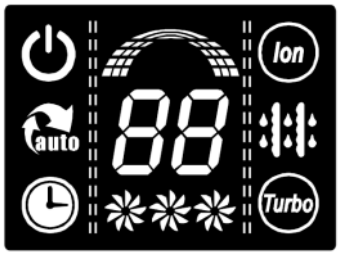
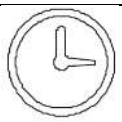
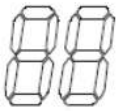
7. Troubleshooting

7.1 Display Function



	**TIMER display** Illuminated during Timer operation.
	**CLEAN AIR display(optional)** Illuminated when Ionizer is activated.
	**TURBO operation display** Illuminated when select TURBO function in cooling operation or in heating operation.
	**DIGITAL DISPLAY** Displayed the current setting temperature or malfunction code when the air conditioner is in operation. When SELF CLEAN feature is activated, it displays . “SC”
	**FAN SPEED display** Displayed the selected fan speed: LOW( ), MED( ) and HIGH( ).
	**Operation Frequency display** This display is separated into five zones. The zones illuminate based on the compressor current frequency. For example, higher frequency will Illuminate more zones.

7.2Indoor Unit Error Display

Display	Failure
E0	Indoor EEPROM malfunction
E1	Indoor/ outdoor units communication error
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 EEPROM malfunction
E6	Open circuit or short circuit of T1 or T2 temperature sensor
P0	IPM module protection or IGBT over-strong current protection
P1	Voltage protection
P2	Temperature protection of compressor top
P3	Outdoor temperature is lower than -15°C （optional function）
P4	Inverter compressor drive protection
P5	Mode conflict

Note

P3: If the outdoor temperature <= -15 °C for 1 hour, then the machine stops running, the indoor display shows the error code "P3“. The unit can still receive remote control signals.

If the outdoor >= -12 °C for 10 minutes, the compressor stops running more than one hour,

Or the outdoor temperature>= 5 for 10 minutes, then AC will recover to the last mode and fan speed.

E4： Reserved function.

7.3 Outdoor Unit Error Display

For KSIM20912-H216 - 2G, KSIM30912-H216 - 1G, KSIM330-H219, KSIM40912-H216 - 2G

Display	LED STATUS	IDU Error (KWIL / KWIM)	IDU Error (KDIM
E0	Outdoor EEPROM malfunction	E5	E6
E2	Indoor / outdoor units communication error	E1	E2
E3	Communication malfunction between IPM board and outdoor main board	——	——
E4	Open or short circuit of outdoor temperature sensor(T3、T4、T5、T2B)	E5	E6
E5	Voltage protection	P1	P0
E6	PFC module protection(Only for KSIM40912-H216 - 2G)	——	——
E8	Outdoor fan speed has been out of control(Only for DC fan motor models)	——	——
F1	No A Indoor unit coil outlet temp. sensor or connector of sensor is defective	——	——
F2	No B Indoor unit coil outlet temp. sensor or connector of sensor is defective	——	——
F3	No C Indoor unit coil outlet temp. sensor or connector of sensor is defective	——	——
F4	No D Indoor unit coil outlet temp. sensor or connector of sensor is defective	——	——
P0	Temperature protection of compressor top (Only for KSIM30912-H216 - 1G)	P2	P3
P1	High pressure protection (Only for KSIM40912-H216 - 2G)	——	——
P2	Low pressure protection(Only for KSIM40912-H216 - 2G)	——	——
P3	Current protection of compressor	——	——
P4	Temperature protection of compressor discharge	——	——
P5	High temperature protection of condenser	——	——
P6	IPM module protection	P0	E5

For M2OC-18HRDN1-M, M3OC-27HRDN1-M, KSIM40912-H216 - 1G

Display digital tube	LED STATUS	IDU Error (KWIL / KWIM	IDU Error KDIM
E0	Outdoor EEPROM malfunction	E5	E6
E1	No A Indoor unit coil outlet temp. sensor or connector of sensor is defective	——	——
E2	No B Indoor unit coil outlet temp. sensor or connector of sensor is defective	——	——
E3	No C Indoor unit coil outlet temp. sensor or connector of sensor is defective	——	——
E6	No D Indoor unit coil outlet temp. sensor or connector of sensor is defective	——	——
E4	Open or short circuit of outdoor temperature sensor(T4)	E5	E6
E5	Voltage protection	P1	P0
E7	Communication malfunction between IPM board and outdoor main board	——	——
P0	Temperature protection of compressor discharge (Temperature protection of compressor top(only for KSIM20912-H216 - 1G & KSIM30912-H216 - 2G))	P2	P3
P1	High pressure protection (Only for KSIM40912-H216 - 1G)	——	——
P2	Low pressure protection(Only for KSIM40912-H216 - 1G)	——	——
P3	Current protection of compressor	——	——
P4	IPM module protection	P0	E5
P6	High temperature protection of condenser	——	——
P7	Inverter compressor drive protection	P4	P4
PF	PFC module protection(Only for KSIM40912-H216 - 1G)	——	——

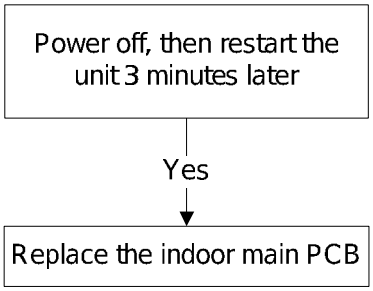
7.4 Diagnosis and Solution

7.4.1 Indoor unit trouble shooting

7.4.1.1 E0(Indoor EEPROM malfunction) error diagnosis and solution

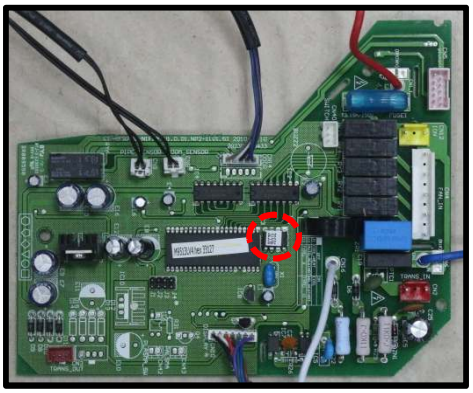
Error Code	E0
Malfunction decision conditions	PCB main chip does not receive feedback from EEPROM chip
Supposed causes	• Installation mistake • PCB faulty

Trouble shooting:



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

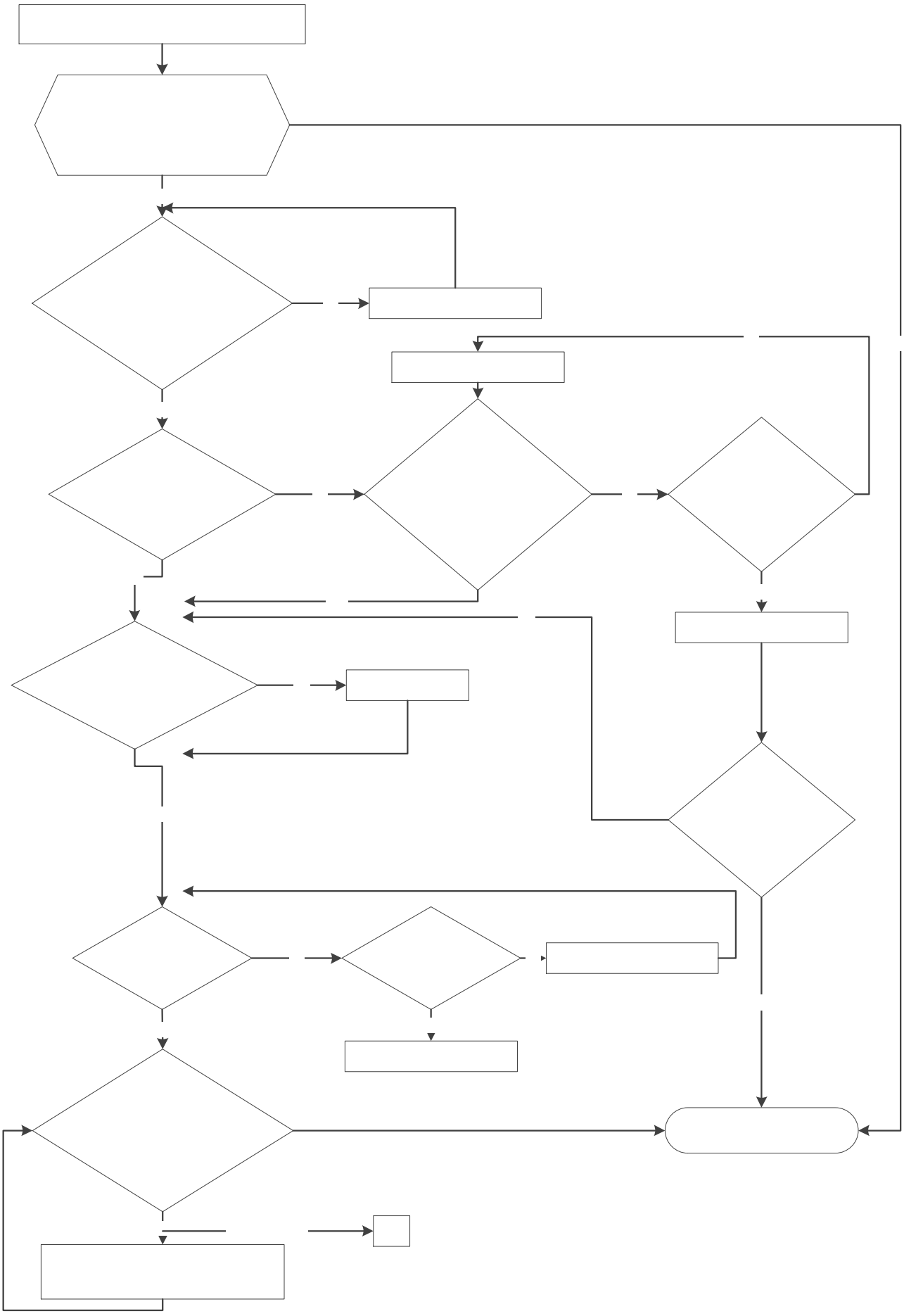
For the location of EEPROM chip, please refer to the below photos.

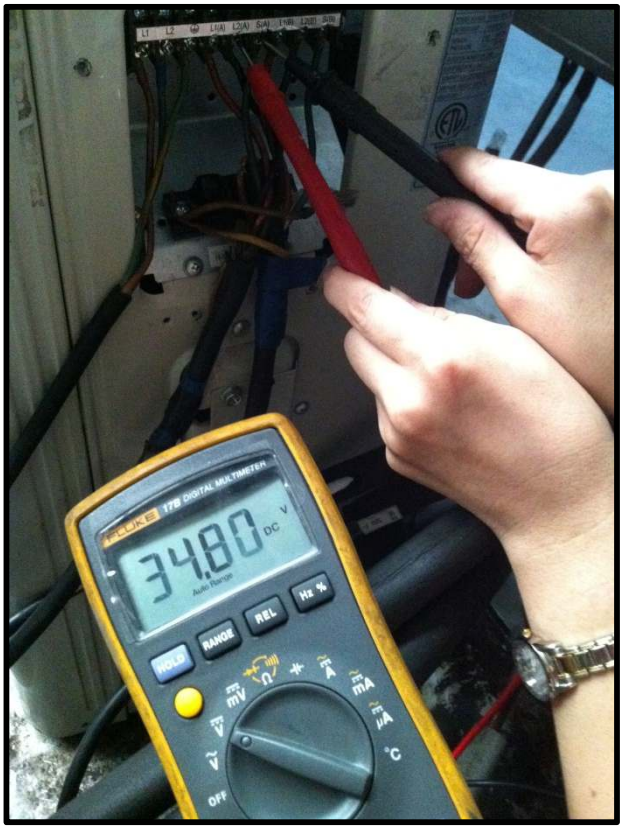


7.4.1.2 E1(Communication malfunction between indoor and outdoor units) error diagnosis and solution.

Error Code	E1
Malfunction decision conditions	Indoor unit does not receive the feedback from outdoor unit during 120 seconds.
Supposed causes	• Wiring mistake • Indoor or outdoor PCB faulty

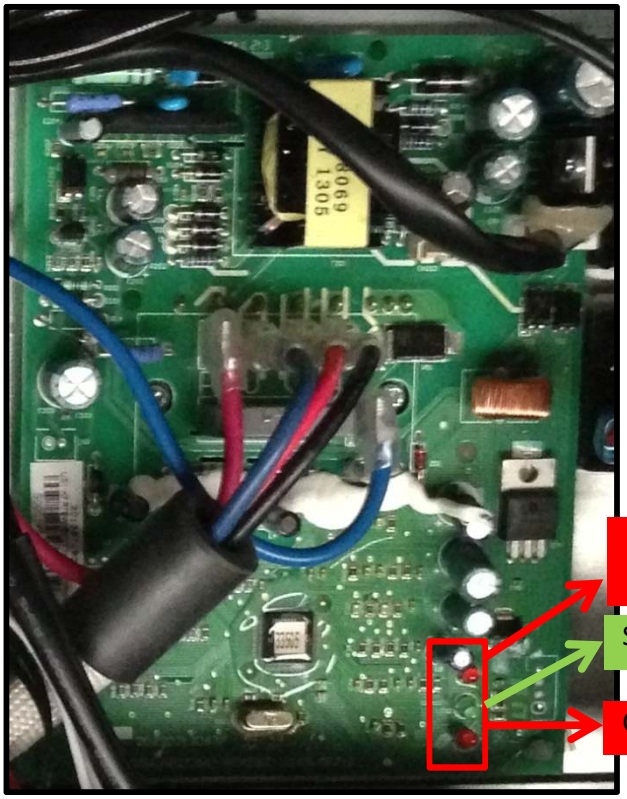
Trouble shooting:



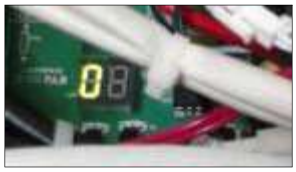


Pic 1:Use a multimeter to test the DC voltage between L2 port and S port of outdoor unit. The red pin of multimeter connects with L2 port while the black pin is for S port.

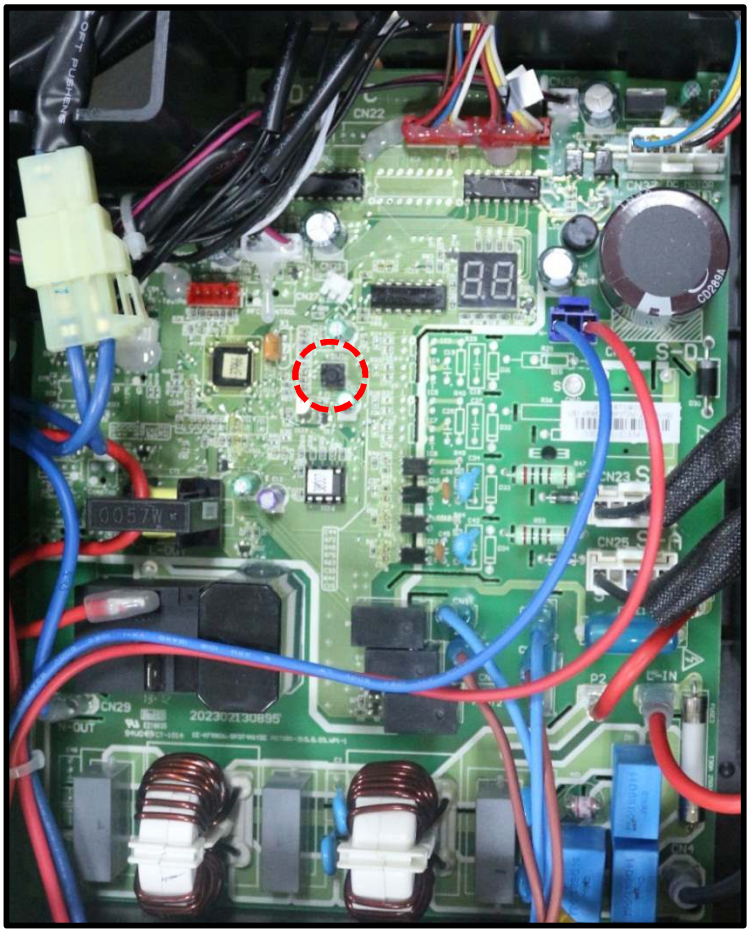
When AC is normal running, the voltage will move alternately between positive value and negative value.



Pic 2: :IPM (for dual/tri/qua-zone)



PIC3 :Main board LED when power on and unit standby.



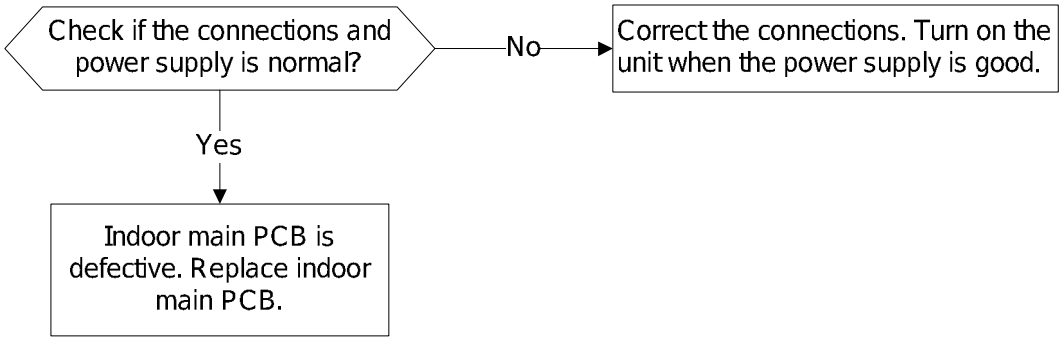
PIC 4: Check point button, press 1 time for check how many indoor units are connected.(for KSIM20912-H216 - 2G,KSIM30912-H216 - 1G,KSIM330-H219,KSIM40912-H216 - 2G)

Check point button, press 18 times for check how many indoor units are connected.(for KSIM20912-H216 - 1G, KSIM30912-H216 - 1G, KSIM40912-H216 - 1G)

7.4.1.3 E2(zero-crossing signal error) diagnosis and solution.

Error Code	E2
Malfunction decision conditions	When PCB does not receive zero crossing signal feedback for 4 minutes or the zero crossing signal time interval is abnormal.
Supposed causes	• Connection mistake • PCB faulty

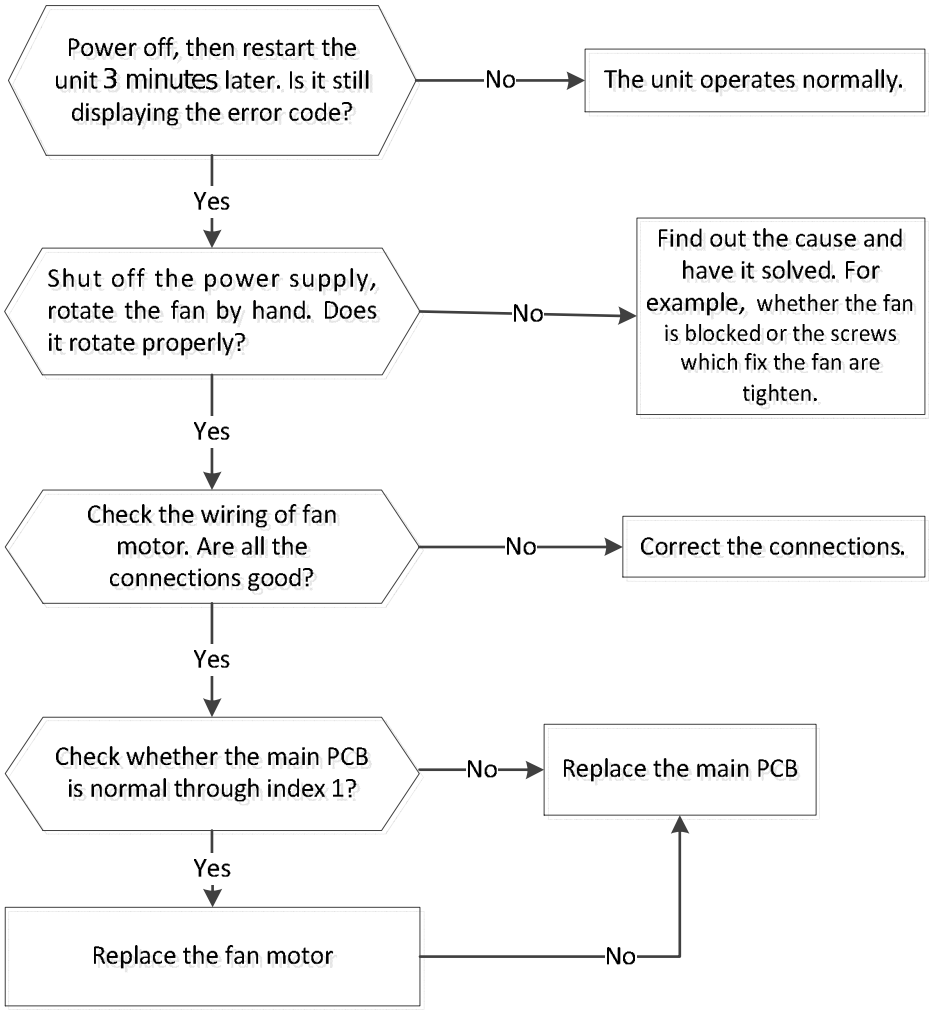
Trouble shooting:



7.4.1.4 E3(indoor fan speed has been out of control) diagnosis and solution.

Error Code	E3
Malfunction decision conditions	When indoor fan speed keeps too low (300RPM) for certain time, the unit will stop and the LED will display the failure.
Supposed causes	• Wiring mistake • Fan ass'y faulty • Fan motor faulty • PCB faulty

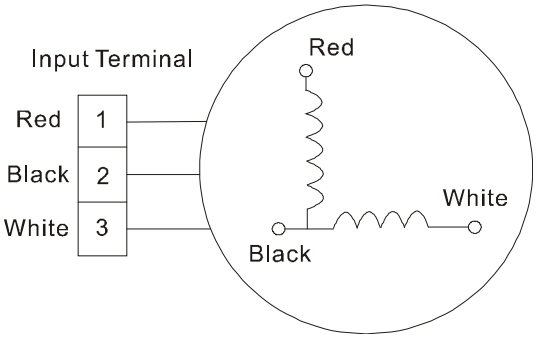
Trouble shooting:



Index 1:

1: Indoor AC fan motor

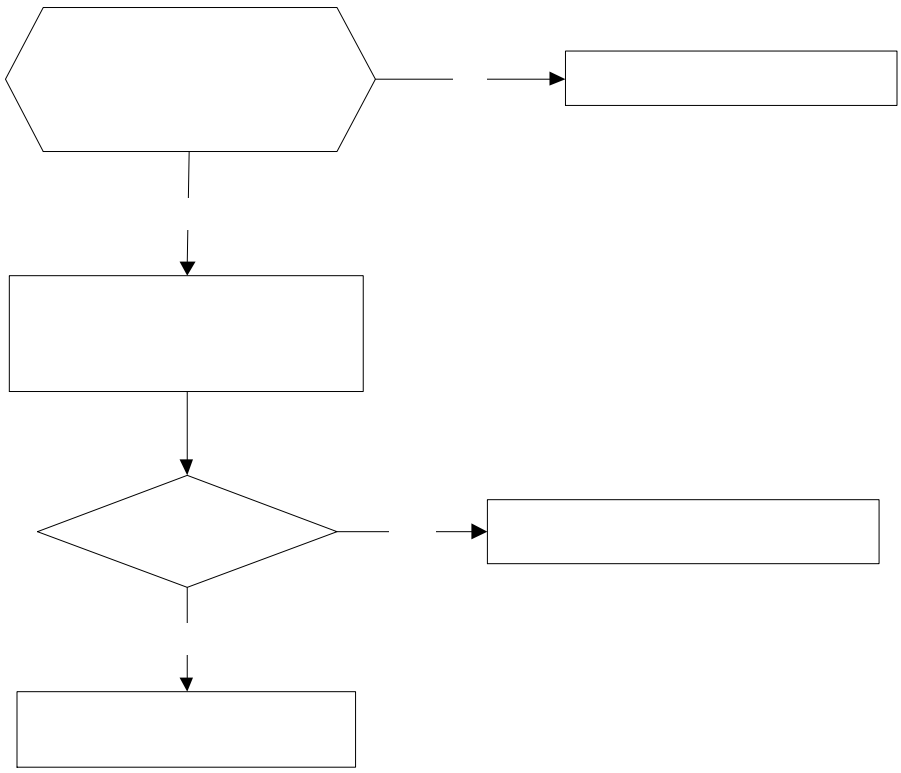
Power on and set the unit running in fan mode at high fan speed. After running for 15 seconds, measure the voltage of pin1 and pin2. If the value of the voltage is less than 100V(208~240V power supply)or 50V(115V power supply), the PCB must have problems and need to be replaced.

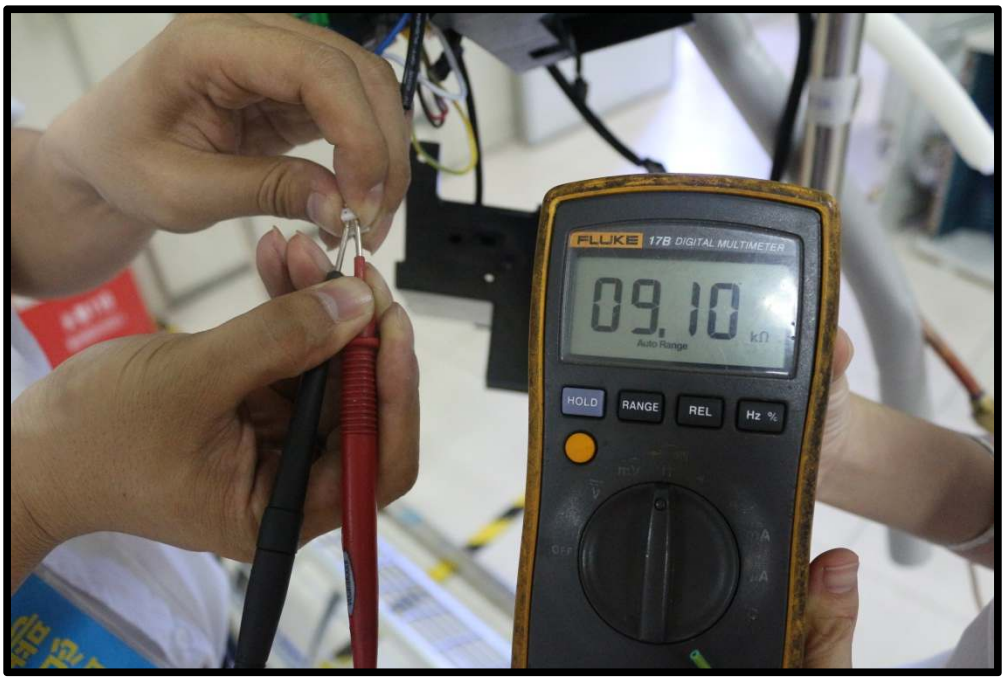


7.4.1.5 E5(open or short circuit of outdoor temperature sensor) diagnosis and solution
E6 (open or short circuit of room or indoor temperature sensor) diagnosis and solution.

Error Code	E5/E6
Malfunction decision conditions	If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED will display the failure.
Supposed causes	• Wiring mistake • Sensor faulty • PCB faulty

Trouble shooting:

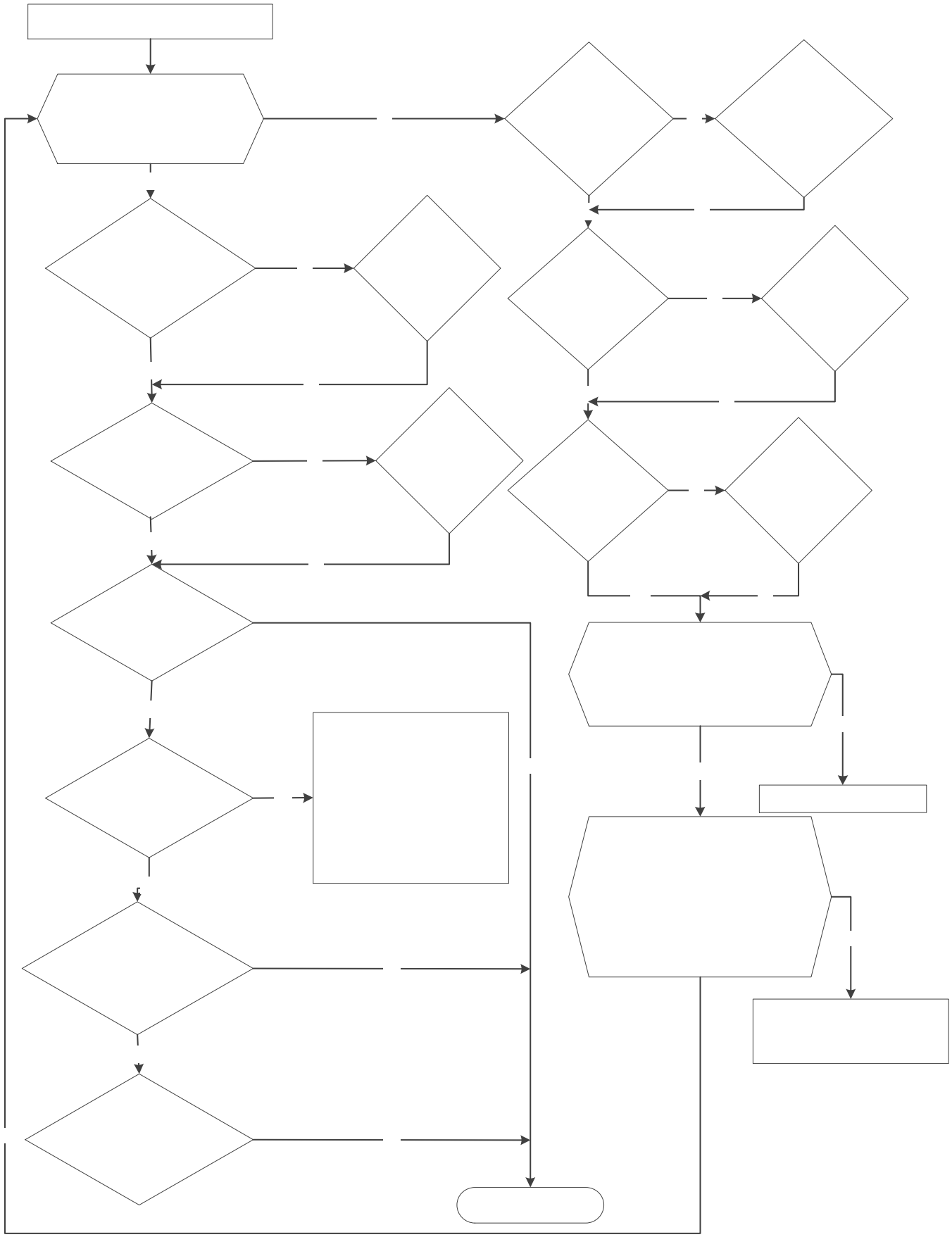




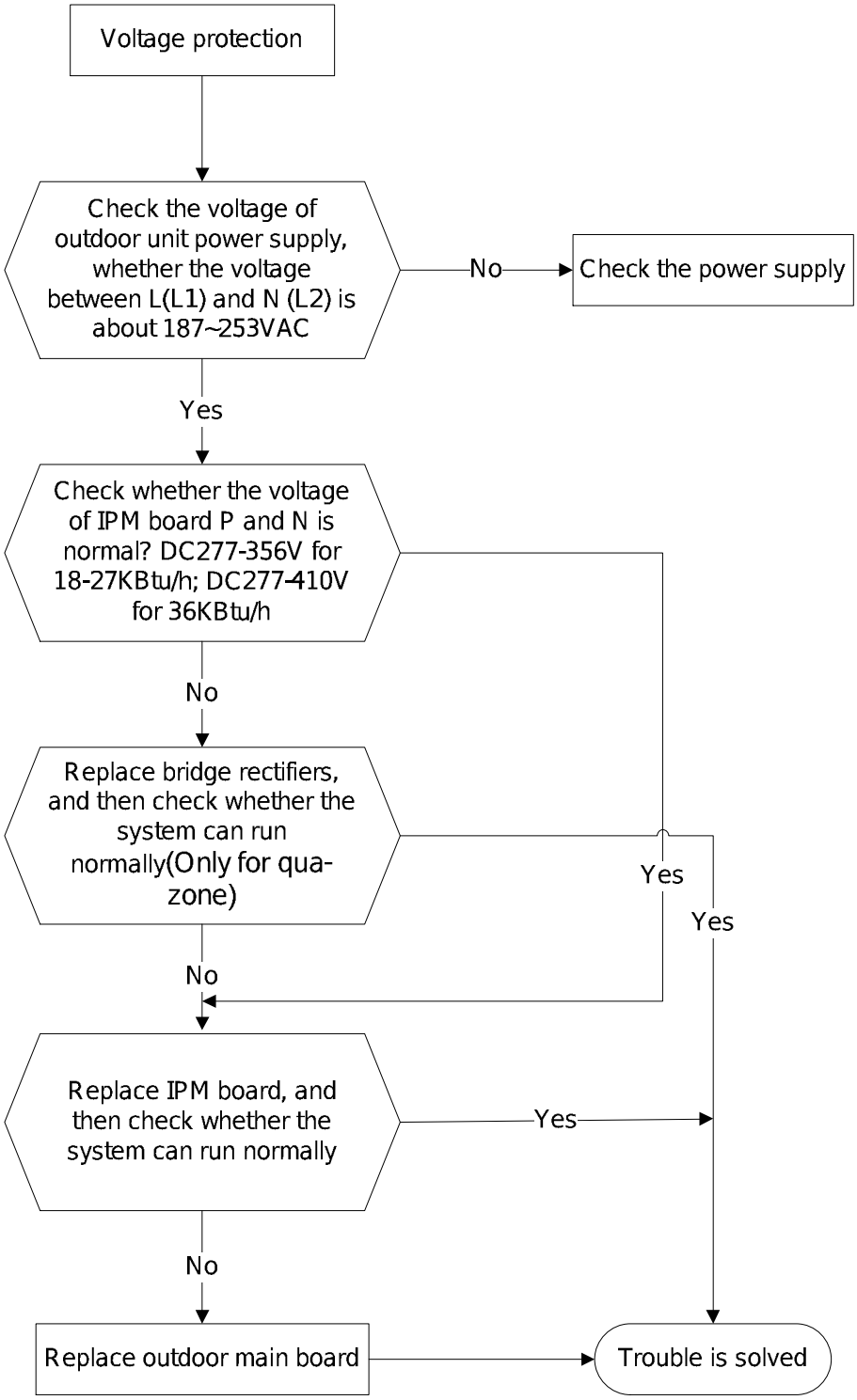
7.4.1.6 P0(IPM module or IGBT over-strong current protection) diagnosis and solution.

Error Code	P6
Malfunction decision conditions	When the voltage signal that IPM send to compressor drive chip is abnormal, the display LED will show “P6” and AC will turn off.
Supposed causes	• Wiring mistake • IPM malfunction • Outdoor fan ass’y faulty • Compressor malfunction • Outdoor PCB faulty

Trouble shooting:

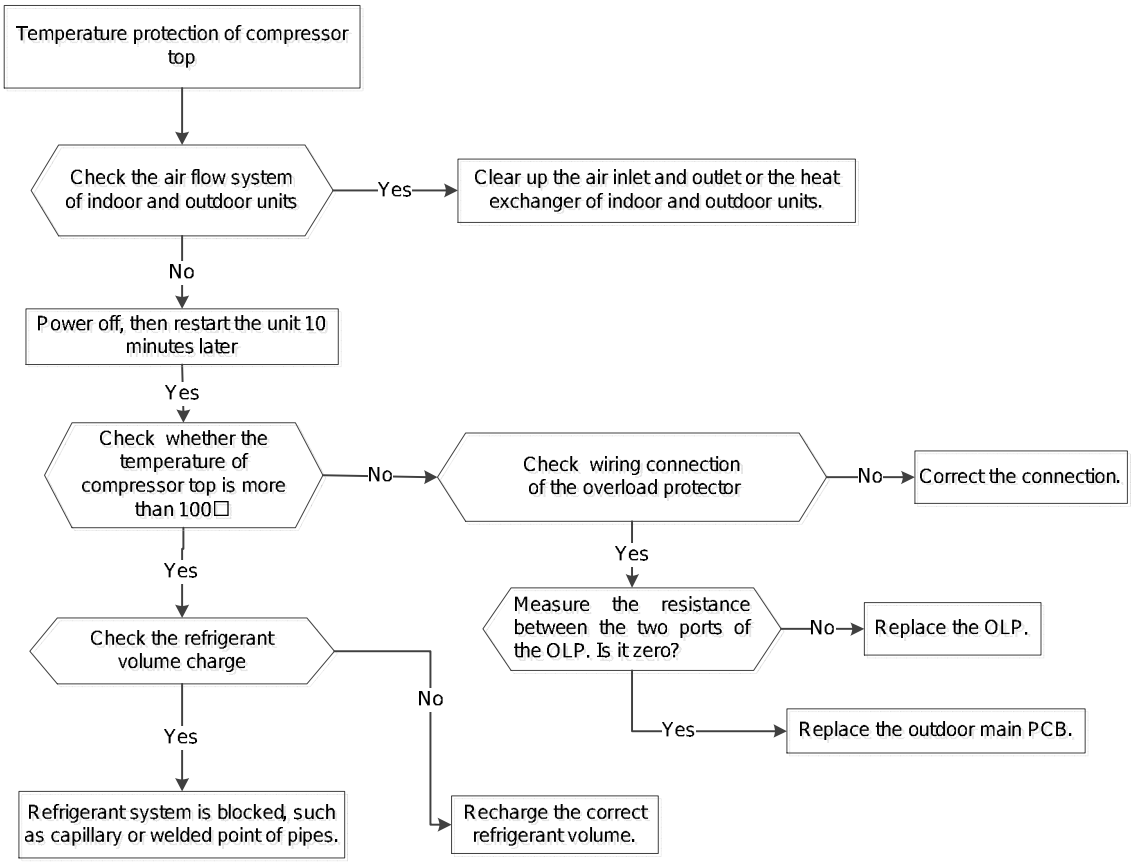


7.4.1.7 P1(over voltage or too low voltage protection) diagnosis and solution.



7.4.1.8 P2(temperature protection of compressor top) diagnosis and solution.

Error Code	P2
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty



7.4.1.9 P4 Inverter compressor drive error diagnosis and solution

The trouble shooting is same with one of IPM module protection(P0).

7.4.1.10 P5: Mode conflict.

Error Code	P5
Malfunction decision conditions	The indoor units cannot work cooling mode and heating at same time. Heating mode has a priority.
Unit action	• Suppose Indoor unit A working in cooling mode or fan mode, and indoor unit B is set to heating mode, then A will change to off and B will work in heating mode. • Suppose Indoor unit A working in heating mode, and indoor unit B is set to cooling mode or fan mode, then B will change to stand by and A will be no change.

	Cooling mode	Heating Mode	Fan	Off
Cooling mode	No	Yes	No	No
Heating Mode	Yes	No	Yes	No
Fan	No	Yes	No	No
Off	No	No	No	No

No: No mode conflict;

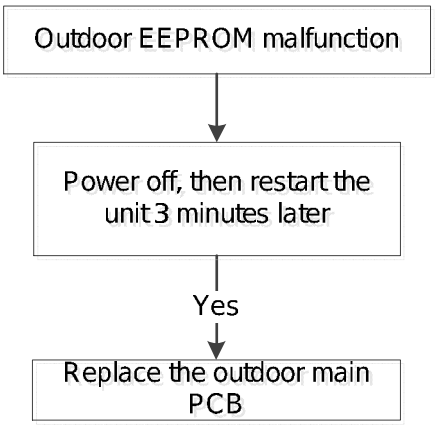
Yes: Mode conflict

7.4.2 Outdoor unit trouble shooting (For KSIM20912-H216 - 2G, KSIM218-H221,KSIM30912-H216 - 1G, KSIM330-H219, KSIM40912-H216 - 2G)

7.4.2.1 E0(Outdoor EEPROM malfunction) error diagnosis and solution

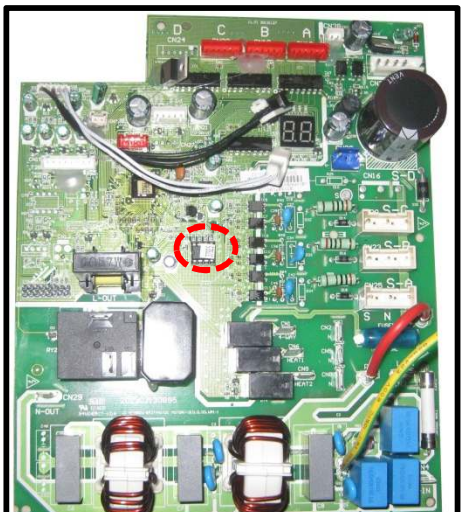
Error Code	E0
Malfunction decision conditions	PCB main chip does not receive feedback from EEPROM chip
Supposed causes	• Installation mistake • PCB faulty

Trouble shooting:



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

For the location of EEPROM chip, please refer to the below photos.

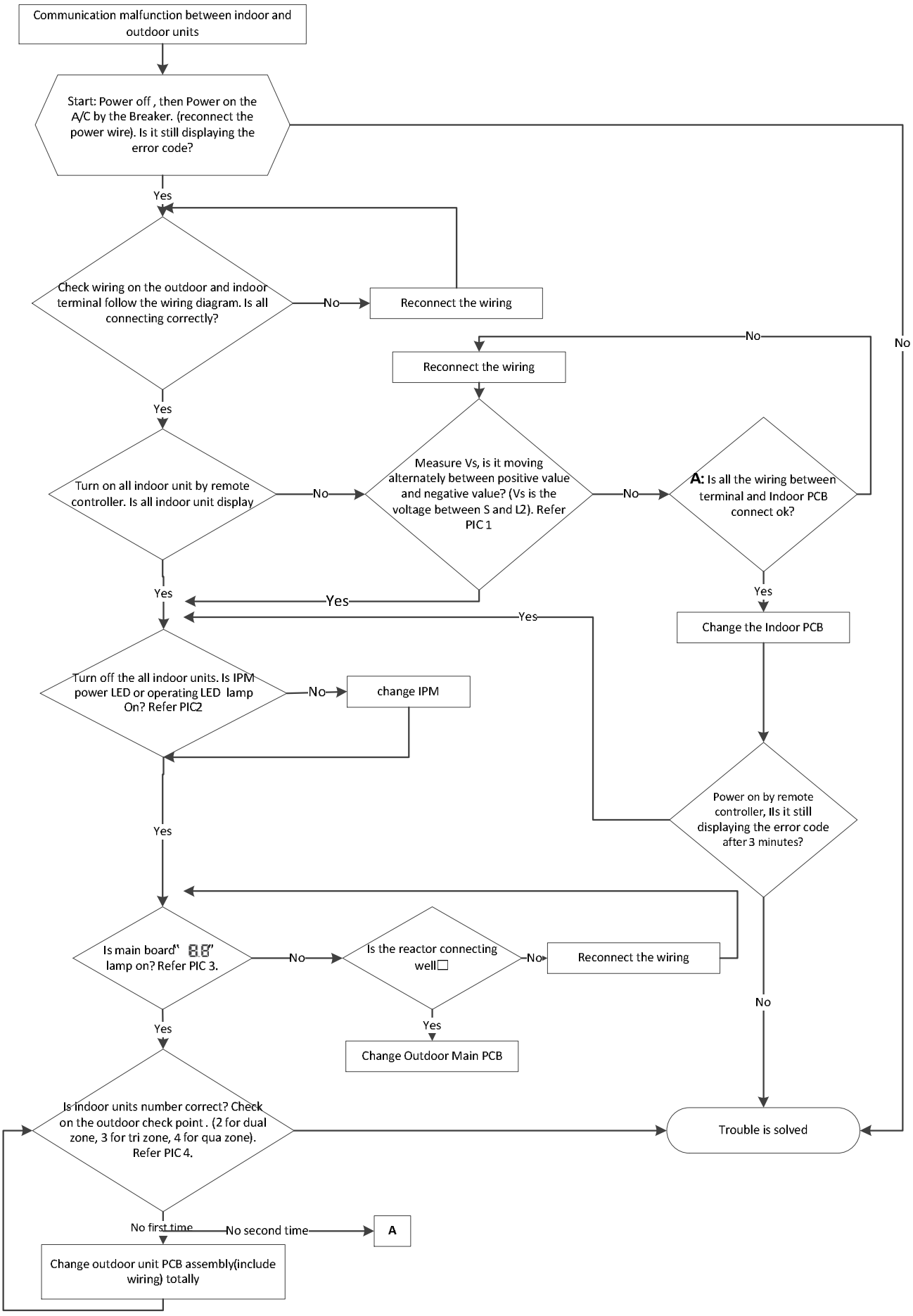


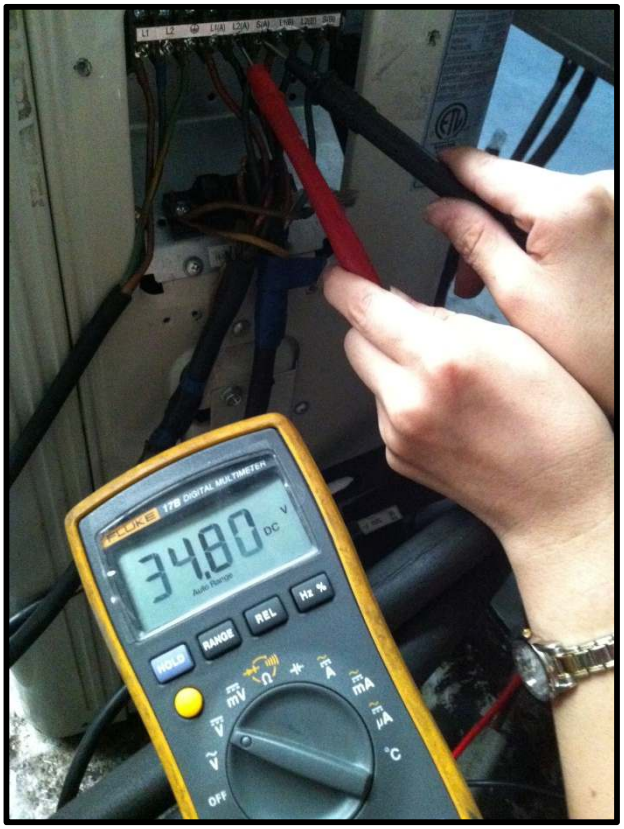
Outdoor PCB(KSIM330-H219)

7.4.2.2 E2(Communication malfunction between indoor and outdoor units) error diagnosis and solution.

Error Code	E2
Malfunction decision conditions	Indoor unit does not receive the feedback from outdoor unit during 120 seconds or outdoor unit does not receive the feedback from any one indoor unit during 180 seconds.
Supposed causes	• Wiring mistake • Indoor or outdoor PCB faulty

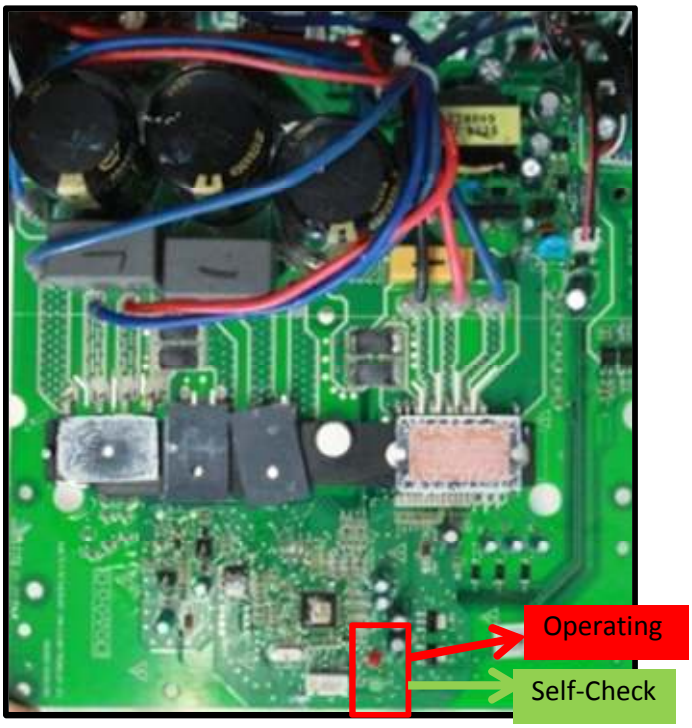
Trouble shooting:


Communication malfunction between indoor and outdoor units
Start: Power off , then Power on the A/C by the Breaker. (reconnect the power wire). Is it still displaying the error code?
Yes
No
Check wiring on the outdoor and indoor terminal follow the wiring diagram. Is all connecting correctly?
No
Reconnect the wiring
Reconnect the wiring
No
No
Yes
Turn on all indoor unit by remote controller. Is all indoor unit display
No
Measure Vs, is it moving alternately between positive value and negative value? (Vs is the voltage between S and L2). Refer PIC 1
No
A: Is all the wiring between terminal and Indoor PCB connect ok?
Yes
Yes
Yes
Yes
Change the Indoor PCB
Turn off the all indoor units. Is IPM power LED or operating LED lamp On? Refer PIC2
No
change IPM
Power on by remote controller, IIs it still displaying the error code after 3 minutes?
Yes
Is main board' 88' lamp on? Refer PIC 3.
No
Is the reactor connecting well□
No
Reconnect the wiring
No
Yes
Yes
Change Outdoor Main PCB
Is indoor units number correct? Check on the outdoor check point . (2 for dual zone, 3 for tri zone, 4 for qua zone). Refer PIC 4.
Trouble is solved
No first time
No second time
A
Change outdoor unit PCB assembly(include wiring) totally

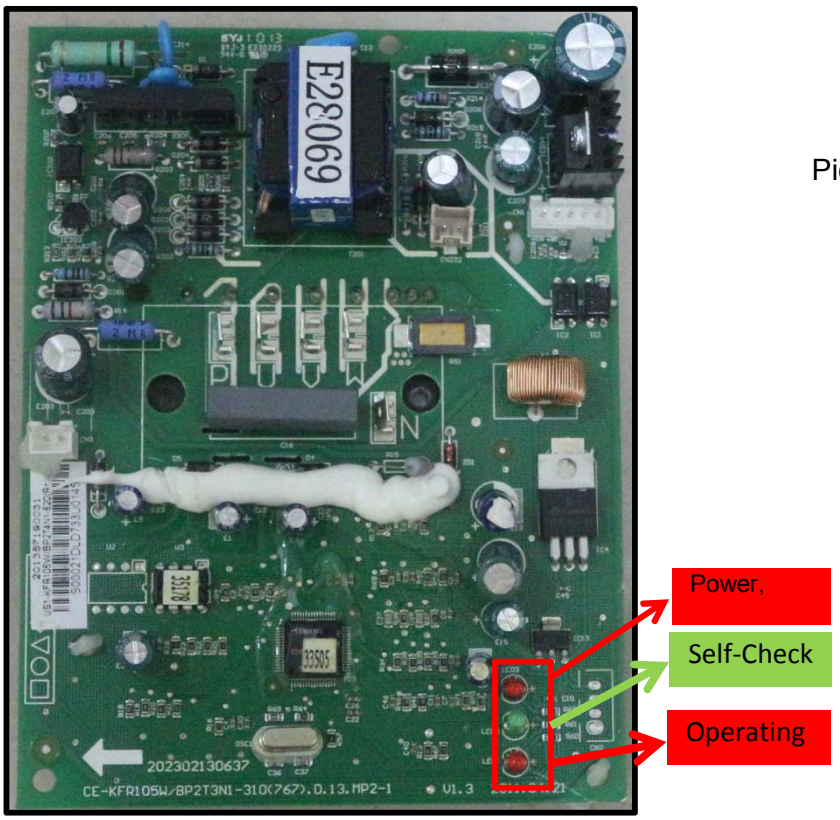


Pic 1:Use a multimeter to test the DC voltage between L2 port and S port of outdoor unit. The red pin of multimeter connects with L2 port while the black pin is for S port.

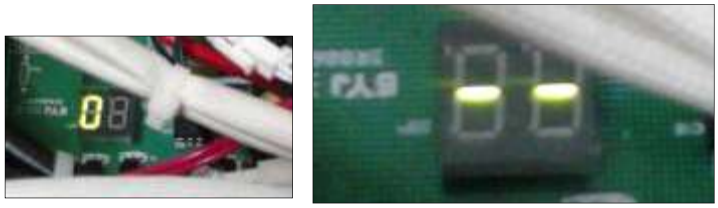
When AC is normal running, the voltage will move alternately between positive value and negative value.



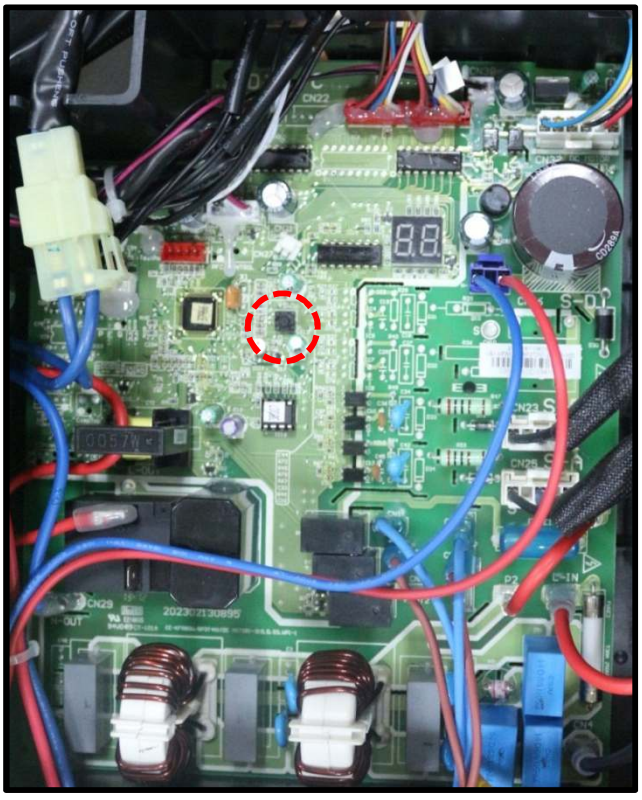
Pic 2: :IPM (For dual/tri-zone)



Pic 2: :IPM (For qua-zone)



PIC3 :Main board LED when power on and unit standby.



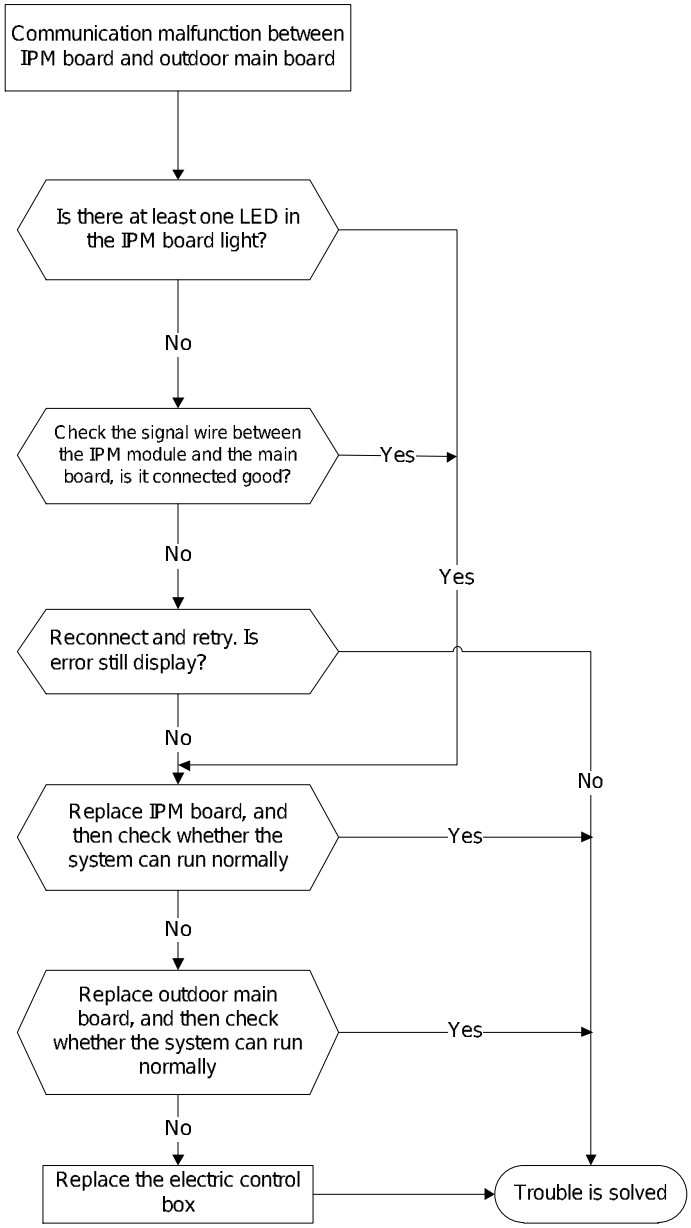
PIC 4: Check point button, press 1 time for check how many indoor units are connected.

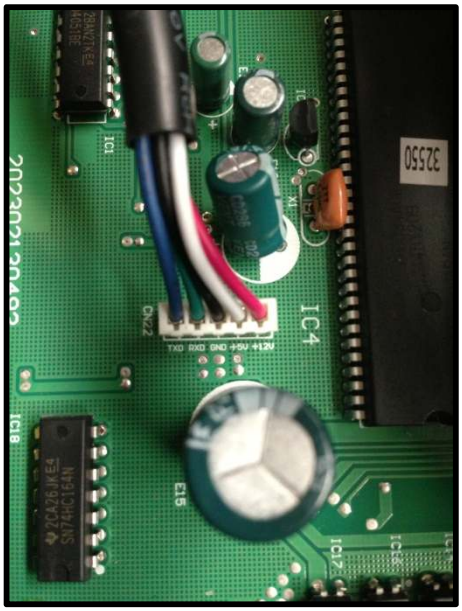
7.4.2.3 E3(Communication malfunction between IPM board and outdoor main board) error diagnosis and

.

Error Code	E3
Malfunction decision conditions	PCB main chip does not receive feedback from IPM module during 60 seconds.
Supposed causes	• Wiring mistake • PCB faulty

Trouble shooting:

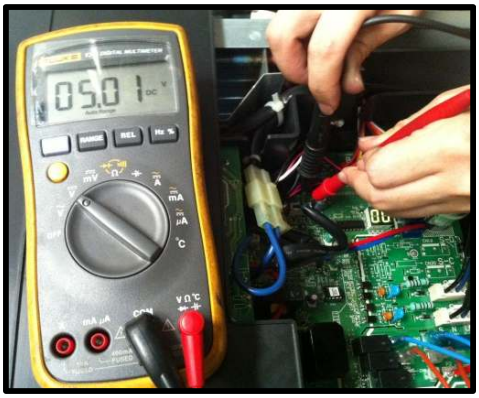


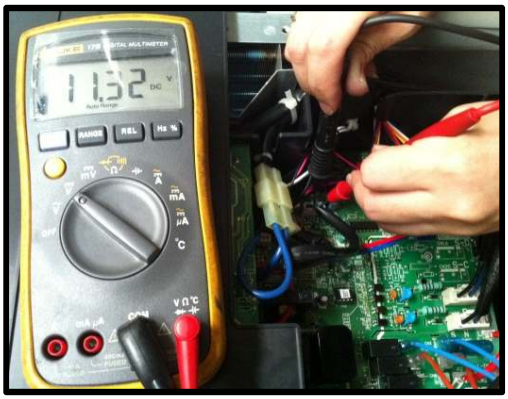


Remark:

Use a multimeter to test the DC voltage between black pin and white pin of signal wire The normal value should be around 5V.

Use a multimeter to test the DC voltage between black pin and red pin of signal wire. The normal value should be around 12V.



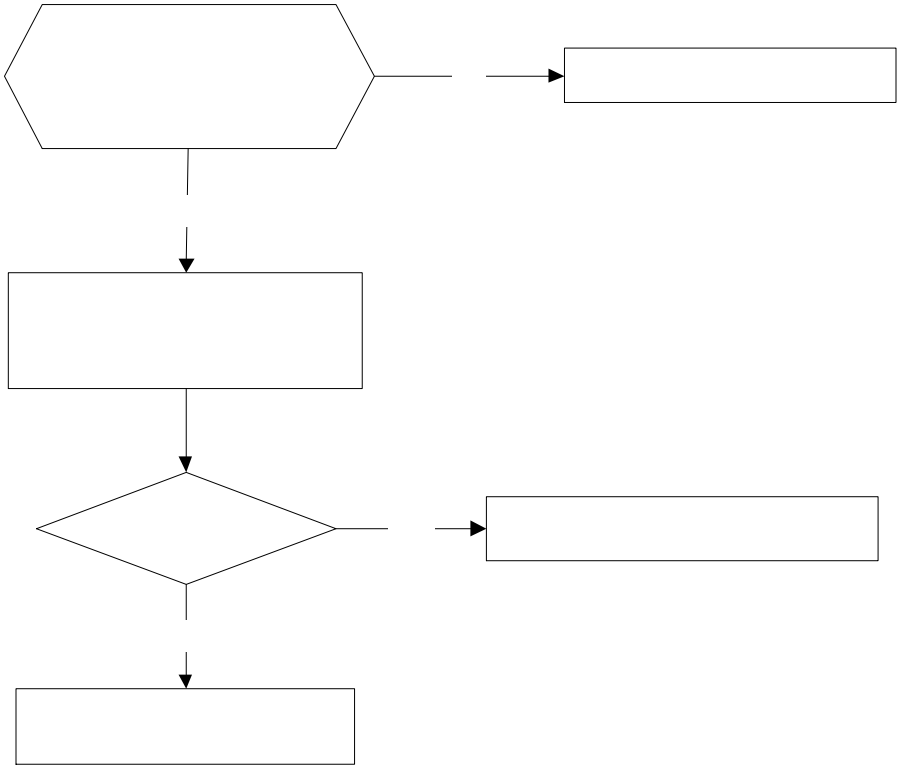


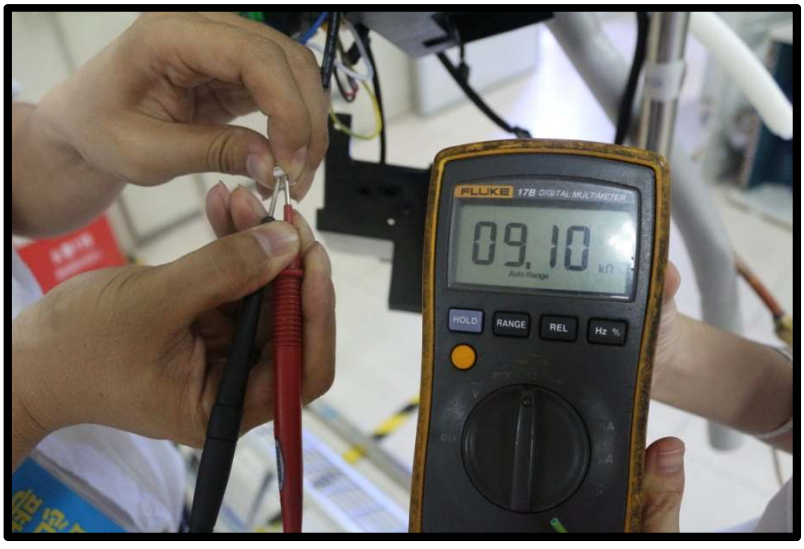
7.4.2.4E4(open or short circuit of outdoor temperature sensor) diagnosis and solution
F1/F2/F3/F4/F5 (open or short circuit of indoor coil temperature sensor) diagnosis and solution.

.

Error Code	E4/F1/F2/F3/F4/F5
Malfunction decision conditions	If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED will display the failure.
Supposed causes	• Wiring mistake • Sensor faulty • PCB faulty

Trouble shooting:

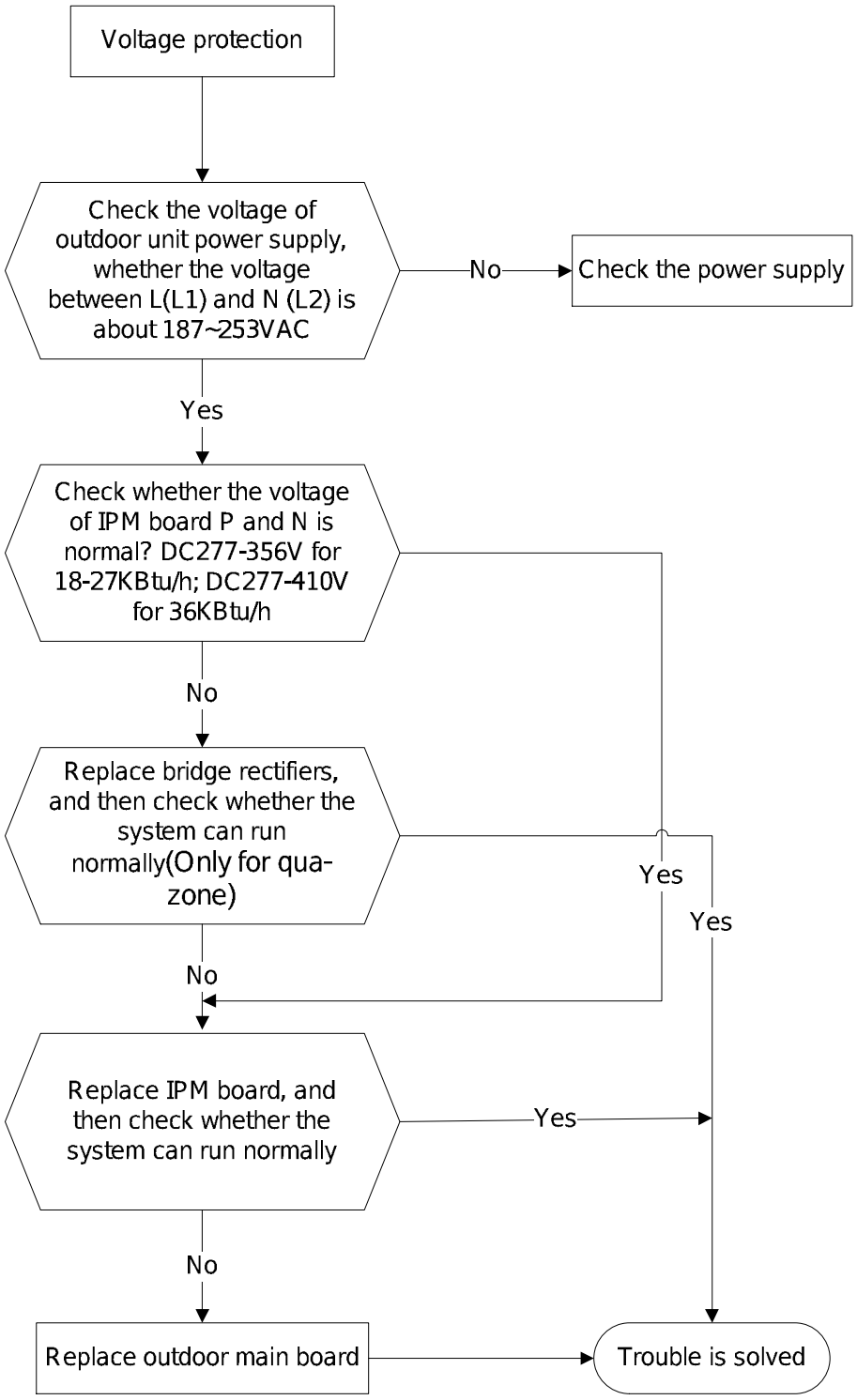


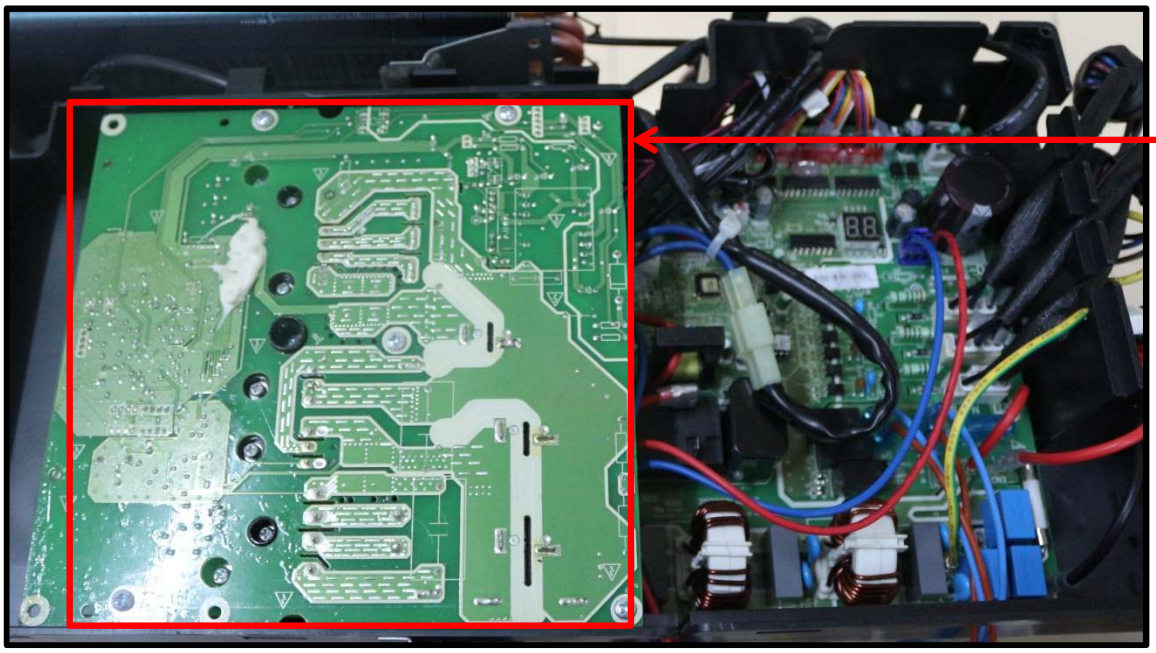


7.4.2.5 E5(Voltage protection) error diagnosis and solution.

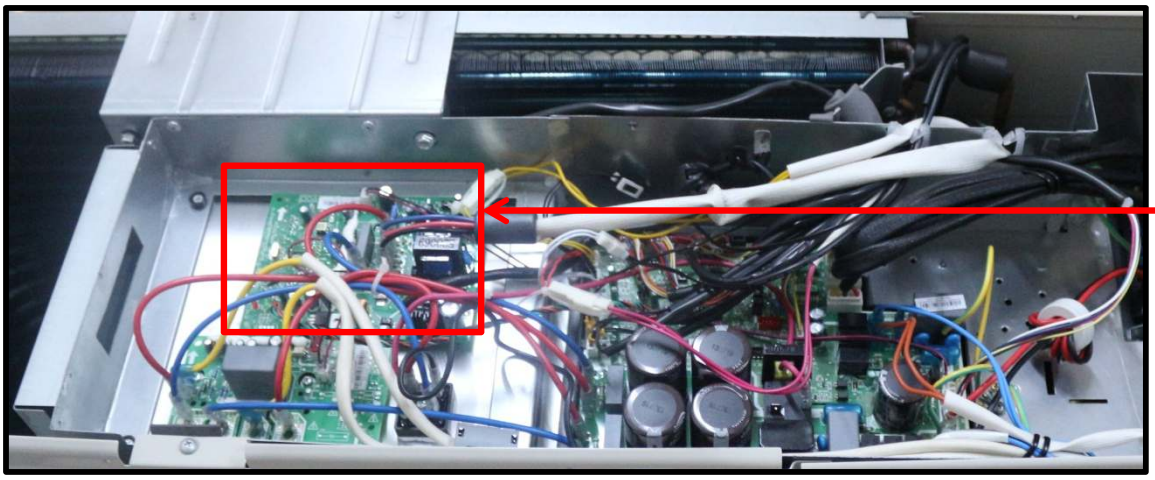
Error Code	E5
Malfunction decision conditions	An abnormal voltage rise or drop is detected by checking the specified voltage detection circuit.
Supposed causes	• Power supply problems. • System leakage or block • PCB faulty

Trouble shooting:



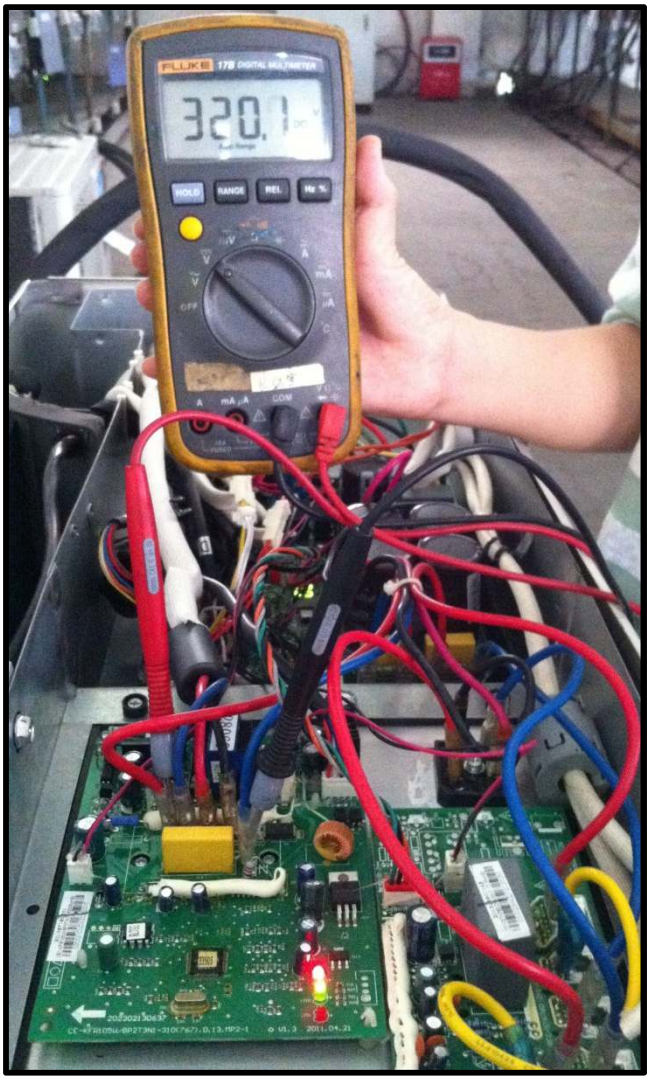


IPM (for dual/tri-zone)



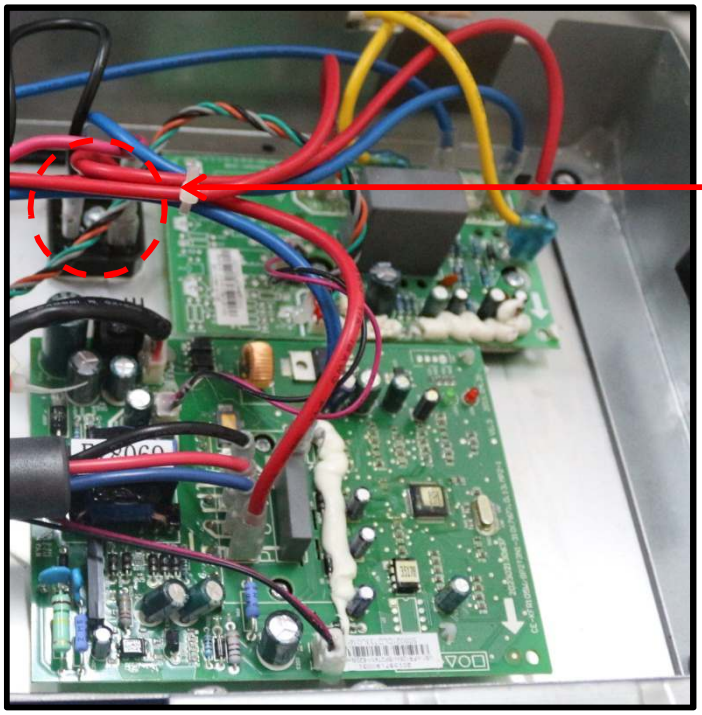
IPM (for qua-zone)

P-N (for dual/tri-zone)

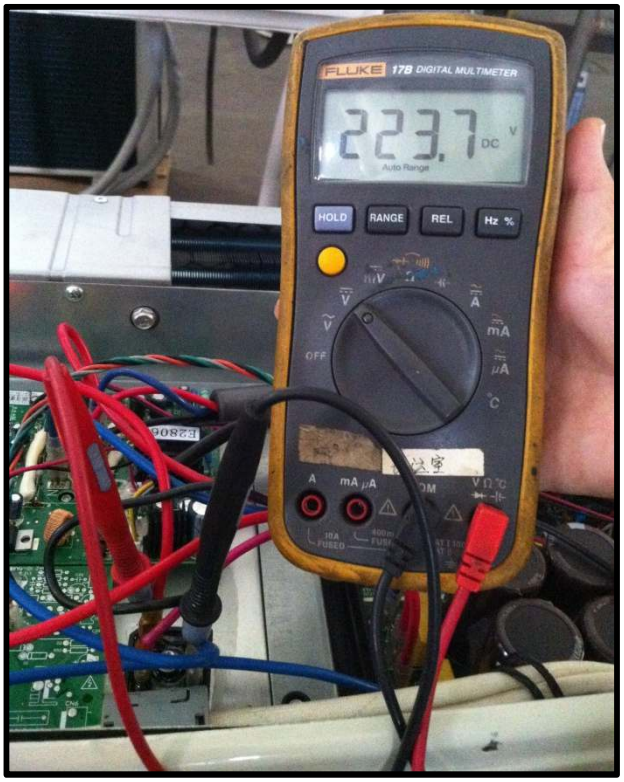


P-N (for qua-zone)

bridge rectifier
(for dual/tri-zone)



bridge rectifier
(for qua-zone)



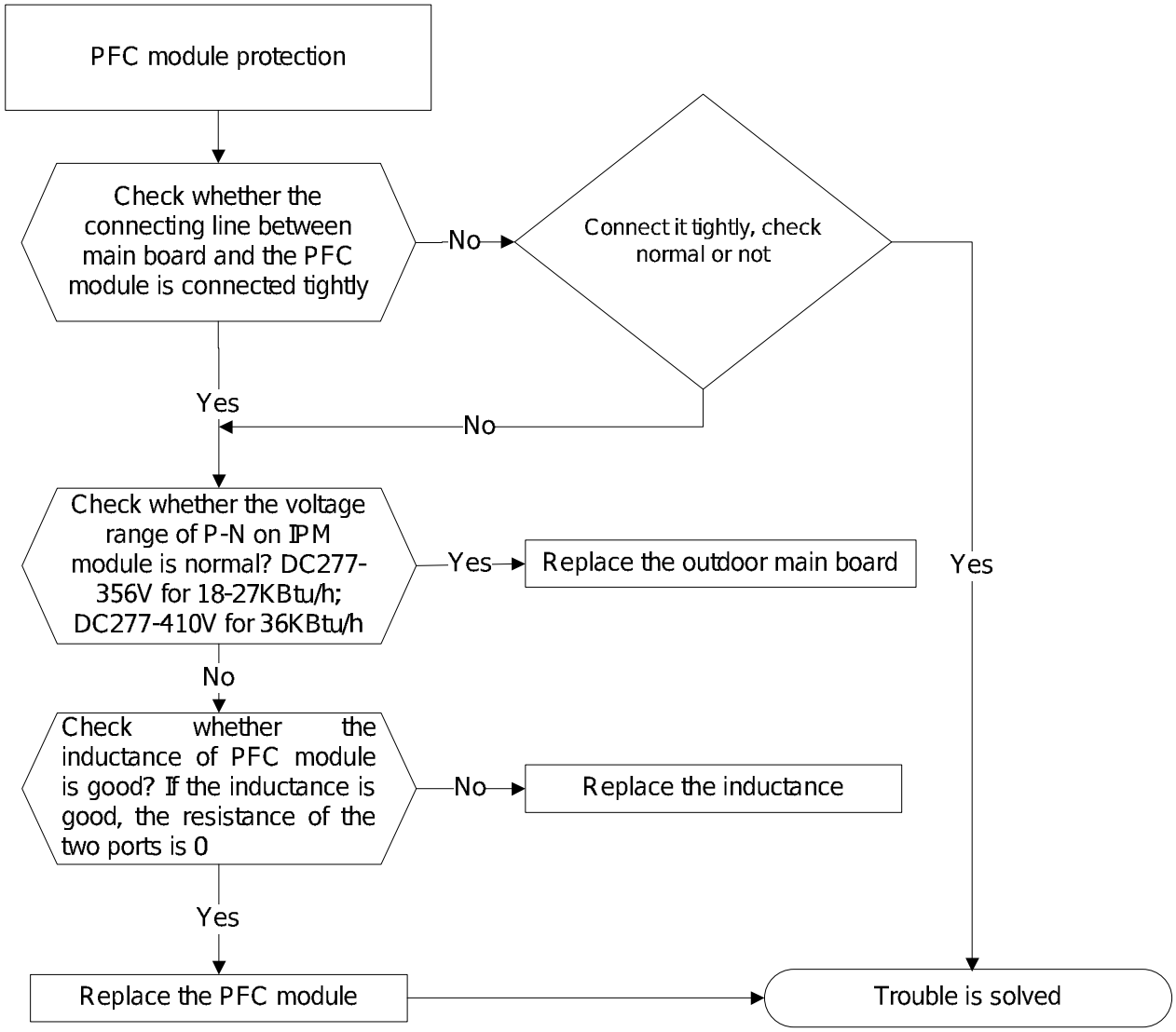
Remark:

Measure the DC voltage between + and - port. The normal value should be 190V~250V.

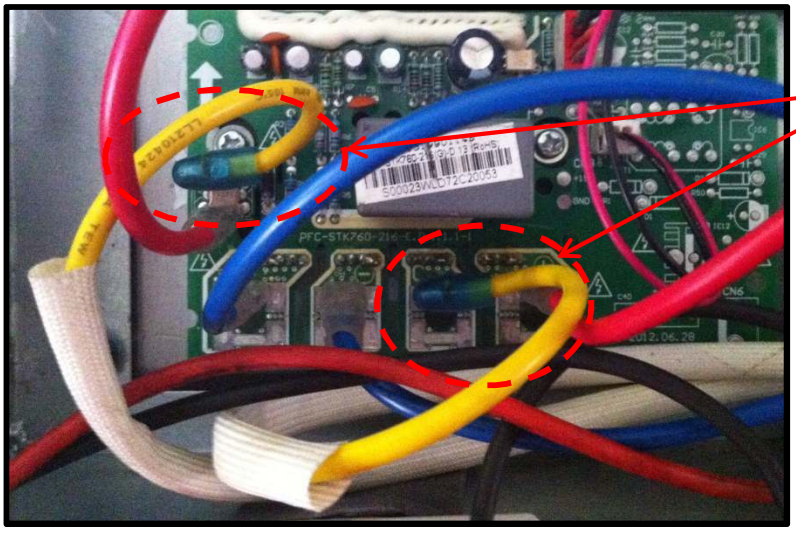
7.4.2.6 E6(PFC module protection) error diagnosis and solution. (Only for KSIM40912-H216 - 2G)

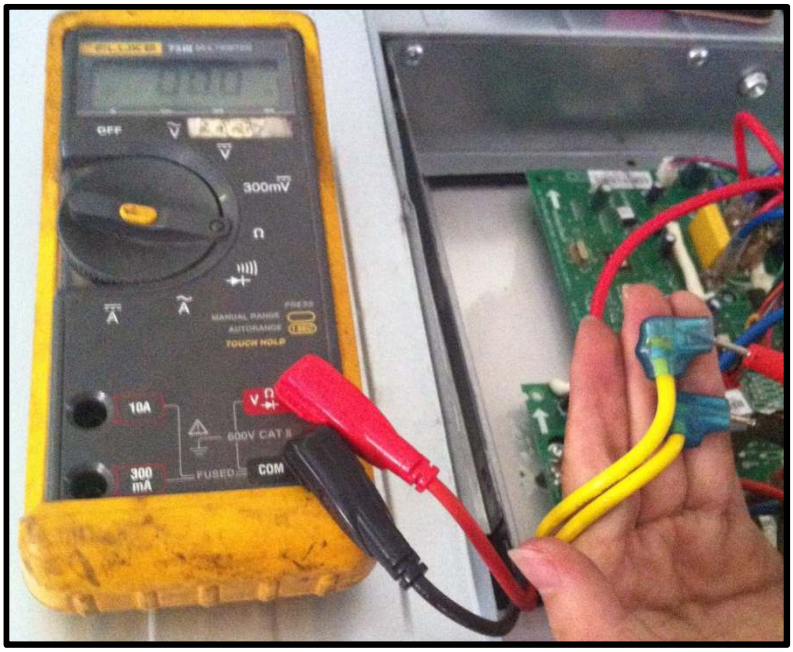
Error Code	E6
Malfunction decision conditions	When the voltage signal that PFC sends to main control board is abnormal, the display LED will show “E6” and AC will turn off.
Supposed causes	• Wiring mistake • Outdoor PCB faulty • Inductance of PFC module faulty • PFC module malfunction

Trouble shooting:




Inductance

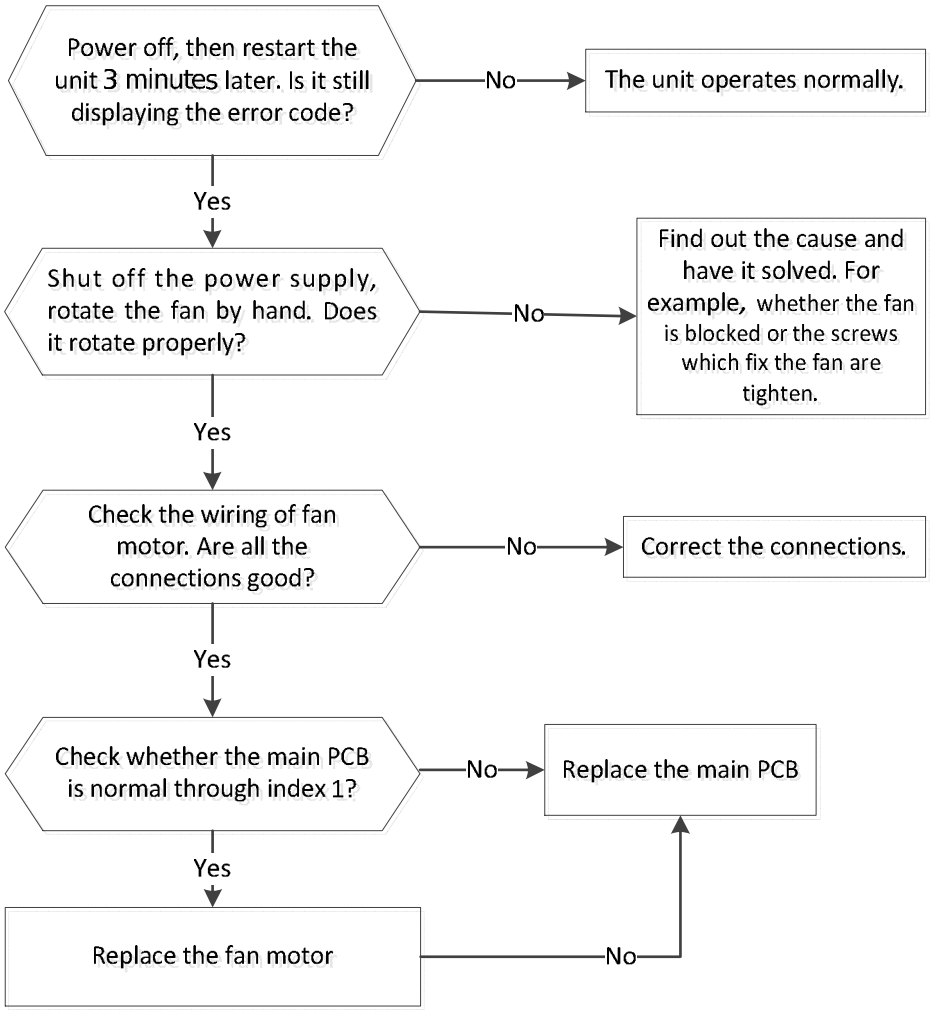

Two ports of the inductance


OFF
300mV
MANUAL RANGE
AUTORANGE
TOUCH HOLD
10A
300 mA
600V CAT II
FUSED
COM

7.4.2.7 E8(Outdoor fan speed has been out of control) diagnosis and solution(Only for DC fan motor models).

Error Code	E8
Malfunction decision conditions	When outdoor fan speed keeps too low (300RPM) or too high(2400RPM) for certain time, the unit will stop and the LED will display the failure.
Supposed causes	• Wiring mistake • Fan ass'y faulty • Fan motor faulty • PCB faulty

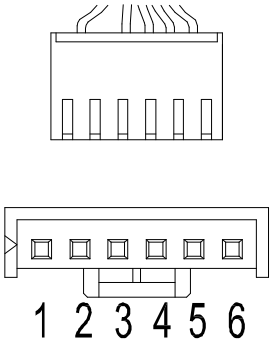
Trouble shooting:



Index 1:

1. DC fan motor(control chip is inside fan motor)

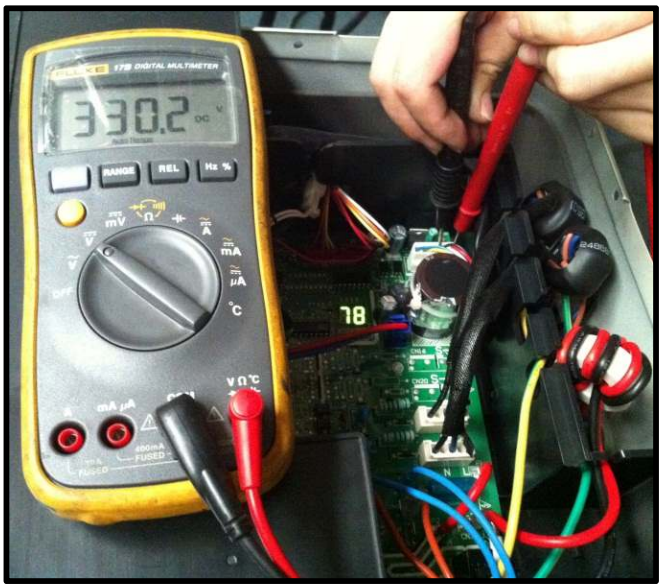
Power on and when the unit is in standby, measure the voltage of pin1-pin3, pin4-pin3 in fan motor connector. If the value of the voltage is not in the range showing in below table, the PCB must have problems and need to be replaced.



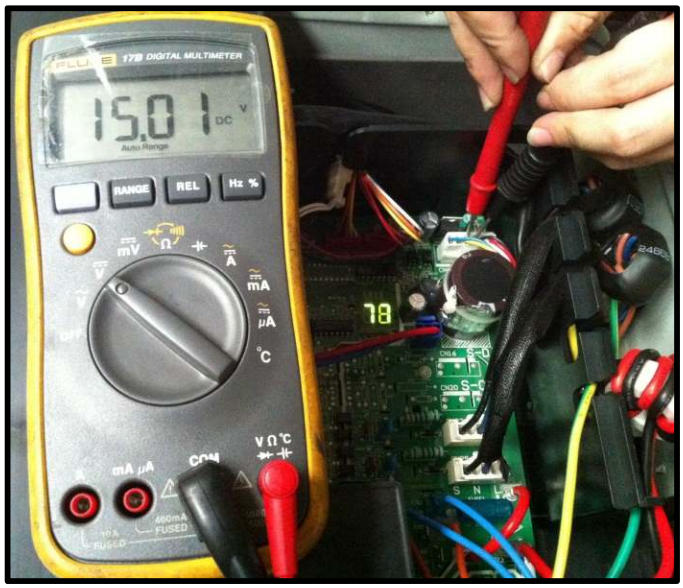
DC motor voltage input and output

NO.	Color	Signal	Voltage
1	Red	Vs/Vm	200~380V
2	---	---	---
3	Black	GND	0V
4	White	Vcc	13.5~16.5V
5	Yellow	Vsp	0~6.5V
6	Blue	FG	13.5~16.5V

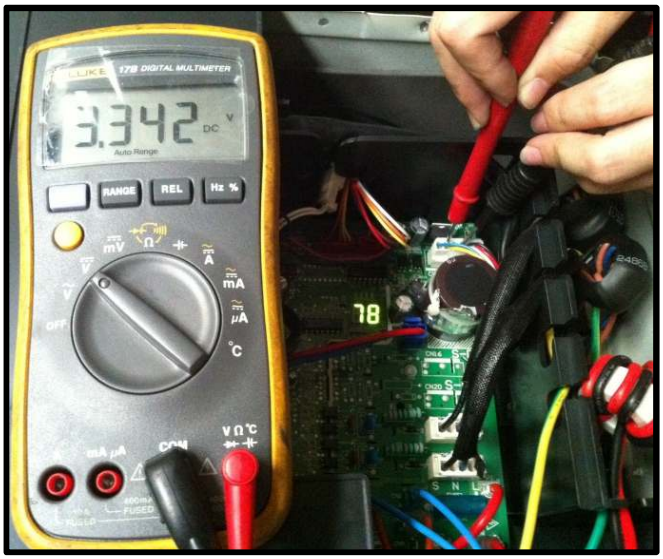
Vs



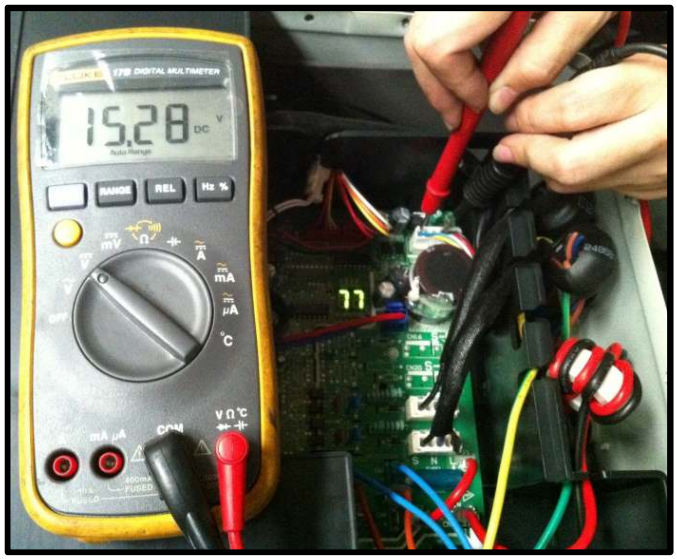
Vcc



Vsp


FLUKE 17B DIGITAL MULTIMETER
3.342 DC V
Auto Range
RANGE
REL
Hz %
78

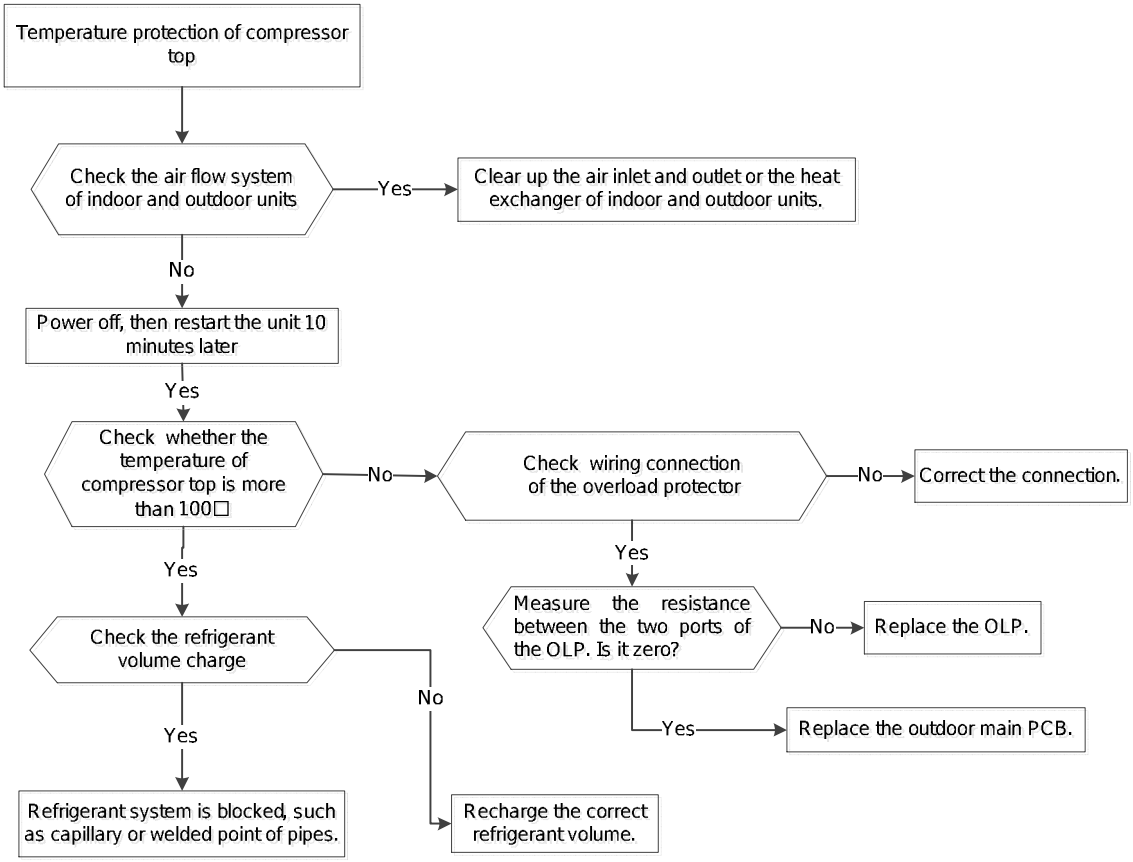
FG

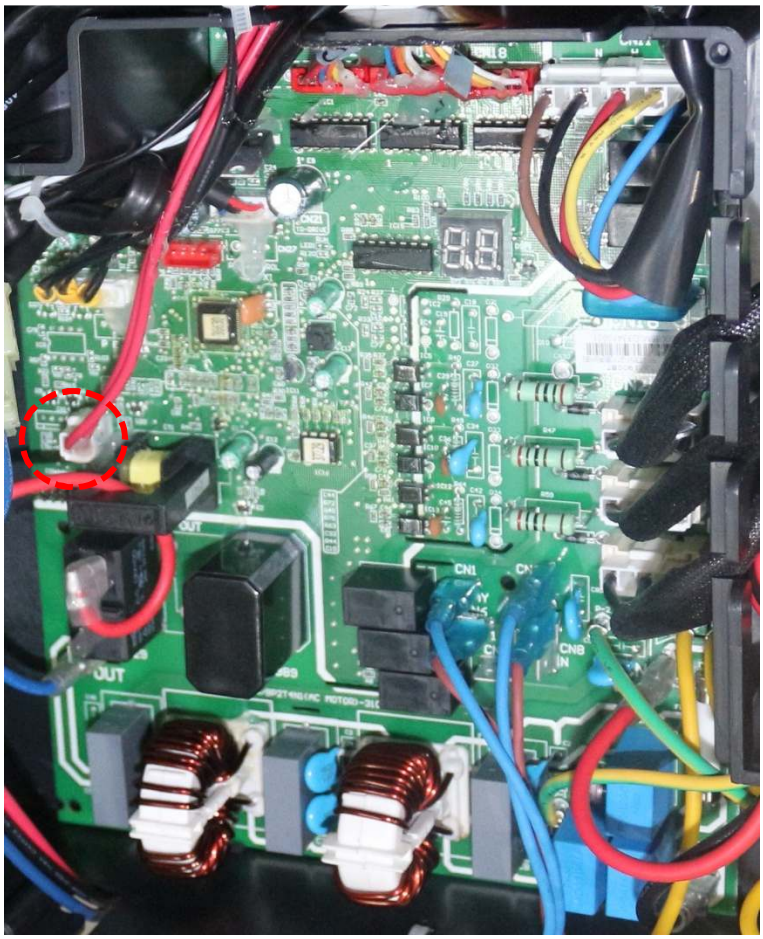

FLUKE 17B DIGITAL MULTIMETER
15.28 DC V
Auto Range
RANGE
REL
Hz %
11

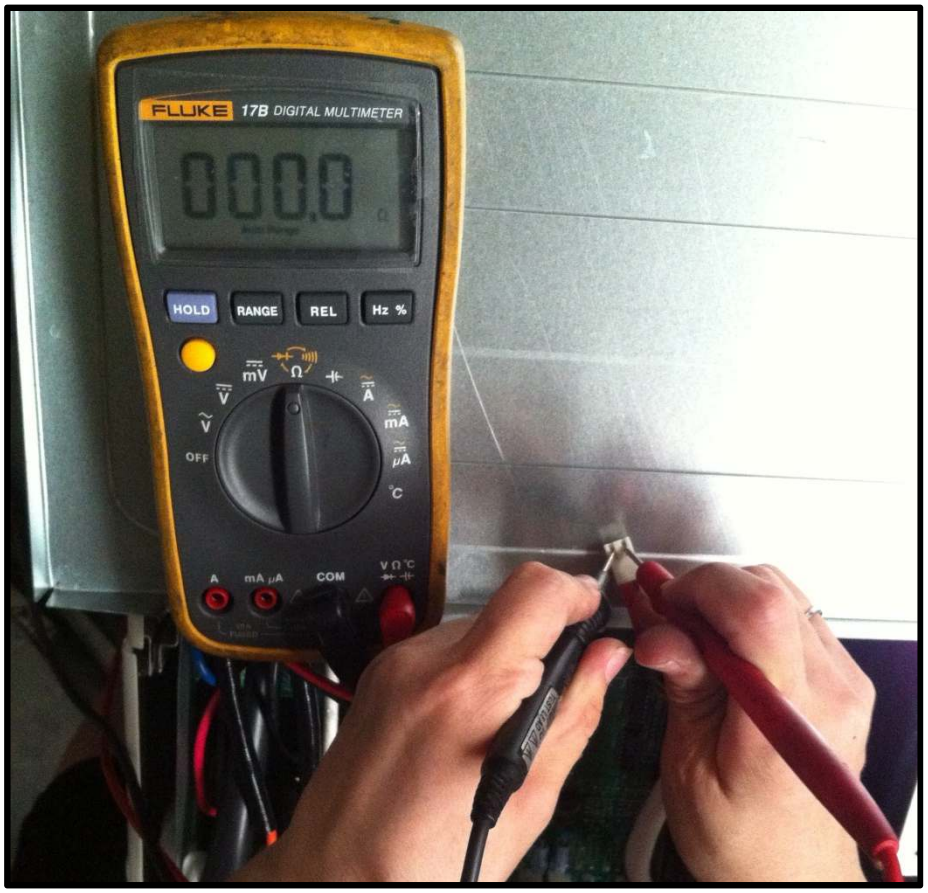
7.4.2.8 P0(Temperature protection of compressor top) error diagnosis and solution. (Only for KSIM30912-H216 - 1G)

Error Code	P0
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty

Trouble shooting:



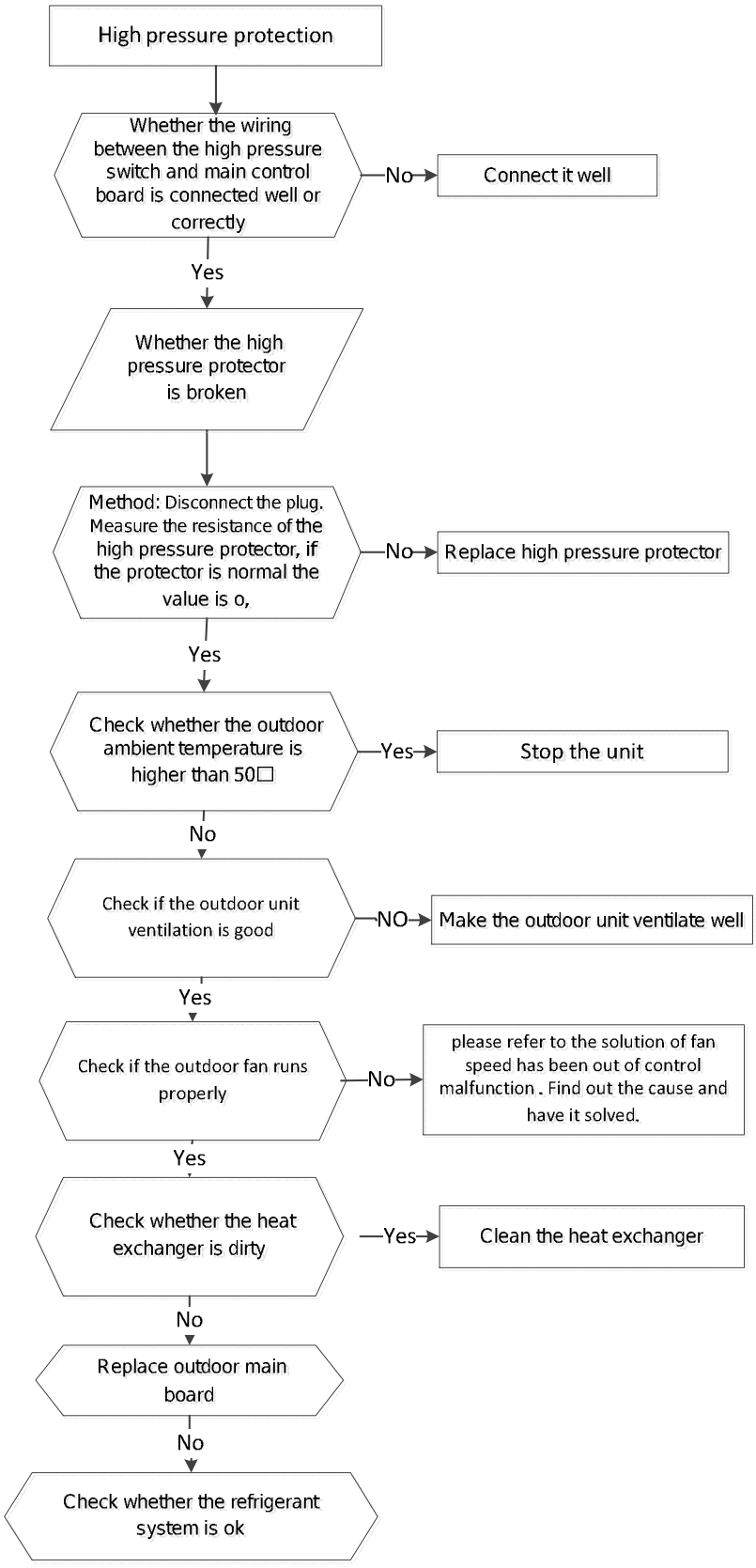


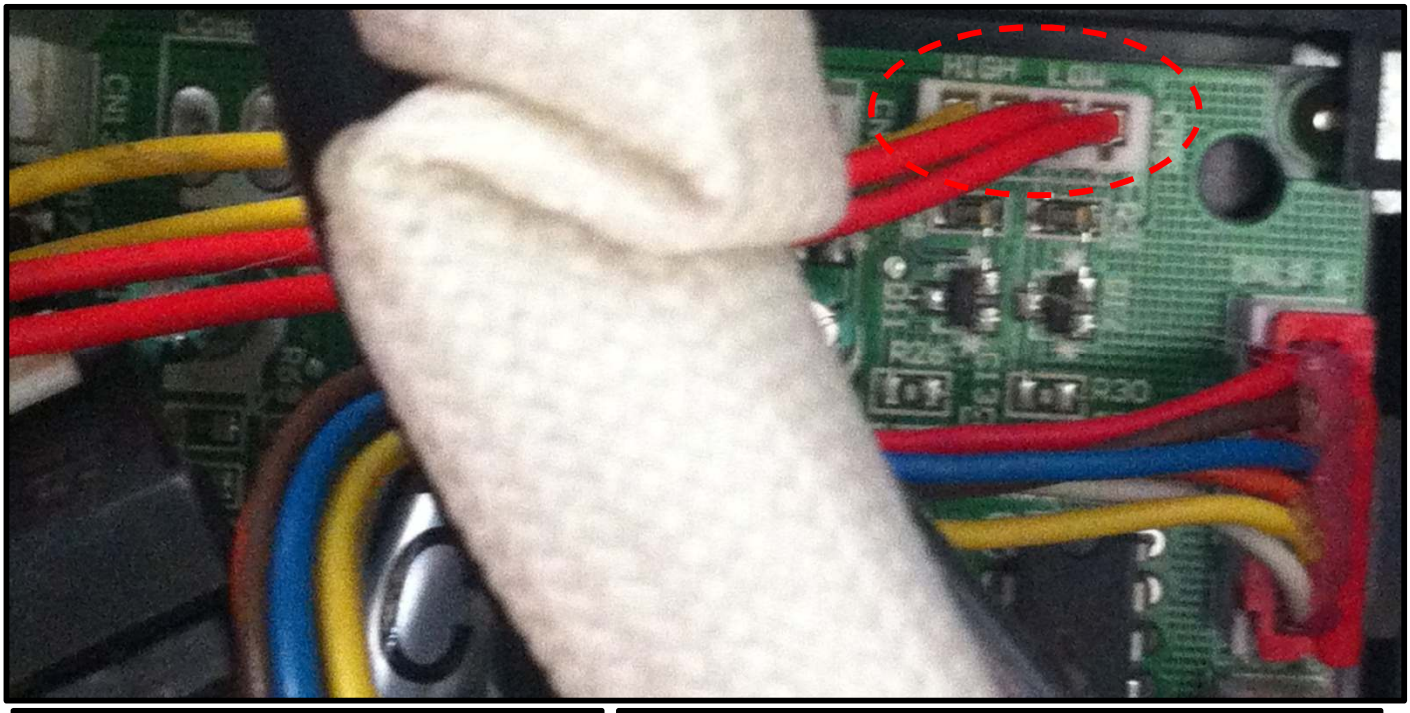

FLUKE 17B DIGITAL MULTIMETER
000.0
HOLD
RANGE
REL
Hz %
OFF
A
mA µA
COM

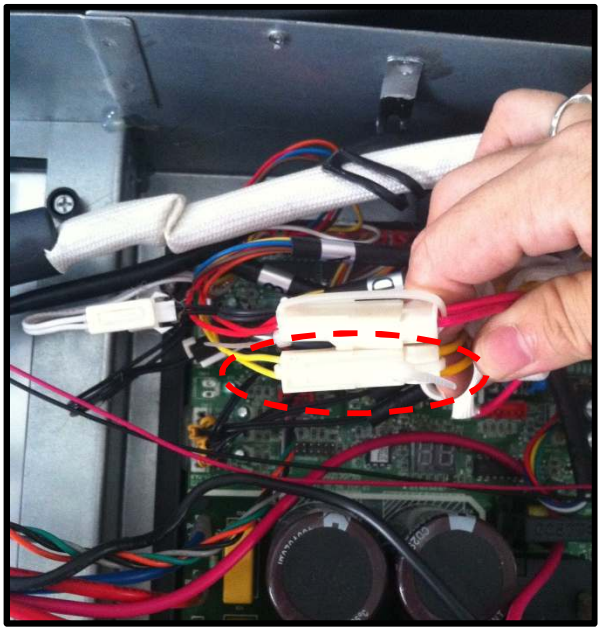
7.4.2.9 P1(High pressure protection) error diagnosis and solution. (Only for KSIM40912-H216 - 2G)

Error Code	P1
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty

Trouble shooting:


High pressure protection
Whether the wiring between the high pressure switch and main control board is connected well or correctly
No
Connect it well
Yes
Whether the high pressure protector is broken
Method: Disconnect the plug. Measure the resistance of the high pressure protector, if the protector is normal the value is o,
No
Replace high pressure protector
Yes
Check whether the outdoor ambient temperature is higher than 50□
Yes
Stop the unit
No
Check if the outdoor unit ventilation is good
NO
Make the outdoor unit ventilate well
Yes
Check if the outdoor fan runs properly
No
please refer to the solution of fan speed has been out of control malfunction . Find out the cause and have it solved.
Yes
Check whether the heat exchanger is dirty
Yes
Clean the heat exchanger
No
Replace outdoor main board
No
Check whether the refrigerant system is ok



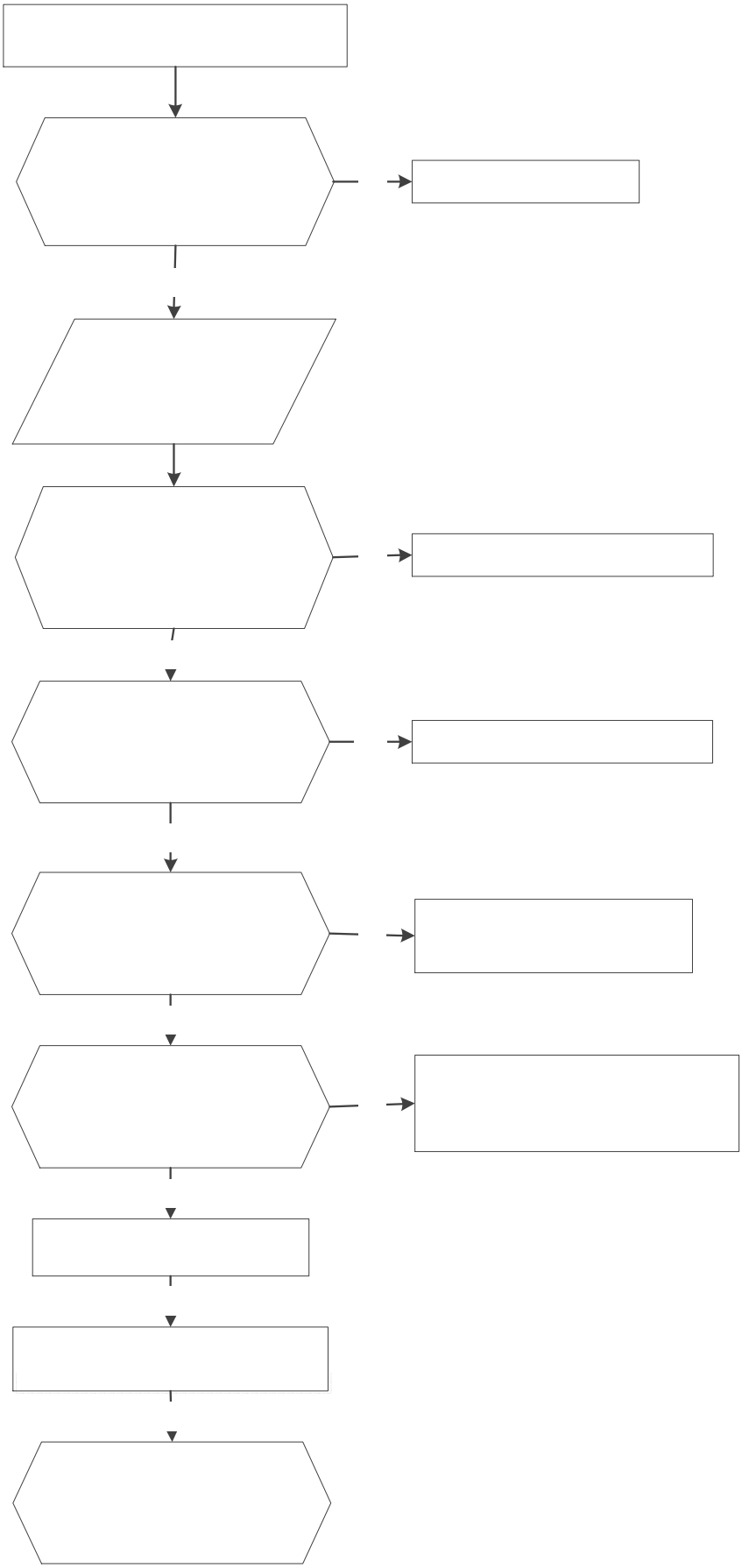


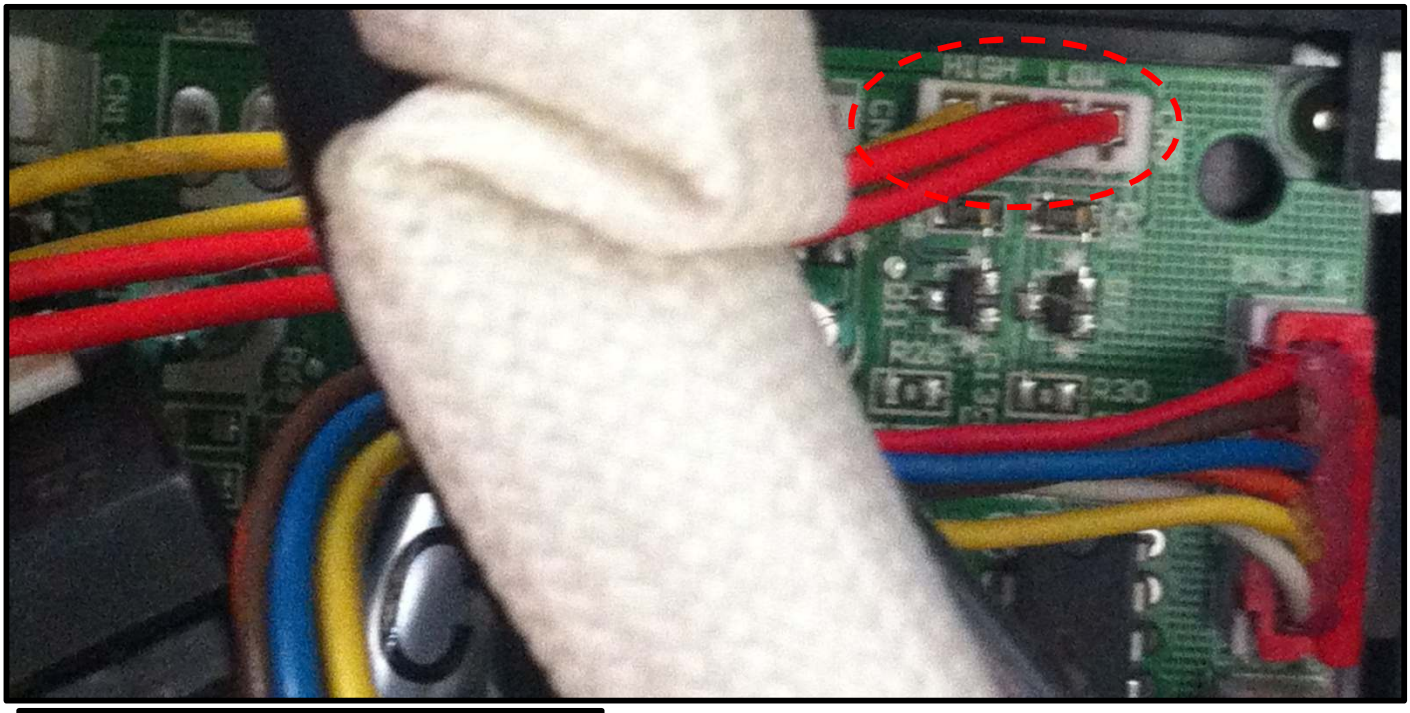

FLUKE 73III MULTIMETER
OFF
300mV
Ω
10A
COM

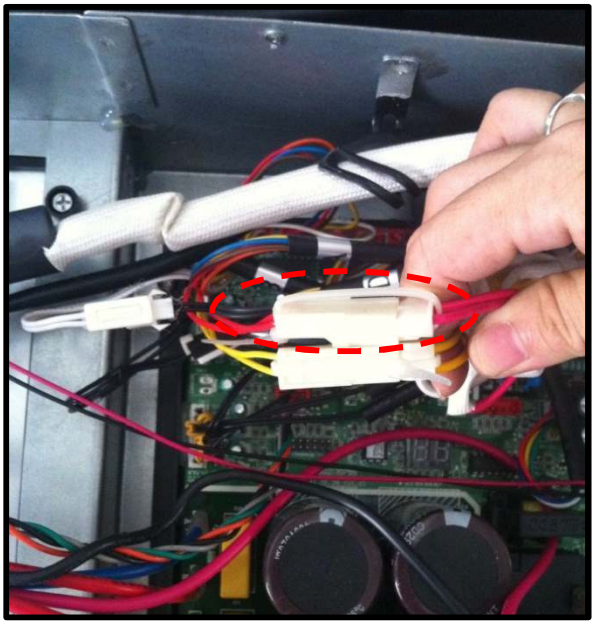
7.4.2.10 P2(Low pressure protection) error diagnosis and solution. (Only for KSIM40912-H216 - 2G)

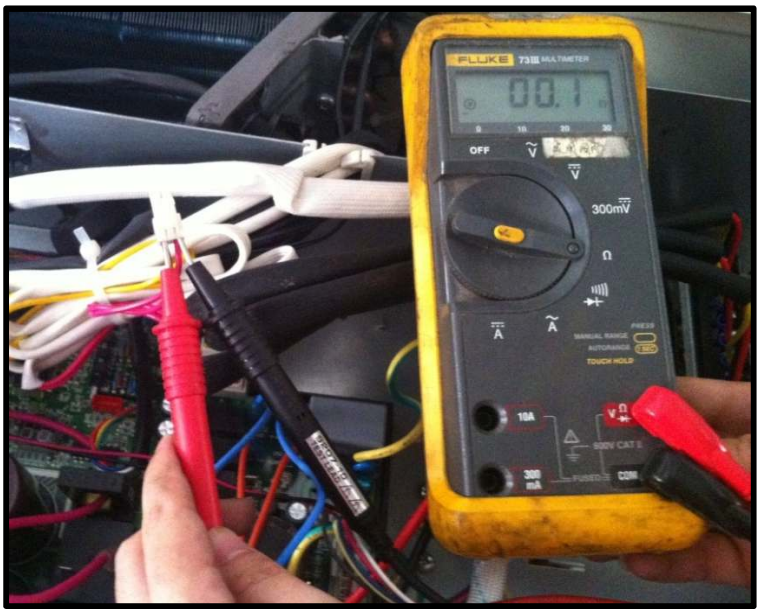
Error Code	P2
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty

Trouble shooting:





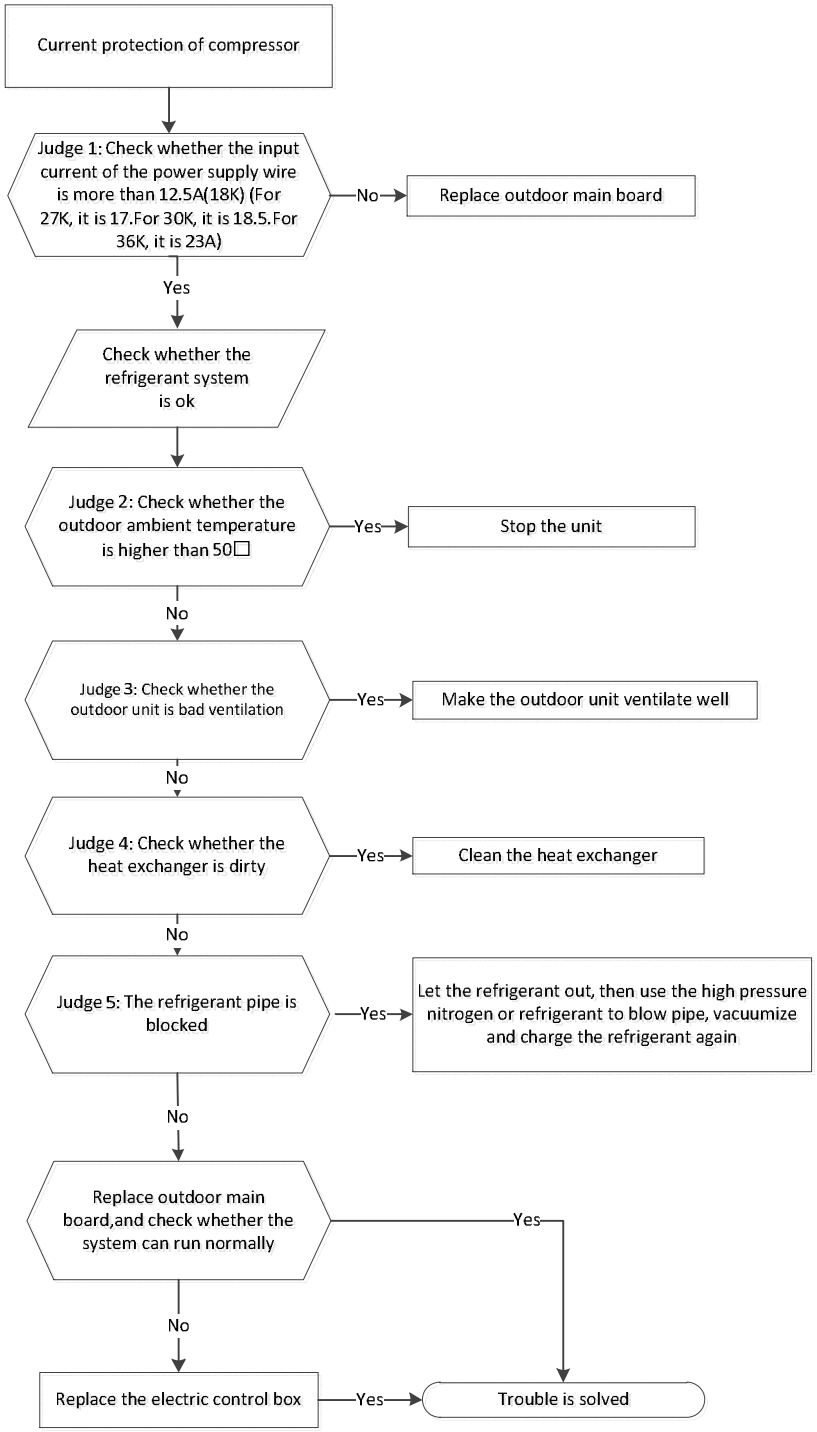



FLUKE
OFF
300mV
10A
COM

7.4.2.11 P3(Current protection of compressor) error diagnosis and solution.

Error Code	P3
Malfunction decision conditions	If the outdoor current exceeds the current limit value, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty

Trouble shooting:



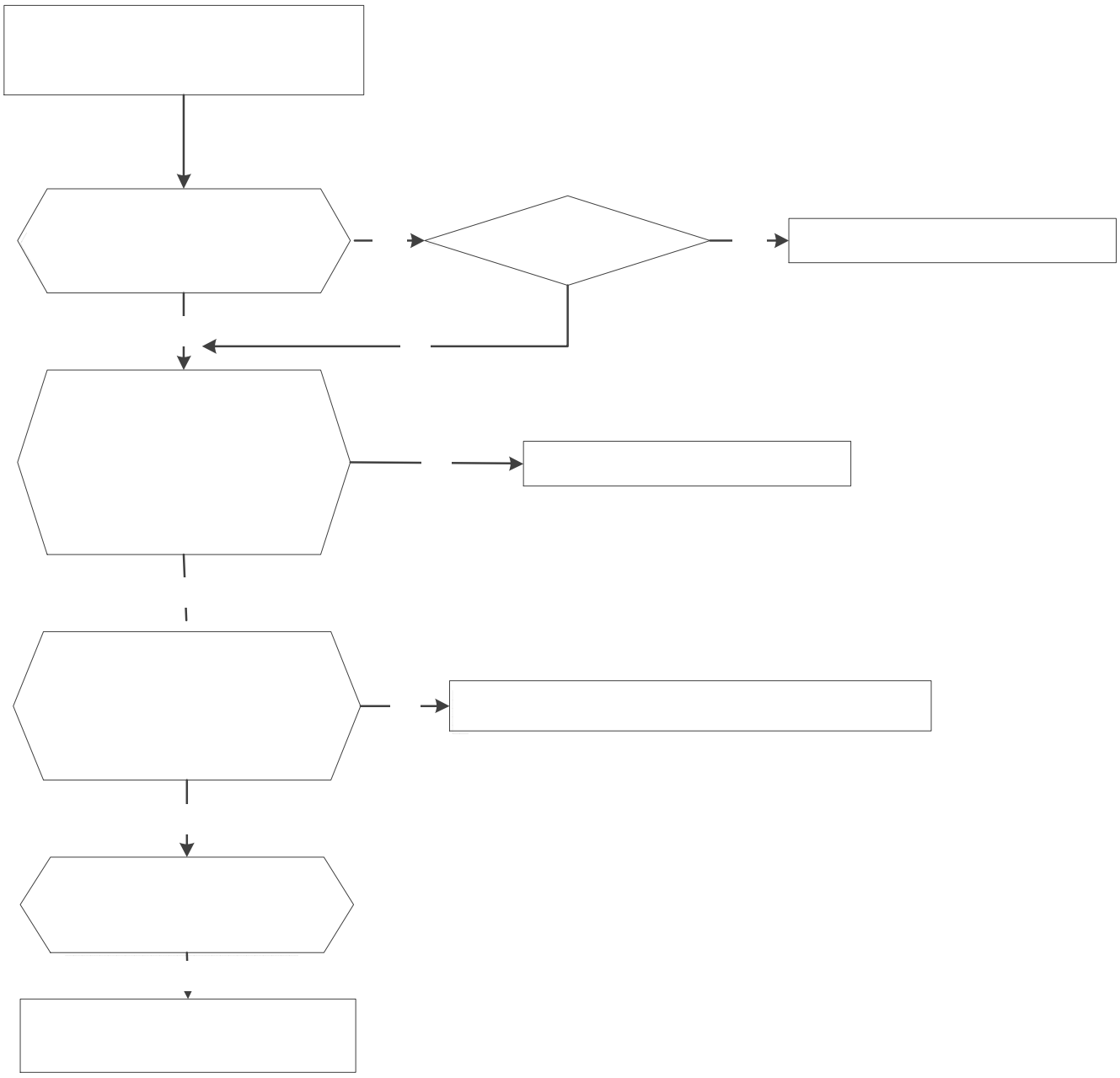

HIOKI 3282
6.53
DIGITAL CLAMP ON HITESTER
CAT IV
600V
COM
RANGE
HOLD


HIOKI 3282
6.61
DIGITAL CLAMP ON HITESTER
CAT IV
600V
COM
RANGE
HOLD

7.4.2.12 P4(Temperature protection of compressor discharge) error diagnosis and solution.

Error Code	P4
Malfunction decision conditions	When the compressor discharge temperature(T5) is more than 115 for 10 seconds, the compressor will stop and restart till T5 is less than 90 .
Supposed causes	• Refrigerant leakage • Wiring mistake • The discharge temperature sensor faulty • Outdoor PCB faulty

Trouble shooting:

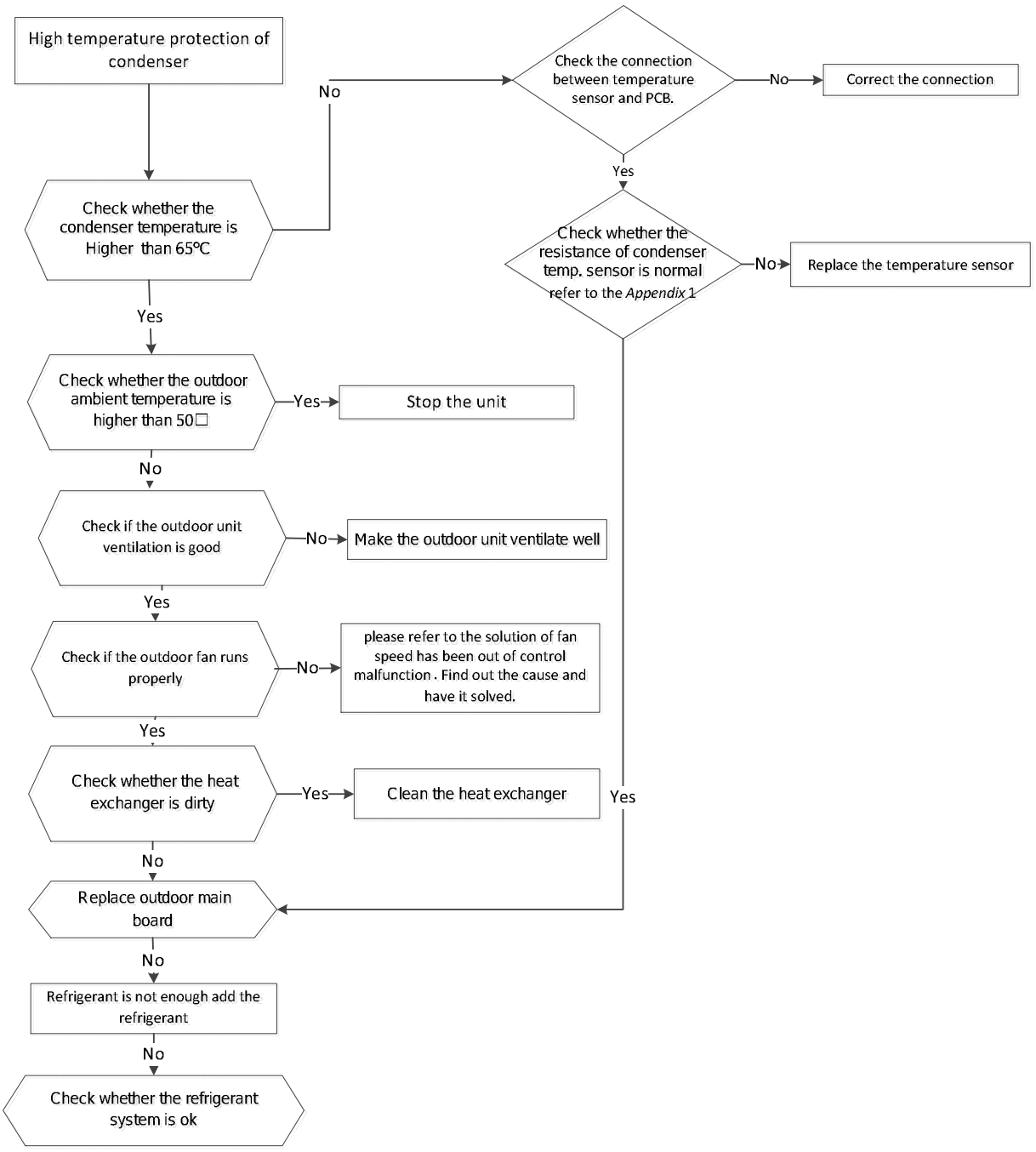


Temperature protection of

7.4.2.13 P5(High temperature protection of condenser) error diagnosis and solution.

Error Code	P5
Malfunction decision conditions	When outdoor pipe temperature is more than 65°C, the unit will stop, and unit runs again when outdoor pipe temperature is less than 52°C
Supposed causes	• The condenser temperature sensor faulty • Heat exchanger dirty • System block

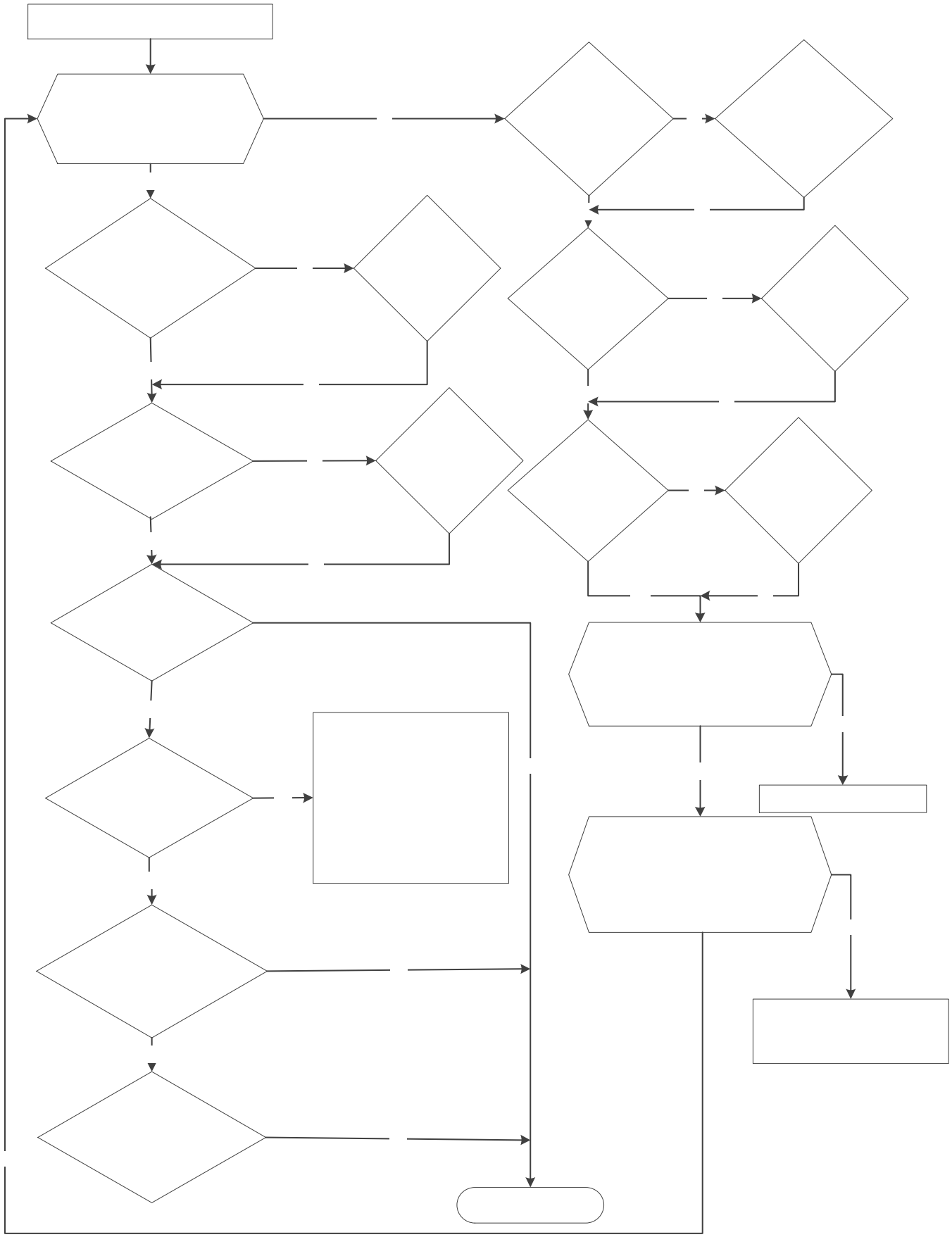
Trouble shooting:



7.4.2.14 P6(IPM module protection) error diagnosis and solution.

Error Code	P6
Malfunction decision conditions	When the voltage signal that IPM send to compressor drive chip is abnormal, the display LED will show “P6” and AC will turn off.
Supposed causes	• Wiring mistake • IPM malfunction • Outdoor fan ass’y faulty • Compressor malfunction • Outdoor PCB faulty

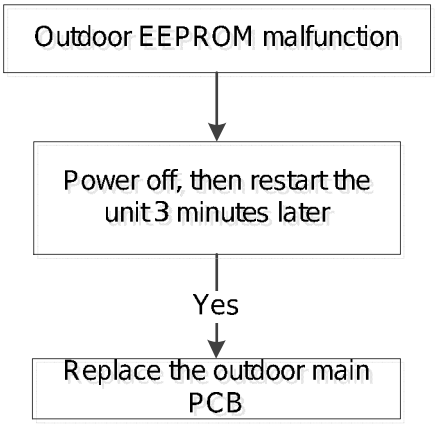
Trouble shooting:



7.4.3 Outdoor unit trouble shooting (For KSIM20912-H216 - 1G, KSIM30912-H216 - 1G, KSIM40912-H216 - 1G 7.4.3.1 E0(Outdoor EEPROM malfunction) error diagnosis and solution

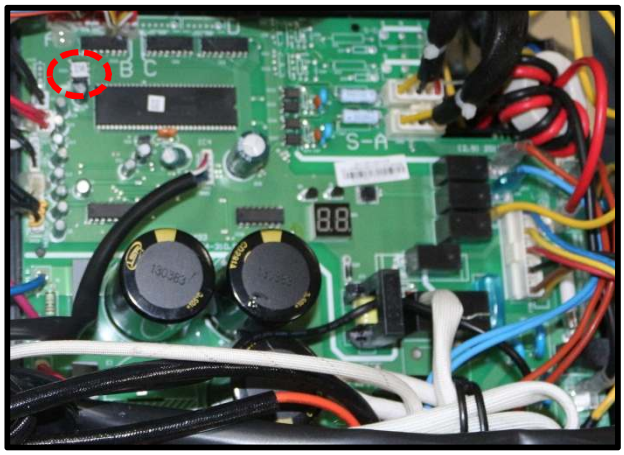
Error Code	E0
Malfunction decision conditions	PCB main chip does not receive feedback from EEPROM chip
Supposed causes	• Installation mistake • PCB faulty

Trouble shooting:



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

For the location of EEPROM chip, please refer to the below photos.

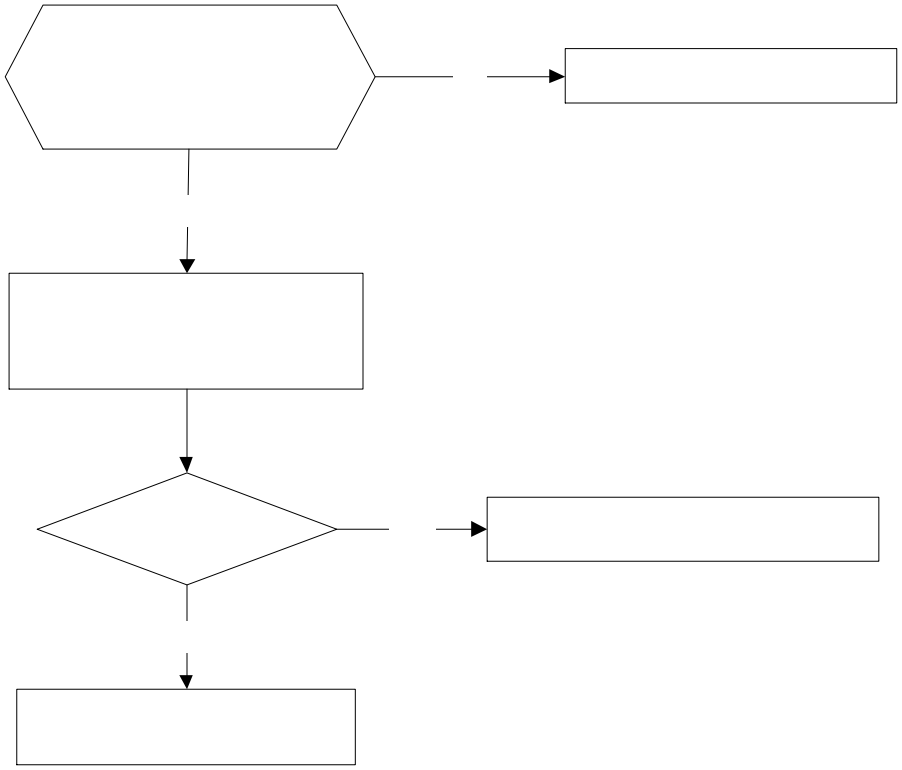


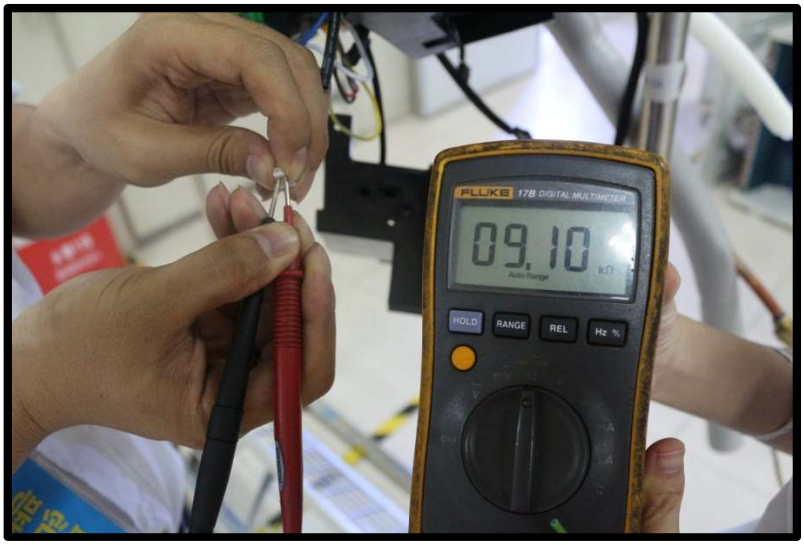
Outdoor PCB(KSIM20912-H216 - 1G)

7.4.3.2 E4(open or short circuit of outdoor temperature sensor) diagnosis and solution
E1/E2/E3/E6 (open or short circuit of indoor coil temperature sensor) diagnosis and solution.

Error Code	E1/E2/E3/E4/E6
Malfunction decision conditions	If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED will display the failure.
Supposed causes	• Wiring mistake • Sensor faulty • PCB faulty

Trouble shooting:

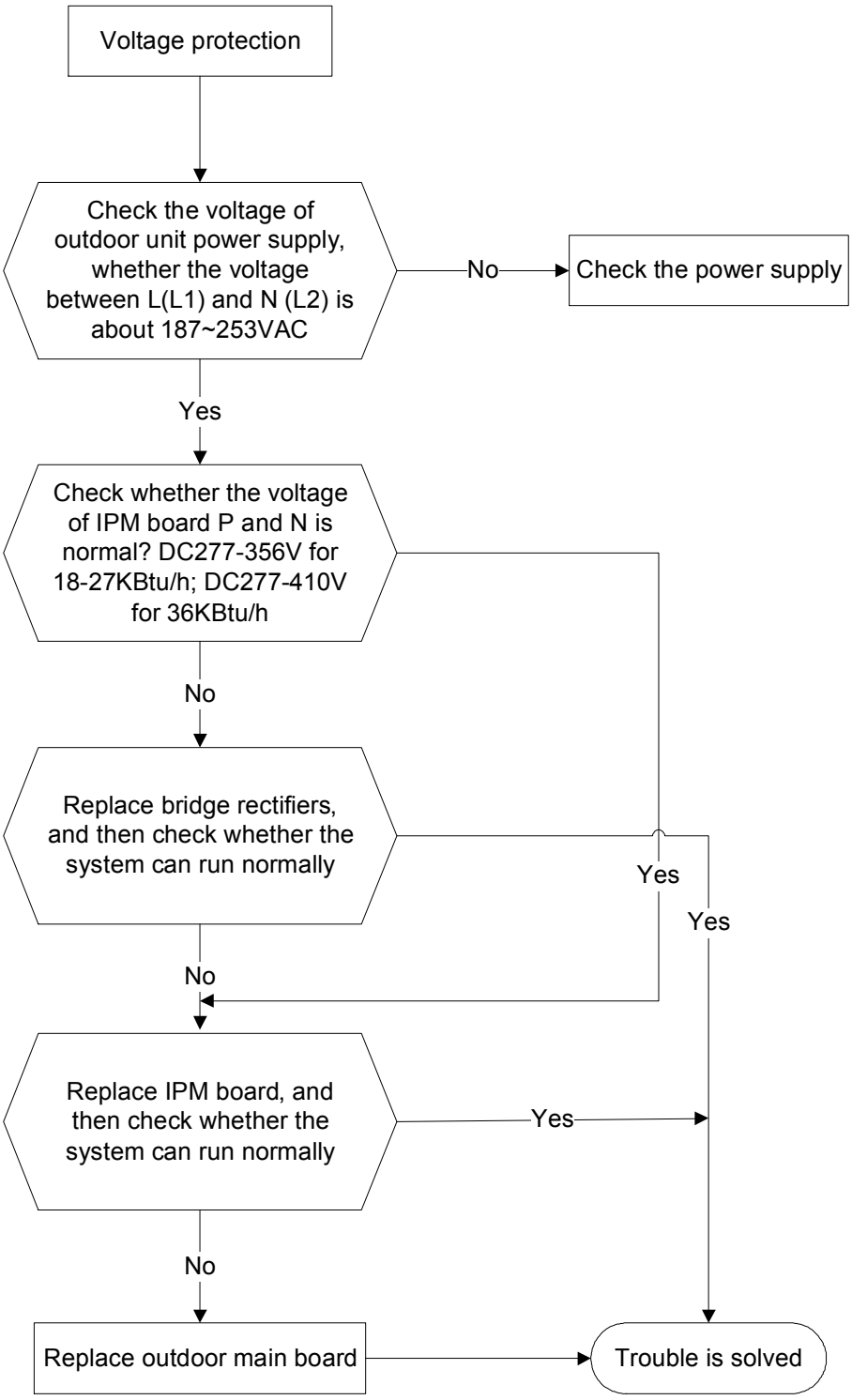


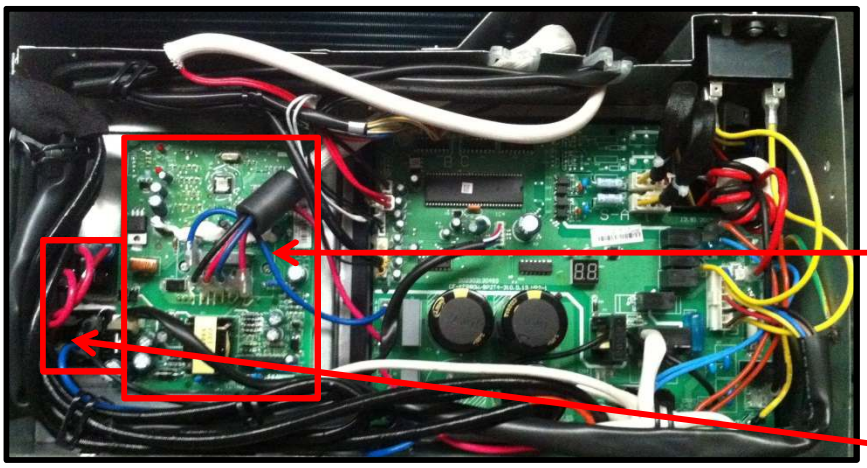


7.4.3.3 E5(Voltage protection) error diagnosis and solution.

Error Code	E5
Malfunction decision conditions	An abnormal voltage rise or drop is detected by checking the specified voltage detection circuit.
Supposed causes	• Power supply problems. • System leakage or block • PCB faulty

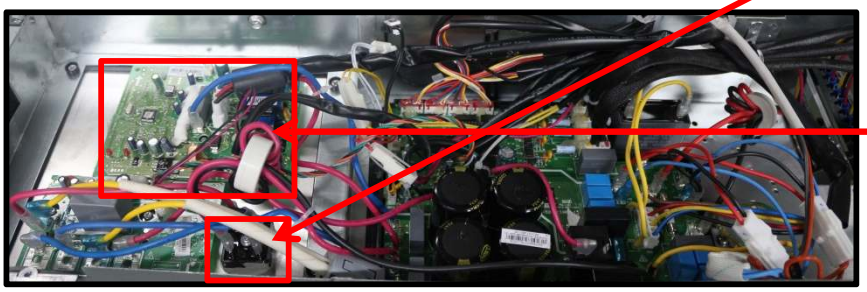
Trouble shooting:



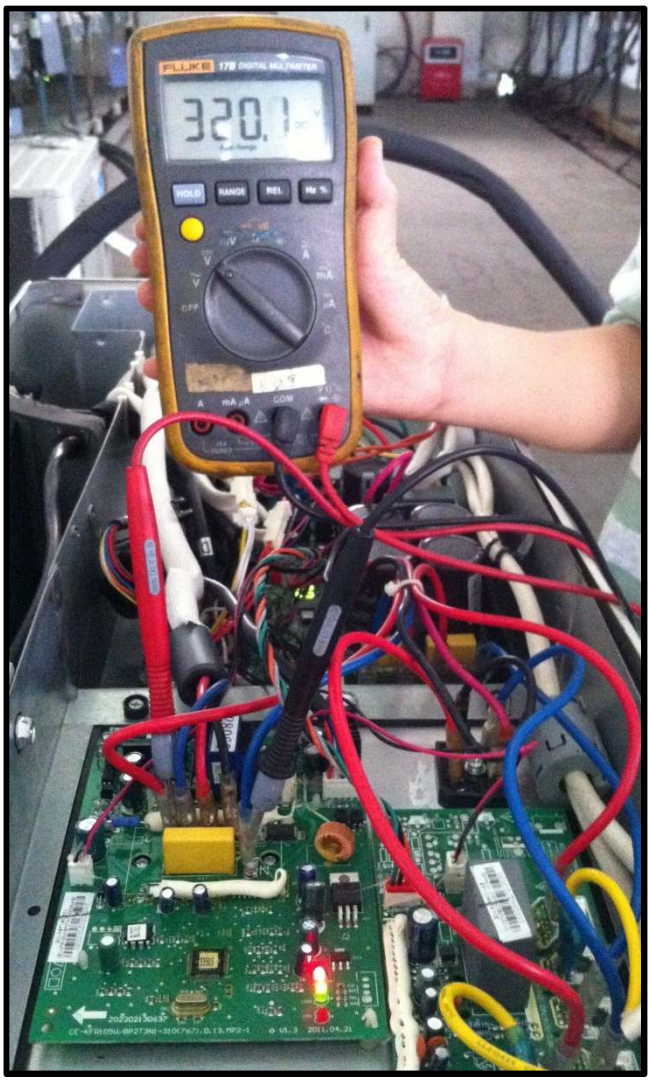


IPM (for dual/tri-zone)

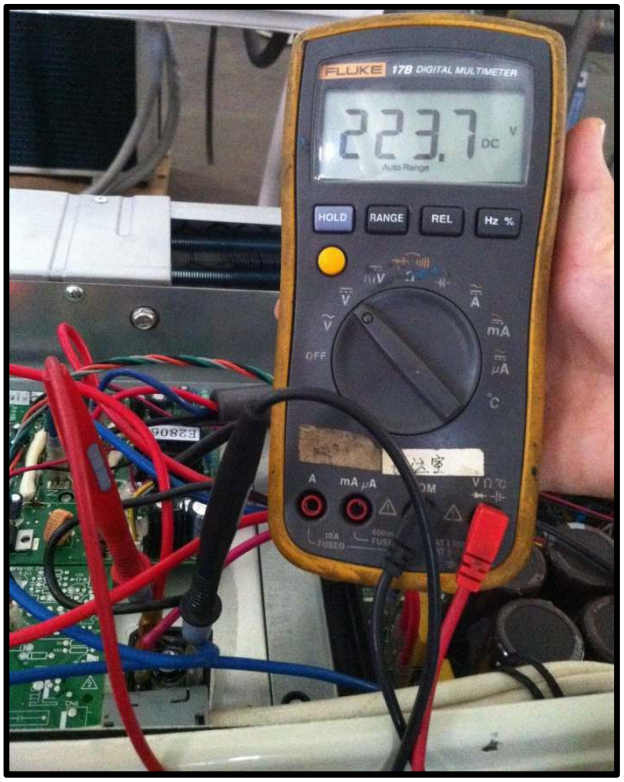
bridge rectifier



IPM (for qua-zone)



P-N



Remark:

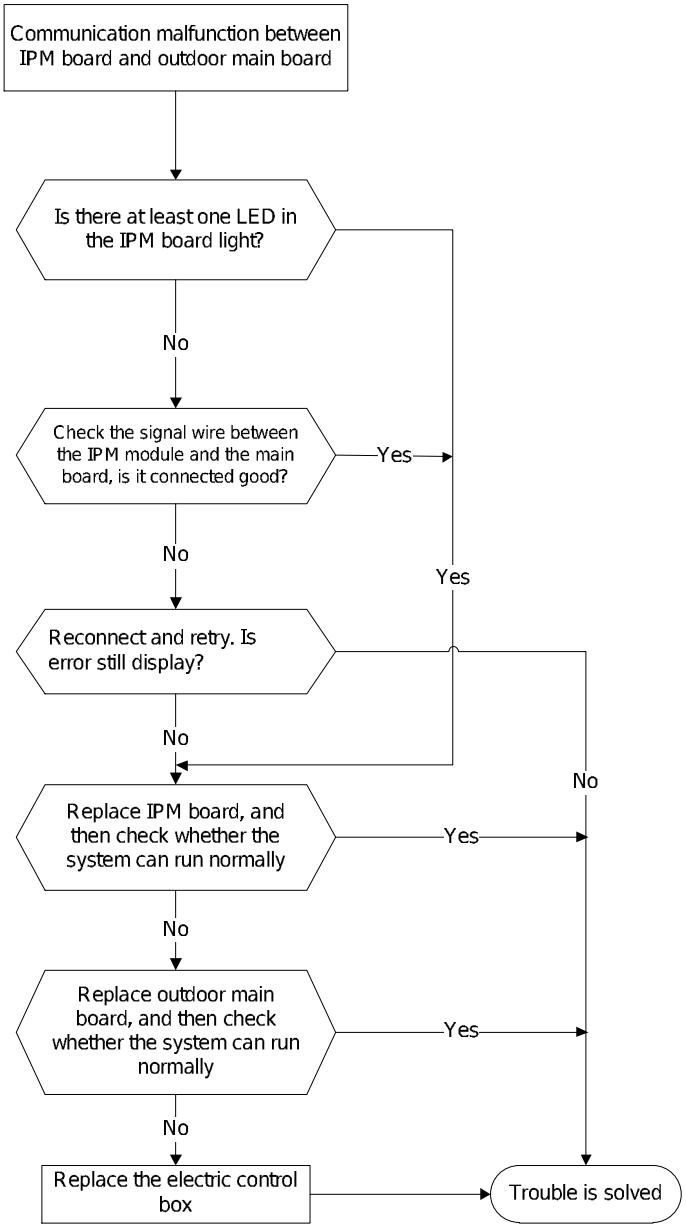
Measure the DC voltage between + and - port. The normal value should be 190V~250V.

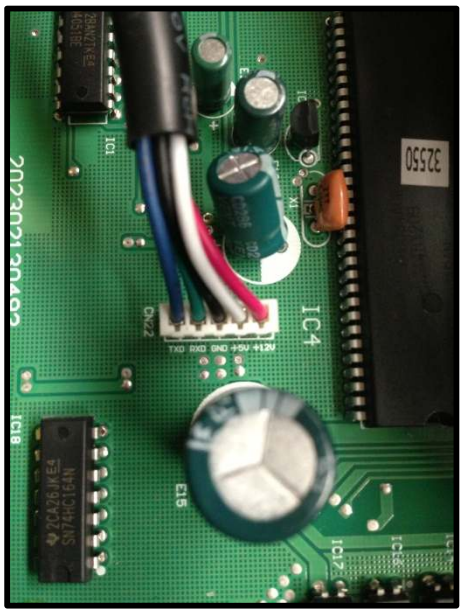
7.4.3.4 E7(Communication malfunction between IPM board and outdoor main board) error diagnosis and

.

Error Code	E7
Malfunction decision conditions	PCB main chip does not receive feedback from IPM module during 60 seconds.
Supposed causes	• Wiring mistake • PCB faulty

Trouble shooting:

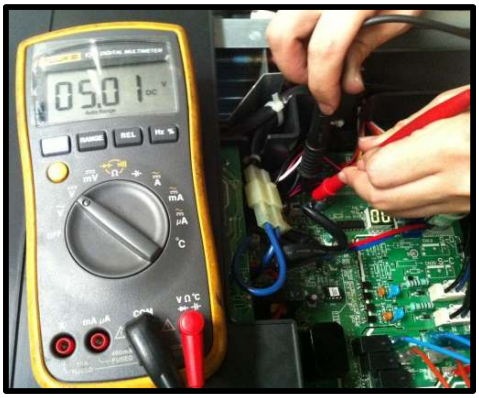


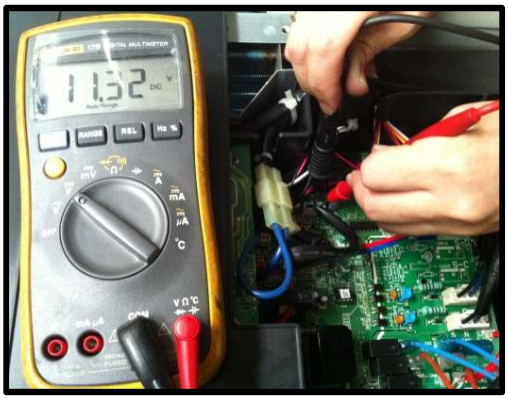


Remark:

Use a multimeter to test the DC voltage between black pin and white pin of signal wire The normal value should be around 5V.

Use a multimeter to test the DC voltage between black pin and red pin of signal wire. The normal value should be around 12V.

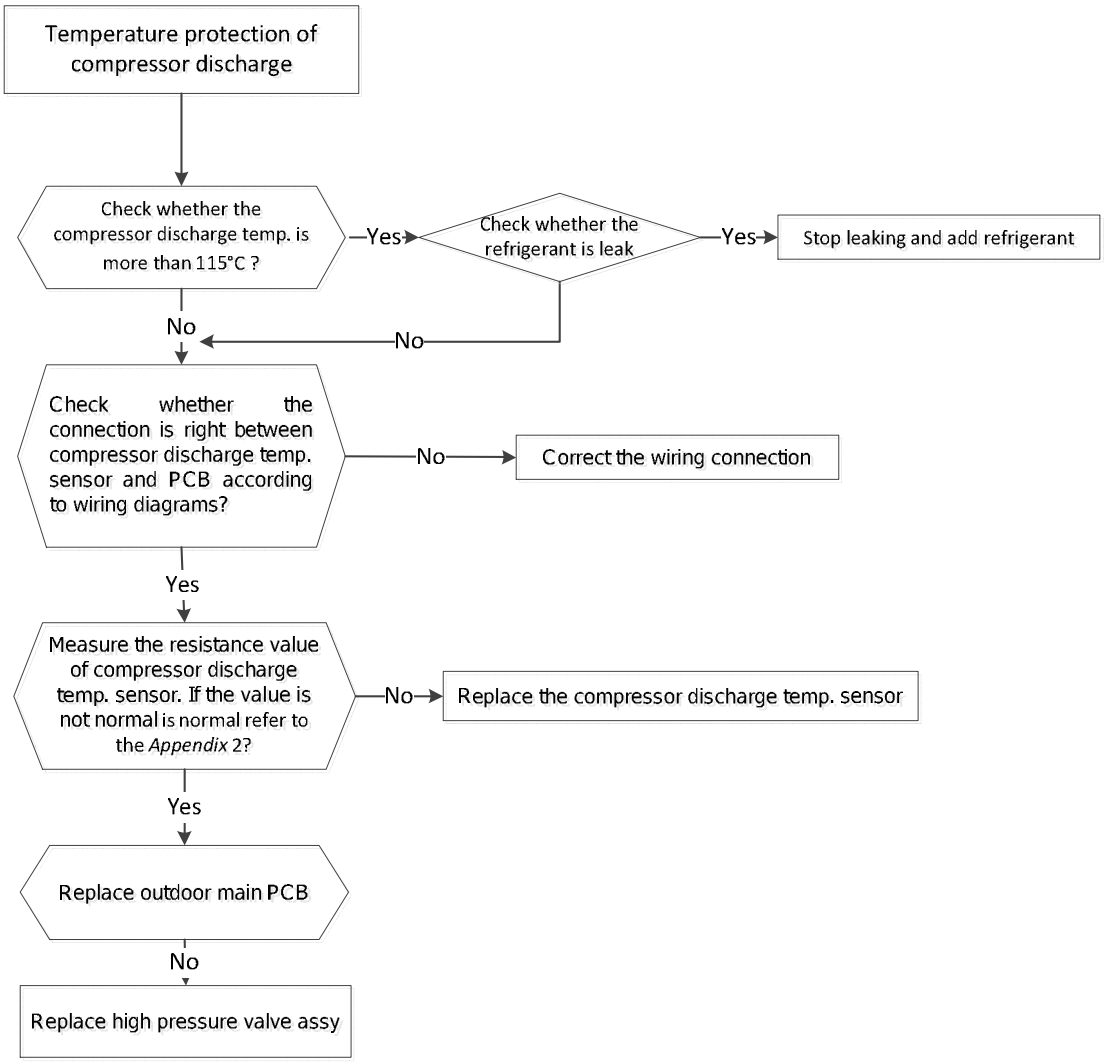




7.4.3.5 P0(Temperature protection of compressor discharge) error diagnosis and solution.

Error Code	P0
Malfunction decision conditions	When the compressor discharge temperature(T5) is more than 115 for 10 seconds, the compressor will stop and restart till T5 is less than 90 .
Supposed causes	• Refrigerant leakage • Wiring mistake • The discharge temperature sensor faulty • Outdoor PCB faulty

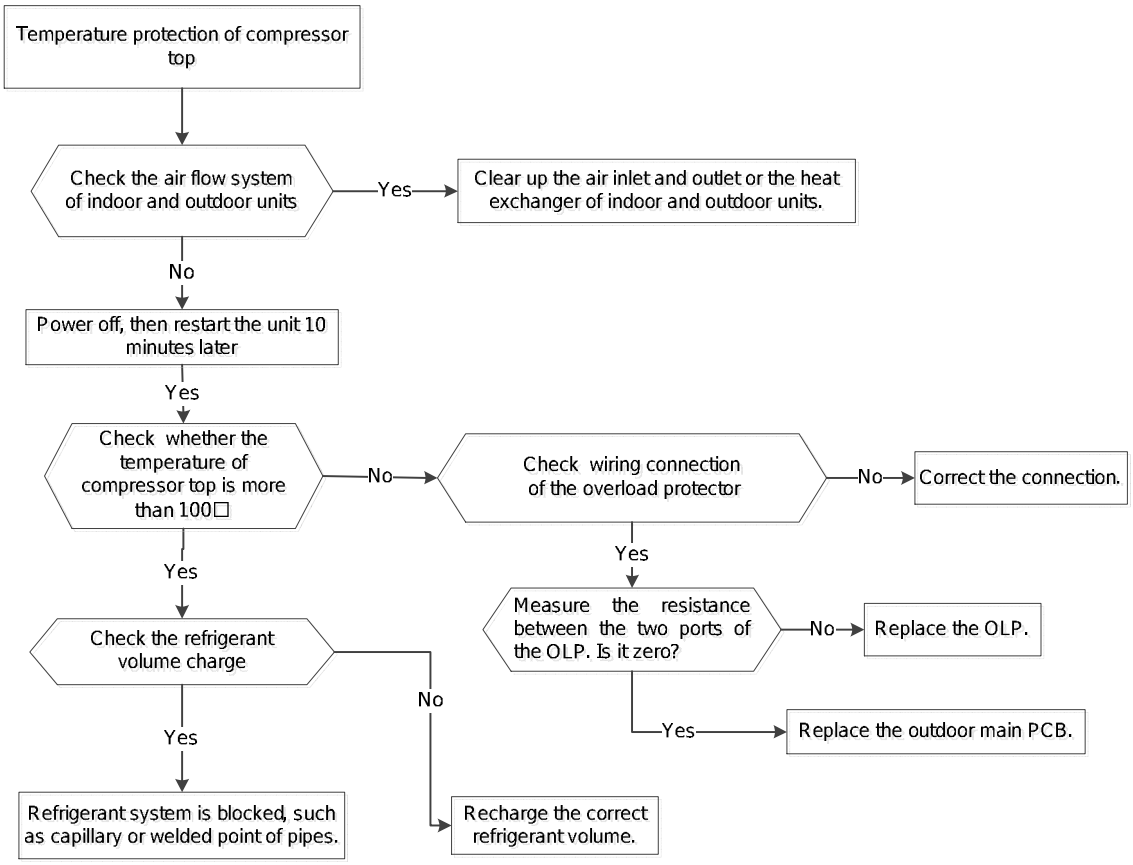
Trouble shooting:

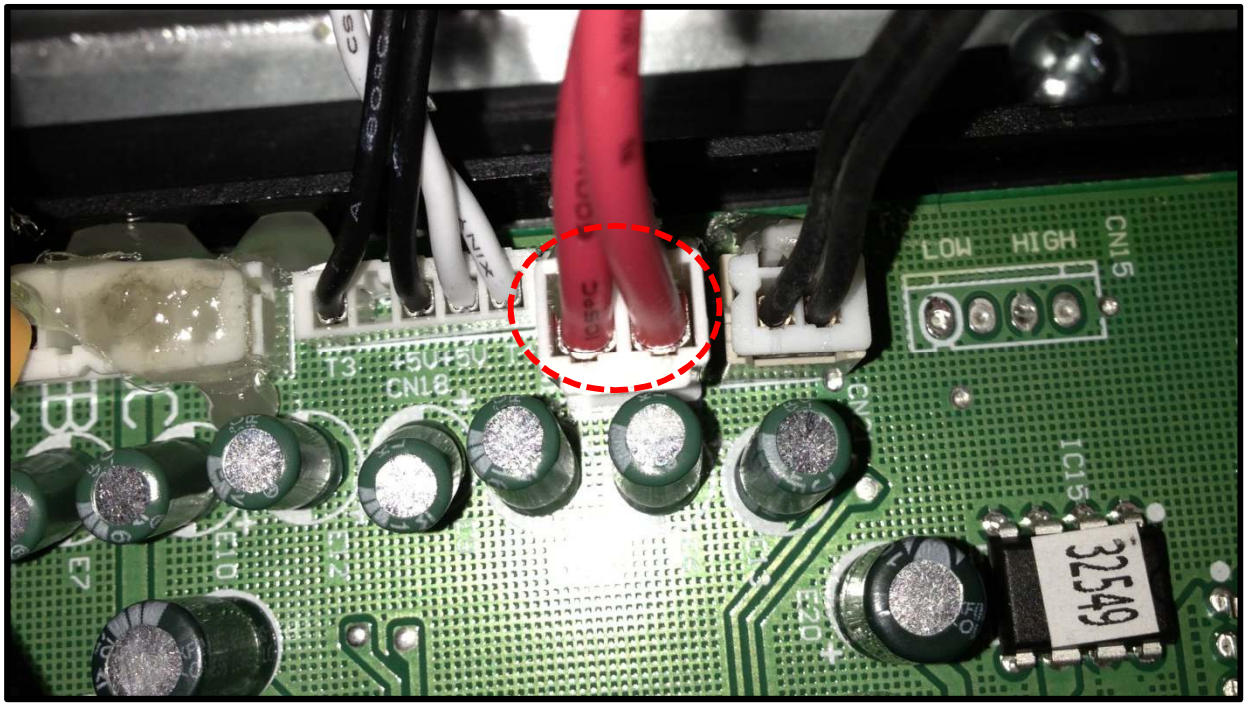


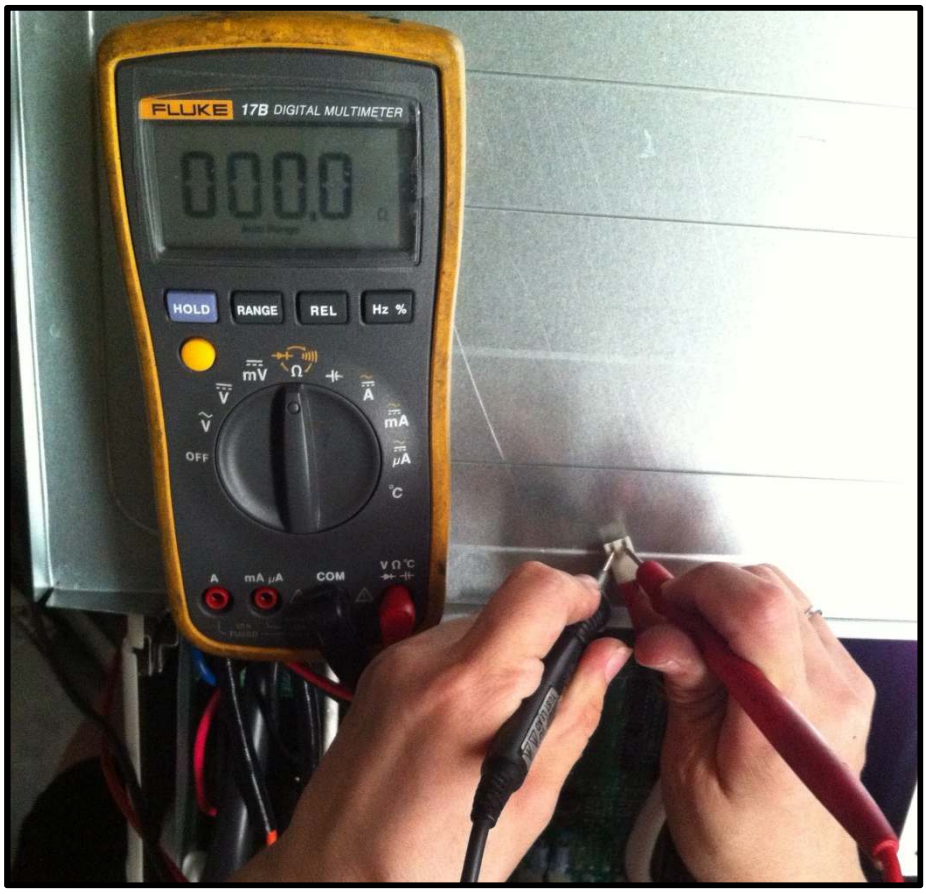
7.4.3.6 P0(Temperature protection of compressor top) error diagnosis and solution. (Only for KSIM20912-H216 - 1G & KSIM30912-H216 - 1G)

Error Code	P0
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty

Trouble shooting:



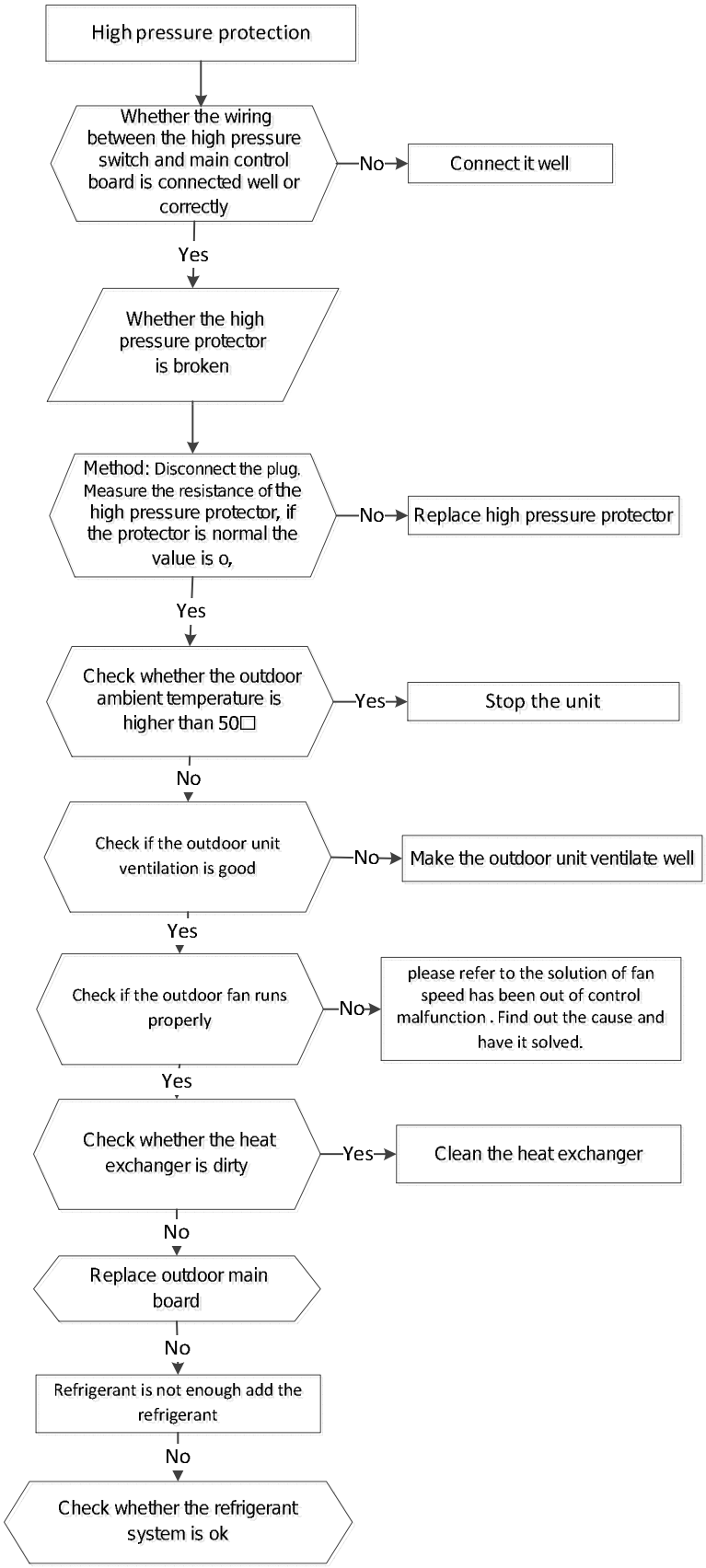

LOW
HIGH
CN15
T3
+5V+5V
CN18
IC15
32549

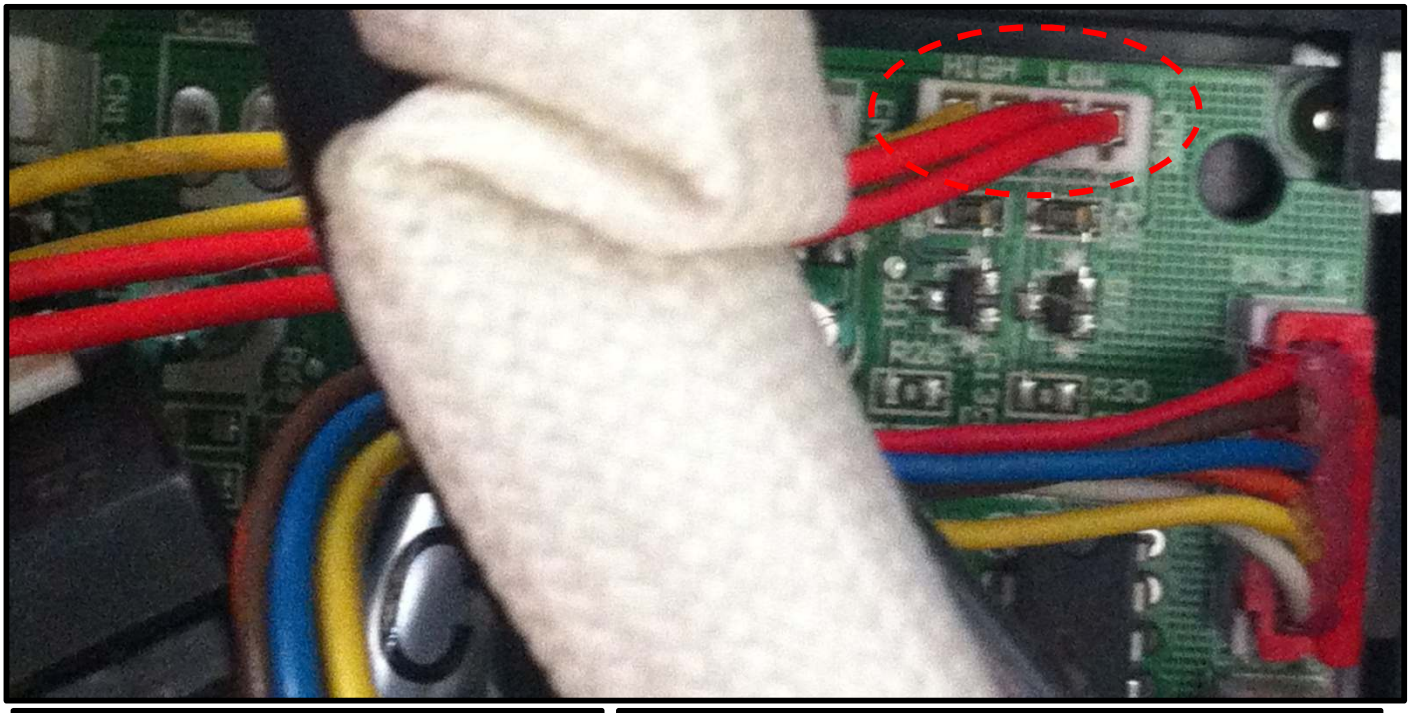

FLUKE 17B DIGITAL MULTIMETER
000.0
HOLD
RANGE
REL
Hz %
OFF
COM

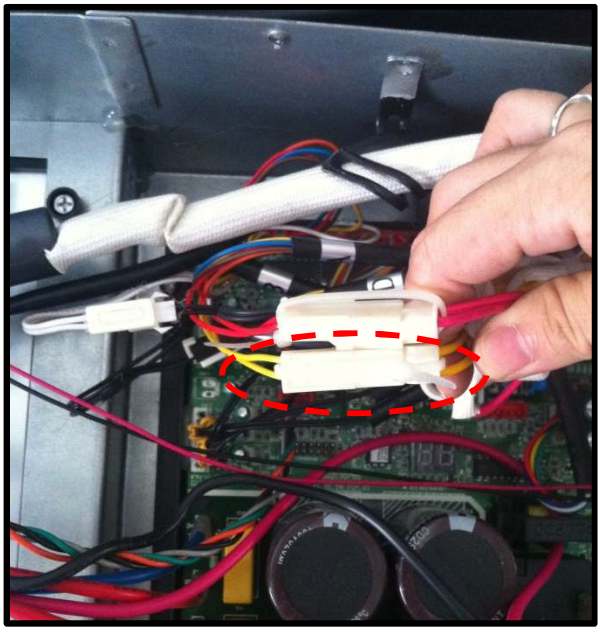
7.4.3.7 P1(High pressure protection) error diagnosis and solution. (Only for KSIM40912-H216 - 1G)

Error Code	P1
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty

Trouble shooting:


High pressure protection
Whether the wiring between the high pressure switch and main control board is connected well or correctly
No
Connect it well
Yes
Whether the high pressure protector is broken
Method: Disconnect the plug. Measure the resistance of the high pressure protector, if the protector is normal the value is o,
No
Replace high pressure protector
Yes
Check whether the outdoor ambient temperature is higher than 50□
Yes
Stop the unit
No
Check if the outdoor unit ventilation is good
No
Make the outdoor unit ventilate well
Yes
Check if the outdoor fan runs properly
No
please refer to the solution of fan speed has been out of control malfunction . Find out the cause and have it solved.
Yes
Check whether the heat exchanger is dirty
Yes
Clean the heat exchanger
No
Replace outdoor main board
No
Refrigerant is not enough add the refrigerant
No
Check whether the refrigerant system is ok



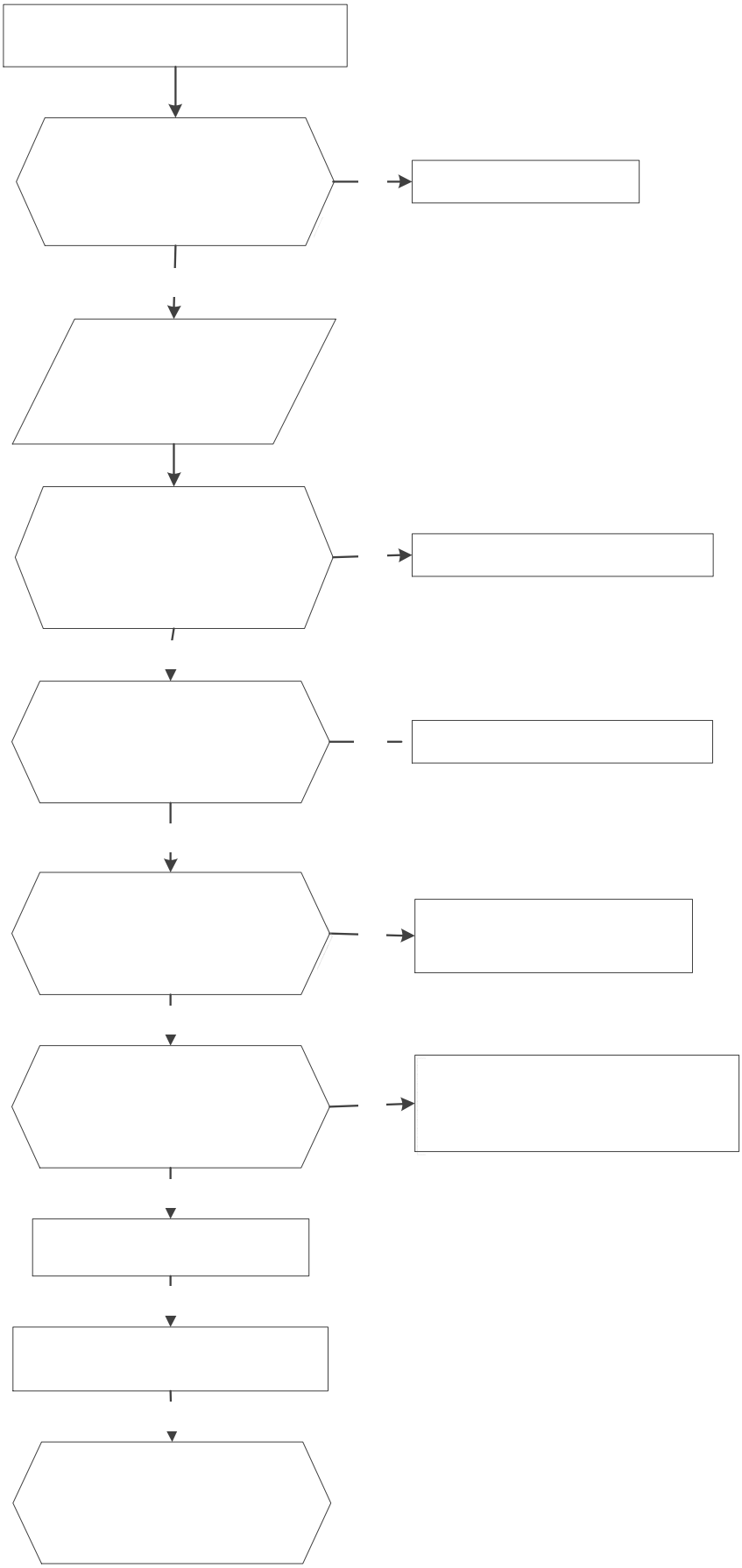


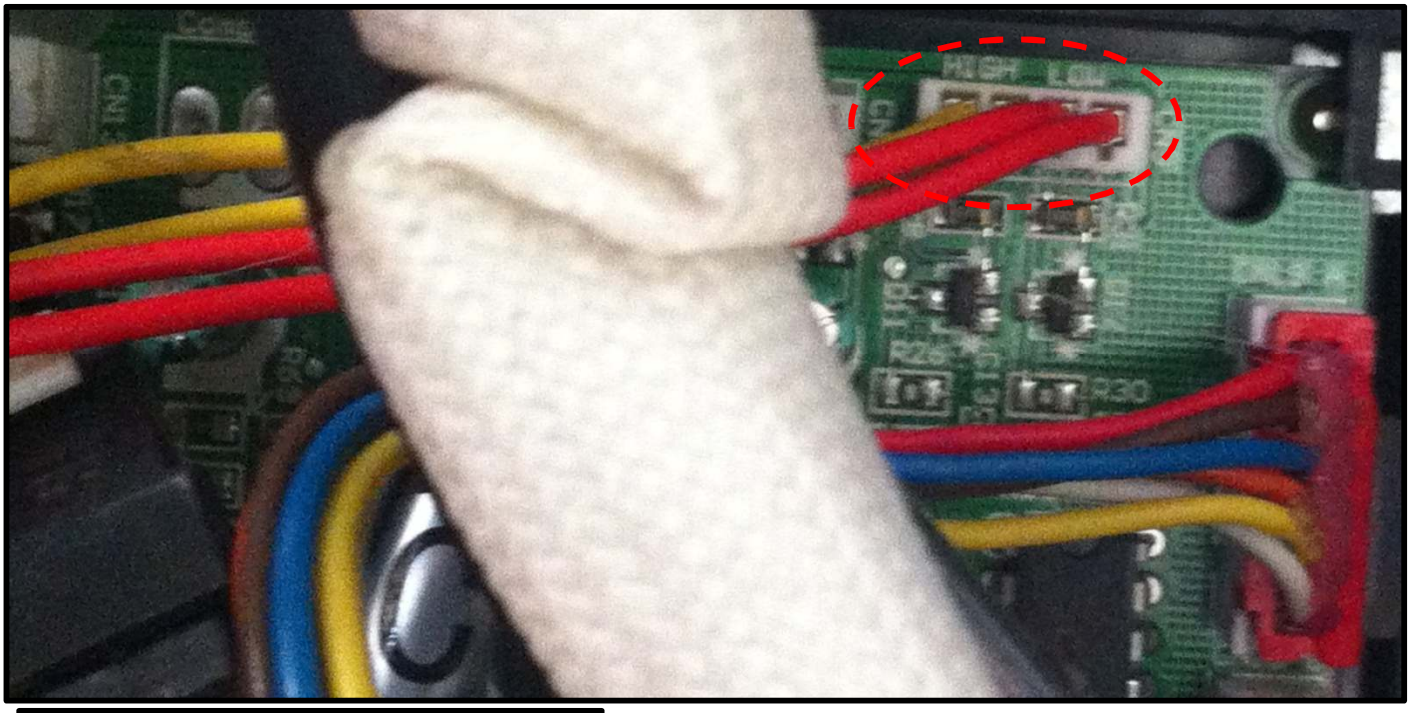

FLUKE 73III MULTIMETER
00.2
OFF
300mV
Ω
10A
300 mA
COM

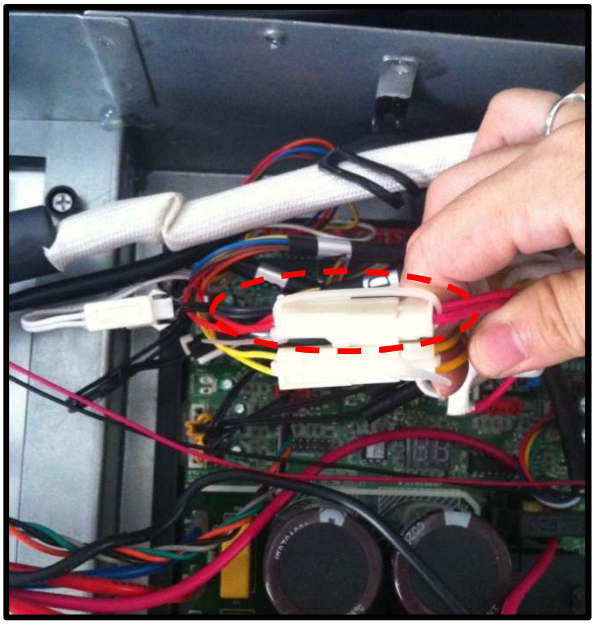
7.4.3.8 P2(Low pressure protection) error diagnosis and solution. (Only for KSIM40912-H216 - 1G)

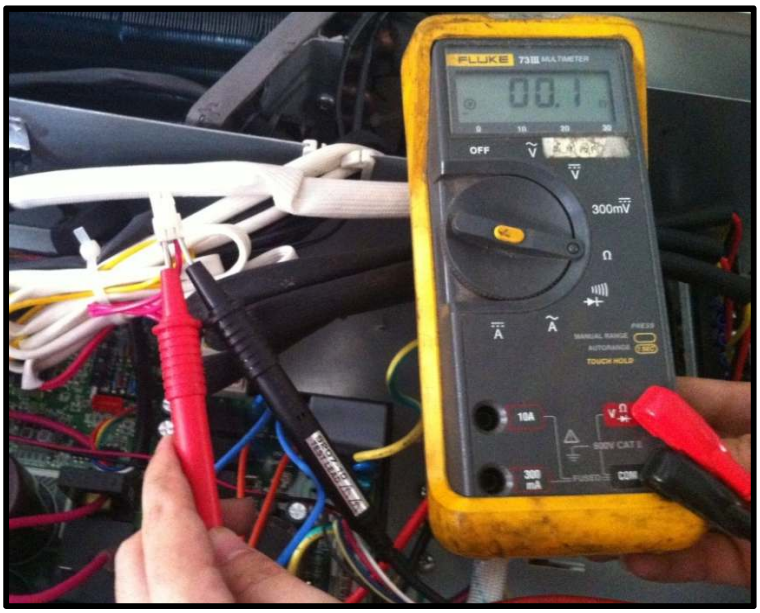
Error Code	P2
Malfunction decision conditions	If the sampling voltage is not 5V, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty

Trouble shooting:





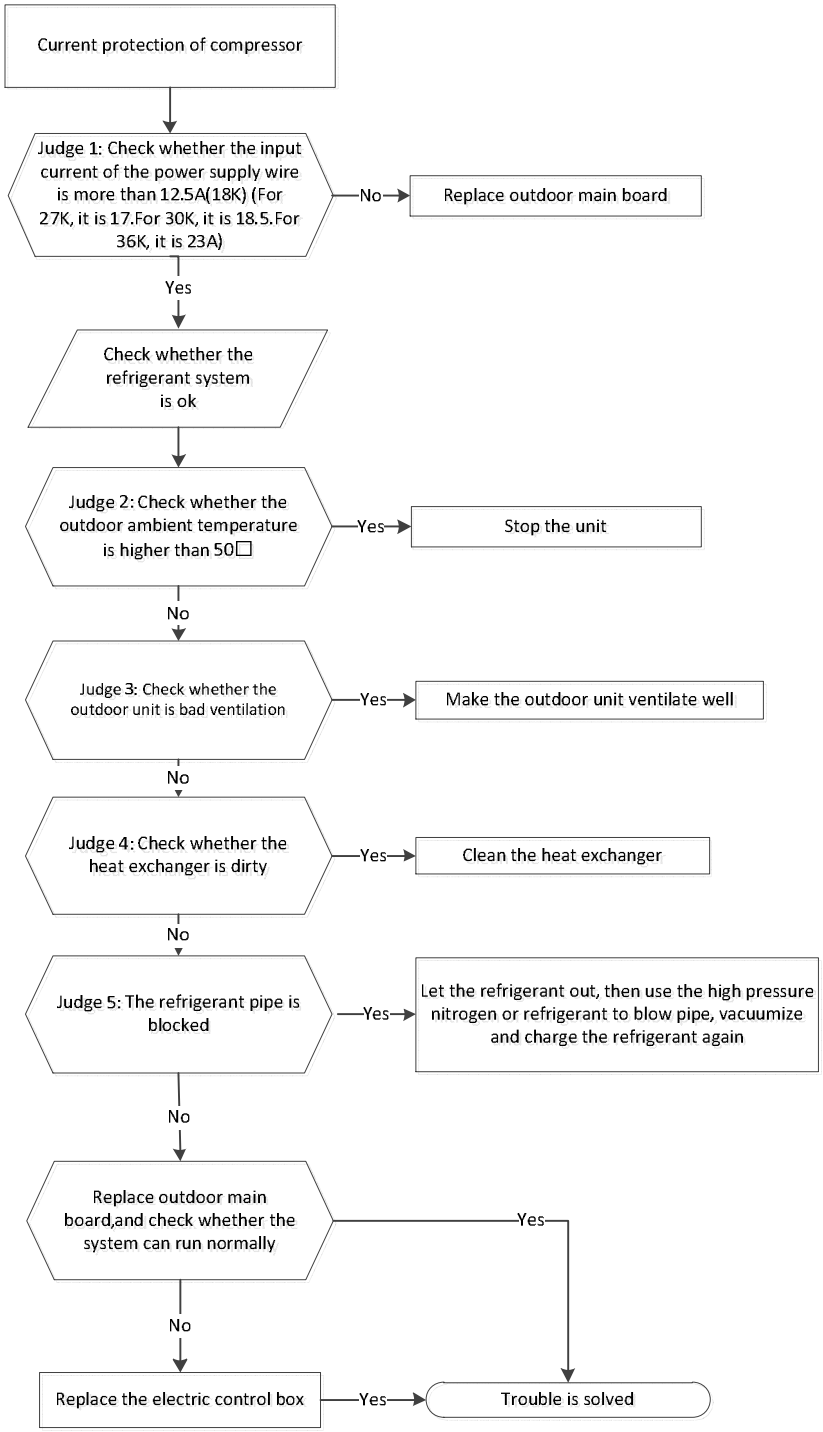



FLUKE
OFF
300mV
10A
COM

7.4.3.9 P3(Current protection of compressor) error diagnosis and solution.

Error Code	P3
Malfunction decision conditions	If the outdoor current exceeds the current limit value, the LED will display the failure.
Supposed causes	• Wiring mistake • Over load protector faulty • System block • Outdoor PCB faulty

Trouble shooting:



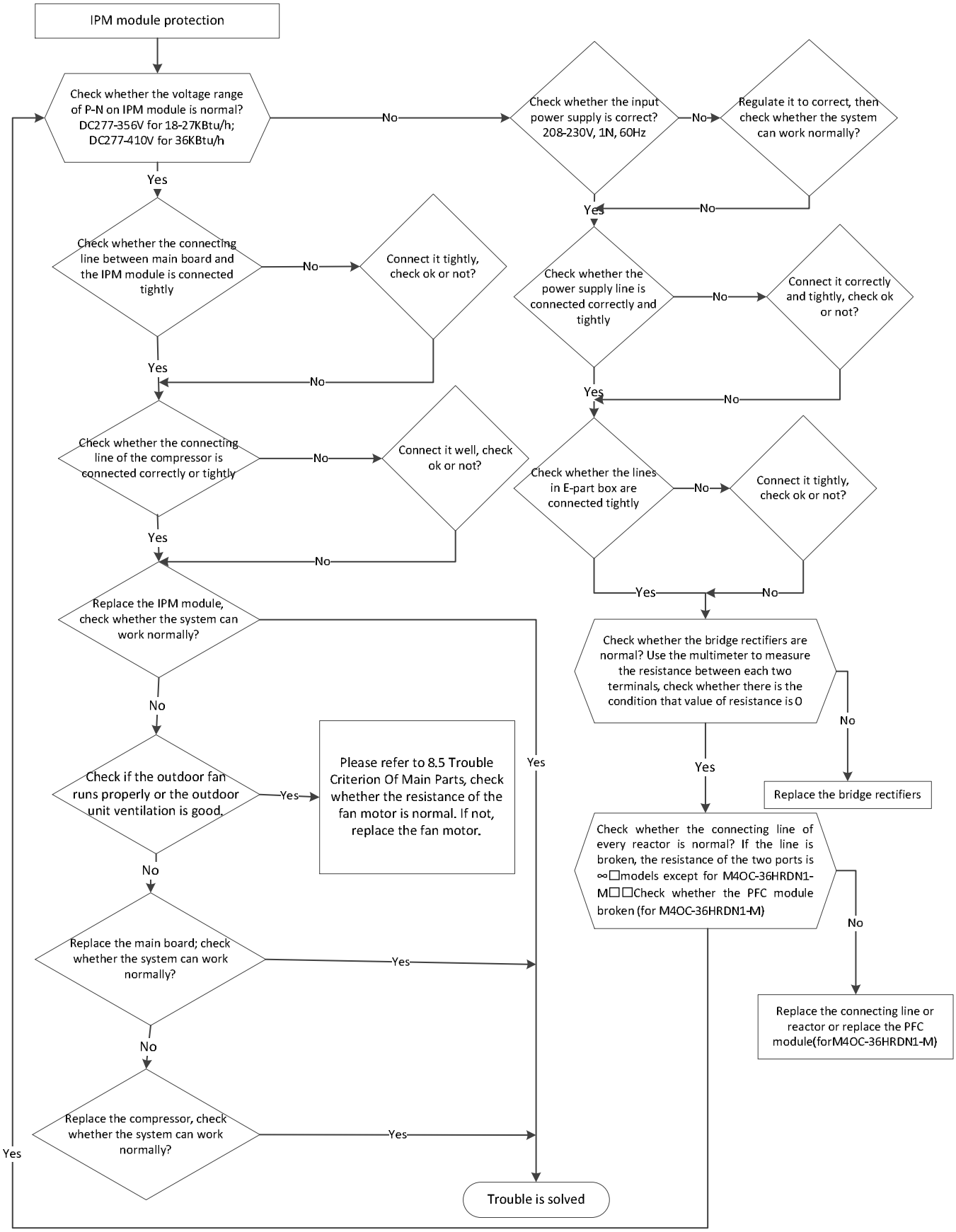

HIOKI 3282
6.53
DIGITAL CLAMP ON HITESTER
CAT Ⅳ
600V
COM
TEMP


HIOKI 3282
6.61
DIGITAL CLAMP ON HITESTER
CAT Ⅳ
600V
COM
TEMP

7.4.3.10 P4(IPM module protection) error diagnosis and solution.

Error Code	P4
Malfunction decision conditions	When the voltage signal that IPM send to compressor drive chip is abnormal, the display LED will show “P4” and AC will turn off.
Supposed causes	• Wiring mistake • IPM malfunction • Outdoor fan ass’y faulty • Compressor malfunction • Outdoor PCB faulty

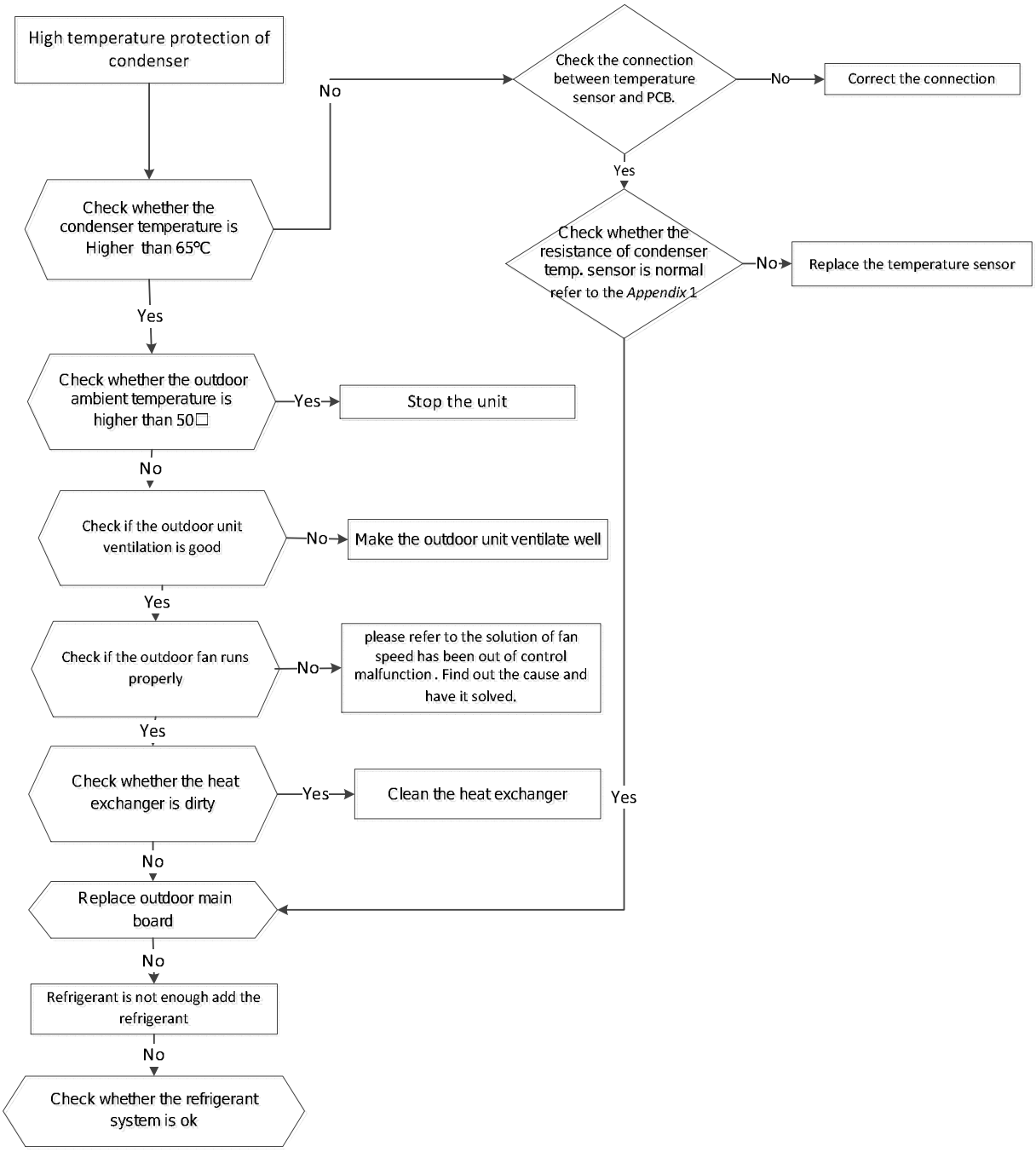
Trouble shooting:


IPM module protection
Check whether the voltage range of P-N on IPM module is normal? DC277-356V for 18-27KBtu/h; DC277-410V for 36KBtu/h
No
Check whether the input power supply is correct? 208-230V, 1N, 60Hz
No
Regulate it to correct, then check whether the system can work normally?
No
Yes
Yes
Check whether the connecting line between main board and the IPM module is connected tightly
No
Connect it tightly, check ok or not?
Check whether the power supply line is connected correctly and tightly
No
Connect it correctly and tightly, check ok or not?
Yes
No
Yes
No
Check whether the connecting line of the compressor is connected correctly or tightly
No
Connect it well, check ok or not?
Check whether the lines in E-part box are connected tightly
No
Connect it tightly, check ok or not?
Yes
No
Yes
No
Replace the IPM module, check whether the system can work normally?
Yes
Check whether the bridge rectifiers are normal? Use the multimeter to measure the resistance between each two terminals, check whether there is the condition that value of resistance is 0
No
Replace the bridge rectifiers
No
Check if the outdoor fan runs properly or the outdoor unit ventilation is good.
Yes
Please refer to 8.5 Trouble Criterion Of Main Parts, check whether the resistance of the fan motor is normal. If not, replace the fan motor.
Yes
Yes
Check whether the connecting line of every reactor is normal? If the line is broken, the resistance of the two ports is ∞□models except for M4OC-36HRDN1-M□□Check whether the PFC module broken (for M4OC-36HRDN1-M)
No
Replace the connecting line or reactor or replace the PFC module(forM4OC-36HRDN1-M)
No
Replace the main board; check whether the system can work normally?
Yes
No
Replace the compressor, check whether the system can work normally?
Yes
Yes
Trouble is solved

7.4.3.11 P6(High temperature protection of condenser) error diagnosis and solution.

Error Code	P6
Malfunction decision conditions	When outdoor pipe temperature is more than 65°C, the unit will stop, and unit runs again when outdoor pipe temperature is less than 52°C
Supposed causes	• The condenser temperature sensor faulty • Heat exchanger dirty • System block

Trouble shooting:



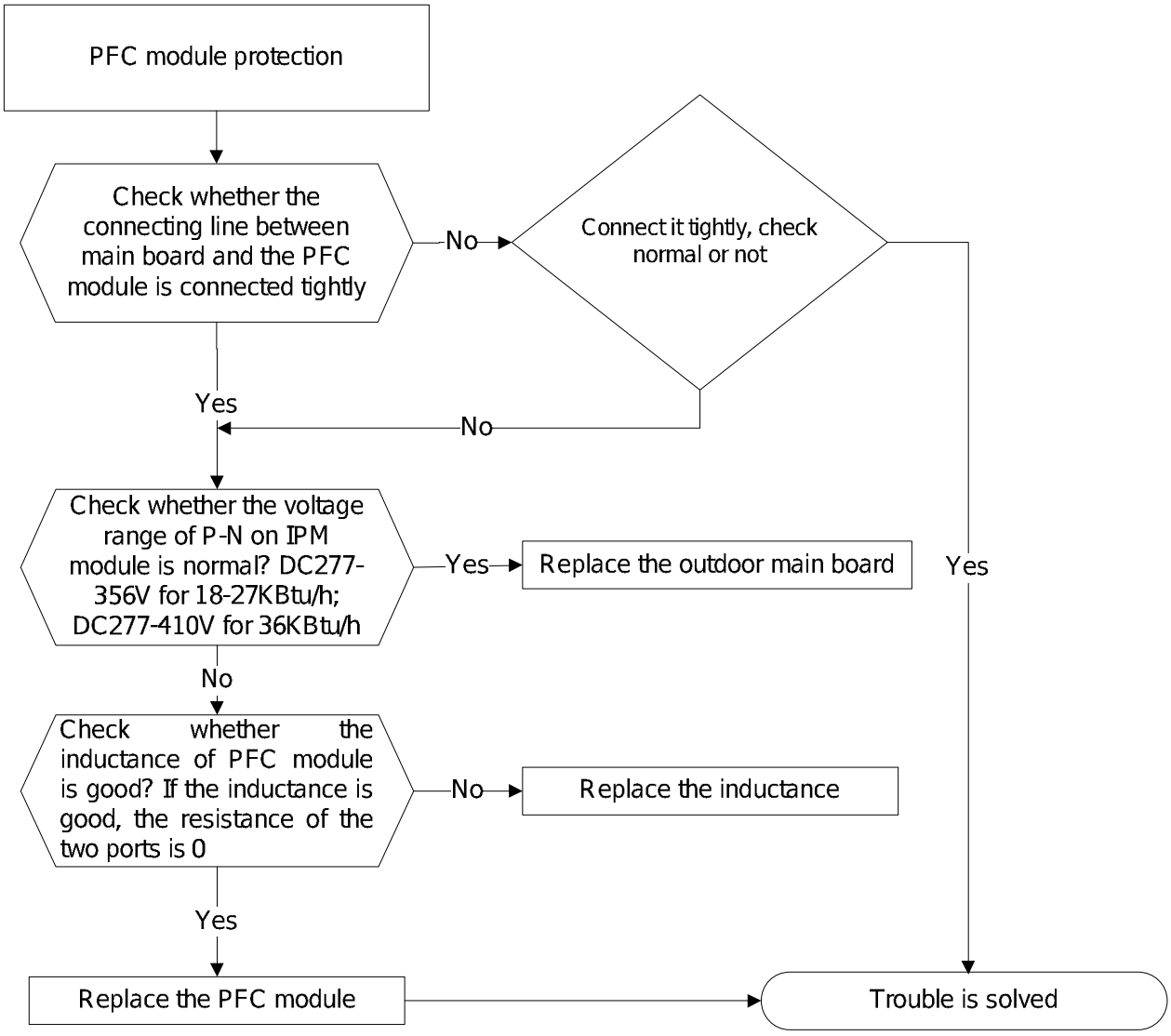
7.4.3.12 P7(Inverter compressor drive protection) error diagnosis and solution.

The same as P4(IPM module protection)

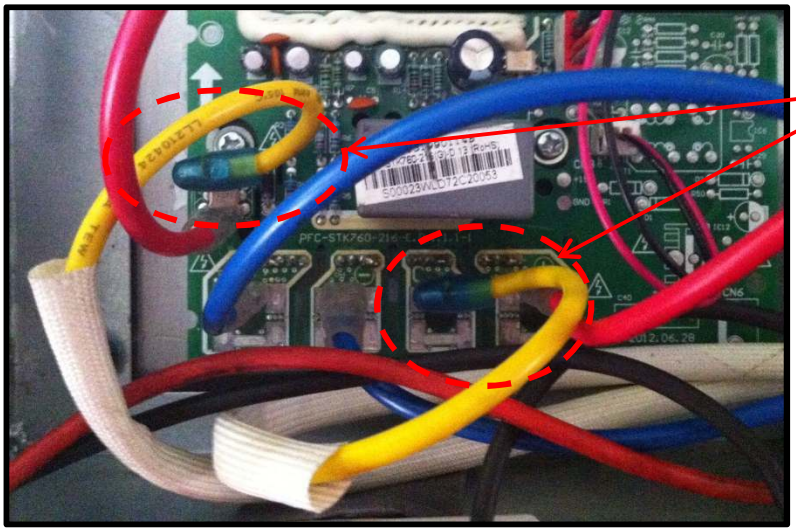
7.4.3.13 PF(PFC module protection) error diagnosis and solution. (Only for KSIM40912-H216 - 1G)

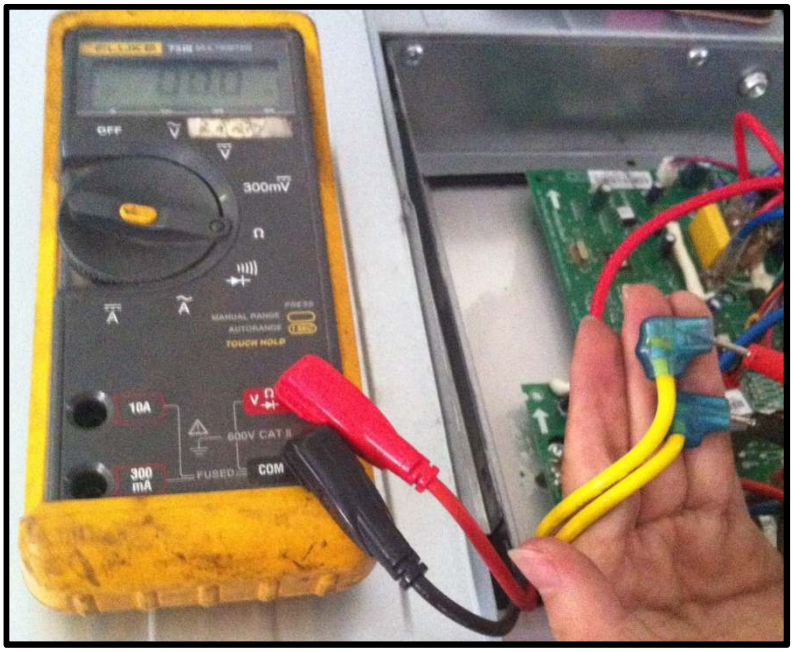
Error Code	PF
Malfunction decision conditions	When the voltage signal that PFC sends to main control board is abnormal, the display LED will show “PF” and AC will turn off.
Supposed causes	• Wiring mistake • Outdoor PCB faulty • Inductance of PFC module faulty • PFC module malfunction

Trouble shooting:




Inductance


Two ports of the inductance


OFF
300mV
MANUAL RANGE
AUTORANGE
TOUCH HOLD
10A
300 mA
600V CAT II
FUSED
COM

7.5 Trouble Criterion Of Main Parts.

Spec.

Indoor unit				
Model	KWIM09-H2	KWIM12-H2	KWIM18-H2	
Indoor fan motor	RPG20B	RPG20B	RPG28H	
Outdoor unit				
Model	KSIM20912-H216 - 2G	KSIM30912-H216 - 1G	KSIM330-H219	KSIM40912-H216 - 2G
Compressor	DA130S1C-20FZ	DA150S1C-20FZ	DA250S2C-30MT	TNB306FPGMC-L
Outdoor fan motor	WZDK50-38G	YDK53-6FB(B)	WZDK72-38G	WZDK180-38G
Model	KSIM20912-H216 - 1G	KSIM30912-H216 - 1G	KSIM40912-H216 - 1G	
Compressor	DA130S1C-20FZ	DA150S1C-20FZ	TNB306FPGMC-L	
Outdoor fan motor	YDK70-6FB	YDK53-6FB(B)	YDK180-8GB	

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