



DC INVERTER Wall Mounted Split

TMINVL & TMINVC Series



TRUST AIR CONDITIONING EQUIPMENT CO.
Prepared By: Engineering & R & D Department.

Shiraz- AUG 2015

1. Troubleshooting	2
1.1 Indoor Unit Error Display	2
1.2 Diagnosis and Solution	4

توجه:

**شرکت تراست حق تغییر مشخصات دستگاه‌ها را در جهت بهبود و ارتقای
کیفیت برای خود محفوظ می‌دارد.**

1. Troubleshooting

1.1 Indoor Unit Error Display

Display	LED STATUS
E0	EEPROM parameter error
E1	Indoor / outdoor units communication protection
E2	Zero-crossing signal error
E3	Indoor fan speed has been out of control
E5	Open circuit or short circuit of outdoor temperature sensor or outdoor unit EEPROM parameter error
E6	Open circuit or short circuit of room or evaporator temperature sensor
P0	IPM malfunction or IGBT over-strong current protection
P1	Over voltage or too low voltage protection
P2	Temperature protection of compressor top.(only for TMINV-12H410A & TMINVL-18H410A
P4	Inverter compressor drive error

Note: E4 & P3: Reserved function.

Outdoor unit error display:

On the outdoor PCB, there are two LED lights. One is green, the other is red. You can judge what the error is through the status of the two lights.

Error	LED1 (Red)	LED2 (Green)	Indoor unit display
Over voltage or too low voltage protection	O	O	P1
Stand by	X	O	
Normal operation	O	X	
Compressor drive chip malfunction caused by over voltage or too low voltage	☆	O	P1
Inverter compressor drive error	☆	X	P4
Inverter compressor drive error	O	☆	P4
IPM malfunction or IGBT over-strong current protection	X	☆	P0
Inverter compressor drive error	☆	☆	P4

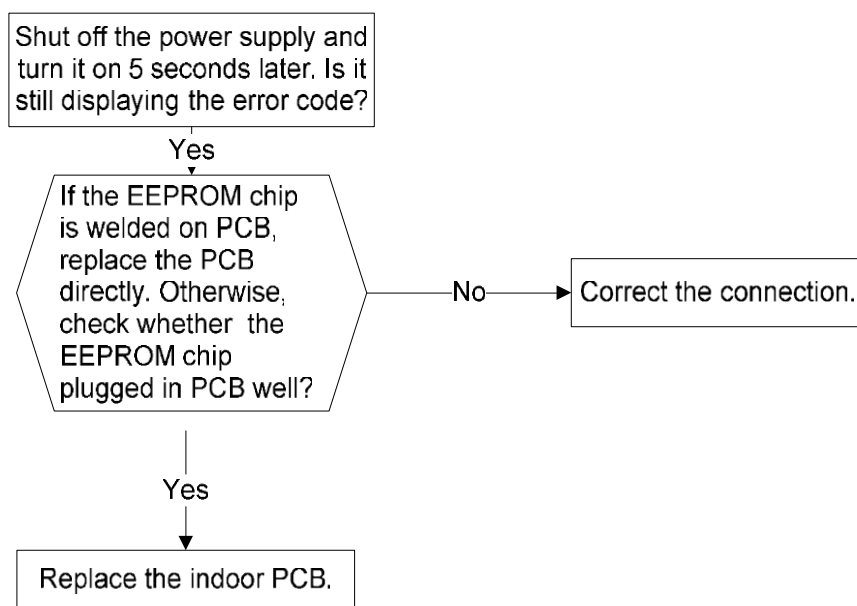
O (light)

X (off)

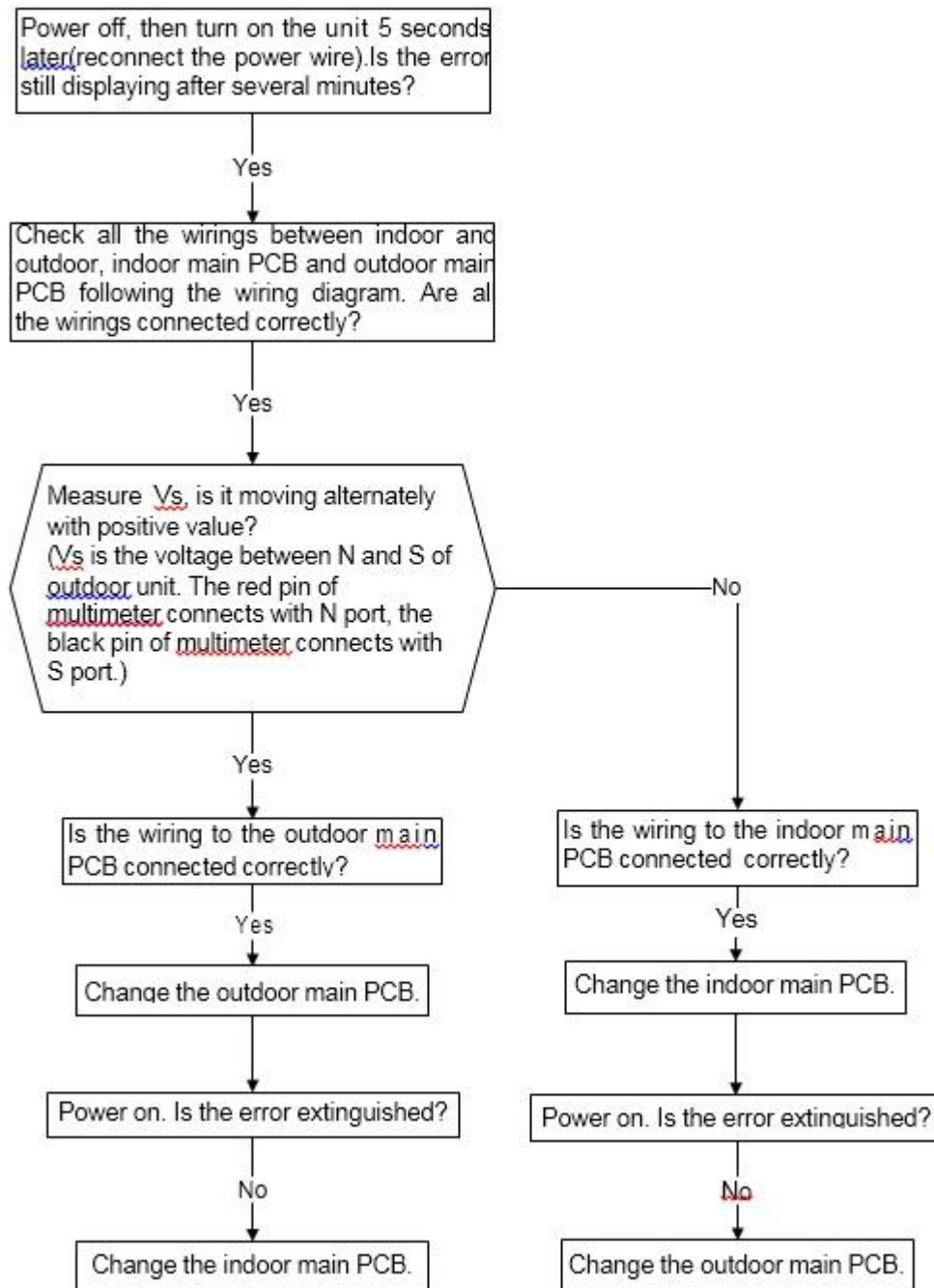
☆ (flash)

1.2 Diagnosis and Solution

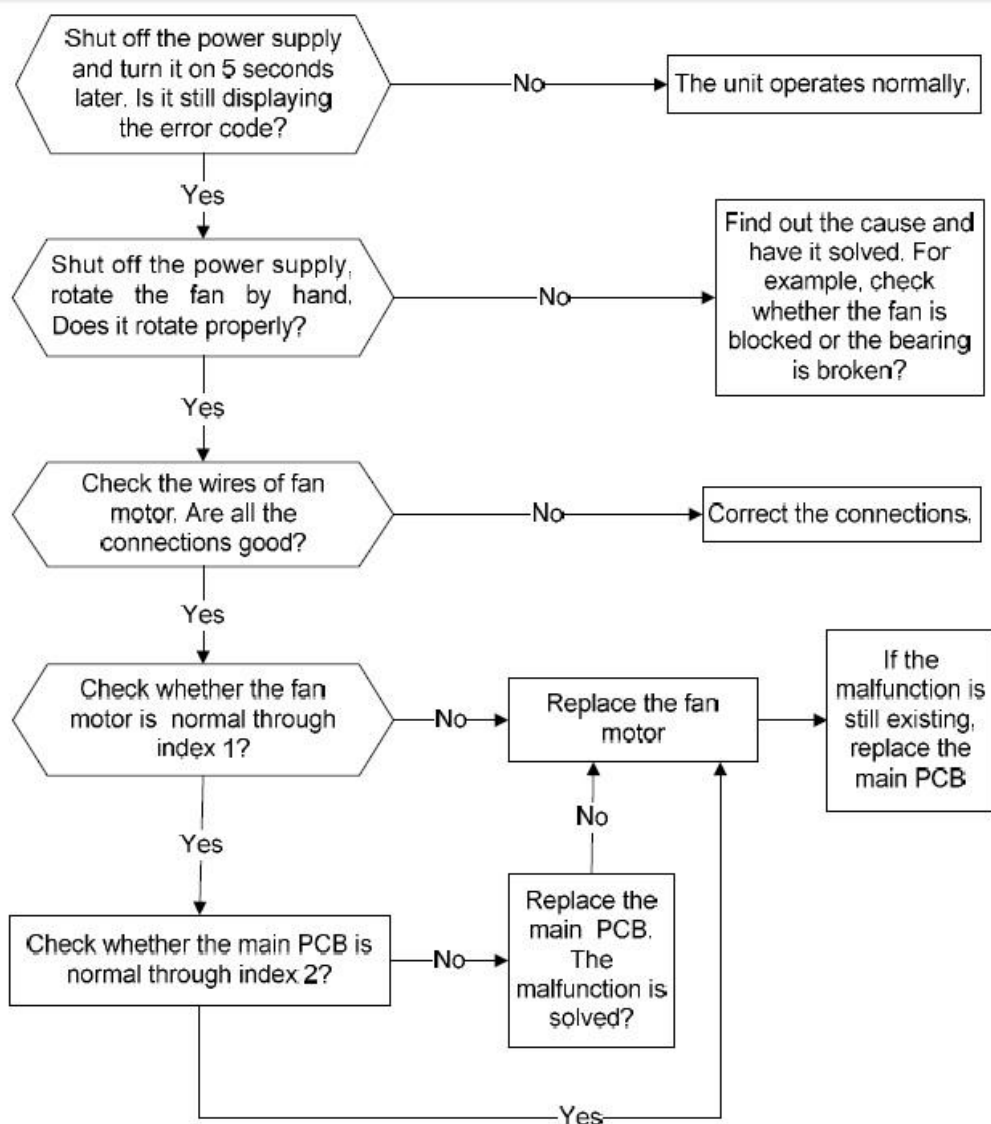
1.2.1 EEPROM parameter error diagnosis and solution



1.2.2 Indoor unit and outdoor unit communication protection error diagnosis and solution



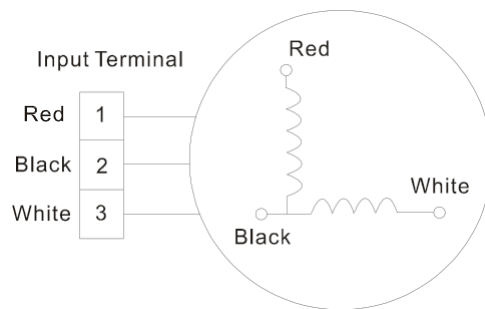
1.2.3 Indoor fan speed has been out of control diagnosis and solution



Index 1:

1. Indoor AC Fan Motor

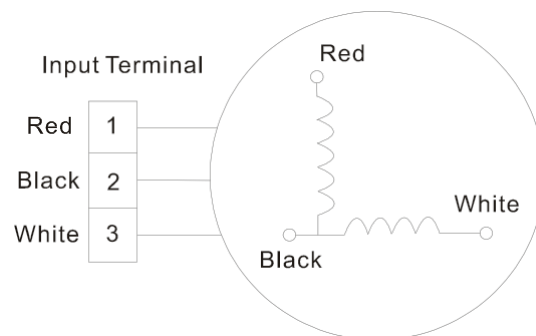
Measure the resistance value of each winding by using the tester.



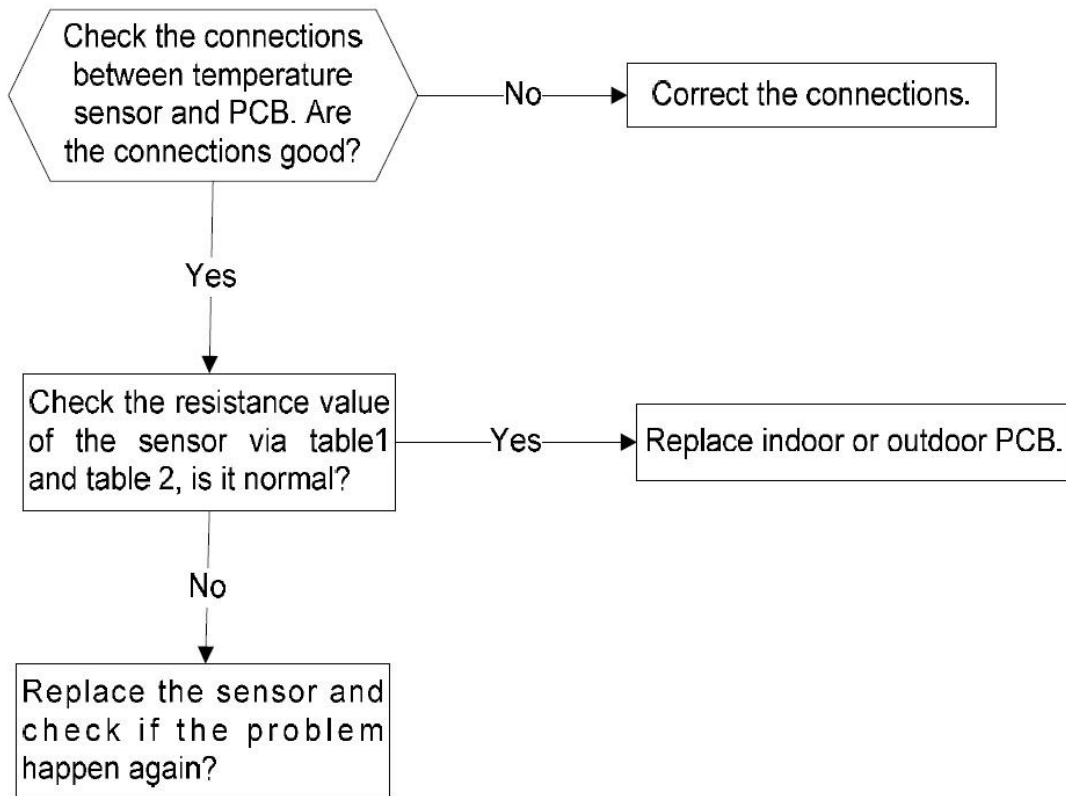
Index 2:

1: Indoor AC Fan Motor

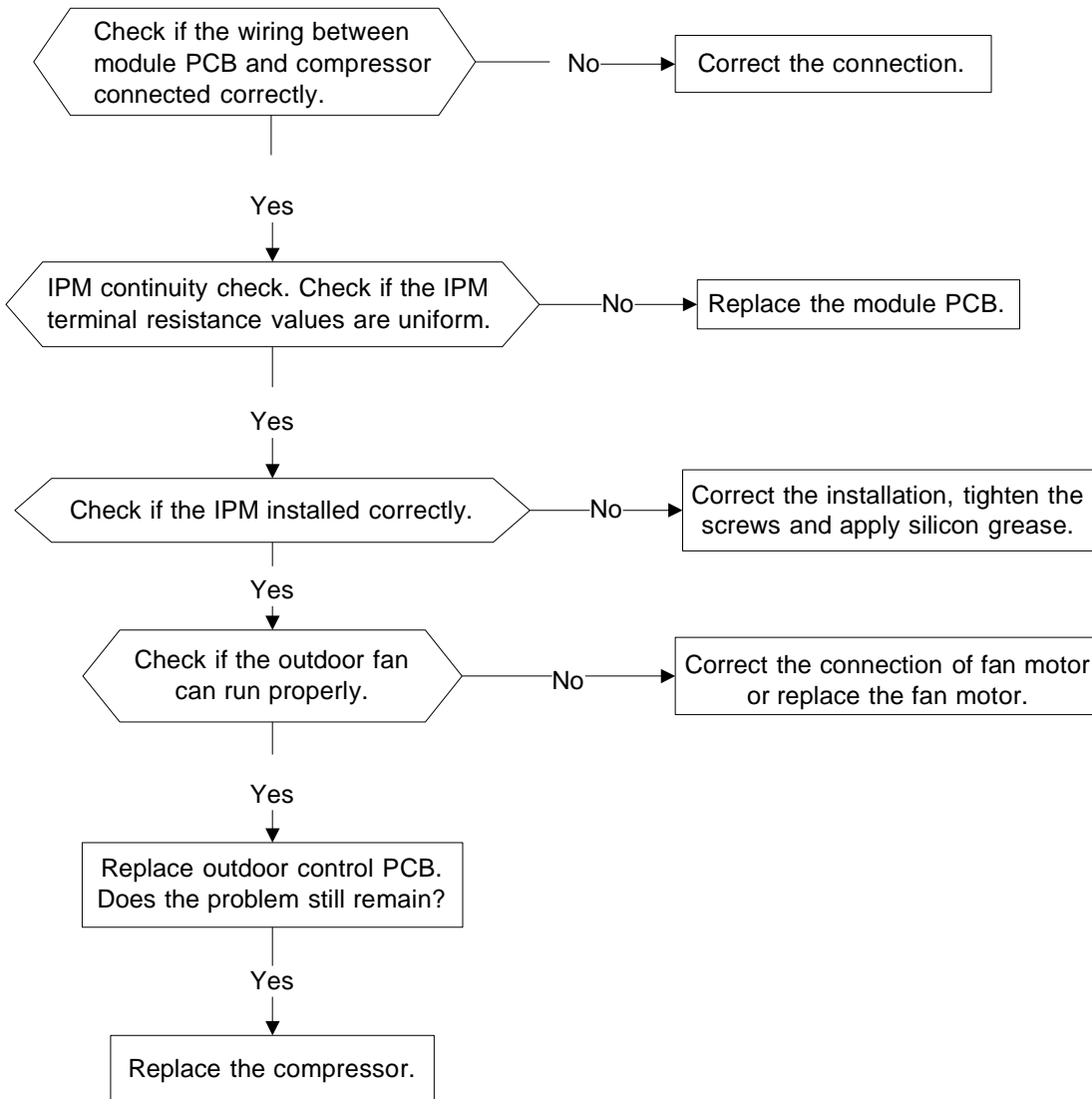
Power on and set the unit running in fan mode at high fan speed. After running for 15 seconds, measure the voltage of pin1 and pin2. If the value of the voltage is less than 100V (208~240V power supply) or 50V (115V power supply), the PCB must have problems and need to be replaced.



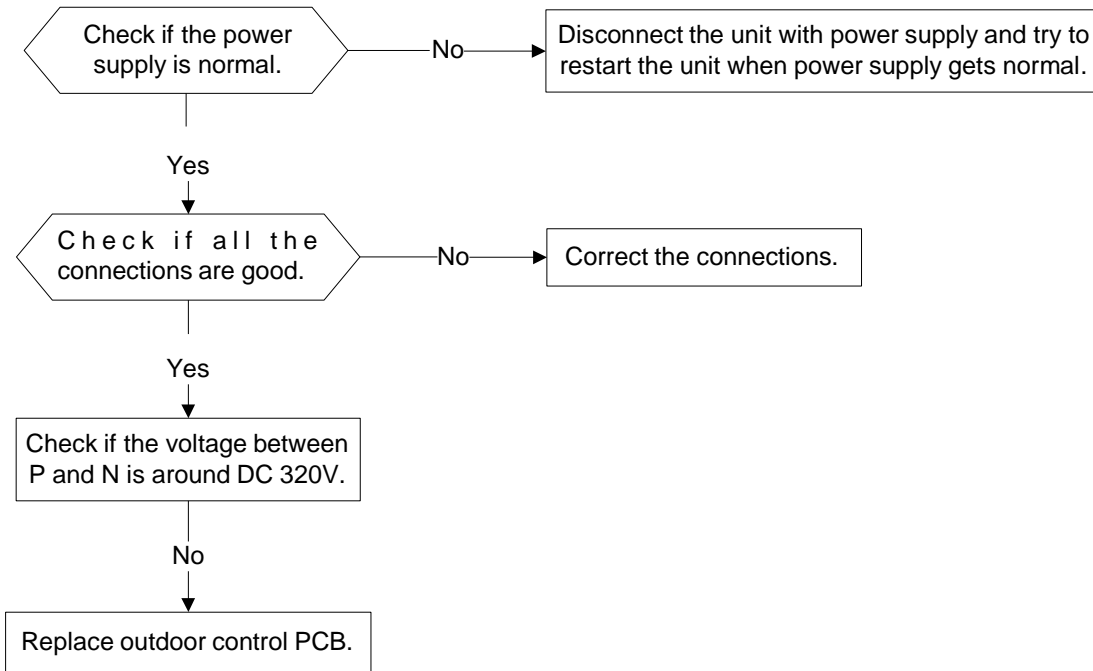
1.2.4 Open circuit or short circuit of temperature sensor diagnosis and solution



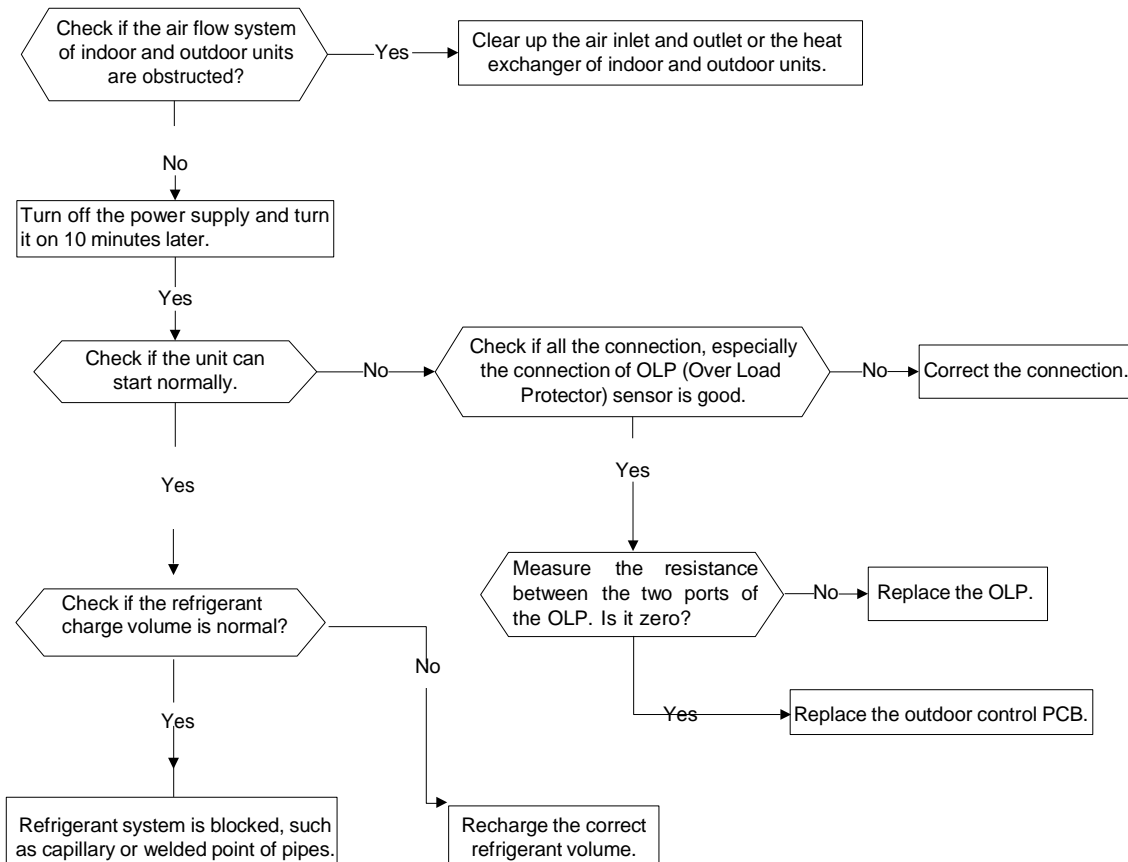
1.2.5 IPM malfunction or IGBT over-strong current protection diagnosis and solution



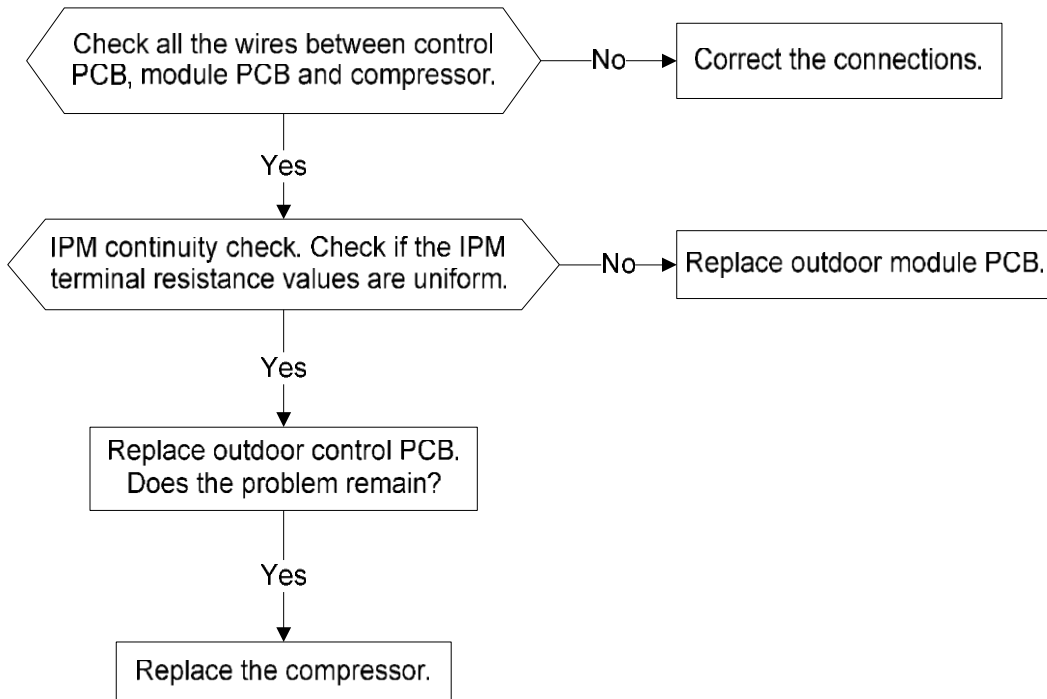
1.2.6 Over voltage or too low voltage protection diagnosis and solution



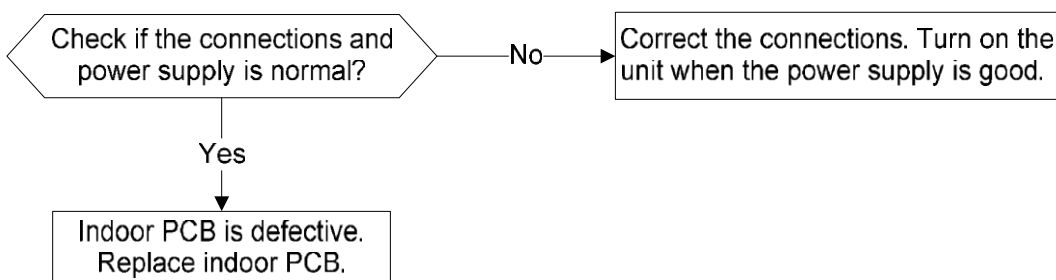
1.2.7 High temperature protection of compressor top diagnosis and solution



1.2.8 Inverter compressor drive error diagnosis and solution

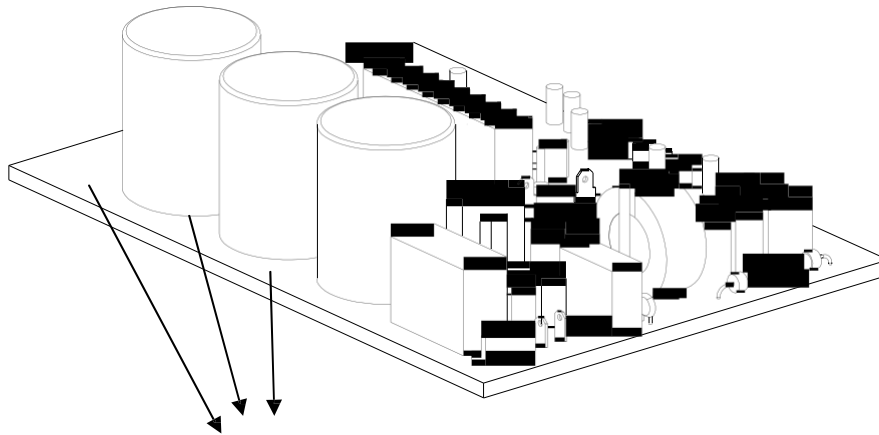


1.2.9 Zero crossing detection error diagnosis and solution



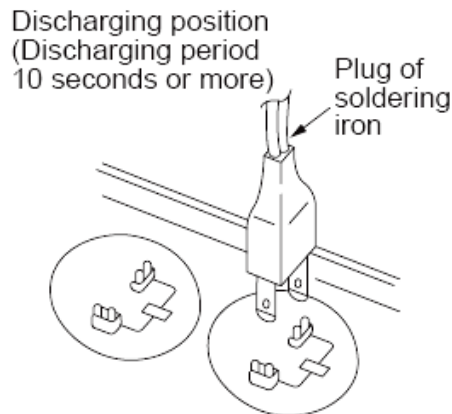
Safety

Electricity power is still kept in capacitors even the power supply is shut off. Do not forget to discharge the electricity power in capacitor.



Electrolytic Capacitors
(HIGH VOLTAGE! CAUTION!)

Connect discharge resistance (approx.100Ω 40W) or soldering iron (plug) between +, - terminals of the electrolytic capacitor on the contrary side of the outdoor PCB.

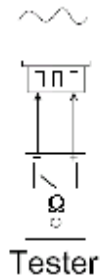


Note: The picture above is only for reference. The plug of your side may be different.

Main parts check

1. Temperature sensor checking

Disconnect the temperature sensor from PCB, measure the resistance value with a tester.



Temperature Sensors:

Room temp.(T1) sensor, Indoor coil

temp.(T2) sensor, Outdoor coil

temp.(T3) sensor, Outdoor ambient

temp.(T4) sensor,

Compressor discharge temp.(T5) sensor.

Measure the resistance value of each winding by using the multi-meter.

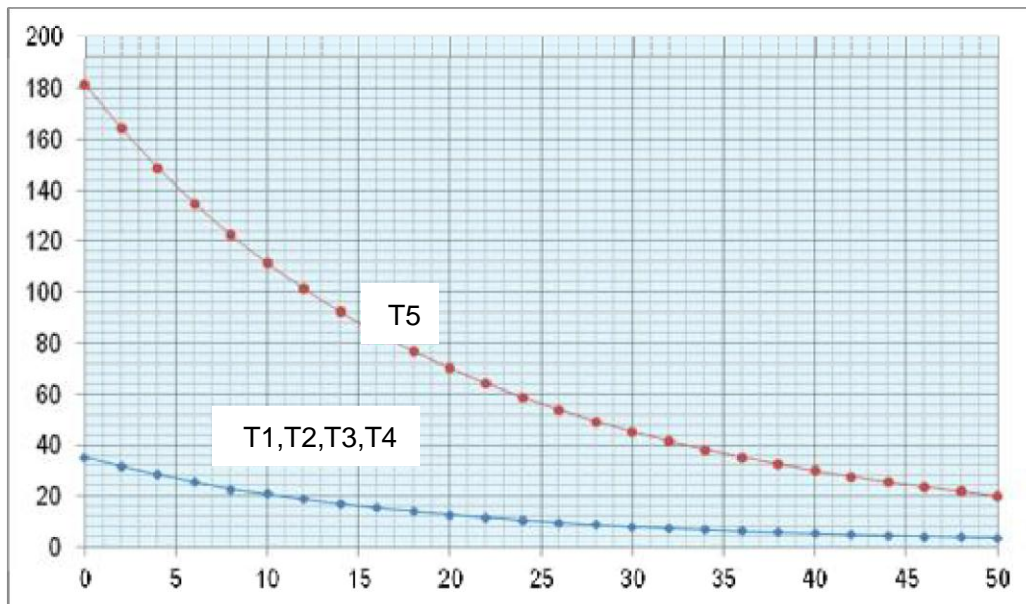
Table 1: Some frequently-used R-T data for T1,T2,T3 and T4 sensor:

Temperature (°C)	5	10	15	20	25	30	40	50	60
Resistance Value (KΩ)	26.9	20.7	16.1	12.6	10	8	5.2	3.5	2.4

Table 2: Some frequently-used R-T data for T5 sensor:

Temperature (°C)	5	15	25	35	60	70	80	90	100
Resistance Value (KΩ)	141.6	88	56.1	36.6	13.8	9.7	6.9	5	3.7

Resistance value (KΩ)



1. Troubleshooting.....	2
1.1 Indoor Unit Error Display.....	2
1.2 Diagnosis and Solution	3

1. Troubleshooting

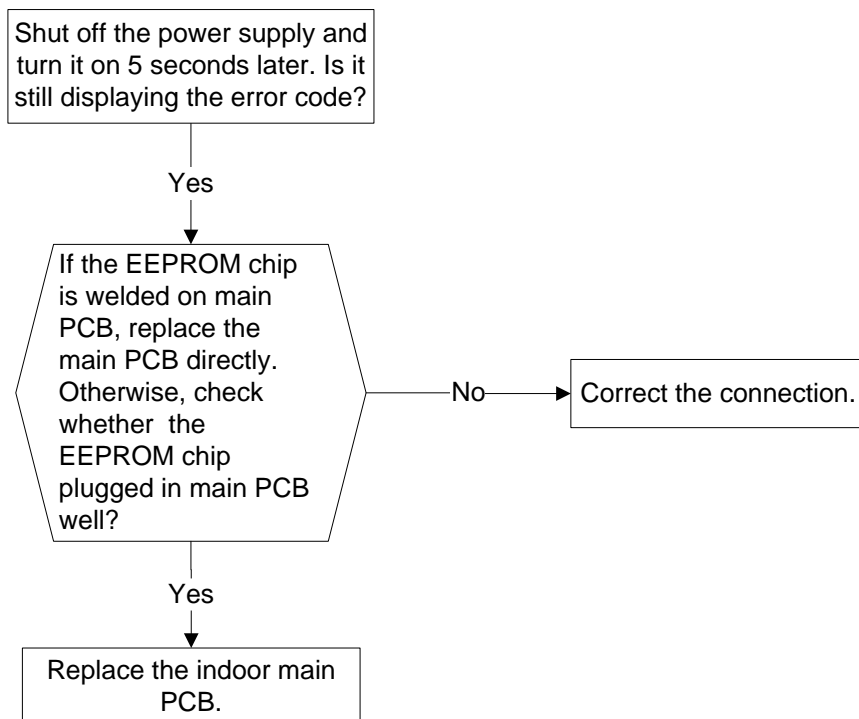
1.1 Indoor Unit Error Display

Display	LED STATUS
E0	EEPROM parameter error
E1	Indoor unit and outdoor unit communication protection
E2	Zero-crossing detection signal error
E3	Indoor fan speed has been out of control
E5	Open or short circuit of outdoor temperature sensor or outdoor unit EEPROM parameter error
E6	Open or short circuit of room or evaporator coil temperature sensor
P0	IPM malfunction or IGBT over-strong current protection
P1	Over voltage or too low voltage protection
P2	Temperature protection of compressor top(only for MSC-18HRDN1-QC2, MSC-24HRDN1-QC0W, MSC-18HRDN1-QC2(B), MSC-24HRDN1-QC2GW)
P4	Inverter compressor drive error

Note: E4 & P3: Reserved function.

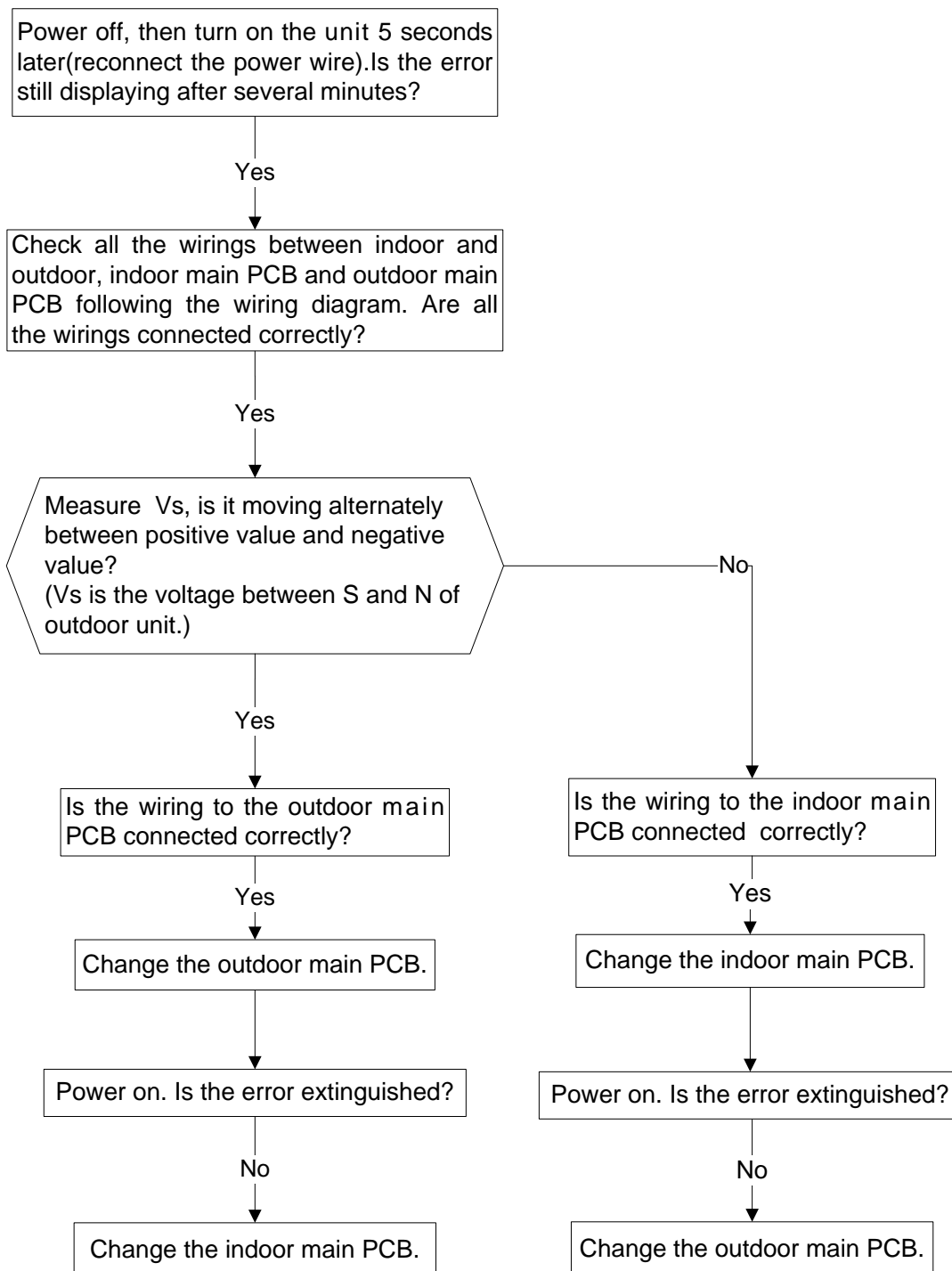
1.2 Diagnosis and Solution

1.2.1 EEPROM parameter error diagnosis and solution

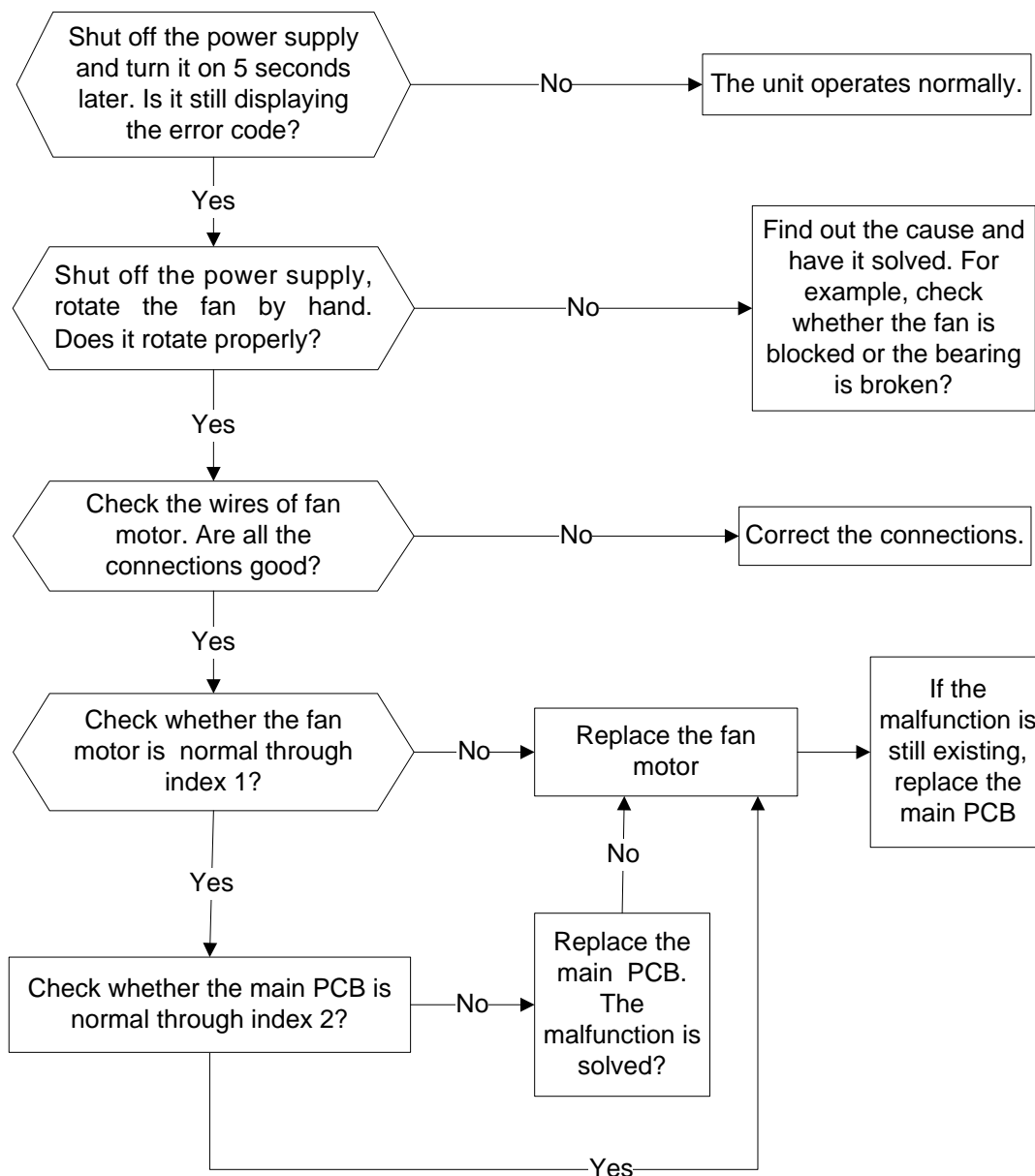


EEPROM: a read-only memory whose contents can be erased and reprogrammed using a pulsed voltage.

1.2.2 Indoor unit and outdoor unit communication protection error diagnosis and solution



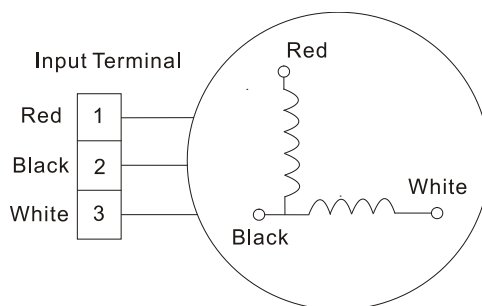
1.2.3 Indoor fan speed has been out of control diagnosis and solution



Index 1:

1. Indoor AC Fan Motor

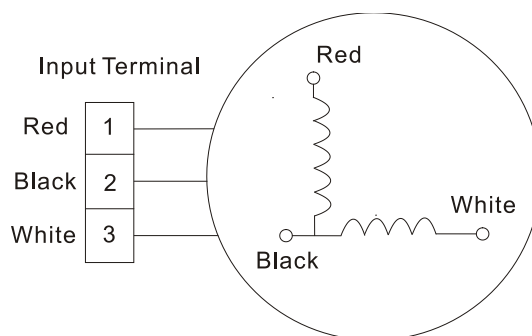
Measure the resistance value of each winding by using the tester.



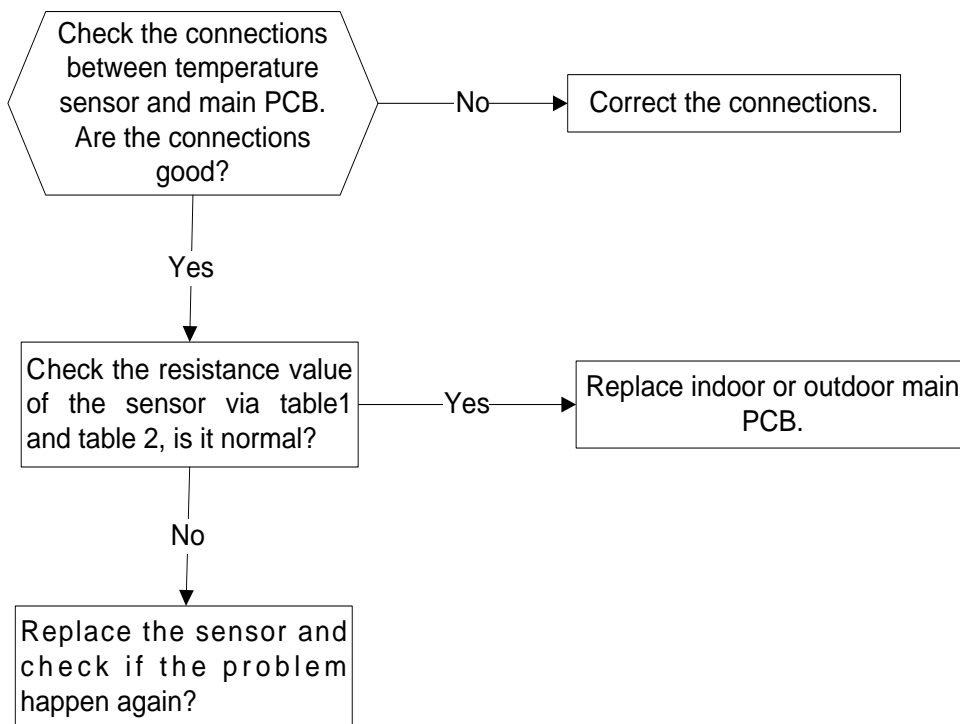
Index2:

1. Indoor AC Fan Motor

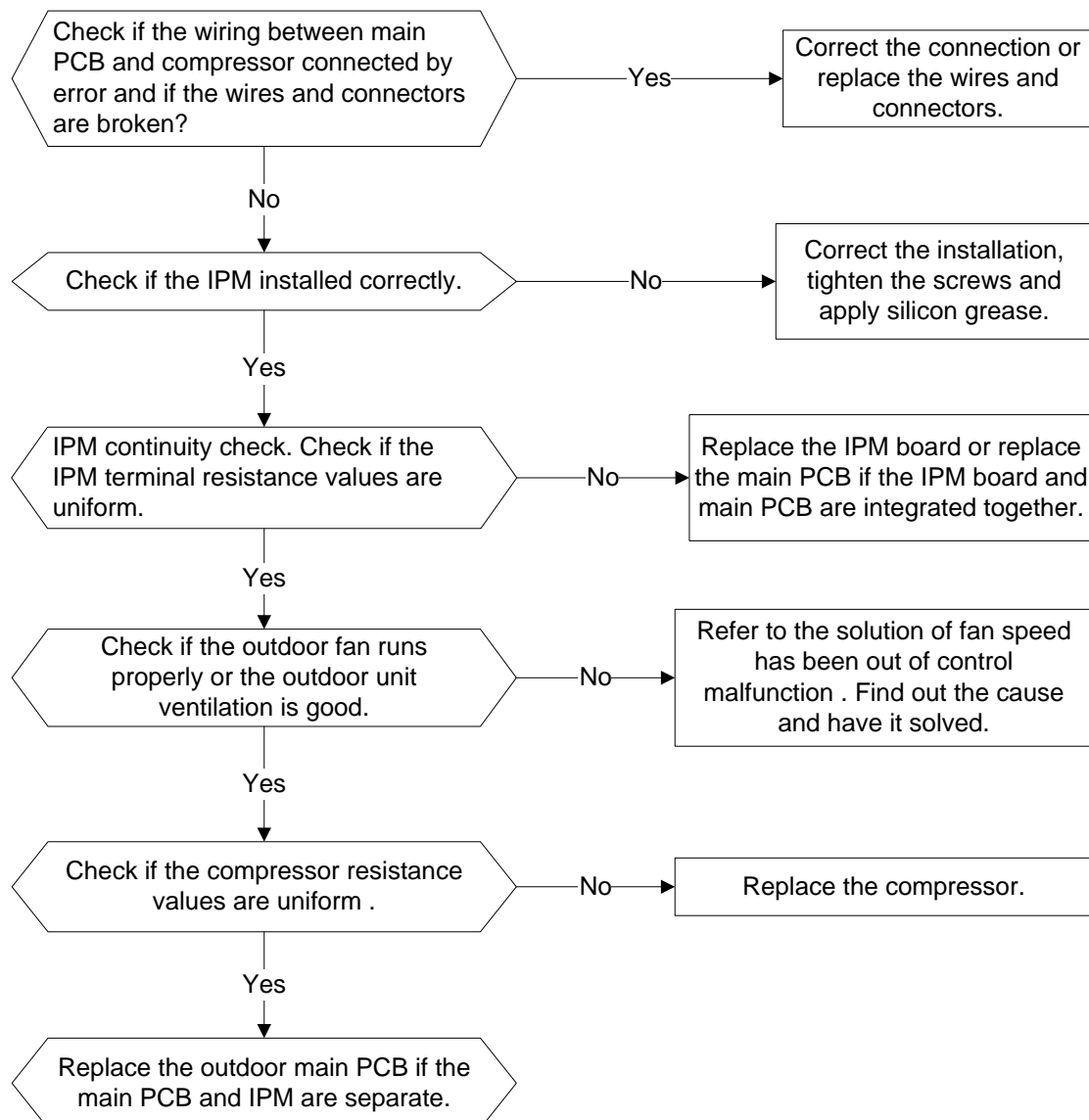
Power on and set the unit running in fan mode at high fan speed. After running for 15 seconds, measure the voltage of pin1 and pin2. If the value of the voltage is less than 100V (208~240V power supply) or 50V (115V power supply), the PCB must has problems and need to be replaced.



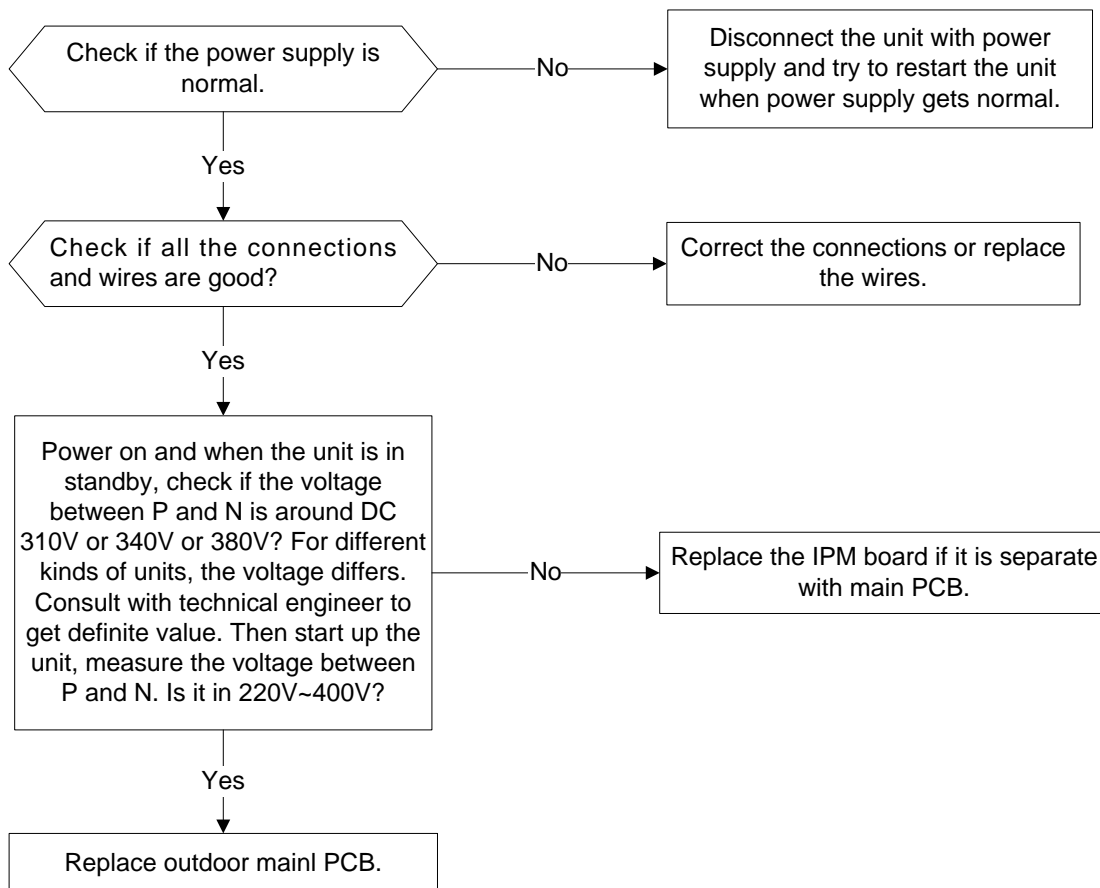
1.2.4 Open circuit or short circuit of temperature sensor diagnosis and solution



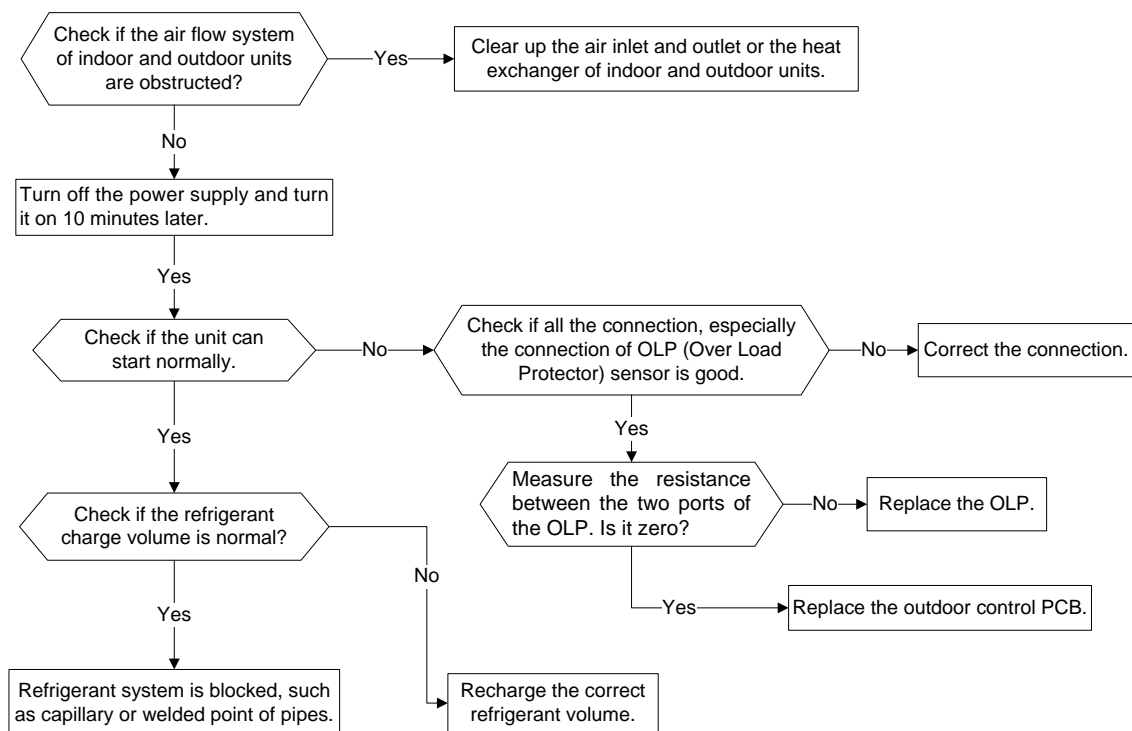
1.2.5 IPM malfunction or IGBT over-strong current protection diagnosis and solution



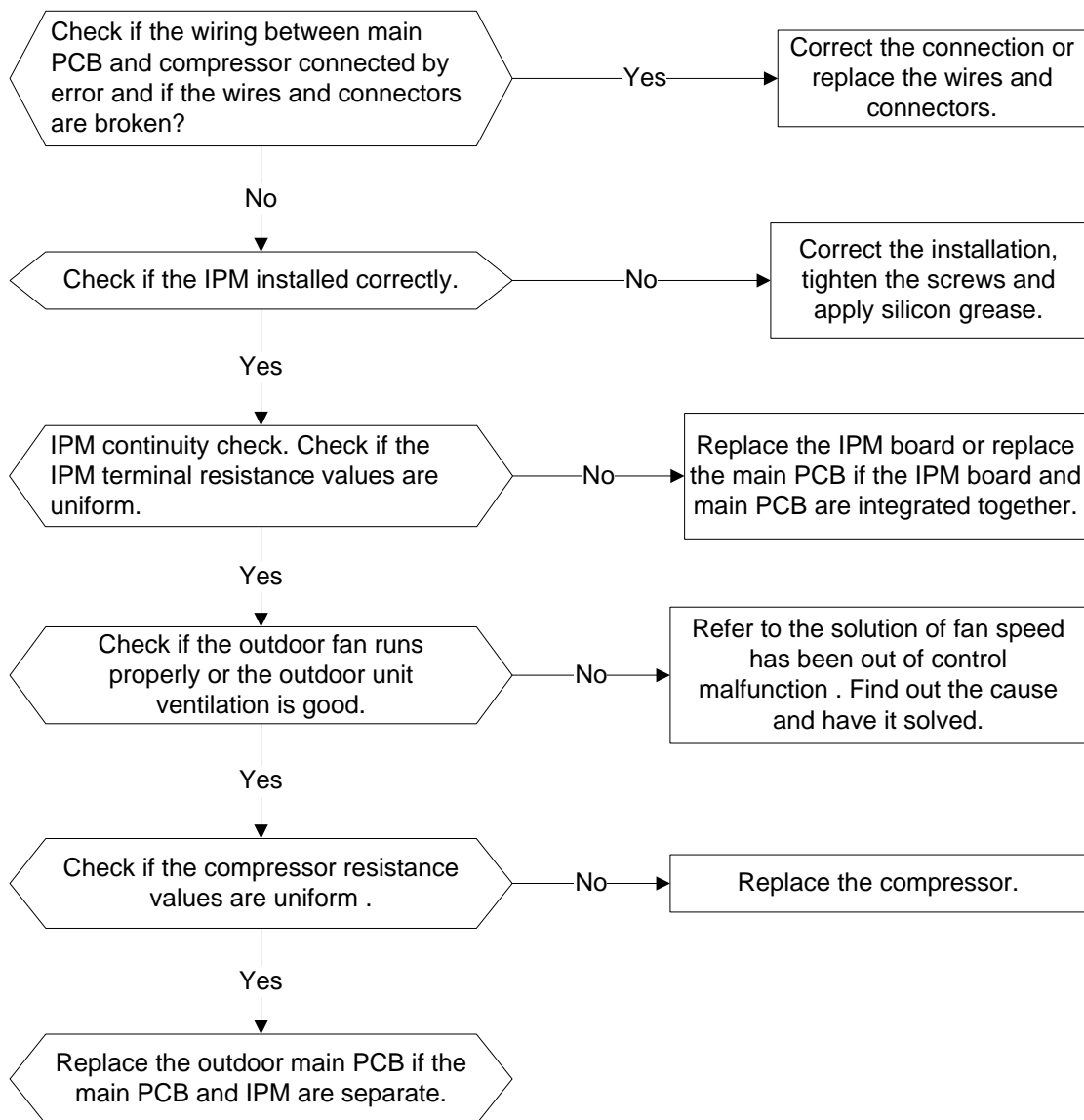
1.2.6 Over voltage or too low voltage protection diagnosis and solution



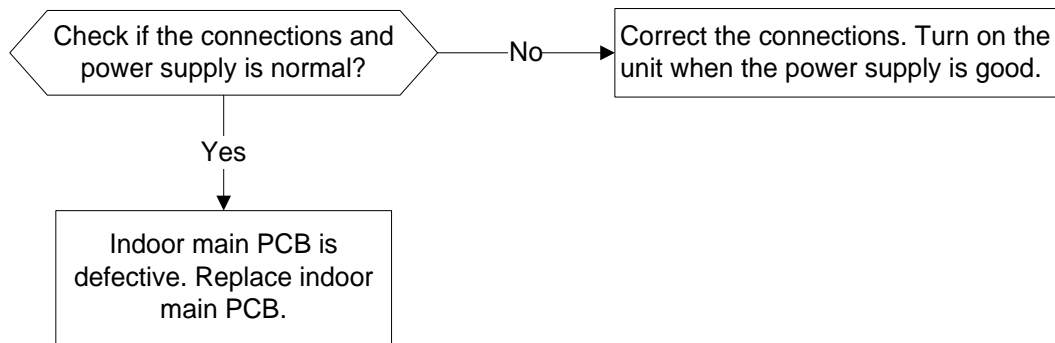
1.2.7 High temperature protection of compressor top diagnosis and solution



1.2.8 Inverter compressor drive error diagnosis and solution

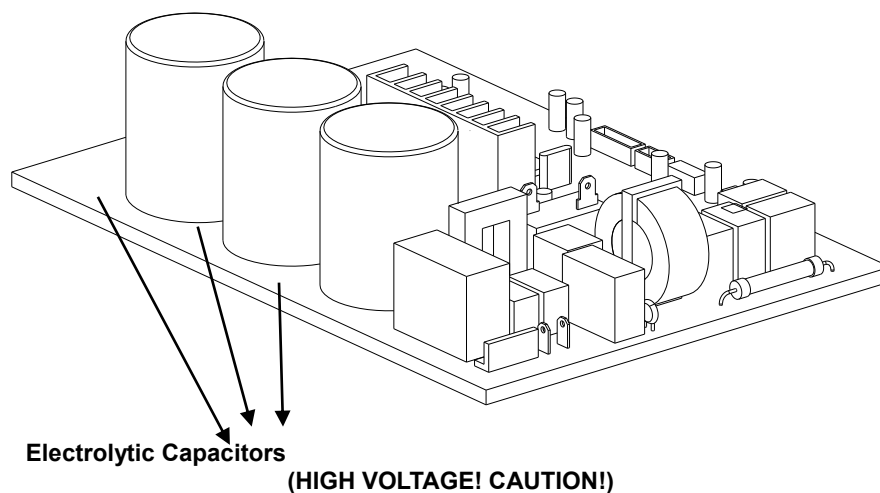


1.2.9 Zero crossing detection error diagnosis and solution

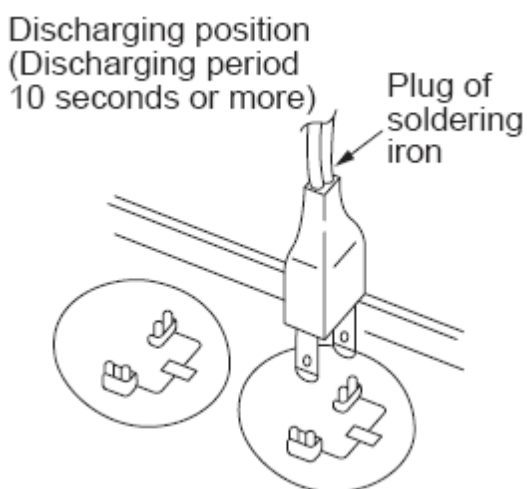


Safety

Electricity power is still kept in capacitors even the power supply is shut off. Do not forget to discharge the electricity power in capacitor.



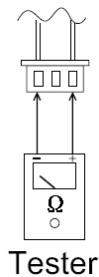
Connect discharge resistance (approx.100Ω 40W) or soldering iron (plug) between +, - terminals of the electrolytic capacitor on outdoor PCB.



Main parts check

1. Temperature sensor checking

Disconnect the temperature sensor from PCB, measure the resistance value with a tester.



Temperature Sensors.

- Room temp.(T1) sensor,
 - Indoor coil temp.(T2) sensor,
 - Outdoor coil temp.(T3) sensor,
 - Outdoor ambient temp.(T4) sensor,
 - Compressor discharge temp.(TP) sensor.
- Measure the resistance value of each winding by using the multi-meter.

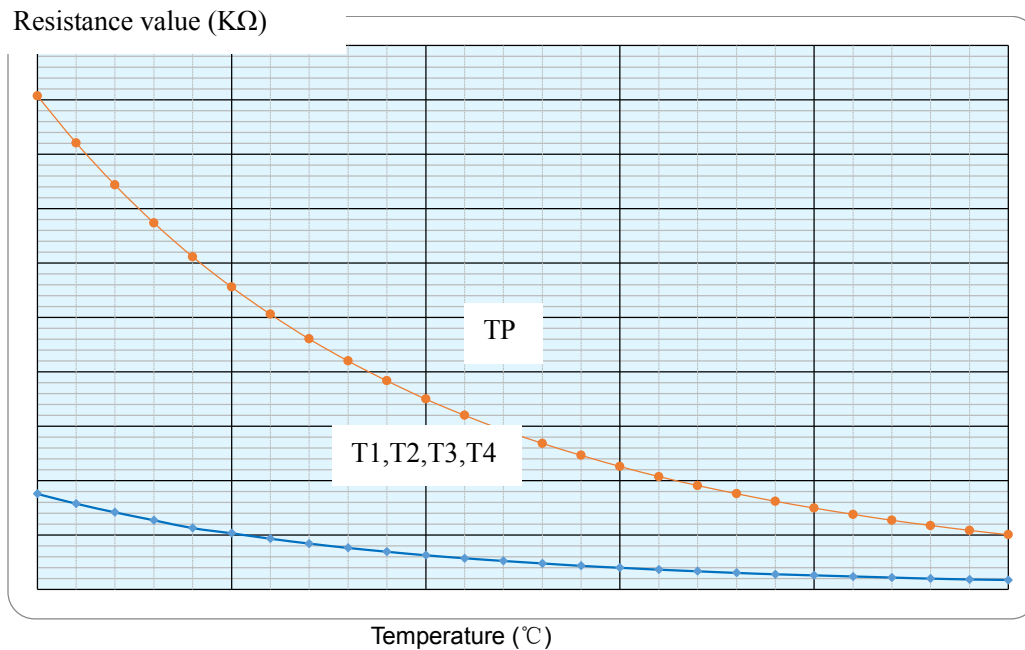
Table 1: Some frequently-used R-T data for T1,T2,T3 and T4 sensor:

Temperature (°C)	5	10	15	20	25	30	40	50	60
Resistance Value (KΩ)	26.9	20.7	16.1	12.6	10	8	5.2	3.5	2.4

Table 2: Some frequently-used R-T data for TP sensor:

Temperature (°C)	5	15	25	35	60	70	80	90	100
Resistance Value (KΩ)	141.6	88	56.1	36.6	13.8	9.7	6.9	5	3.7

Temperature Sensor Characteristic table





Air Conditioning Systems

Cooling & Heating

TRUST AIR-CONDITIONING EQUIPMENT CO.

Shiraz office: 8 th floor, Alvand Blog., Dostan St.,
Moaliabad Ave., SHIRAZ, IRAN., Post code: 71877-14446

Tel.: +98-71-36341070

Fax.: +98-71-36341094

Tehran office: No. 19- koohe nour St.- Motahhari St.-

TEHRAN, IRAN., Post code: 15876-73111

Tel.: +98-21-89389

Fax.: +98-21-88541903

Ahwaz office: No. 309- Kaveh St.- AHWAZ, IRAN., Post code: 61939-47911

Tel.: +98-61-32230647-8

Fax.: +98-61-32230647

E-mail: info@trustacs.com

Web site: <http://www.trustacs.com>

برند برتر در اولین جشنواره بین المللی
برترین نام و نشان های تجاری ایران

