC电机或直流风机故障（挂内机）	E4
★	●	●	ODU and IDU communication error 内外机通讯	E5
●	●	○	Discharge temperature protection 排气保护	P5
○	●	●	Evaporator overload Protection(Heating mode) 室内防高温保护（制热）	P6
●	○	○	IDU anti-freezing protection in Refrigeration Room(Cooling mode) 室内防冻保护（制冷）	P7
○	○	★	Compressor overcurrent Protection on Phase Current 压缩机相电流过流保护	L1

○ is off、● is on、★ is twinkle



Two
Necessary tools

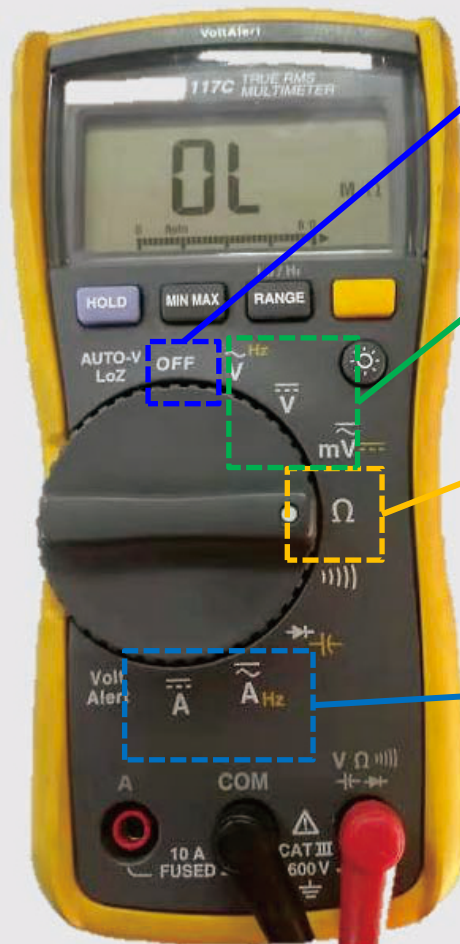
常用检测工具

1. Multimeter 万用表



Function : test **resistance** , **current** , **voltage** , etc.

作用：测量电阻、电流、电压等



1. **Rest to "OFF"** before start testing

档位归零

2. Switch to **V** before testing **voltage**.

Note:

Choose DC or AC according to demand

测电压时，调至电压档

3. Switch to **Ω** to test **resistance**.

测量电阻时，调至欧姆档

4. Switch to **A** to test **current**

Note:

(1) Choose DC or AC according to demand

(2) Choose the appropriate range

测量电流时，调至电流档，应选择合适的量程档位，根据测试的设备是交流、直流需求选择测试档。

2. Current clamp 电流钳



Function: Test running current

作用：用来测量电路中的电流值



Note: Single-core wires go through the current clamp

注意：单芯线穿过电流钳



Three

Error code trouble

shooting guide

故障代码排查方法

Error code troubleshooting guide

3.1 Sensor error

传感器类

3.2 Motor error

电机类

3.3 Driving Protection error

驱动保护类

3.4 Communication error

通讯类

3.5 Protection error

保护类

3.6 EE error

EE类

3.1 Sensor




传感器类



Error Code	Explanation	Sensor resistance at 25°C
E1	IDU room sensor error 内机室温	15KΩ
E2	ODU condenser sensor error 室外盘管	20KΩ
E3	IDU evaporator sensor error 室内盘管	20KΩ
F4	ODU discharge sensor error 室外排气	50KΩ
F6	ODU room sensor error 室外环温	15KΩ
FA	Suction sensor error 回气	20KΩ

Resistance comparison table 阻值对照表

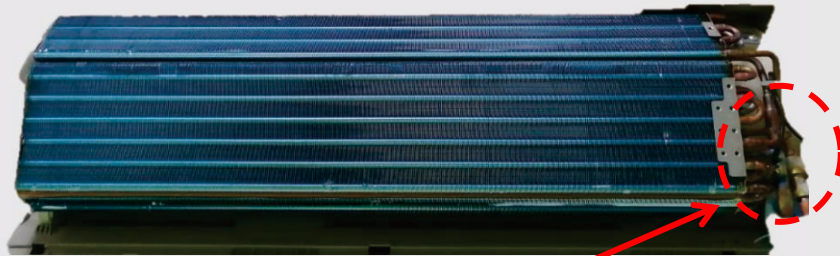


Sensor resistance at 25°C	Resistance comparison table
15KΩ	 Resistance-1
20KΩ	 Resistance-2
50KΩ	 Resistance-3

Where are these sensors in IDU?



Wall-mounted AC

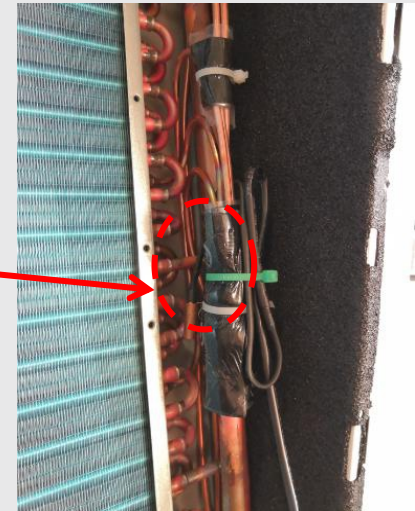
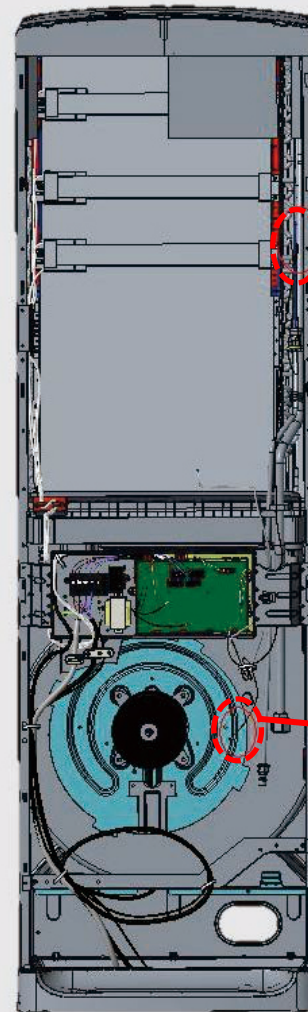


IDU evaporator sensor

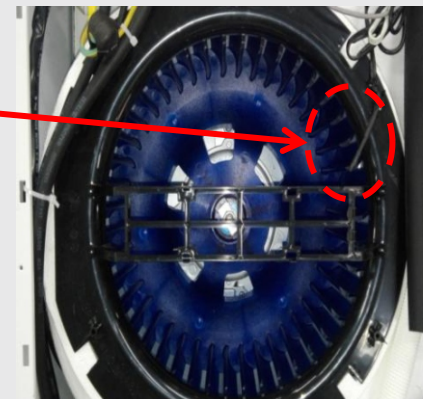


IDU room sensor

Floor standing AC



IDU evaporator sensor



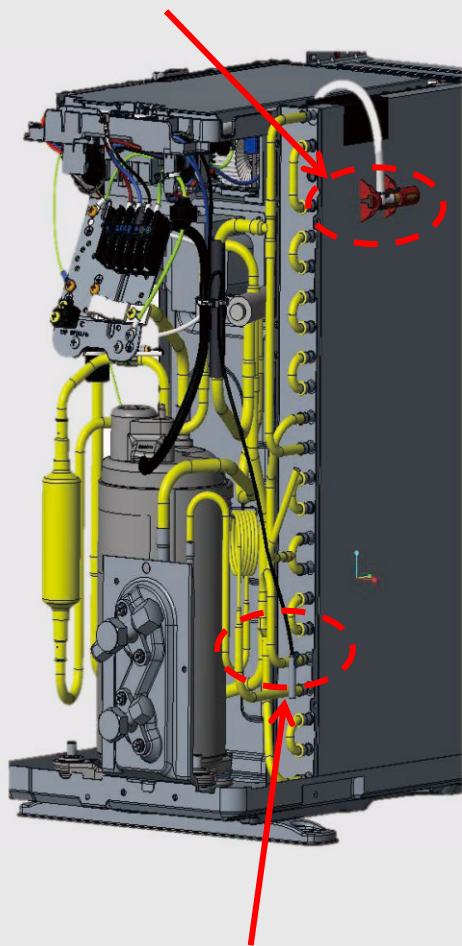
IDU room sensor

Where are these **sensors** in **ODU**?

外机传感器位置

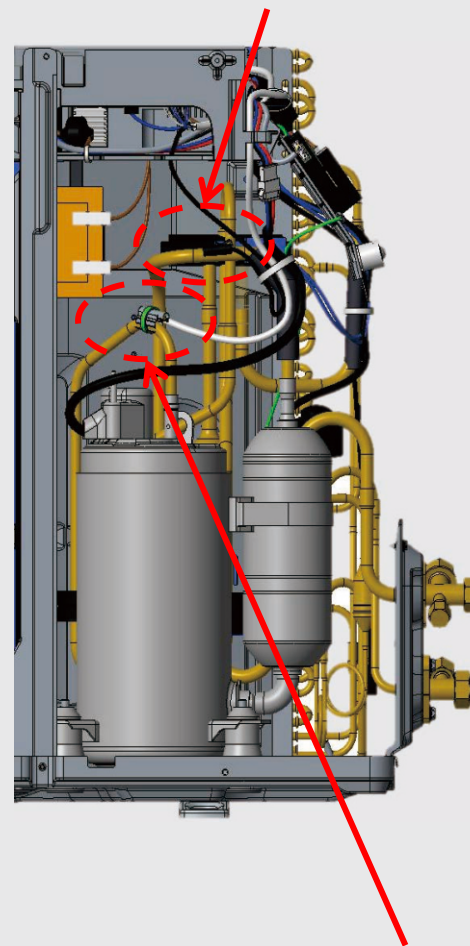


ODU room sensor



ODU condenser sensor

Suction sensor



ODU discharge sensor

Troubleshooting Guide

传感器类 - 排查步骤



Whether the sensor connector is **loose** ?

传感器接插件是否松脱

Yes

Connect the connector again

重新固定连接线

No

Is sensor **broken** ?

Yes

Replace sensor

Replace PCB



Broken



Connector is **loose**

3.2 Motor 电机类



Error Code	Explanation
E4	IDU motor error (Including AC or DC) 挂机内电机 (含AC/DC)
Fb	IDU DC motor error 室内直流电机故障 (柜机)
F0	ODU motor error 室外风机故障

Troubleshooting Guide

电机类-排查步骤



Is the fan **stuck** by something ?

风叶是否被障碍物卡住

Yes

Take out the barrier

取出异物

No

Is there **large turn resistance** when toggling the fan blades in No power ?

无电状态，拨动风叶转动阻力大

Yes

The motor bearing is too tight, **replace** the motor

电机轴承配合过紧，更换电机

No

Is motor **connector** is **loose** ?

电机连接是否松动

Yes

Reconnect the connector

重新固定连接线

No

Is fan capacitor resistance infinite or zero ?

风机电容阻值是否无穷大或者为零

Yes

Replace the capacitor

更换电容

No

Is the resistance between any two core wires of motor infinite or zero

任意两芯线之间电阻是否无穷大或者为零

Yes

Replace the motor

更换电机

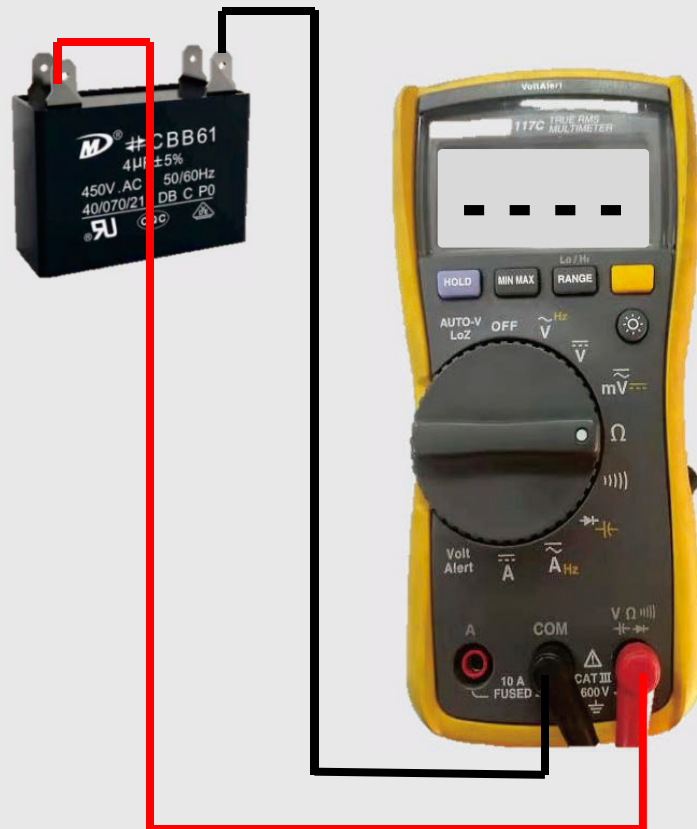
Replace the PCB revolved

更换对应的室内或室外机的PCB

Check if motor capacitor is broken ?

As picture shows : if resistance is **infinite** or **zero** ,the capacitor is broken .Then **replace** the capacitor.

按图示测量，若阻值无穷大或者为零，说明电容损坏，需更换电容



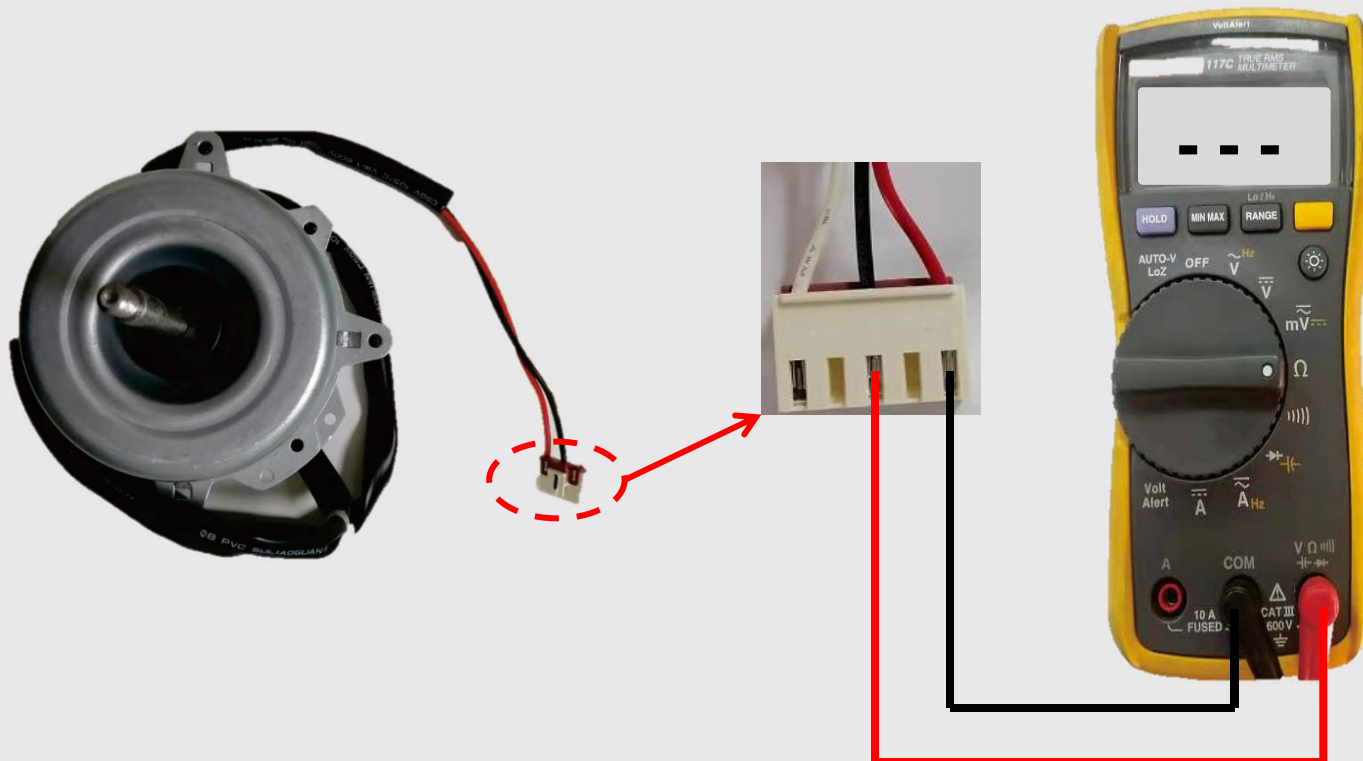
Check whether motor is broken

检测电机是否损坏



Test any **2 cores** : if resistance is **infinite** or **zero** ,the motor is **broken** .Then **replace** the motor.

按图示测量，若阻值无穷大或者为零，说明电机损坏，需更换电机。



[Return](#)

3.3 Driving & Protection 驱动保护类



Error Code	Explanation
F1	ODU module protection error IPM 模块保护故障
F2	ODU PFC protection error PFC 保护故障
F3	Compressor start failure or out-of-step error 压缩机启动失败或运行失步

F1 Troubleshooting Guide

F1排查指引



Power supply is too low < 120V

电压 < 120V

↓ No

Yes

1. Power off and power on again, open the AC again
2. Equip a voltage regulator

1. 重新上电
2. 安装稳压器

Whether the electric reactor connector is loose? Is resistance infinite or zero?

电抗器接线松脱、电阻无穷大或为零

↓ No

Yes

1. Reconnect the connector
2. Replace the electric reactor

1. 重新接插
2. 更换电抗器

ODU is too dirty. Air inlet and outlet is Not smooth.

外机太脏、进出风不顺畅

↓ No

Yes

1. Clear ODU condenser
2. Remove the obstruction of ODU
3. Adjust installation position

1. 清洗外机冷凝器
2. 去除外机遮挡物
3. 调整外机安装位置

Whether the compressor is broken: Is the resistance between any two press terminals infinite or zero?

压缩机：任意2个端子电阻无穷大或为零

Yes

Replace the compressor

更换压缩机

Replace the ODU PCB

更换外机PCB

How to check electric reactor ?

如何核查电抗器？



Electric reactor location

电抗器位置



How to test resistance?

如何测试电抗器阻值？



[Return](#)



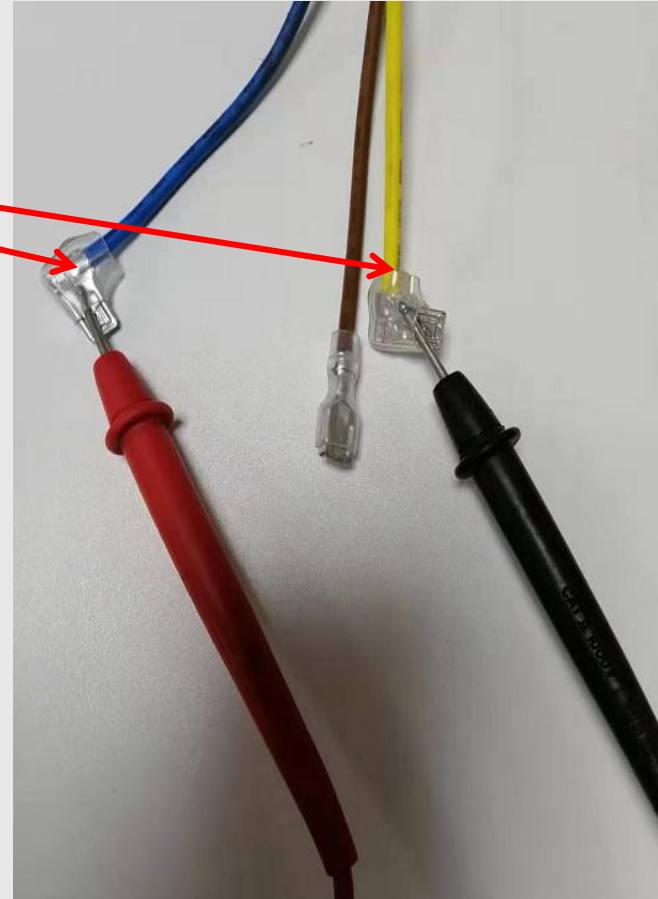
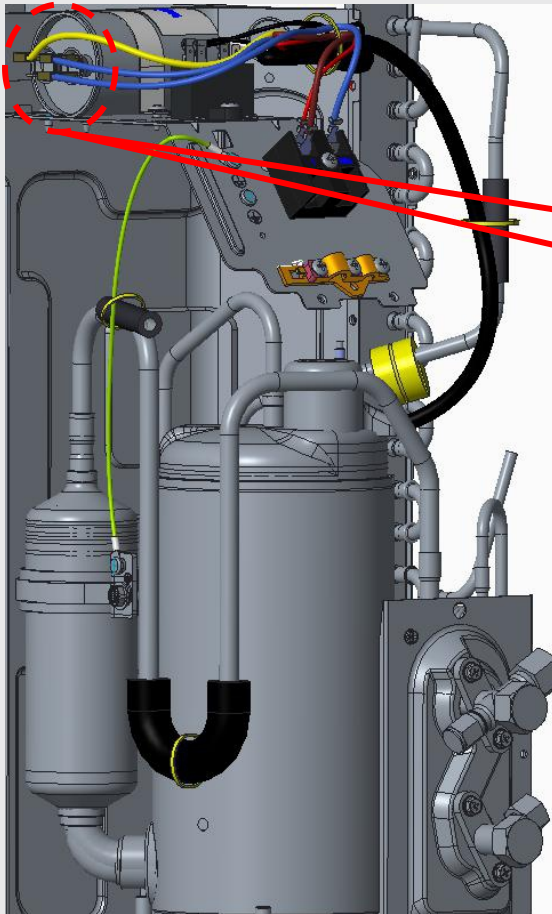
ODU is too dirty
外机脏堵



Improper location
安装不合理



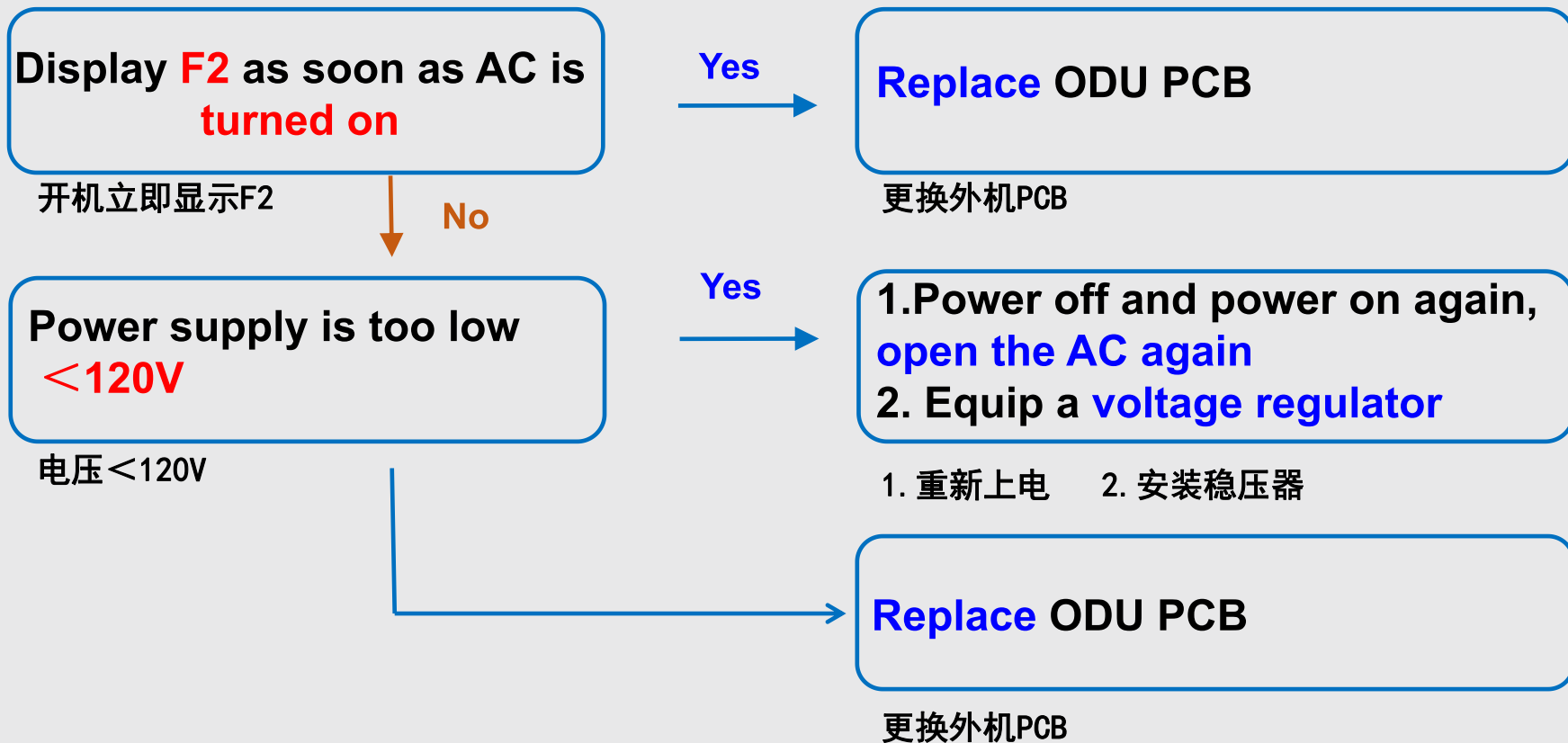
Obstruction
障碍物



**How to test compressor
resistance**
测此处压缩机连接线的电阻

F2 Troubleshooting Guide

F2排查指引



F3 Troubleshooting Guide

F3排查指引



Display "F3" as soon as the ODU is **turned on**

开机立即显示F3

↓ No

Power supply is too low < **120V**

电压 < 120V

↓ No

ODU is too **dirty**. Air inlet and outlet is **not smooth**

外机太脏、进出风不顺畅

↓ No

Whether the **compressor** is **broken**: Is the resistance between any 2 terminals **infinite** or **zero**?

压缩机损坏：任意2个端子电阻无穷大或为零

Yes

Replace ODU PCB

更换外机PCB

Yes

1. Power off and power on again, open the AC **again**
2. Equip a **voltage regulator**

1. 重新上电 2. 安装稳压器

Yes

1. **Clear** ODU condenser
2. **Remove the obstruction** of ODU
3. **Adjust** installation position

1. 清洗外机冷凝器 2. 去除外机遮挡物
3. 调整外机安装位置

Yes

Replace the compressor

更换压缩机

Replace ODU PCB

更换外机PCB

3.4 Communication 通讯类



Error Code	Explanation
E5(5E)	ODU and IDU communication error 内外机通讯故障
E8	Communication error between display board and PCB board 变频柜机灯板和主控板通讯故障

E5(5E) Troubleshooting Guide E5 (5E) 排查指引



Check if the power connection cable is **broken**.

电源连接线是否损坏

Yes



Replace the power connection cable

更换电源连接线

No



Check if power connection cable to the indoor and outdoor terminal boards is wrong.

电源连接线和室内、外机端子板的连接是否错误

Yes



Rewiring according to the wiring diagram

按接线图接线

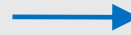
No



Check if the LED on ODU PCB is abnormal.

室外机PCB上的指示灯显示不匹配

Yes

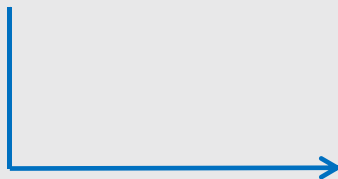


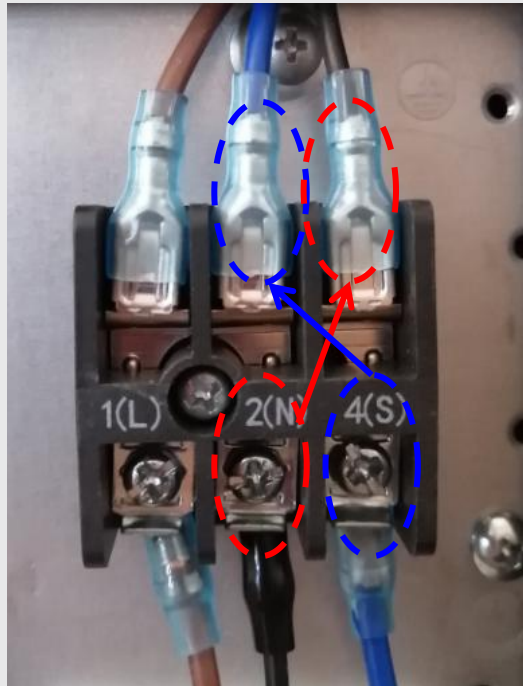
Replace ODU PCB

更换外机PCB

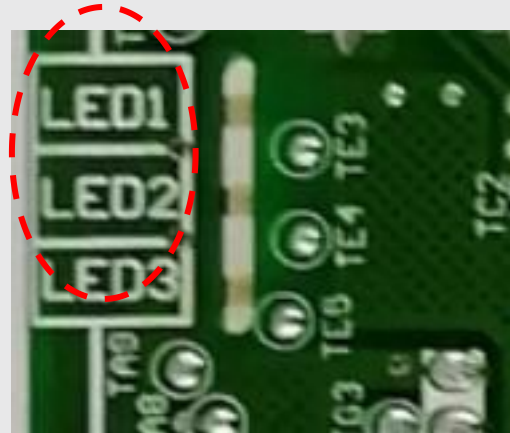
Replace IDU PCB

更换内机PCB





Wrong connection:
S(signal)&N(null line)
N S连接线位置接错



LED is **abnormal**
指示灯异常闪烁

The connection cable between the display board and the PCB board is **loose, broken or incorrectly connected.**

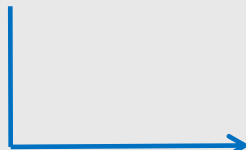
Yes



Reconnect or replace the cable

重新接插、更换连接线

显示板与主控板连接线松脱，损坏、接错



Replace display board or PCB board separately

分别更换显示板和主控板

3.5 Protection 保护类



Error Code	Explanation
E0	IDU overcurrent protection 室内电流互感器过流保护
P2	High-pressure switch protection 高压保护
P3	Lack of refrigerant Protection 缺液保护
P4	Condenser overload Protection(Cooling mode) 外盘防过载保护(制冷)
P5	Discharge temperature protection 排气保护
P6	Evaporator overload Protection(Heating mode) 室内防高温保护(制热)
P7	IDU anti-freezing protection (Cooling mode) 室内防冻结保护(制冷)
P8	ODU overcurrent protection 室外过流保护

E0 Troubleshooting Guide

E0排查指引



Use current clamp to measure whether the current of IDU is Normal?

使用电流钳，测量整机电流是否正常

↓ No

Power supply <120V

电压<120V

↓ No

ODU is too **dirty**. Air inlet and outlet is Not smooth.

外机太脏、进出风不顺畅

Yes



Current transformer is broken, **replace** the IDU PCB

电流互感器损坏，更换内机主控板

Yes



1. Power off and power on again, open the AC **again**
2. Equip a **voltage regulator**

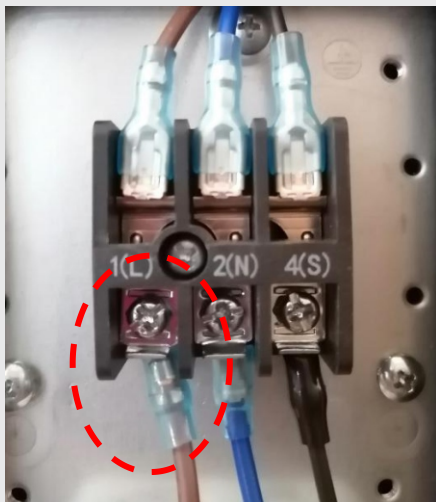
1. 重新上电 2. 安装稳压器

1. **Clear** ODU condenser
2. **Remove the obstruction** of ODU
3. **Adjust** installation position

1. 清洗外机冷凝器 2. 去除外机遮挡物
3. 调整外机安装位置

Use current clamp test working current, if the detected current current within the scope of the nameplate, probably current transformer is damaged, replace machine main control board.

使用电流钳测试工作电流, 如果检测到当前电流在铭牌范围内, 可能电流互感器损坏, 更换主控板。



Testing ODU brown current wire on a terminal board

检测外机端子板上棕色线电流

P2 Troubleshooting Guide

P2排查指引



Whether the high-pressure switch connector is loose?

高压开关接插件是否松动

↓ No

Yes →

Reconnect connection cable

重新安装连接线

Is the high-voltage switch resistance infinite or zero?

测量高压开关电阻是否无穷大
或为零

↓ No

Yes →

Replace the pressure switch

更换压力开关

ODU is too dirty. Air inlet and outlet is Not smooth.

外机太脏、进出风不顺畅

Yes →

- 1. Clear ODU condenser**
- 2. Remove the obstruction of ODU**
- 3. Adjust installation position**

1. 清洗外机冷凝器
2. 去除外机遮挡物
3. 调整外机安装位置

Replace ODU PCB

更换外机PCB

1. Check whether the high-pressure switch connector is **loose**
2. Test the resistance of 2 terminals **infinite or zero?**

1. 检测端子是否安装到位
2. 测量端子的电阻是否出现无穷大或为零



High –pressure switch

高压开关

P3 Troubleshooting Guide

P3排查指引



Whether check valve is not fully open ?

截止阀是否未全部打开

Yes

Open check valve fully

全部打开截止阀

No

Whether the connection pipe or heat exchanger is **broken**?

连接管、换热器有无破裂

Yes

1. **Replace** broken parts
2. **Refill** refrigerant

1. 更换破损部件
2. 重新加液

No

Lack of refrigerant

制冷剂不足

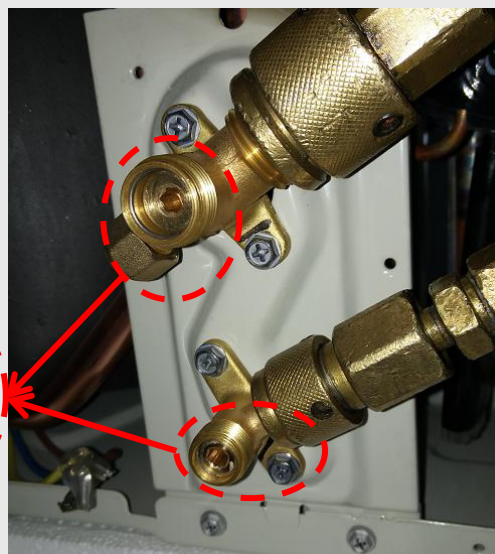
Increase refrigerant

增加制冷剂



Stop valve

截止阀



Stop valve is not fully open

截止阀未全开



Stop valve fully open

截止阀全开

Use inner hexagon spanner, counterclockwise until the screw to be not moved

全开的检测方法：用内六角扳手，逆时针旋转直到螺丝不动为止。



Increase refrigerant

增加制冷剂

P4 Troubleshooting Guide

P4排查指引



Is the condenser sensor **resistance abnormal**?

外盘传感器阻值是否异常

Yes

Replace **20kΩ sensor**

更换20KΩ的标准传感器

No

Is the ODU motor **speed too low**?

室外电机转速是否过低

Yes

1. Replace ODU **motor capacitor**
2. Replace ODU **motor**

1、更换室外电机电容
2、更换室外电机

No

ODU is too **dirty**. Air inlet and outlet is Not smooth.

外机太脏、进出风不顺畅

Yes

1. **Clear** ODU condenser
2. **Remove the obstruction** of ODU
3. **Adjust** installation position

1. 清洗外机冷凝器 2. 去除外机遮挡物
3. 调整外机安装位置

Replace **ODU PCB**

更换外机PCB

P5 Troubleshooting Guide

P5排查指引



Is **discharge temperature sensor** resistance abnormal?

排气传感器阻值异常

Yes

Replace 50kΩ sensor.

更换50KΩ的标准传感器

No

1. Condenser, evaporator or IDU filter is **too dirty**.
2. Air inlet and outlet is **Not smooth**.

1. 室内外换热器脏
2. 通风不畅

Yes

1. **Clean** condenser, evaporator and filter.
2. **Remove** the obstruction of ODU and IDU.
3. **Adjust** installation position.

方法1. 清洁冷凝器、蒸发器、过滤网
方法2. 去除内、外机遮挡物
方法3. 调整安装位置、使通风顺畅

No

Is the **motor speed** too low?

电机转速是否过低

Yes

1. **Replace** ODU motor capacitor.
2. **Replace** ODU motor.

1. 更换外电机电容
2. 更换外电机

No

Lack of **refrigerant** ?

制冷剂不足

Increase refrigerant.

添加制冷剂

Is evaporator sensor
resistance is abnormal?

内盘传感器阻值异常

Yes

Replace 20kΩ sensor

更换20KΩ的标准传感器

No

1. Condenser, evaporator or IDU
filter is **too dirty**.

2. Air inlet and outlet is **Not
smooth**.

1. 室内外换热器脏
2. 通风不畅

1. **Clean** condenser, evaporator
and filter.
2. **Remove** the obstruction of ODU
and IDU.
3. **Adjust** installation position.

方法1. 清洁冷凝器、蒸发器、过滤网

方法2. 去除内、外机遮挡物

方法3. 调整安装位置、使通风顺畅

P8 Troubleshooting Guide

P8排查指引



Power supply is too low <120V

电压 <120V

Yes

1. Power off and power on again, open the AC again
2. Equip a voltage regulator

1. 重新上电
2. 安装稳压器

No

ODU is too dirty. Air inlet and outlet is Not smooth.

外机太脏、进出风不顺畅

Yes

1. Clear ODU condenser
2. Remove the obstruction of ODU
3. Adjust installation position

1. 清洗外机冷凝器
2. 去除外机遮挡物
3. 调整外机安装位置

Replace ODU PCB

更换外机PCB

3.6 EE



Error Code	Explanation
Eb	IDU PCB EE error 室内EE故障
F9	ODU PCB EE error 室外EE故障

Note :

The 2 errors mean that the **EEPROM is broken**, so it's better to **replace PCB** .

备注：

此故障表示控制器的**EEPROM损坏**，不易修复，建议更换控制器。

Thanks!