

9. Troubleshooting

9.1 Troubleshooting

Be cautious during installation and maintenance. Do operation following the regulations to avoid electric shock and casualty or even death due to drop from high attitude.

* Static maintenance is the maintenance during de-energization of the air conditioner.

For static maintenance, make sure that the unit is de-energized and the plug is disconnected.

* Dynamic maintenance is the maintenance during energization of the unit.

Before dynamic maintenance, check the electricity and ensure that there is ground wire on the site. Check if there is electricity on the housing and connection copper pipe of the air conditioner with voltage tester. After ensure insulation place and the safety, the maintenance can be performed.

Take sufficient care to avoid directly touching any of the circuit parts without first turning off the power. At times such as when the circuit board is to be replaced, place the circuit board assembly in a vertical position. Normally, diagnose troubles according to the trouble diagnosis procedure as described below. (Refer to the check points in servicing written on the wiring diagrams attached to the indoor/outdoor units.)

NO.	Troubleshooting procedure
1	Confirmation
2	Judgement by Flashing LED of Indoor/Outdoor Unit
3	How to Check simply the main part

9.2 Confirmation

(1) Confirmation of Power Supply

Confirm that the power breaker operates (ON) normally;

(2) Confirmation of Power Voltage

Confirm that power voltage is AC 220–230–240 ± 10%. If power voltage is not in this range, the unit may not operate normally.

9.3 Judgement by Flashing LED of Indoor/Outdoor Unit

No.	Malfunction Name	Display Method of Indoor Unit				A/C Status	Possible Causes
		Error Code	Indicator lamp (During blinking, ON for 0.5S and OFF for 0.5 S)				
			Operation Lamp	COOL Lamp	HEAT Lamp		
1	Indoor ambient temperature sensor is open/short-circuited	F1		OFF 3S and blinks once		The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads stop operation; During heating operation, the complete unit stops operation.	1. The wiring terminal between indoor ambient temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to trip-over of the parts on controller; 3. Indoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
2	Indoor evaporator temperature sensor is open/short-circuited	F2		OFF 3S and blinks twice		The unit will stop operation as it reaches the temperature point. During cooling and drying operation, except indoor fan operates, other loads stop operation; During heating operation, the complete unit stops operation.	1. The wiring terminal between indoor evaporator temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Indoor evaporator temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.

3	Outdoor ambient temperature sensor is open/short-circuited	F3		OFF 3S and blinks 3 times	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	1. The wiring terminal between outdoor ambient temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Outdoor ambient temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
4	Outdoor condenser temperature sensor is open/short-circuited	F4		OFF 3S and blinks 4 times	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	1. The wiring terminal between outdoor condenser temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Outdoor condenser temperature sensor is damaged (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
5	Outdoor discharge temperature sensor is open/short-circuited	F5		OFF 3S and blinks 5 times	The unit will stop operation as it reaches the temperature point. During cooling and drying operation, compressor stops and indoor fan operates; During heating operation, the complete unit stops operation.	1. The wiring terminal between outdoor discharge temperature sensor and controller is loosened or poorly contacted; 2. There's short circuit due to the trip-over of the parts on controller; 3. Outdoor discharge temperature sensor is damaged. (Please check it by referring to the resistance table for temperature sensor) 4. Main board is broken.
6	High perssure protection	E1	OFF 3S and blinks once		During cooling and drying operation, except indoor fan operates, all loads stop operation. During heating operation, the complete unit stops; if it is floor standing unit	1. The main board and the display panel are not connected well. 2. The OVC terminal on main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of high pressure switch is loosened. 4. Refrigerant is superabundant; 5. Poor heat exchange (including blocked heat exchanger and bad radiating environment); 6. Ambient temperature is too high; (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 7. The supply voltage is abnormal (if it is 3-phase unit, the high pressure protection may be caused by overcurrent protection due to this reason) 8. The air intake and air discharge at indoor / outdoor heat exchanger are not smooth. The air cycle is short circuited. 9. Filter and heat exchange fins of indoor/outdoor units are blocked. 10. The system pipeline is blocked.
7	Freeze protection	E2	OFF 3S and blinks twice.		During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates.	1. Poor air-return in indoor unit; 2. Abnormal fan speed; 3. Dirty evaporator; 4. System is normal, but the indoor tube temperature sensor is abnormal, or the tube temperature sensor is not connected well.
8	Low pressure protection of compressor	E3	OFF 3S and blinks 3 times.		The complete unit stops	1. The main board and display panel are not connected well. 2. The LPP terminal on the main board is not connected well with the high pressure switch on the complete unit. 3. The wiring of the high pressure switch is loosened. High pressure switch is damaged or poorly contacted. 4. Insufficient or leaking out refrigerant. 5. Check whether LPP input is high level.
9	High discharge temperature protection of compressor	E4	OFF 3S and blinks 4 times		During cooling and drying operation, compressor and outdoor fan stop while indoor fan operates. During heating operation, all loads stop.	1. Abnormal system (e.g.: blockage, etc) 2. Abnormal rotation speed of outdoor motor (cooling) 3. Abnormal air intake (cooling) 4. System is normal, but the compressor discharge temperature sensor is abnormal or poorly contacted.
10	Communication malfunction	E6	OFF 3S and blinks 6 times		During cooling operation, compressor stops while indoor fan motor operates. During heating operation, the complete unit stops.	1. The communication line is not connected tightly or poorly contacted. Poor contact of any line may cause communication malfunction. 2. The match between main board and display panel is incorrect. Indoor and outdoor unit boards are matched incorrectly. 3. Incorrect wire connection. 4. Controller is damaged.