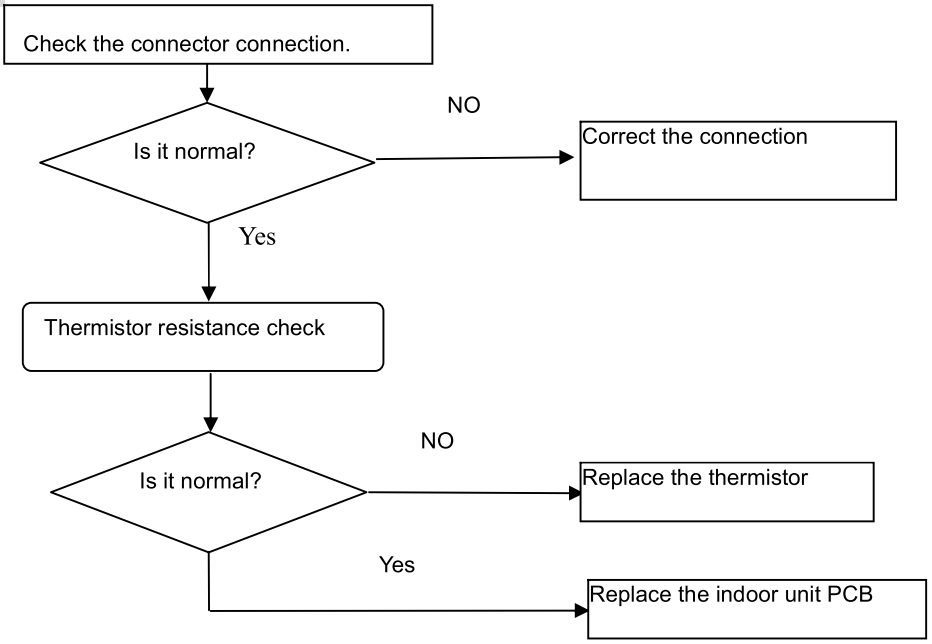
10.3 Error Codes and Description indoor display

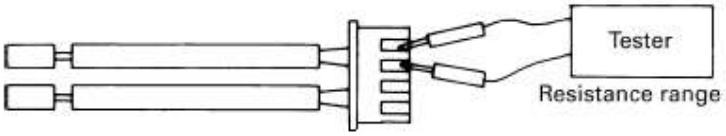
	Code indication			fault description	Reference Page
	Indoor displaying panel code indication		Outdoor (LED1 flash times)		
	Other display	Only For 498 and 498A display (Red/Green Time Run □On ★Flash ■Off ,)			
Indoor and Outdoor	E7	■ ■ ★	15	Communication fault between indoor and outdoor units	Page .39
Indoor Malfunction	E1	★ ■ ■	--	Room temperature sensor failure	Page 29
	E2	★ □ □	--	Heat-exchange sensor failure	Page 29
	E4	★ □ ★	--	Indoor EEPROM error	Page 30.
	E9	★ ★ ★	21	High-work intense protection	Page 42
	E14	■ □ ★	--	Indoor fan motor malfunction	Page 31
Outdoor Malfunction	F12	■ ★ ■	1	Outdoor EEPROM error	Page .30
	F1	□ ★ ★	2	The protection of IPM	Page .34
	F22	★ ★ ■	3	Overcurrent protection of AC electricity for the outdoor model	Page .35
	F3	■ ★ ■	4	Communication fault between the IPM and outdoor PCB	Page.36
	F19	■ ★ □	6	Power voltage is too high or low	Page .37
	F4	■ ★ ■	8	Overheat protection for Discharge temperature	Page .38
	F21	□ □ ★	10	Defrost temperature sensor failure	Page 29
	F7	■ ★ ■	11	Suction temperature sensor failure	Page.29
	F6	□ ★ ■	12	Ambient temperature sensor failure	Page 29
	F25	★ □ ■	13	Discharge temperature sensor failure	Page 29
	F11	■ ★ ■	18	deviate from the normal for the compressor	Page .41
	F28	■ ★ ■	19	Loop of the station detect error	Page .41
	F2	■ ★ □	24	Overcurrent of the compressor	Page .35
	F8	■ ★ □	9	Outdoor DC fan motor fault	Page 32
	F23	■ ★ □	25	Overcurrent protection for single-phase of the compressor	Page .35

10.3.1 Thermistor or Related Abnormality

Indoor Display	★ ■ ■/ E1: Room temperature sensor failure ★ □ □/ E2: Heat-exchange sensor failure
Outdoor display	LED1 flash 10 times：Defrost temperature sensor failure LED1 flash 11 times：Suction temperature sensor failure LED1 flash 12 times：Ambient temperature sensor failure LED1 flash 13 times：Discharge temperature sensor failure
Method of Malfunction Detection	The temperatures detected by the thermistors are used to determine thermistor errors
Malfunction Decision Conditions	When the thermistor input is more than 4.92V or less than 0.08V during compressor operation. ● Note: The values vary slightly in some models
Supposed Causes	■ Faulty connector connection ■ Faulty thermistor ■ Faulty PCB
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or else parts damage may be occurred.



Thermistor resistance check method:
Remove the connector of the thermistor on the PCB, and measure the resistance of thermistor using tester.The relationship between normal temperature and resistance is shown in the value of indoor thermistor.



10.3.2 EEPROM abnormal

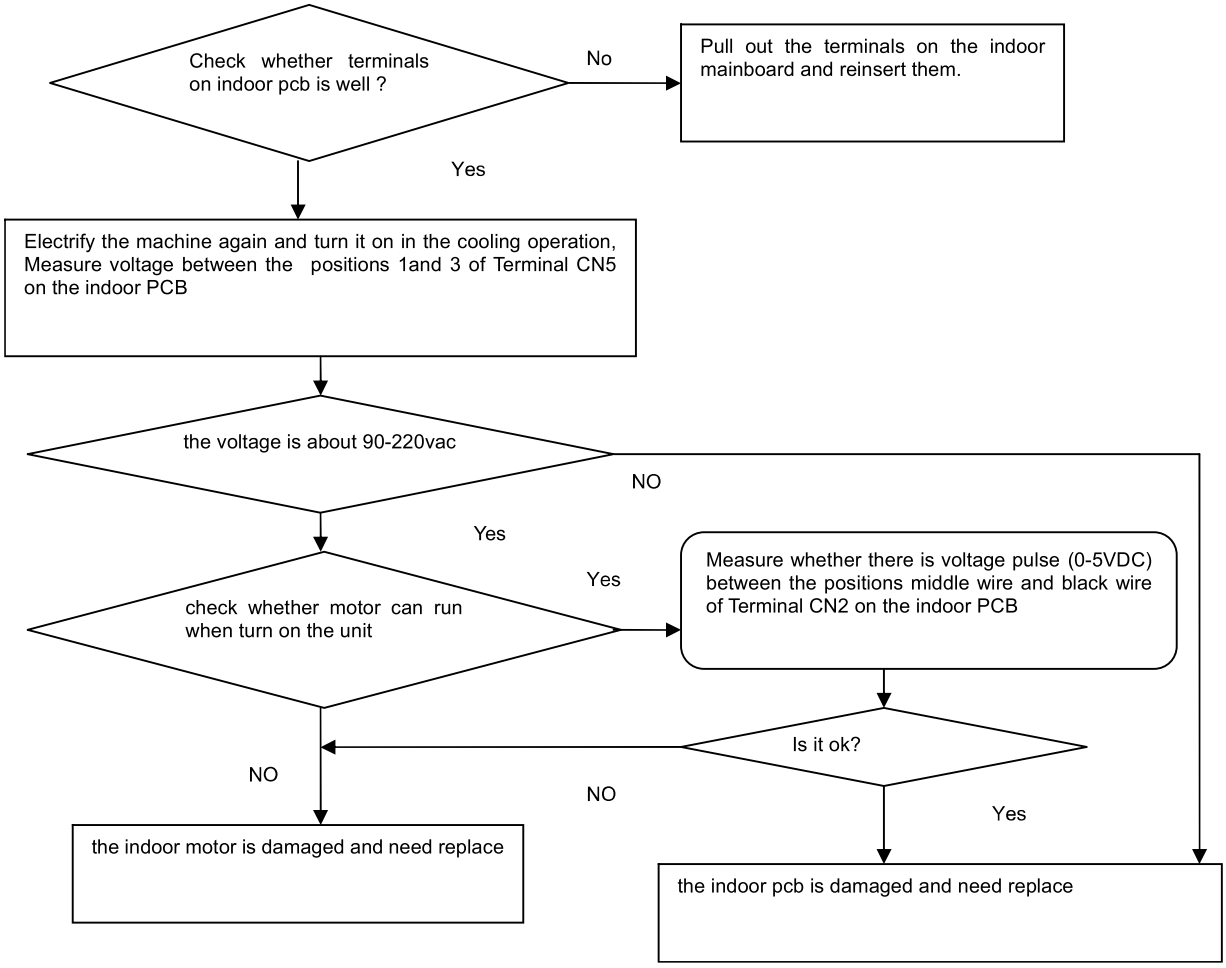
Indoor Display	★ □ ★/ E4: Indoor EEPROM error
Indoor display	■ ★ ■/ F12: Outdoor EEPROM error; Outdoor LED1 flash 1 times
Method of Malfunction Detection	The Data detected by the EEPROM are used to determine MCU
Malfunction Decision Conditions	When the data of EEPROM is error or the EEPROM is damaged
Supposed Causes	■ Faulty EEPROM data ■ Faulty EEPROM ■ Faulty PCB
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.

Replace the indoor or outdoor mainboard.

10.3.3 Indoor AC fan motor malfunction

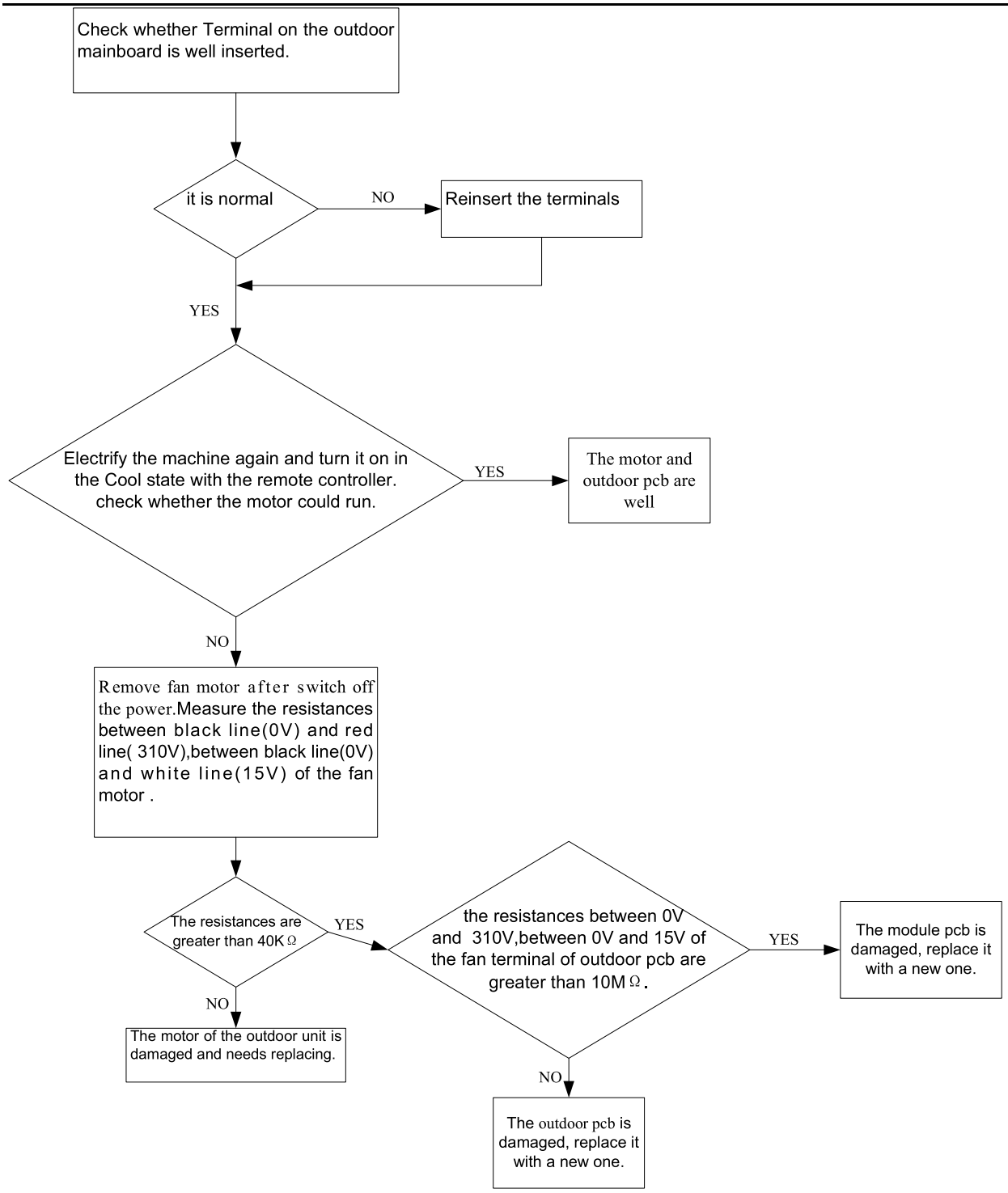
Indoor Display ■ □ ★ / E14

Method of Malfunction Detection	The rotation speed detected by the Hall IC during fan motor operation is used to determine abnormal fan motor operation
Malfunction Decision Conditions	when the detected rotation feedback signal don't received in 2 minutes
Supposed Causes	■ Operation halt due to breaking of wire inside the fan motor. ■ Fan motor overheat protection ■ Operation halt due to breaking of the fan motor lead wires ■ Detection error due to faulty indoor unit PCB
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or else parts damage may be occurred.



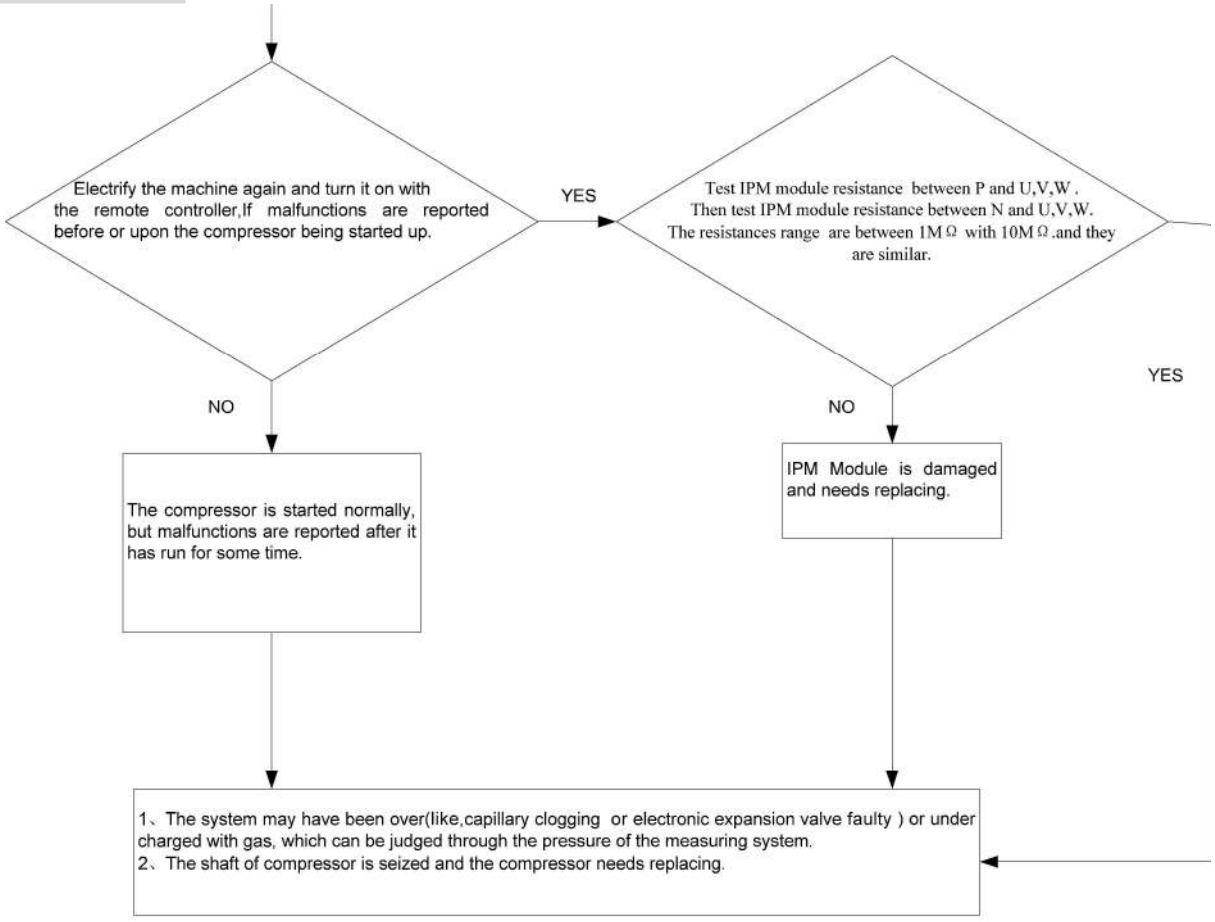
10.3.4 Outdoor DC fan motor fault

Outdoor display	■ ★ □/ F8 LED1 flash 9 times
Method of Malfunction Detection	DC fan motor is detected by checking the fan running condition and so on
Malfunction Decision Conditions	when the data of EEPROM is error or the EEPROM is damaged
Supposed Causes	■ DC fan motor protection dues to the DC fan motor faulty ■ DC fan motor protection dues to faulty PCB
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.


Check whether Terminal on the outdoor mainboard is well inserted.
it is normal
NO
Reinsert the terminals
YES
Electrify the machine again and turn it on in the Cool state with the remote controller. check whether the motor could run.
YES
The motor and outdoor pcb are well
NO
Remove fan motor after switch off the power.Measure the resistances between black line(0V) and red line(310V),between black line(0V) and white line(15V) of the fan motor .
The resistances are greater than 40KΩ
YES
the resistances between 0V and 310V,between 0V and 15V of the fan terminal of outdoor pcb are greater than 10MΩ.
YES
The module pcb is damaged, replace it with a new one.
NO
The motor of the outdoor unit is damaged and needs replacing.
NO
The outdoor pcb is damaged, replace it with a new one.

10.3.5 IPM protection

Outdoor display:	☐ ★ ★/ F1 LED1 flash 2 times
Method of Malfunction Detection	IPM protection is detected by checking the compressor running condition and so on
Malfunction Decision Conditions	■ The system leads to IPM protection due to over current ■ The compressor faulty leads to IPM protection ■ circuit component of IPM is broken and led to IPM protection
Supposed Causes	■ IPM protection dues to the compressor faulty ■ IPM protection dues to faulty PCB of IPM module ■ Compressor wiring disconnected
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or else parts damage may be occurred.

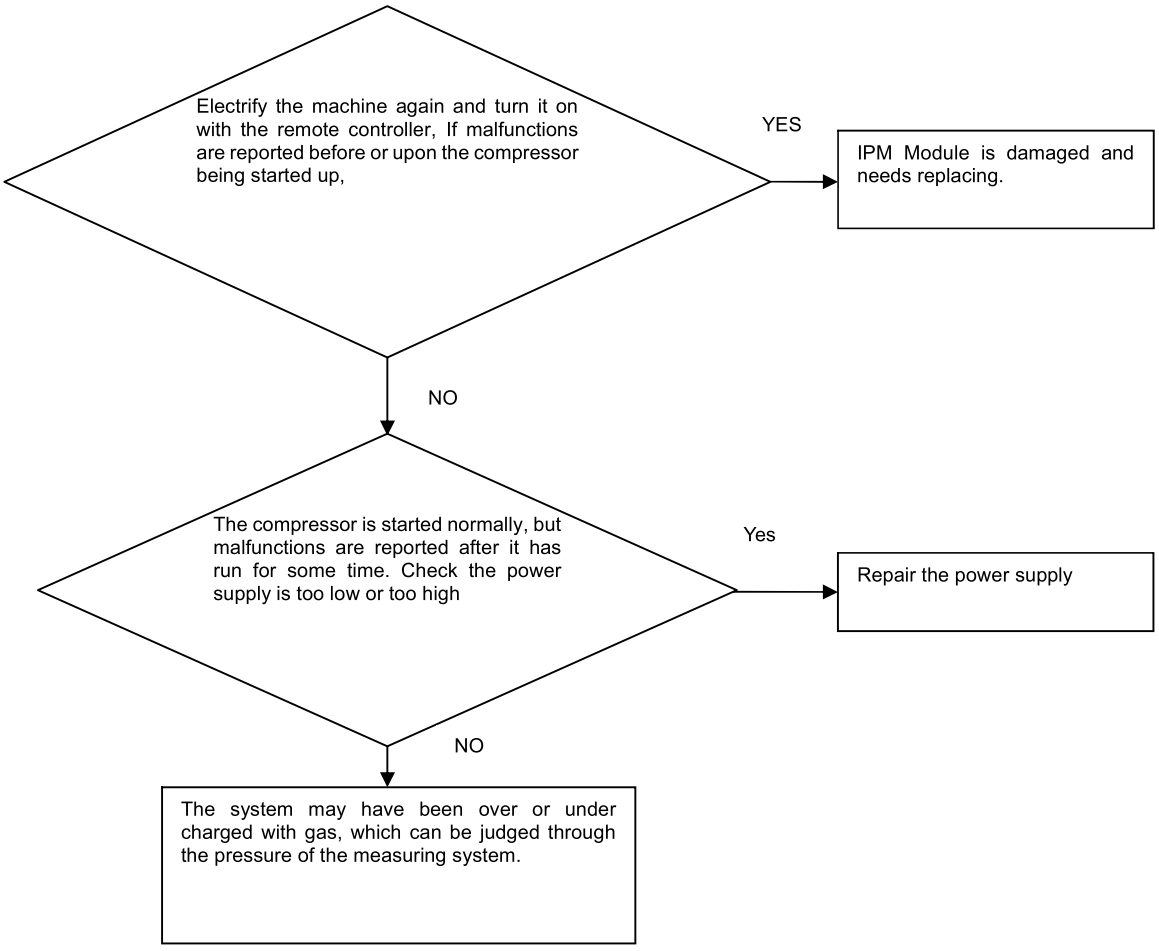


10.3.6 Over-current of the compressor

Outdoor Display:

■ ★ □/ F2 LED1 flash 3 or 24 or 25 times

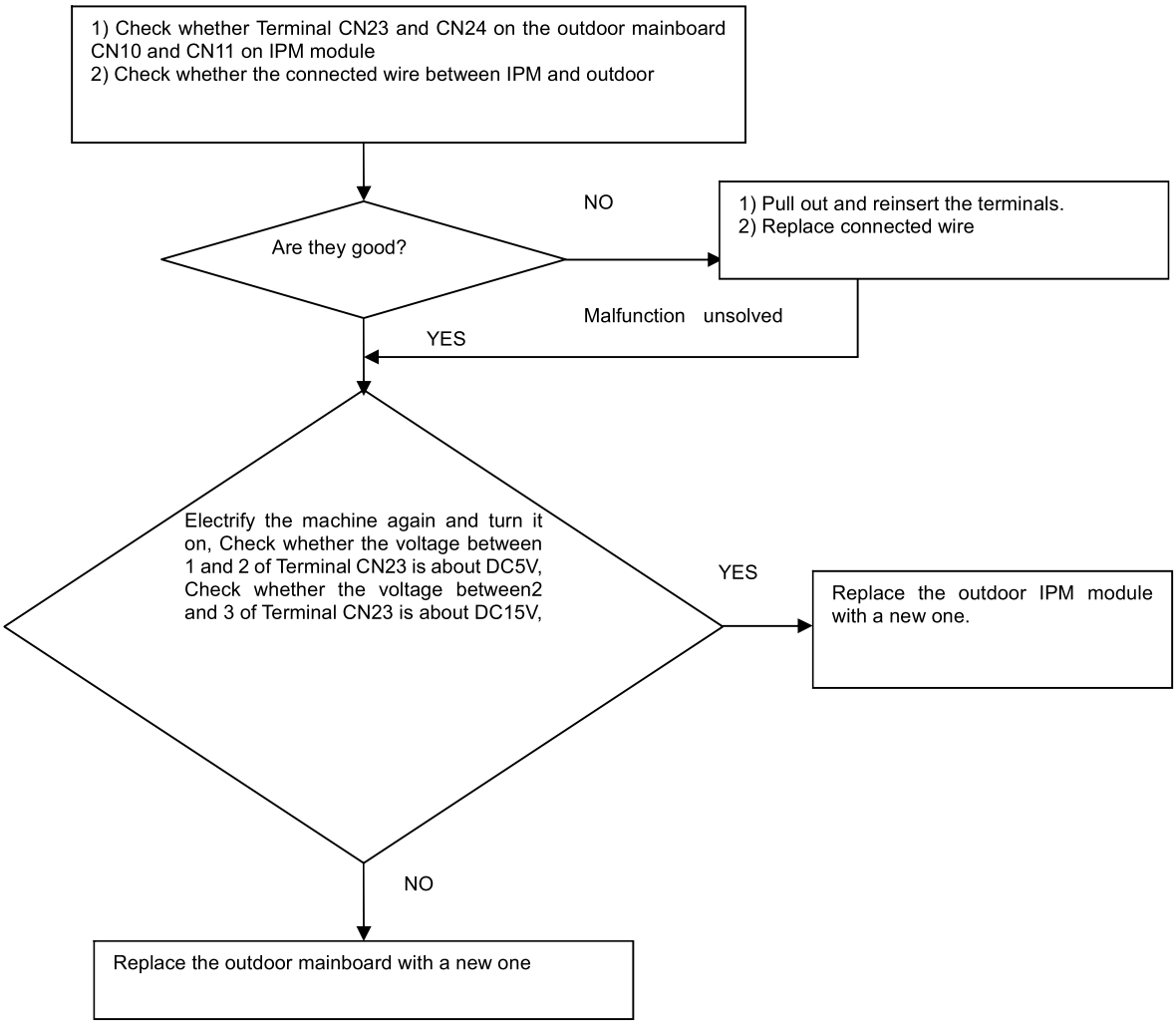
Method of Malfunction Detection	The current of the compressor is too high
Malfunction Decision Conditions	when the IPM Module is damaged or the compressor is damaged. power supply voltage is too low or too high
Supposed Causes	■ Faulty IPM Module ■ Faulty compressor ■ Faulty power supply
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



10.3.7 The communication fault between IPM and outdoor PCB

Outdoor display: ■ ★ ■/ F3 LED1 flash 4 times

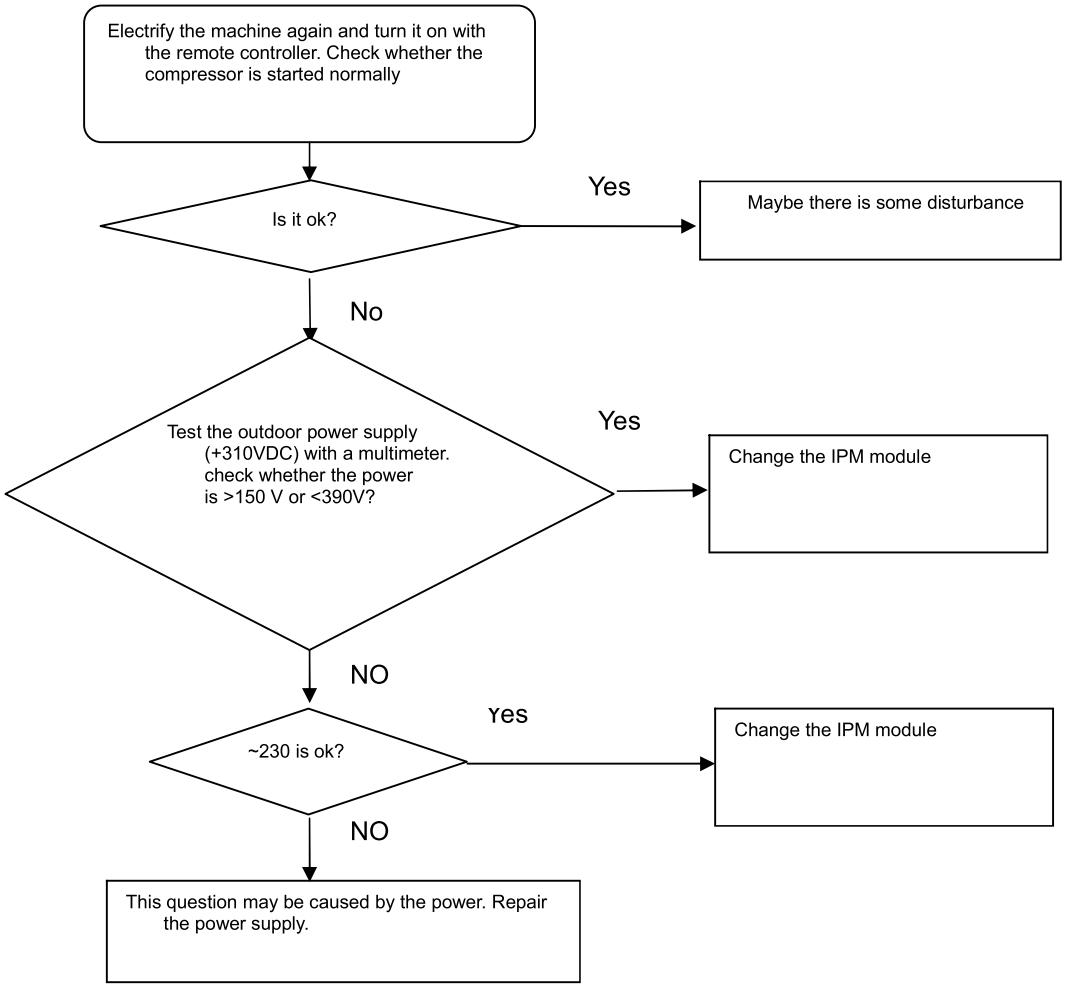
Method of Malfunction Detection	Communication is detected by checking the IPM module and the outdoor PCB
Malfunction Decision Conditions	■ The outdoor PCB broken leads to communication fault ■ The IPM module broken leads to communication fault
Supposed Causes	■ The outdoor PCB is broken ■ The IPM module is broken ■ Communication wiring disconnected
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or else parts damage may be occurred.



10.3.8 Power Supply Over or under voltage fault

Outdoor display: ■ ★ □/ F19 LED1 flash 6 times The power supply is over voltage

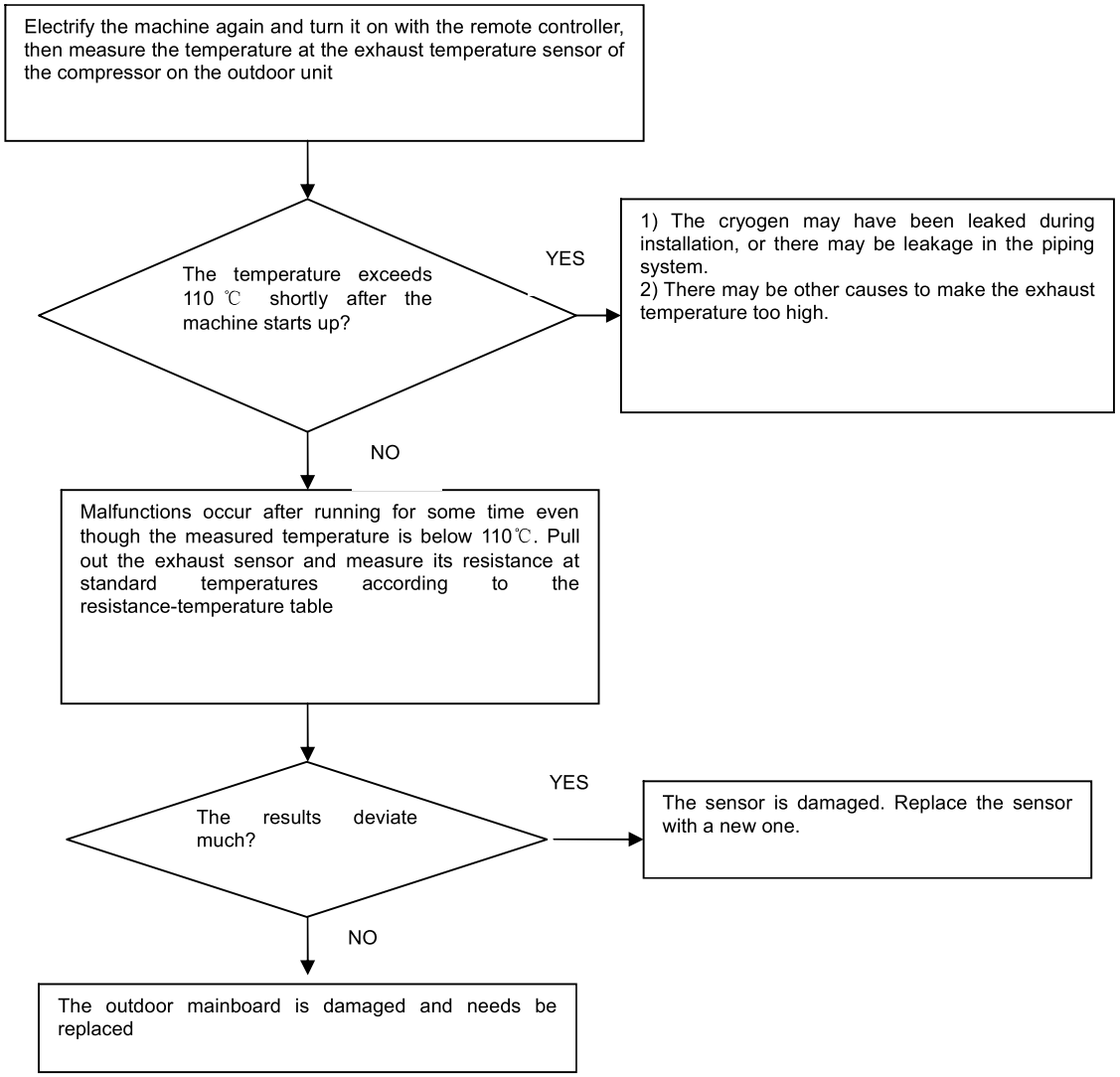
Method of Malfunction Detection	An abnormal voltage rise or fall is detected by checking the specified voltage detection circuit.
Malfunction Decision Conditions	An voltage signal is fed from the voltage detection circuit to the microcomputer
Supposed Causes	■ Supply voltage not as specified ■ the IPM module is broken ■ the outdoor PCB is broken
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or else parts damage may be occurred.



10.3.9 Overheat Protection For Discharge Temperature

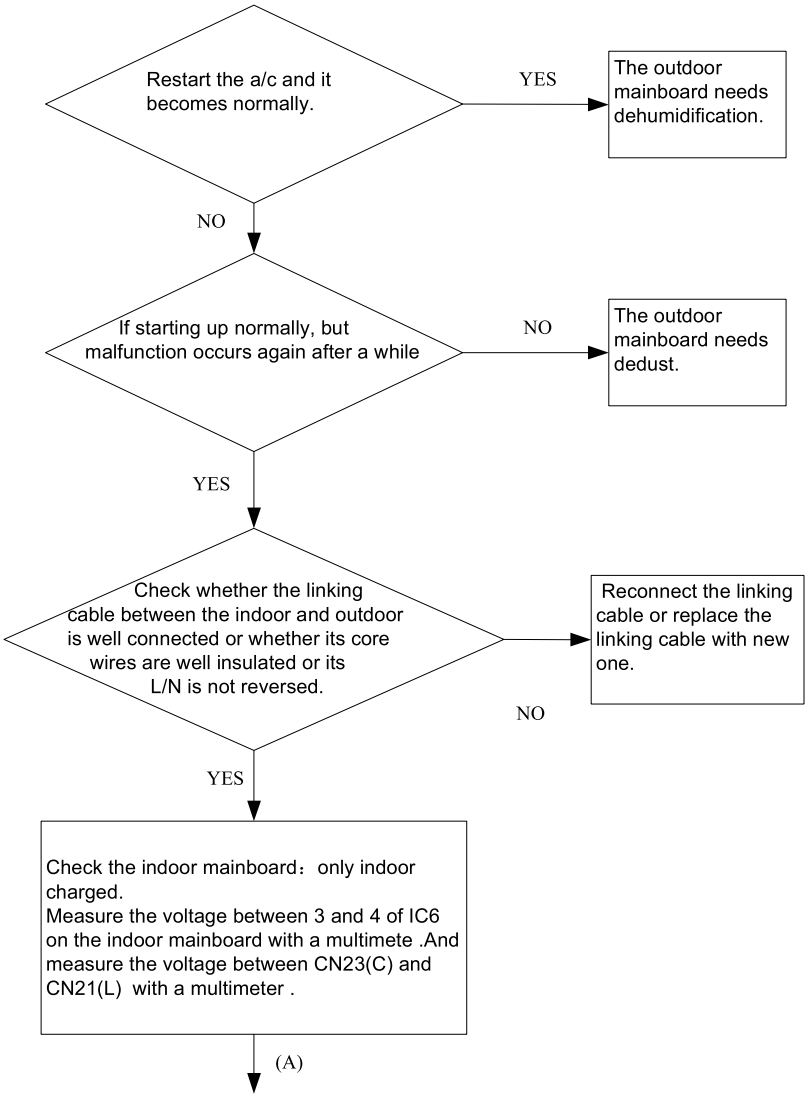
Outdoor display: ■ ★ ■ / F4 LED1 flash 8 times

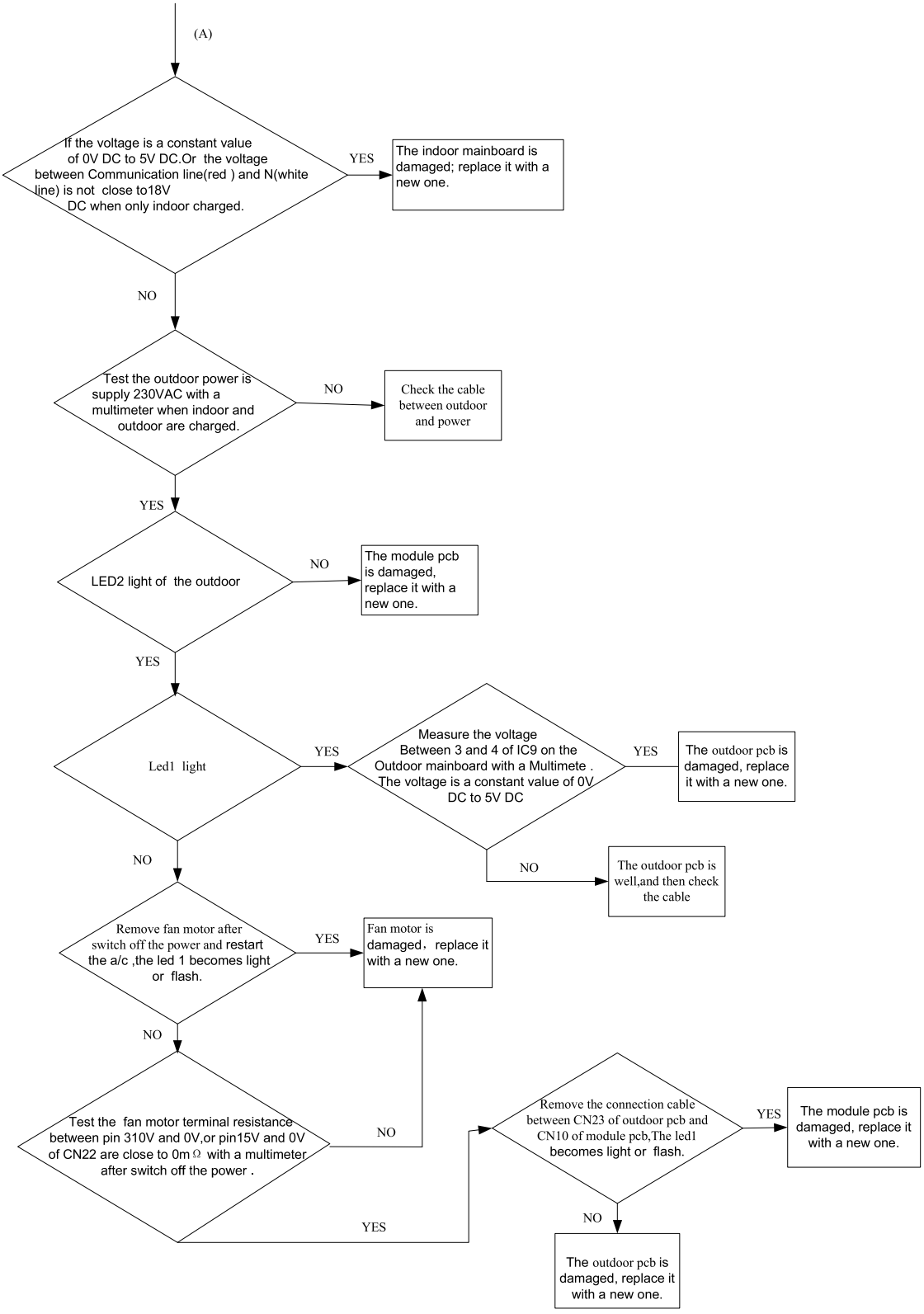
Method of Malfunction Detection	The Discharge temperature control is checked with the temperature being detected by the Discharge pipe thermistor
Malfunction Decision Conditions	when the compressor discharge temperature is above 110℃
Supposed Causes	■ Electronic expansion valve defective ■ Faulty thermistor ■ Faulty PCB
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or else parts damage may be occurred.



10.3.10 The communication fault between indoor and outdoor

Indoor display outdoor display	■ ■ ★/ E7 LED1 flash 15 times
Method of Malfunction Detection	Communication is detected by checking the indoor PCB and the outdoor PCB.
Malfunction Decision Conditions	■ The outdoor PCB broken leads to communication fault. ■ The indoor PCB broken leads to communication fault.
Supposed Causes	■ Communication wiring disconnected. ■ The indoor PCB is broken. ■ The outdoor PCB is broken. ■ The Module PCB is broken.
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or else parts damage may be occurred.

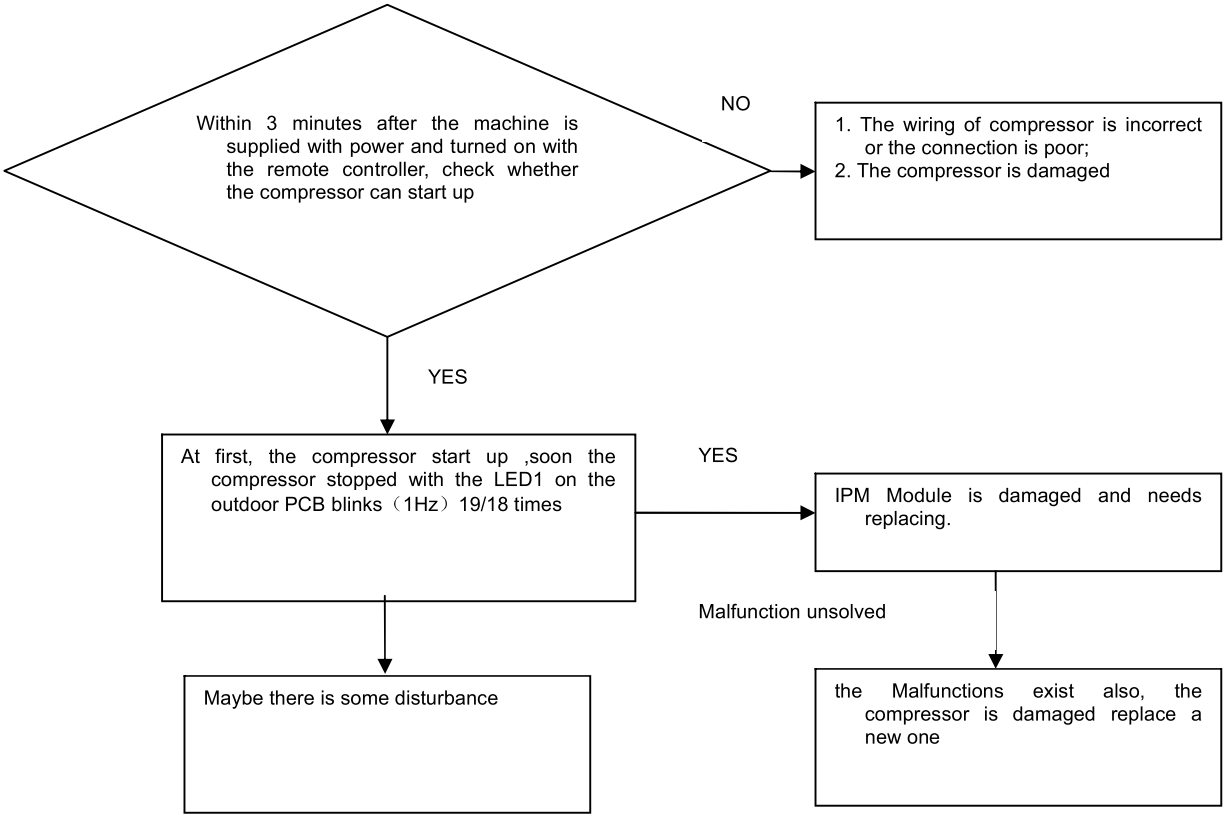



(A)
If the voltage is a constant value of 0V DC to 5V DC.Or the voltage between Communication line(red) and N(white line) is not close to18V DC when only indoor charged.
YES
The indoor mainboard is damaged; replace it with a new one.
NO
Test the outdoor power is supply 230VAC with a multimeter when indoor and outdoor are charged.
NO
Check the cable between outdoor and power
YES
LED2 light of the outdoor
NO
The module pcb is damaged, replace it with a new one.
YES
Led1 light
YES
Measure the voltage Between 3 and 4 of IC9 on the Outdoor mainboard with a Multimete . The voltage is a constant value of 0V DC to 5V DC
YES
The outdoor pcb is damaged, replace it with a new one.
NO
The outdoor pcb is well,and then check the cable
NO
Remove fan motor after switch off the power and restart the a/c ,the led 1 becomes light or flash.
YES
Fan motor is damaged，replace it with a new one.
NO
Test the fan motor terminal resistance between pin 310V and 0V,or pin15V and 0V of CN22 are close to 0mΩ with a multimeter after switch off the power .
NO
YES
Remove the connection cable between CN23 of outdoor pcb and CN10 of module pcb,The led1 becomes light or flash.
YES
The module pcb is damaged, replace it with a new one.
NO
The outdoor pcb is damaged, replace it with a new one.

10.3.11 Loss of synchronism detection

Inverter side current detection is abnormal

Outdoor Display	■ ★ ■\ F11 LED1 flash 18 times ■ ★ ■\F28 LED1 flash 19 times
Method of Malfunction Detection	The position of the compressor rotor can not detected normally
Malfunction Decision Conditions	when the wiring of compressor is wrong or the connection is poor; or the compressor is damaged
Supposed Causes	■ Faulty The wiring of compressor ■ Faulty compressor ■ Faulty PCB
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or parts damage may be occurred.



10.3.12 High work-intense protection

Outdoor display	★ ★ ★\E9 LED1 flash 21 times
Method of Malfunction Detection	High work-intense control is activated in the heating mode if the temperature being sensed by the heat exchanger thermistor exceeds the limit.
Malfunction Decision Conditions	Activated when the temperature being sensed by the heat exchanger rises above 65℃ twices in 30 minutes.
Supposed Causes	■ Faulty electronic expansion valve ■ Dirty heat exchanger ■ Faulty heat-exchange sensor ■ Insufficient gas
Troubleshooting	* Caution Be sure to turn off power switch before connect or disconnect connector, or else parts damage may be occurred.