



# SIRAIR®

Cooling . Heating . Energy



**CHS SERIES, DOMESTIC INVERTER SIGMA WHITE EDITION  
MID-WALL SPLIT AIRCONDITIONER**

# **TECHNICAL PARAMETERS & ERROR CODES.**

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# ERROR CODES.

Error	Error	IDU DISPLAY	Cause of failure	Solution
	F1	Indoor room temperature sensor fault	The room temperature sensor circuit is abnormal	Replace PCB after resolving the sensor fault
	F2	Indoor coil fault and sensor fault	Indoor coil temperature sensor circuit is different	Replace PCB after resolving coil and sensor fault
	F3	Outdoor coil temperature sensor fault	The circuit of the outdoor unit coil temperature sensor is abnormal	Replace PCB after resolving coil temperature sensor fault
	F4	Indoor fan motor fault	The fan motor may have a foreign object inside or the indoor PG motor is abnormal.	1. Turn off power to unit and check voltage is correct 2. Confirm there are no foreign bodies in the fan motor (flip the fan by hand) 3. Replace indoor pg electricity if pg motor is abnormal, replace PCB
	F0	Indoor fan motor zero crossing signal fault	The power grid of the local user is abnormal, and the indoor PCB enters the protection state	Turn the machine on again after closing the machine, if it still occurs, directly replace the PCB
	F5	Communication failure between indoor unit display board and power board	Communication failure between indoor unit display board and power board	Check whether the conductor connector between the main control board and the display board is loose or falls off, and reconnect the main control board in the following order
	F6	Indoor unit EEPROM failure	Indoor unit EEPROM failure	Replace indoor PCB directly
	E0	NO FAULT		
	P2	Heating indoor coil overheat protection	The outdoor unit enters protection if the AC current is greater than the EE overload stop value	Unit can restart after three minutes of shutdown, which belongs to the high current protection, will be lifted after stable, air conditioning is no problem; If the air conditioner does not start, replace the outdoor plate
	P1	Outdoor unit overload protection (overcurrent, system pressure)	When the press exhaust temperature is greater than or equal to EE overload shutdown value ° C and maintains for 3 seconds, the press enters protection	1. The compressor exhaust temperature sensor corresponding to the electrical system is improperly installed or faulty, or the compressor exhaust temperature interface circuit on the outdoor main control board is faulty 2. Due to lack of refrigerant, high pressure leads to the exhaust temperature rising quickly leading to the whole machine protection
	P3	Cooling indoor coil anti-freezing protection	Heating and defrosting tips	INormal phenomenon, air conditioner heating operation into the defrosting prompt, query code, indoor unit display board display "P3" code
Error	ODU LIGHTFLASH	Fault/status name	Cause of failure	Solution
EE	25	EEROM Indoor unit EEPROM fault	IDU main PCB is damaged.	Replace a new IDU main PCB
F0	26	Indoor fan motor fault	1. IDU fan is blocked. 2.IDU fan motor is damaged 3. IDU main PCB is damaged.	1. lean the fan's block 2. replace a new IDU fan motor 3. replace a new IDU main PCB
E1	27	PCB Indoor PCB Zero crossing fault	IDU main PCB is damaged	replace a new IDU main PCB
F3	28	Indoor coil sensor fault	1. IDU coil sensor is loose 、 short circuit or open circuit. 2. IDU main PCB is damaged.	1. loose : connect it well again ; short circuit or open circuit: replace a new IDU coil sensor 2.replace a new IDU main PCB
F1	29	Indoor room temperature sensor fault	1.IDU room tempreature sensor is loose 、 short circuit or open circuit. 2. IDU main PCB is damaged.	1. loose : connect it well again ; short circuit or open circuit: replace a new IDU room tempreature sensor 2. replace a new IDU main PCB
EF	1	EEPROM Outdoor unit EEPROM fault	ODU main PCB is damaged	replace a new ODU main PCB
F6	2	Indoor and outdoor communication fault	1. the IDU and ODU connecting wire were connected in wrong order when installation. 2. poor contact between the connecting wire cable and the terminal block 3. the connecting wire is damaged 4.No ODU rated voltage output or IDU main PCB is damaged 5. ODU main PCB is damaged	1. check the connecting wire to confirm it correct 2. connect it well again. 3. replace a new connecting wire 4. check the power supply voltage or replace a new IDU main PCB 5. replace a new ODU main PCB

# **FAULT CLASSES & TROUBLESHOOTING.**

- 2.1. F1: The room temperature sensor circuit is abnormal.
- 2.2. F2: Indoor coil temperature sensor circuit is different.
- 2.3. F3: The circuit of the outdoor unit coil temperature sensor is abnormal.
- 2.4. PCB: After the above symptoms are rectified, replace the PCB.

## **F4 FAILURE: ATTENTION! IF THIS FAULT OCCURS, TURN OFF THE POWER SUPPLY OF THE MACHINE FOR TROUBLESHOOTING.**

- 3.1. **Check whether the power supply voltage meets the operating requirements of the machine.**
- 3.2. To confirm whether the indoor PG motor assembly is intact or there are foreign bodies in the air duct, you can judge by flipping the fan by hand.
- 3.3 Indoor PG motor is abnormal, or the heat protector of indoor PG motor is wrong to operate, treatment method: replace indoor PG electricity.
- 3.4 After the above symptoms are rectified, replace the PCB.

## **F0 FAILURE: INDOOR FAN MOTOR ZERO CROSSING SIGNAL FAULT.**

Cause analysis: The power grid of the local user is abnormal, and the indoor PCB enters the protection state.

PCB: Treatment method: turn the machine on again after closing the machine, if it still occurs, directly replace the PCB.

F5: Communication failure between indoor unit display board and power board.

Solution: Check whether the conductor connector between the main control board and the display board is loose or falls off, and reconnect the main control board in the following order.

F6: EEPROM: Indoor unit EEPROM failure.

PCB: Solution: Replace indoor PCB directly.

## **“UF” CBB65±5%.**

Choose multi-meter “uF” gear for testing the capacity, waiting for the multi-meter stable, if the capacitor in normal condition , it can display the value of Capacitor CBB65 which indicate on the Capacitor, deviation ±5%.



## **"UF" CBB61±5%**

Select the uF bracket of the multi-meter to test the capacity between the leading terminals of the capacitor. After the multi-meter is stable, if the measured capacitor is normal.

the multi-meter displays the capacity value on the CBB61 label with a deviation of  $\pm 5\%$ .

## **"Ω" 200 Ω**

Select the "ω" range of the multi-meter, and select the range suitable for the range requirements according to the measured target.

If the resistance range of the measured target cannot be determined, adjust the range from the 200 ω range. Check whether the resistance value of the measured main and auxiliary windings is within the range of the technical agreement of the corresponding model.

### **1. IDU SENSOR IS FAULTY.**

F1-Indoor coil sensor fault.

F3-Indoor room temperature sensor fault.

### **2. F0: INDOOR FAN MOTOR FAULT.**

Failure condition, action and release instructions:

(1) Fault condition: The indoor main control cannot detect the feedback pulse signal of the indoor fan.

(2) Fault action: The indoor main control can not detect the feedback pulse signal of the indoor fan.

and the indoor display board displays the fault code "F0", and the indoor fan stops.

(3) Fault removal: remote shutdown will clear the motor fault, start the test again after starting up, if the feedback pulse can be detected, then normal operation.

### **3. ODU SENSOR FAILURE.**

1. F2: Outdoor ambient temperature sensor fault.
2. F4: Outdoor coil temperature sensor fault.
3. F5: Exhaust temperature sensor fault.
4. E1: Indoor PCB Zero crossing fault.

Failure condition, action and release instructions.

(1) Fault condition: The indoor main control can not detect the zero crossing signal of the circuit.

(2) E1: Fault action: The indoor main control can not detect the zero crossing signal of the circuit. After 50 seconds, the indoor display will display the fault code "E1".

(3) Fault action: The indoor main control can not detect the zero crossing signal of the circuit. After 50 seconds, the indoor display will display the fault code "E1".

Failure condition, action and release Instructions.

### **FAULT DIAGNOSIS INSTRUCTIONS.**

If such a fault occurs, replace the indoor control board directly.

### **5. EF: OUTDOOR UNIT EEPROM FAULT.**

(1) EEPROM Fault condition: The indoor main control read EEPROM data checksum error or fixed check code error.

(2) "EE" LED 25. Fault action: The indoor unit does not run, and the indoor unit display board reports the fault code "EE". The outdoor LED indicator blinks 25 times.

(3) Remove the fault: Power off and power on again.

If the reading and verification are correct, remove the fault and run normally.

Fault diagnosis instructions

EEPROM:

Step 1: Required tools :EEPROM update tool and EEPROM update software. IEEPROM  $\perp$  ODU EEPROM Try updating ODU EEPROM using the EEPROM tool, If the update fails, go to Step 2.

If the aftermarket does not have this tool, please go to the second step.

Step 2: If it still does not work, please directly replace the outdoor control panel.

## **6. EE: INDOOR UNIT EEPROM FAULT.**

Failure condition, action and release instructions.

(1) EEPROM, Fault condition: The indoor main control read EEPROM data checksum error or fixed check code error.

(2) "EE" LED 25, Fault action: The indoor unit does not run, and the indoor unit display board reports the fault code "EE".

The outdoor LED indicator blinks 25 times.

(3) Remove the fault: Power off and power on again.

If the reading and verification are correct, remove the fault and run normally.

Fault diagnosis instructions.

EEPROM.

Step 1: Required tools :EEPROM update tool and EEPROM update software.

IEEPROM  $\perp$  IDU EEPROM, Try to update the IDU EEPROM using the EEPROM tool. If the update fails, go to Step 2.

If the aftermarket does not have this tool, please go to the second step.

Step 2: If it still does not work, please directly replace the indoor control panel.

## **7. F6: INDOOR AND OUTDOOR COMMUNICATION FAULT.**

Failure condition, action and release instructions.

(1) Protection condition: If the internal machine cannot receive the external machine for 2 minutes, the fault is reported and the entire machine is stopped.

(2) Protection action: The compressor stops, the indoor unit display panel displays the fault code "F6", and the outdoor red LED blinks twice at 1Hz

(3) Release condition: The communication is normal and the fault code starts one minute after the fault code disappears.

### **TROUBLESHOOTING INSTRUCTIONS.**

Common causes of failure are indoor and external connecting line (communication line) assembly error or communication line plug loose, or reactor line plug loose, there is another possibility is the outdoor control board on the regulator tube damage, or outdoor control board damage, directly replace the outdoor control board after excluding the above content.

**STEP 1:** First of all, confirm whether the wiring of indoor and outdoor machine is correct. If wiring error occurs, please adjust the sequence and verify.

**STEP 2:** Please confirm whether the connecting part with the control board is loose, and whether the reactor wire is loose; If the plug is loose, please reassemble and verify 0-24V ; 0-24V.

**STEP 3:** Use a multi-meter in DC gear to measure that the voltage between the communication line S and the neutral line.

N of the terminal board varies between 0-24V; If the change is not between 0 and 24V, replace the outdoor main control board.

### **7. THE INDOOR AND OUTDOOR UNITS ARE INCORRECTLY CONNECTED.**

5.1. The wiring of the internal and external units does not correspond: the "1" of the internal unit is connected to the brown live wire, and the "1" of the external unit is connected to the blue neutral wire, resulting in a fault of F6 reported. As shown below:

5.2. 24V (220V) (4) (220V) PCB F6, The inner unit "1" is connected to the brown live wire, and the outer unit "1" is connected.

to the black communication wire. The communication voltage is 24V and the brown line is (220V) high voltage.

When the communication number (4) is connected to the high voltage (220V), the external electromechanical control PCB components will be burned after the power is switched on and the operation will eventually lead to the fault of F6. As shown below:

### **8. E4: COMPRESSOR STARTING ABNORMAL (PHASE FAILURE, REVERSE).**

Failure condition, action and release instructions.

(1) Protection condition: compressor line UVW, lack of phase or reverse connection, reported after 6 consecutive occurrences.

(2) LED 1H, "E4" Protection action: compressor stops, outdoor LED blinks 4 times at 1Hz, indoor unit display board displays fault code "E4".

(3) Protection release: remove the exception; Or press the remote control key to clear the fault and restart the machine.

Fault diagnosis instructions.

●Step 1: Check whether the cable connecting the outdoor plate to the compressor is leaky, virtual or reverse connected. If the fault exists, correct it and power on the compressor again.

●Step 2: Check whether the compressor cable is inside the compressor terminal cover and whether the connector is in poor contact with the compressor terminal.

●Step 3: If it still does not work, please directly replace the outdoor control panel.

## **9. COMPRESSOR OUT OF STEP FAULT.**

Failure condition, action and release instructions.

- (1) Protection condition: The compressor is out of step and will be reported after 6 consecutive occurrences.
- (2) Protection action: The compressor stops, the outdoor LED blinks 5 times at 1Hz, and the indoor display board displays the fault code "E3".
- (3) Conditions for release of protection: after the exception is removed; Or press the remote control key to clear the fault and restart the machine.

Fault diagnosis instructions.

- Step 1: Check whether the system is dirty or blocked. If the above conditions exist, check whether the valve is open and the external fan is working. Power on the system after correction.
- Step 2: If it still does not work, please replace the outdoor control panel.
- Step 3: if still can not work, is basically determined to be a compressor or system problems, can consider replacing the machine.

## **10. F9: IPM MODULE FAULT INTELLIGENT POWER MODULE.**

Failure condition, action and release instructions.

- (1) IPM Protection condition: The IPM fault is reported when it occurs for six consecutive times.
- (2) LED 6 "F9" Protection action: compressor stops, outdoor LED blinks 6 times at 1Hz, indoor unit display board displays fault code "F9".
- (3) IPM If the protection is removed, the IPM recovers and the compressor starts normally.

Fault diagnosis instructions.

- Step 1: First check whether the pin of IPM module is connected together due to external force, resulting in short circuit. If the above situation exists, correct it and power on again.
- Step 2: If it still does not work, please directly replace the outdoor control panel.

## **11. E2: OUTDOOR DC FAN MOTOR FAULT.**

Failure condition, action and release instructions.

(1) Protection condition: The outdoor DC fan does not rotate.

(2) "E2" Protection action: The compressor stops, the outdoor LED blinks 12 times at 1Hz, and the indoor unit display board reports the fault code "E2".

(3) Release condition: Release protection after the fan starts successfully.

Fault diagnosis instructions.

Step 1: First of all, check whether the fan socket is properly plugged and whether the connection cable is intact. If there is any abnormal situation, correct it and power on the fan again 4 GND.

Step 2: If it still does not work, unplug the fan socket and test the resistance of the four terminals against GND using a multi-meter. If the resistance is less than tens of ohm, it indicates that the motor is damaged and needs to be replaced.

Step 3: If the replacement of the new motor still can not work, please directly replace the outdoor control panel.

## **12. E8: 30MIN OUTDOOR SYSTEM EXCEPTION.**

Failure condition, action and release instructions.

(1) 40HZ, Te1-Te2. Protection conditions: first to electricity, the normal operation mode (including refrigeration, dehumidification, heating), remote boot, compressor began to run, record inside dish.

Te1 temperature, compressor running time for more than 5 min and the compressor frequency greater than or equal to 40 hz, Te2 inside dish records, and determine if  $|Te1 - Te2| \leq 1$  °C or less and determine system exceptions.

(2) "E8" Protection action: indoor and outdoor units stop running, indoor unit display board report failure code "E8".

(3) Discharge condition: The fault is detected only once after the first power-on and power-on. After the power-on and power-on, check that the inner disk temperature is normal again.