

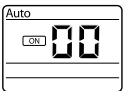


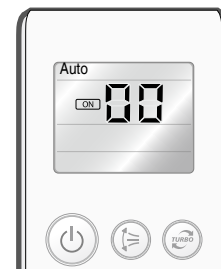
4. Troubleshooting

4-1 Setting Option Setup Method

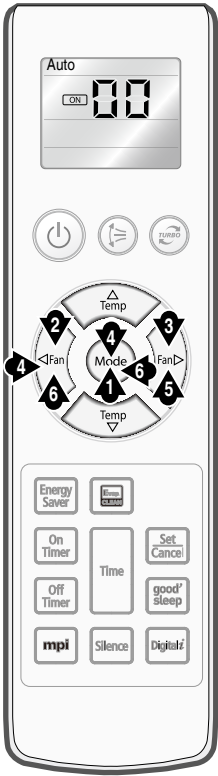




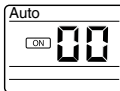


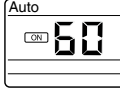


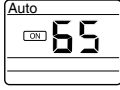




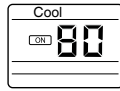








ex) Option No. : 14 77 77 52 1d

Step 1 : Enter the Option Setup mode.

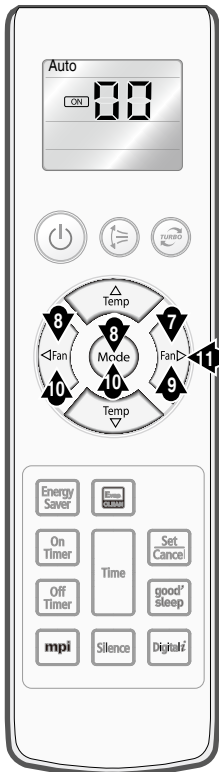







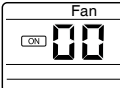


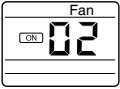




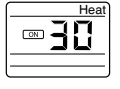



- 1st Take out the batteries of remote control.
- 2nd Press the temperature   button simultaneously and insert the battery again.
- 3rd Make sure the remote contr display shown as  .




Step 2 : Enter the Option Setup mode and select your option according to the following procedure.

	Feature	Display
	1 The default value is  . Every time you push the  button, the display panel reads  Auto → Cool → Dry → Fan → Heat ,  Auto → Cool → Dry → Fan → Heat repeatedly.	
	2 Push the  button to set the display panel to 1 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	
	3 Push the  button to set the display panel to 4 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	
	4 Push the  button to  . Push the  button to set the display panel to 7 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	
	5 Push the  button to set the display panel to 7 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	
	6 Push the  button to  . Push the  button to set the display panel to 7 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	

4-1 Setting Option Setup Method(continue)

	Feature	Display
	7 Push the  button to set the display panel to 7 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	
	8 Push the  button to  . Push the  button to set the display panel to 5 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	
	9 Push the  button to set the display panel to 2 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	
	10 Push the  button to  . Push the  button to set the display panel to 1 . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	
	11 Push the  button to set the display panel to d . Every time you push the  button, the display panel reads 0→1→2→3→.....→9→A→b→c→d→E→F repeatedly.	


Step 3 : Upon completion of the selection, check you made right selections.

Press the Mode  Selection key to set the display part and check the display part.

➔ The display part shows like below when each time you press Mode button .



Step 4 : Pressing the ON/OFF button ()

When pressing the operation ON/OFF key with the direction of remote control for unit, the sound "Ding" or "Diriring" is heard and the OPERATION ICON() lamp of the display is flickering at the same time, then the input of option is completed. (If the diriring sound isn't heard, try again pressing the ON/OFF button.)

Step 5 : Unit operation test-run

First, Remove the battery from the remote control.

Second, Re-insert the battery into the remote control.

Third, Press ON/OFF key with the direction of remote control for set.

• Error Mode

- 1st If all lamps of indoor unit are flickering, Plug out, plug in power plug again and press ON/OFF key to retry.
- 2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for its model.

■ OPTION ITEMS

REMOCON MODEL	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
AQV09AWBN	0	0	4	7	7	7	1	7	5	2	0	c
AQV12AWBN	0	1	4	7	7	7	1	7	5	2	1	d

4-2 Display Error and Check Method

4-2-1 Display Error mode

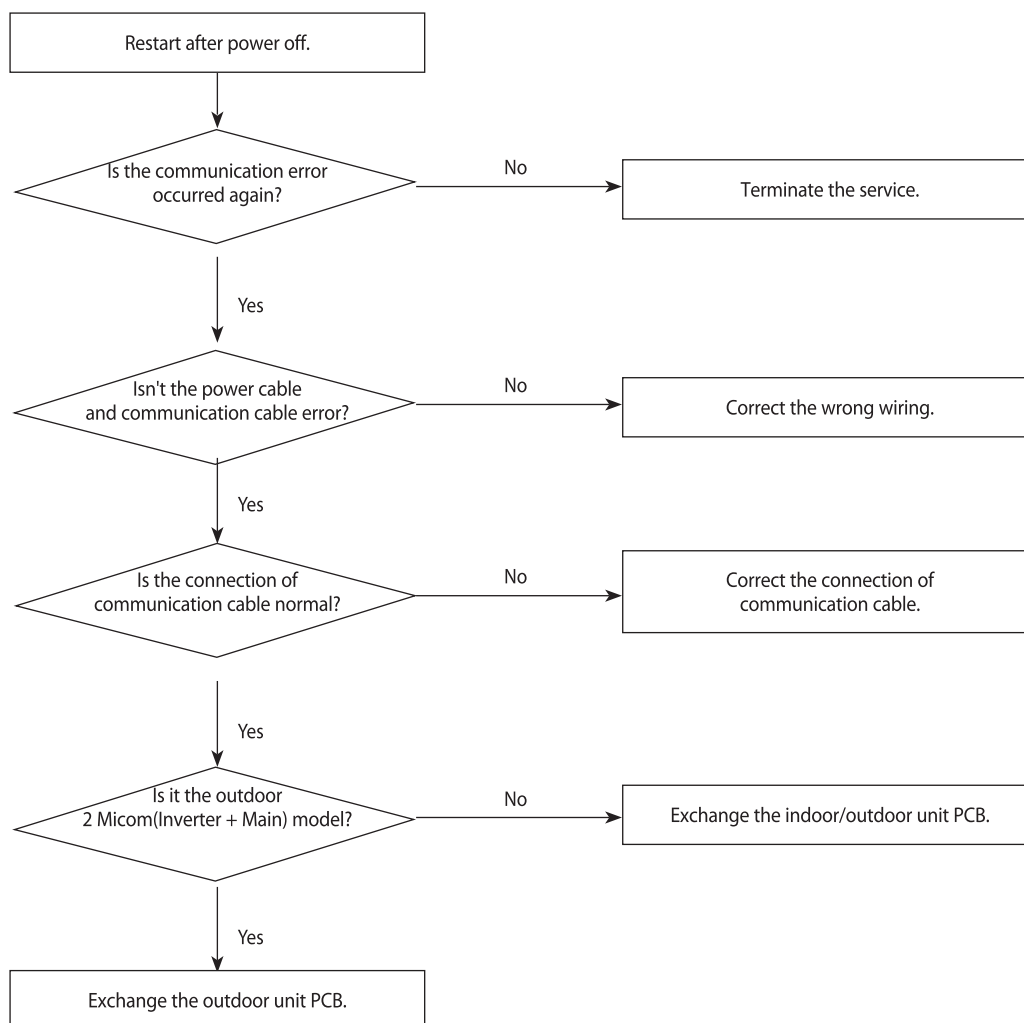
Error Mode				Cauase	Follow-up Measures	operation				Trouble Shooting																		
Indoor 7-Segment	Outdoor LED					Comp.	Outdoor Fan	Indoor Fan	MPI																			
	Y	G	R																									
E 10 1	no display			1min.Time out Communication (Indoor detection)	- Check the connector of indoor-outdoor cable - Check the fuse	OFF	OFF	OFF	Continue	page																		
E 12 1	no display			Indoor Temperature Sensor Error(OPEN/SHORT)	- Check assembling status of the sensor part's connector on the indoor unit main PCB - Measure the resistance value on both sides connector no. 1 and no. 2 (E121), no. 3 and no. 4 (E122) - by separating the sensor part's connector	OFF	OFF	OFF	Continue	page																		
E 12 2	no display			Indoor Heat Exchanger Temperature Sensor Error (OPEN/SHORT)	<table><tr><td>Temp. (°C)</td><td>Resistance Valve(KΩ)</td><td>Temp. (°C)</td><td>Resistance Valve(KΩ)</td><td>Others</td></tr><tr><td>15</td><td>14.68</td><td>30</td><td>8.31</td><td rowspan="3">The error of DATA is ±2%.</td></tr><tr><td>20</td><td>12.09</td><td>35</td><td>6.94</td></tr><tr><td>25</td><td>10.00</td><td>40</td><td>5.83</td></tr></table> * If not meet the above DATA, replace sensors.	Temp. (°C)	Resistance Valve(KΩ)	Temp. (°C)	Resistance Valve(KΩ)	Others	15	14.68	30	8.31	The error of DATA is ±2%.	20	12.09	35	6.94	25	10.00	40	5.83	OFF	OFF	OFF	Continue	page
Temp. (°C)	Resistance Valve(KΩ)	Temp. (°C)	Resistance Valve(KΩ)	Others																								
15	14.68	30	8.31	The error of DATA is ±2%.																								
20	12.09	35	6.94																									
25	10.00	40	5.83																									
E 15 4	no display			Indoor Fan Motor Speed Detecting Error (Occur when it continues for 15 ssecond at below 450rpm)	- Check assembling status of the Motor Hall IC output connector (CN44) on the indoor unit main PCB	OFF	OFF	OFF	OFF	page																		
E 16 2	no display			EEPROM Error		OFF	OFF	OFF	OFF	page																		
E 18 6	no display			MPI Feedback Error	- Check the assembly status of the mpizone connector (CN6601) - Change the mpizone	Continue	Continue	Continue	OFF	page																		
All blink	no display			Option is erased or wrong option code is input	-Reset remote-control option code	OFF	OFF	OFF	OFF	page																		
E 10 2	⊙	●	●	1min. Time out Communication (Outdooe detection)	- Check the connector of indoor-outdoor cable - Check the fuse	OFF	After 1 minute, set OFF	OFF	Continue	page																		
E 22 1	⊙	○	⊙	Outdoor temp sensor error	- Check the assembling statue of sensor parts on the outdoor PCB E221 : CN54 PIN#1,#2 E237 : CN54 PIN#5,#6 E251 : CN54 PIN#3,#4	OFF	After 1 minute, set OFF	OFF	Continue	page																		
E 23 7	⊙	●	⊙	Coil temp sensor error		OFF	After 1 minute, set OFF	OFF	Continue	page																		
E 25 1	⊙	⊙	○	Discharge temp sensor error		OFF	After 1 minute, set OFF	OFF	Continue	page																		
E 4 16	⊙	○	●	Discharge over temperature	- Check the assembling statue of sensor parts on the outdoor PCB CN54 PIN#3,#4	OFF	After 1 minute, set OFF	OFF	Continue	page																		

Error Mode				Cauase	Follow-up Measures	operation				Trouble Shooting								
Indoor 7-Segment	Outdoor LED					Comp.	Outdoor Fan	Indoor Fan	MPI									
	Y	G	R															
E458	●	○	○	Outdoor Fan error	<div><div>- Check the fan was locked.</div><div>- Check the assembling status of Fan connector(CN01) the outdoor PCB</div><div>- Check the wire color of fan connector</div><div></div></div>	OFF	After 1 minute, set OFF	OFF	Continue	page								
E461	○	○	○	Comp Starting error	<div><div>- Check the compressor and PCB cable</div><div>- Check the wire color</div><div><table><tr><td>COMPRESSOR</td><td>U</td><td>V</td><td>W</td></tr><tr><td>COLOR</td><td>RED</td><td>BLU</td><td>YEL</td></tr></table></div><div>- Check the interphase resistance of compressor normal</div></div>	COMPRESSOR	U	V	W	COLOR	RED	BLU	YEL	OFF	After 1 minute, set OFF	OFF	Continue	page
COMPRESSOR	U	V	W															
COLOR	RED	BLU	YEL															
E462	●	○	●	I_Trip error / PFC Over current	-	OFF	After 1 minute, set OFF	OFF	Continue	page								
E464	○	○	○	IPM Over Current(O.C)	-Check the Shunt-R(R418) resistance	OFF	After 1 minute, set OFF	OFF	Continue	page								
E465	○	●	○	Comp Vlimit error	<div><div>- Check the compressor and PCB cable</div><div>- Check the wire color</div><div><table><tr><td>COMPRESSOR</td><td>U</td><td>V</td><td>W</td></tr><tr><td>COLOR</td><td>RED</td><td>BLU</td><td>YEL</td></tr></table></div><div>- Check the interphase resistance of compressor normal</div></div>	COMPRESSOR	U	V	W	COLOR	RED	BLU	YEL	OFF	After 1 minute, set OFF	OFF	Continue	page
COMPRESSOR	U	V	W															
COLOR	RED	BLU	YEL															
E467	●	○	●	Comp rotation error	<div><div>- Check the wire color</div><div><table><tr><td>COMPRESSOR</td><td>U</td><td>V</td><td>W</td></tr><tr><td>COLOR</td><td>RED</td><td>BLU</td><td>YEL</td></tr></table></div></div>	COMPRESSOR	U	V	W	COLOR	RED	BLU	YEL	OFF	After 1 minute, set OFF	OFF	Continue	page
COMPRESSOR	U	V	W															
COLOR	RED	BLU	YEL															
E468	○	○	●	current sensor error	-	OFF	After 1 minute, set OFF	OFF	Continue	page								
E469	●	○	○	DC-Link valtage sensor error	-Measure the resistance : R113~R116	OFF	After 1 minute, set OFF	OFF	Continue	page								
E471	●	○	○	OTP error	<div><div>- Impossible to check EEPROM loading data check</div><div>- Change the PBA</div></div>	OFF	After 1 minute, set OFF	OFF	Continue	page								
E472	●	●	○	AC Line Zero Cross Signal out	- Check the assembly condition of peripheral reference number 200~	OFF	After 1 minute, set OFF	OFF	Continue	page								
E554	●	●	○	GAS Leak error	<div><div>- Check the sensor connection</div><div>- Check the pipe leak</div><div>- Check the refrigerant of compressor</div></div>	OFF	After 1 minute, set OFF	OFF	Continue	page								
E556	○	○	○	capacity miss match	- Reset remote-control option code	OFF	After 1 minute, set OFF	OFF	Continue	page								

4-3 Fault Diagnosis by Symptom

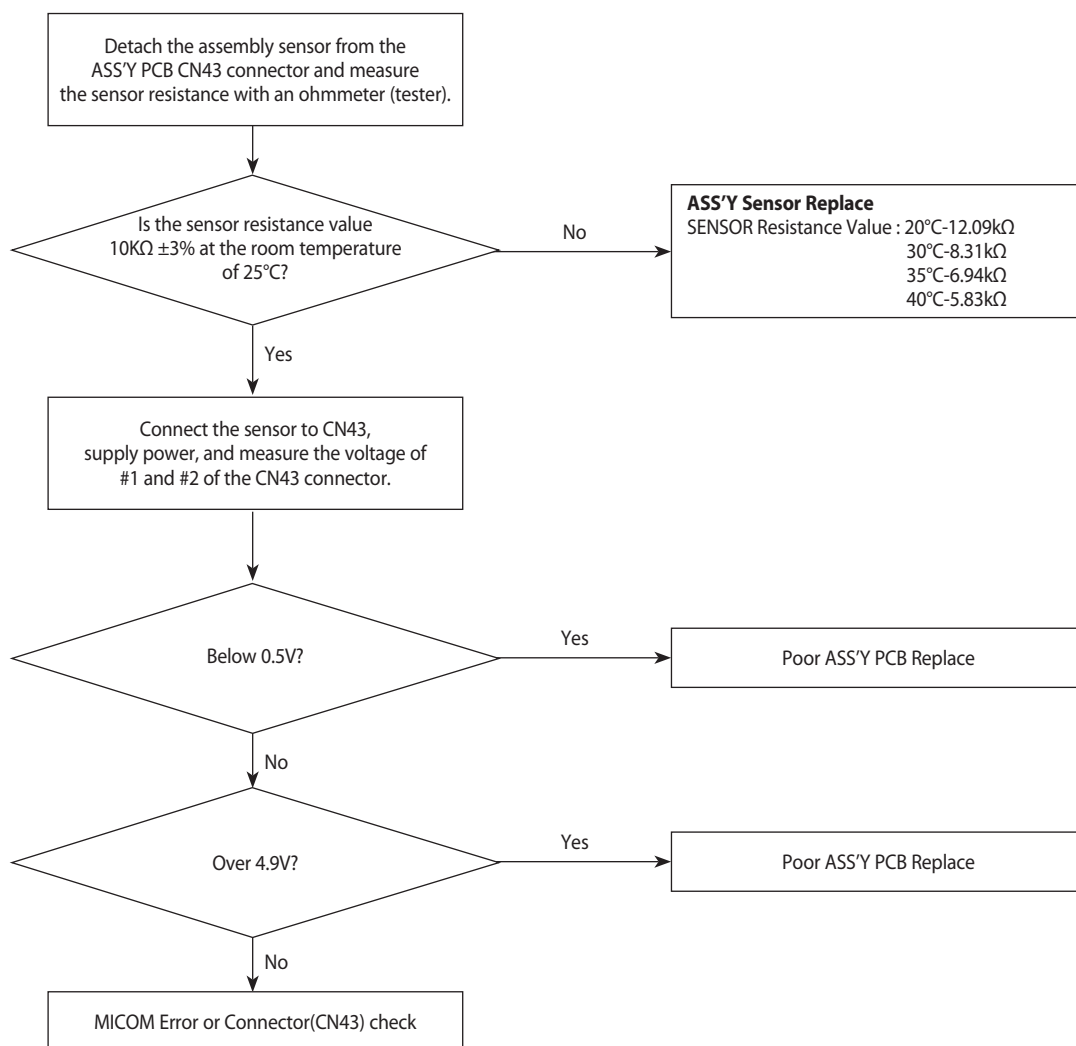
4-3-1 Communication error ↔ When $E 101$ or $E 102$ is displayed

1. Checklist :
 - 1) Is the communication cable between the indoor unit and outdoor unit connected correctly?
 - 2) Isn't the power cable and communication cable error?
2. Troubleshooting procedure



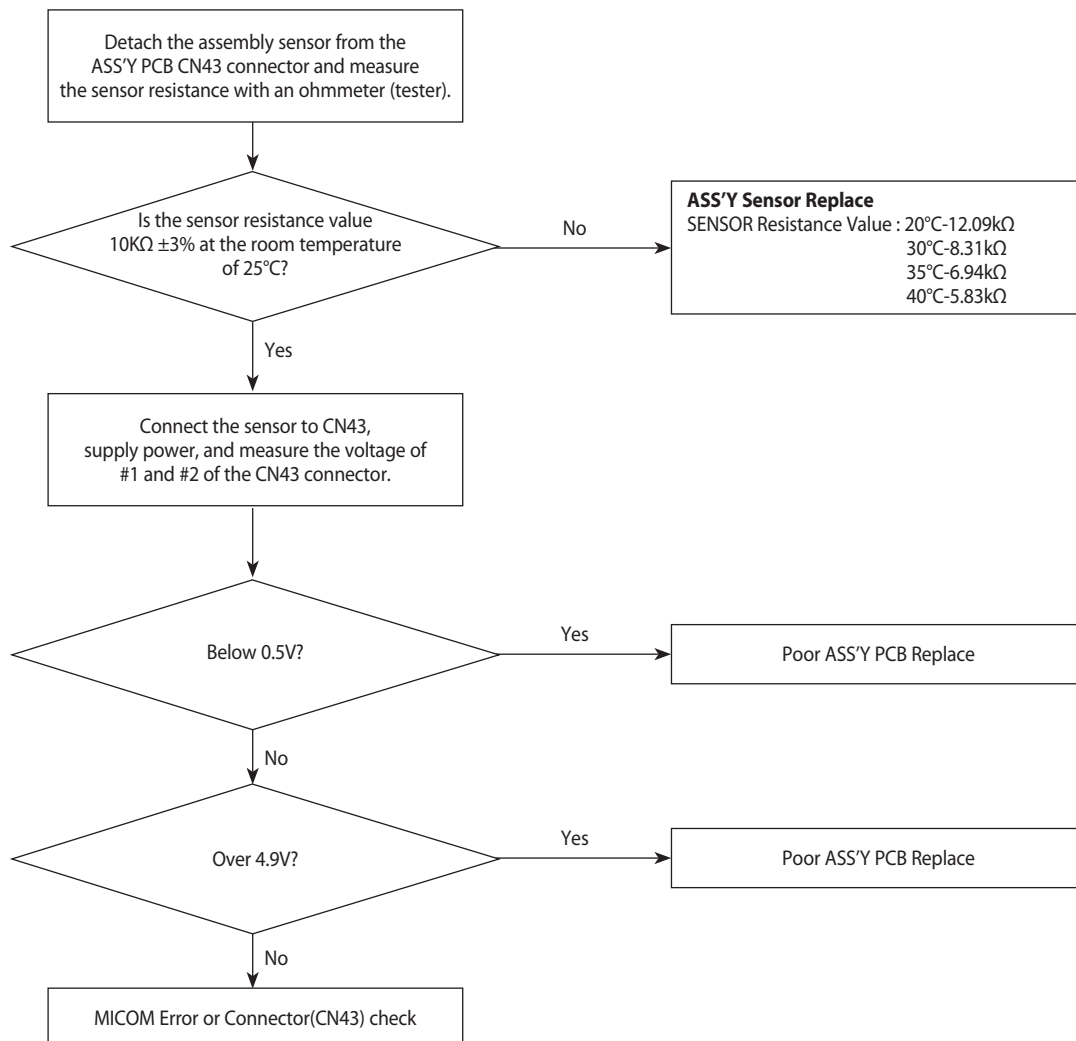
4-3-2 Indoor Temperature Sensor Error ↔ When E_{12} is displayed

1. Checklist :
 - 1) Is the indoor units temperature sensor connected correctly?
2. Troubleshooting procedure



4-3-3 Indoor Heat Exchanger Temperature Sensor Error ↔ When E 122 is displayed

1. Checklist :
 - 1) Is the indoor units temperature sensor connected correctly?
2. Troubleshooting procedure

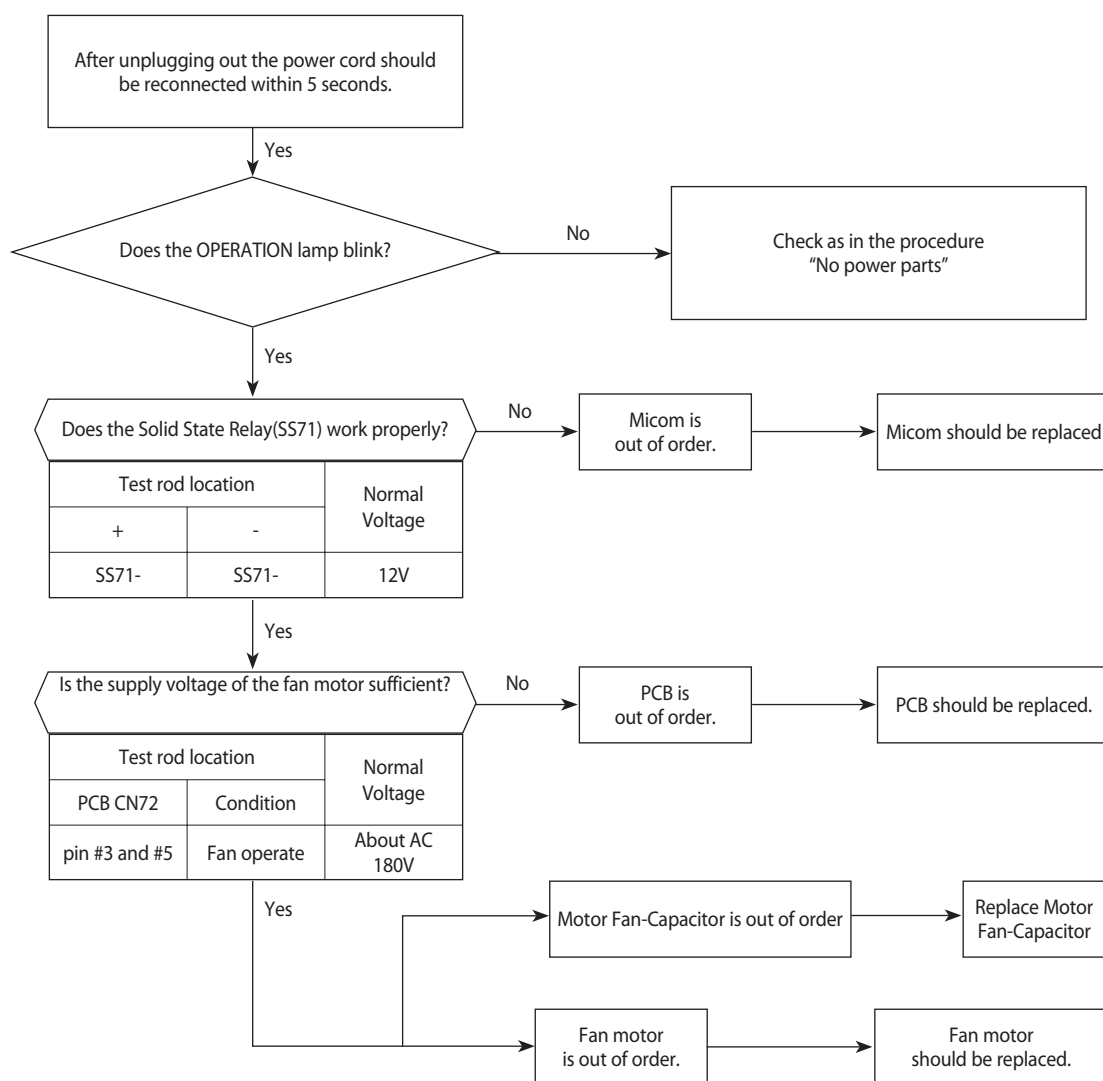


4-3-4 Indoor Fan Motor Speed Detecting Error↔When E 154 is displayed

1. Checklist :

- 1) Is the indoor unit fan motor properly connected with the connector (CN72)?
- 2) Is the AC voltage correct?
- 3) Is HALL IC in indoor fan motor properly connected with the connector (CN44)?
- 4) Is the running capacitor (CR71) properly connected with PCB board?

2. Troubleshooting procedure

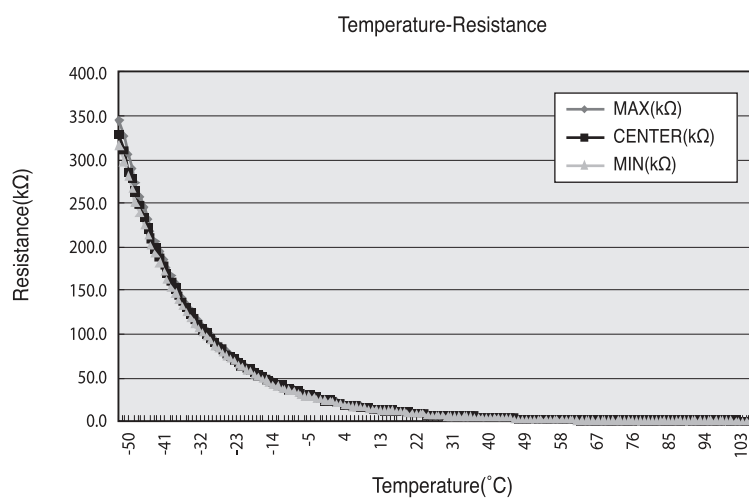
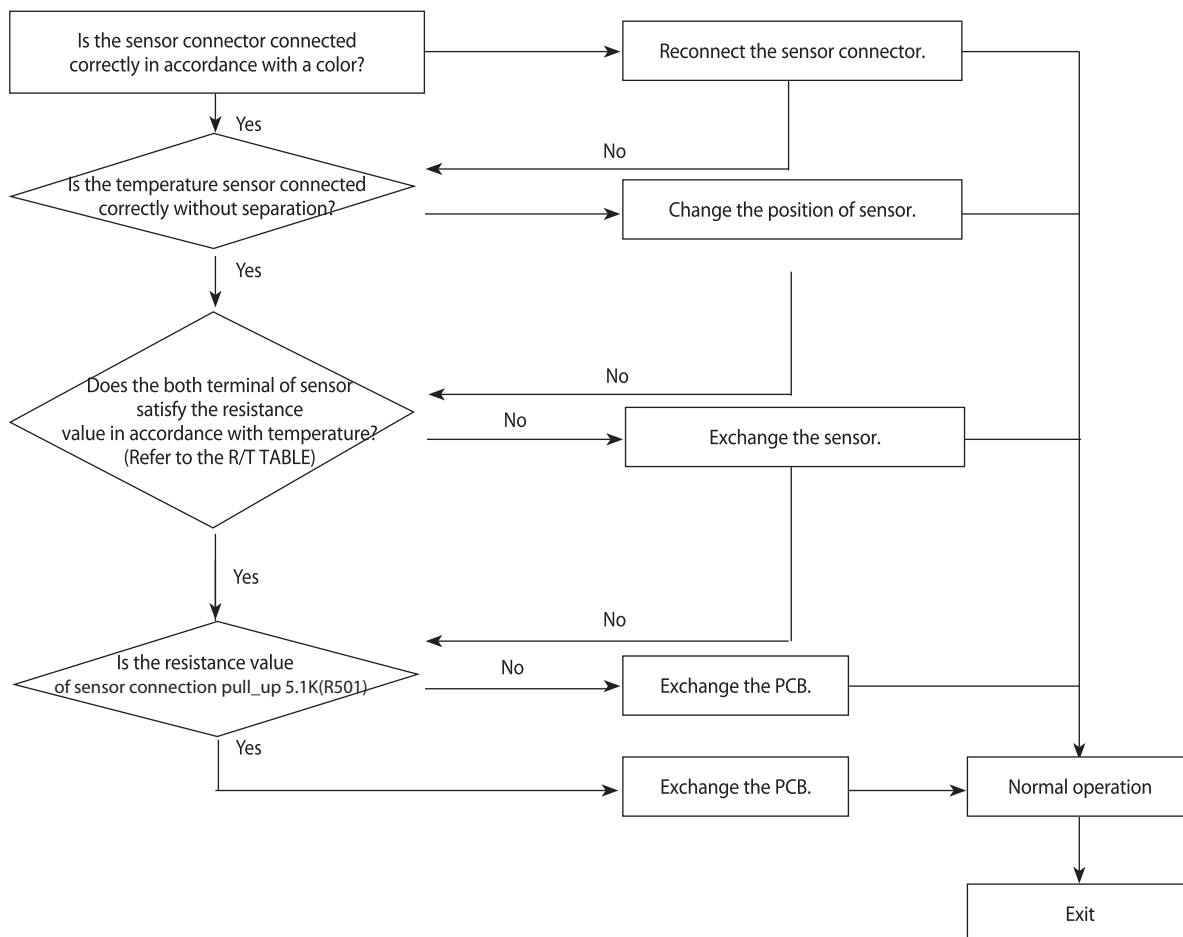


4-3-5 Outdoor temperature sensor error ↔ When $E22$ is displayed

1. Checklist :

- 1) Is the sensor connector connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull_up correct?

2. Troubleshooting procedure

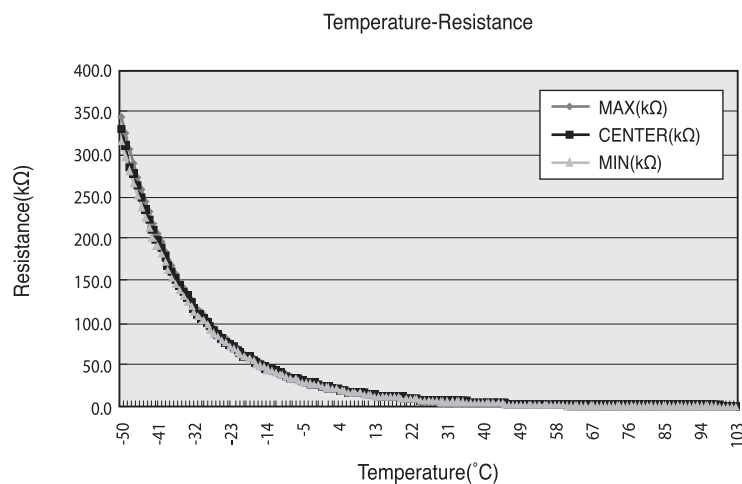
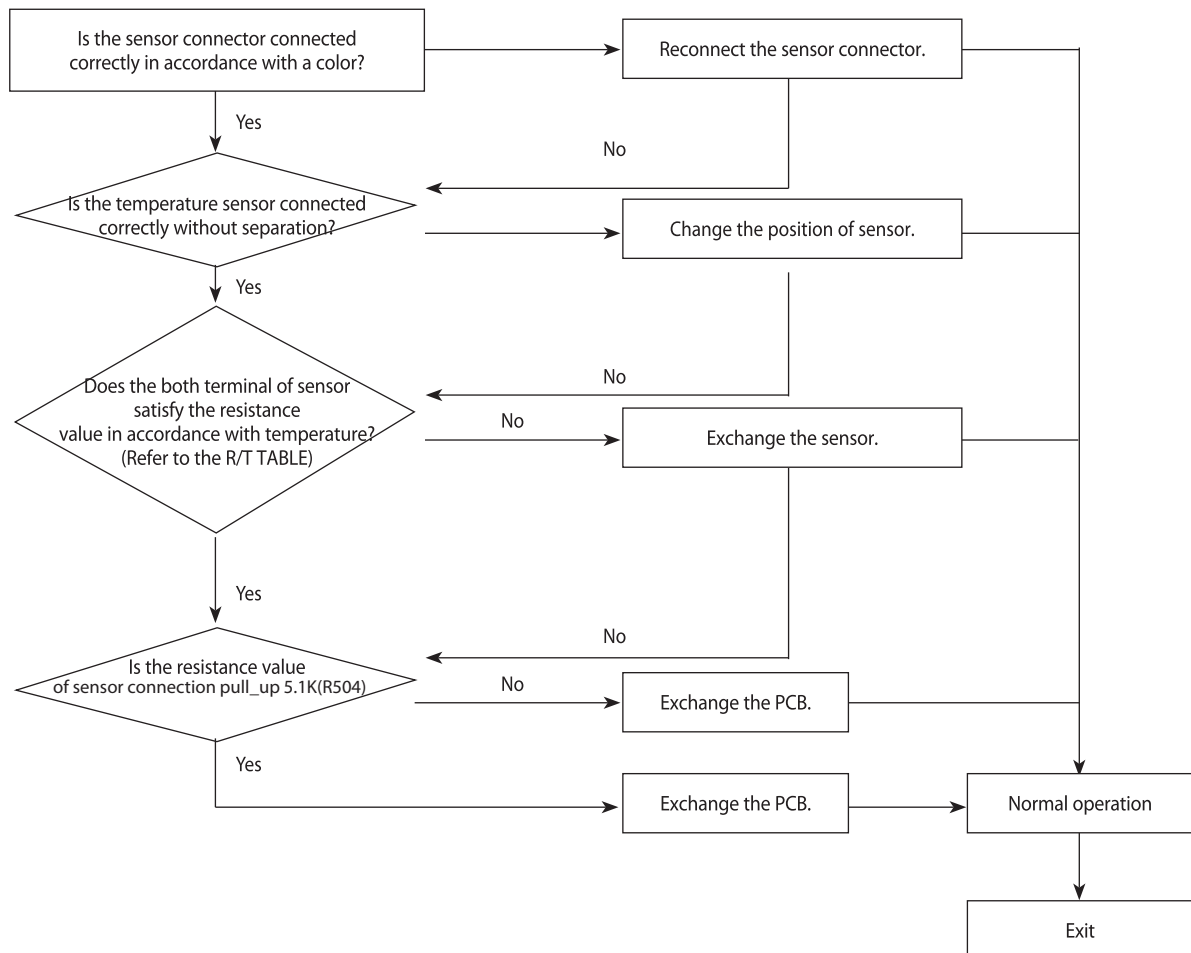


4-3-6 Coil temperature sensor error ↔ When E237 is displayed

1. Checklist :

- 1) Is the sensor connector connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull_up correct?

2. Troubleshooting procedure

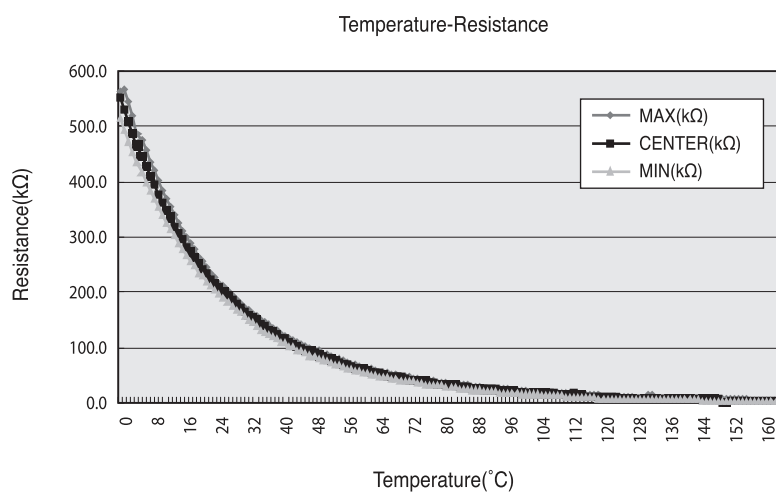
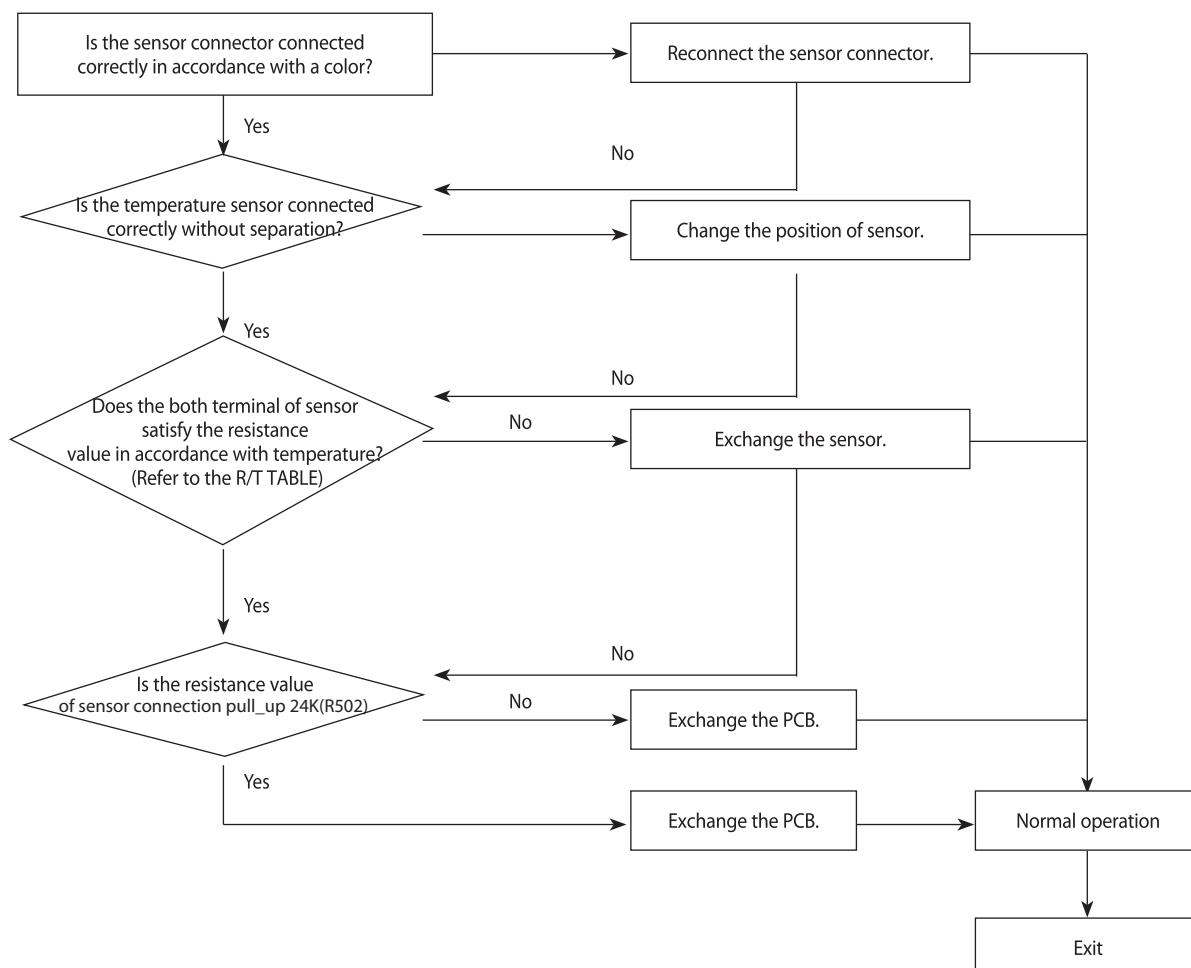


4-3-7 Discharge temperature sensor error ↔ When E25 1 is displayed

1. Checklist :

- 1) Is the sensor connector connected correctly?
- 2) Is the sensor placed correctly?
- 3) Does the both terminal of sensor satisfy the resistance value in accordance with temperature?
- 4) Is the resistance value of sensor connection pull_up correct?

2. Troubleshooting procedure

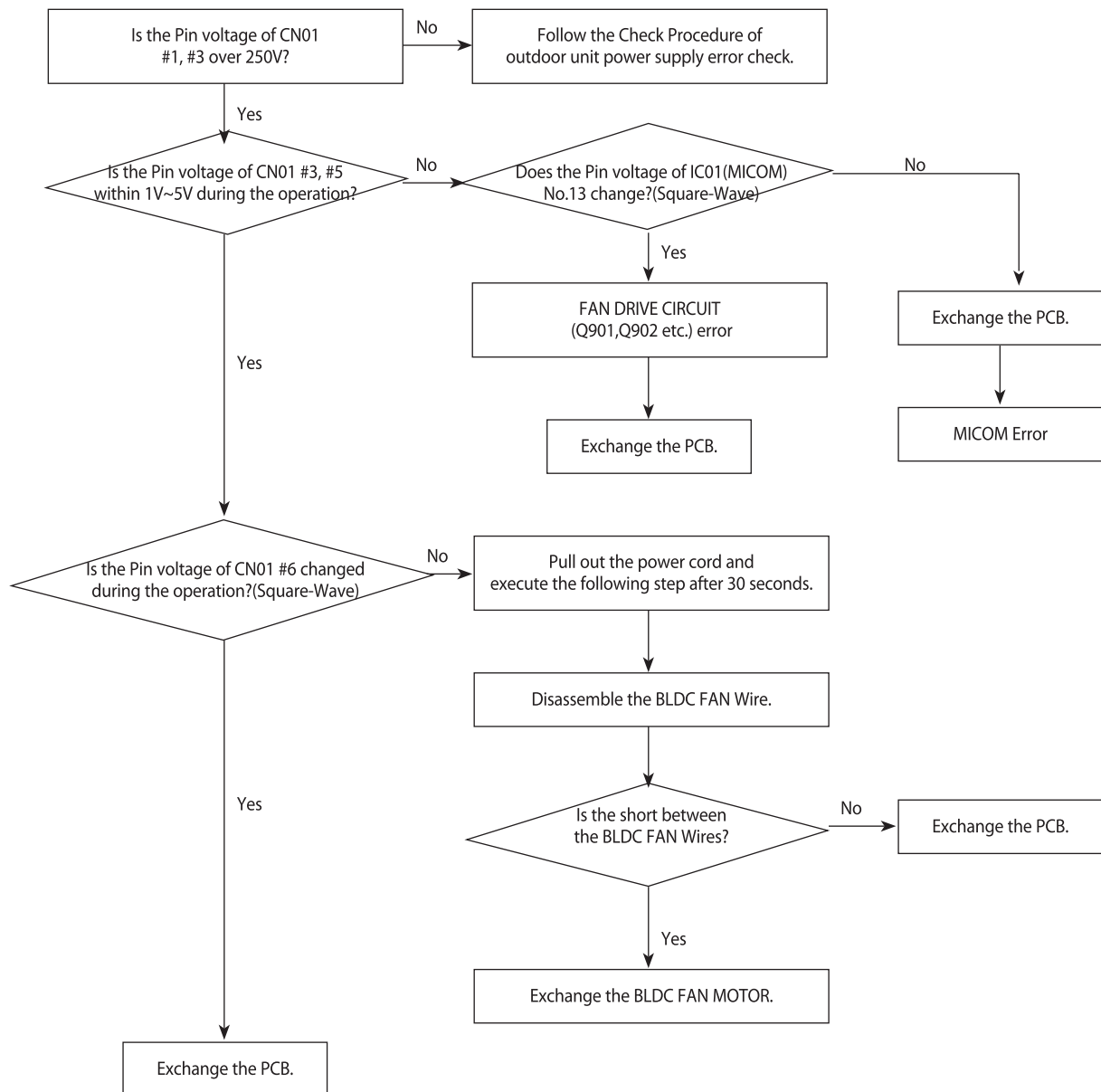


4-3-8 The Outdoor unit Fan error ↔ When E458 is displayed

1. Checklist :

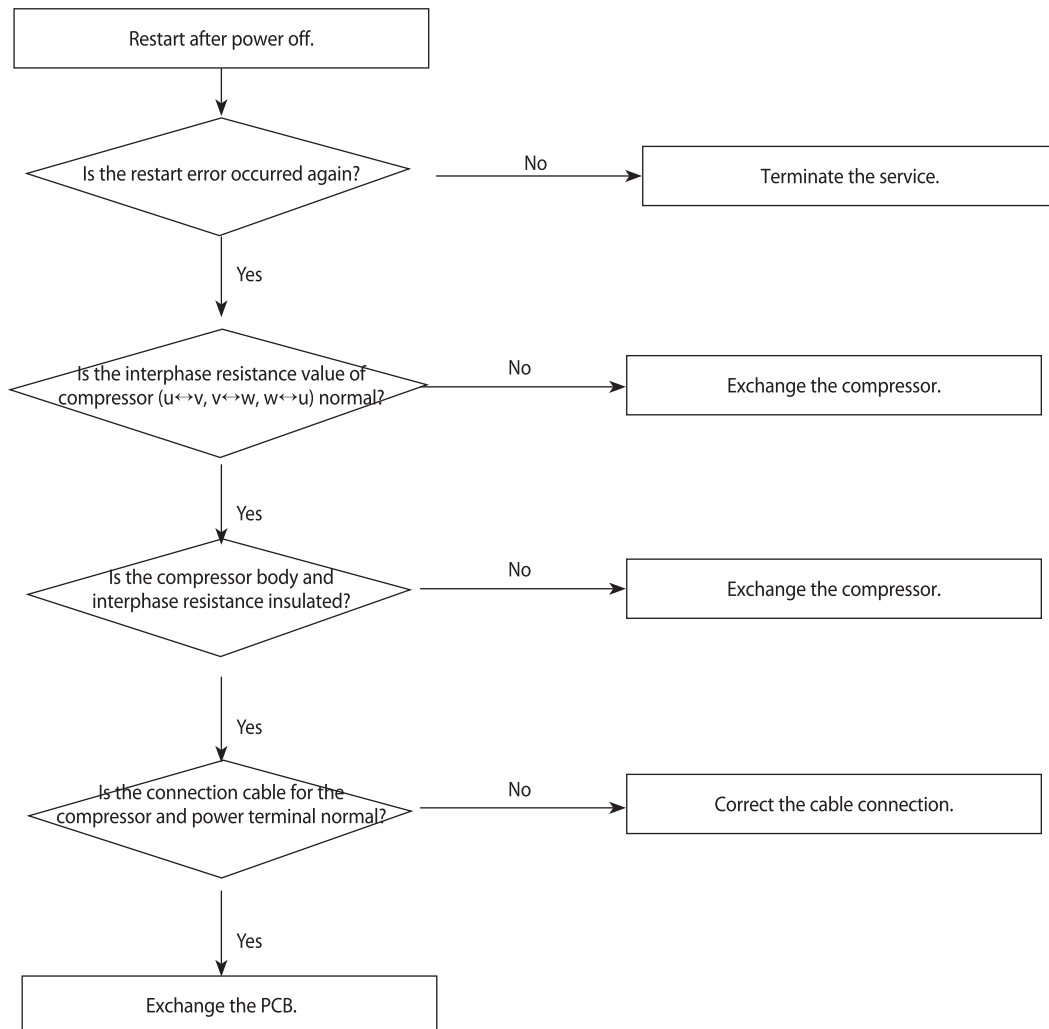
- 1) Are the input power voltage and the power connection correct?
- 2) Is the motor wire connected to the outdoor PCB correctly?
- 3) Is there no assembly error or none-assembly in the terminal of motor wire connector?
- 4) Is there no obstacle at the surrounding of motor and propeller?

2. Troubleshooting procedure



4-3-9 Compressor start error ↔ When E46 is displayed

1. Checklist :
 - 1) Is the connection of cable for the compressor and power?
 - 2) Is the interphase resistance of compressor normal?
2. Troubleshooting procedure

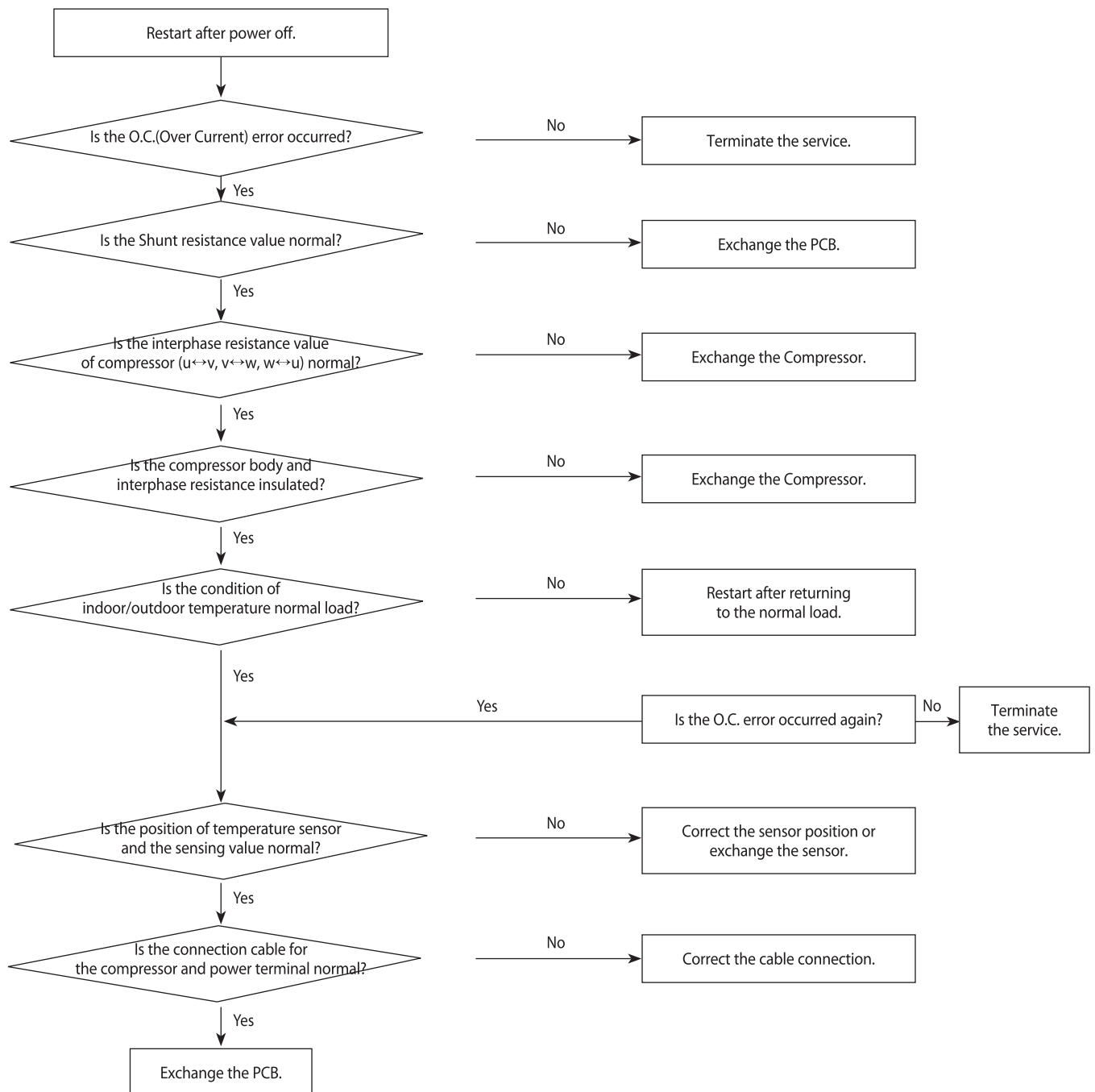


4-3-10 O.C.(Over Current) error↔When E454 is displayed

1. Checklist :

- 1) Is the Shunt resistance value correct?
- 2) Is the condition of surrounding temperature abnormal overload?
- 3) Is there any problem as like the temperature sensor separation or measurement value error?
- 4) Is the interphase resistance of compressor normal?

2. Troubleshooting procedure

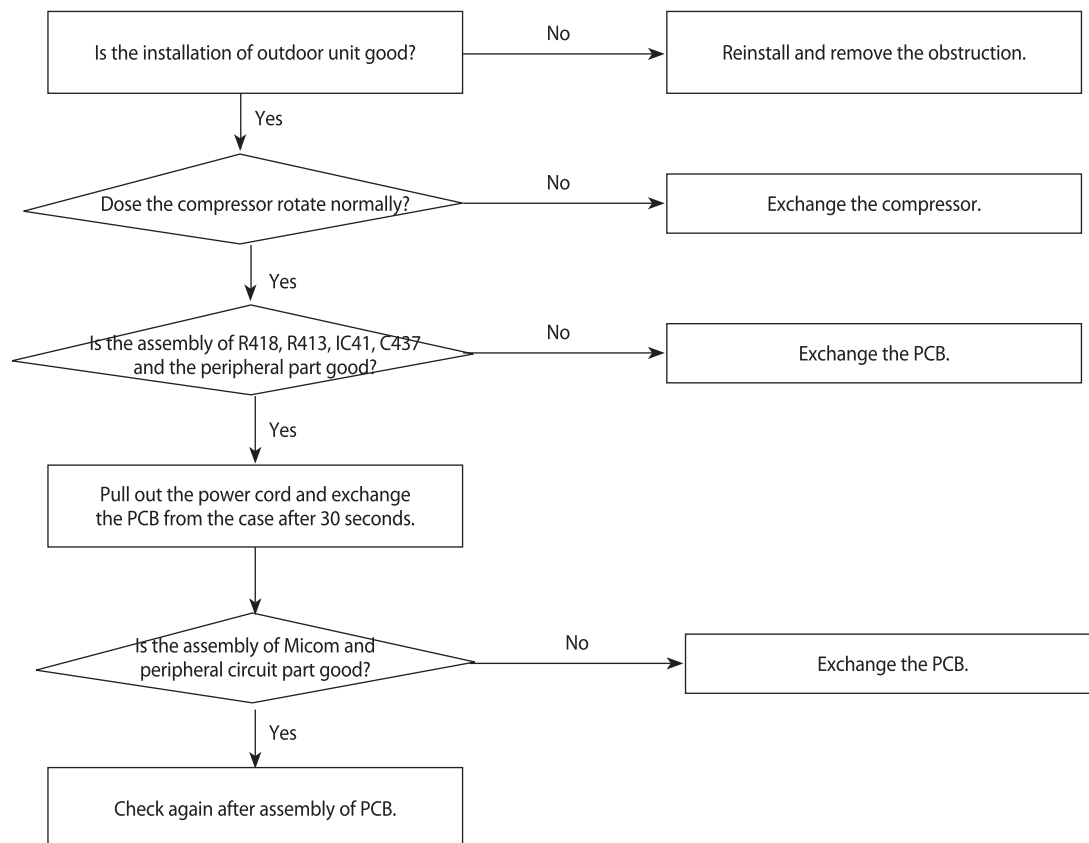


4-3-11 Total current Sensor error ↔ When **E488** is displayed

1. Checklist :

- 1) Is the input power voltage proper?
- 2) Is the refrigerant charged properly?
- 3) Does the compressor rotate normally? (Reverse rotation, Locking etc.)
- 4) Does the outdoor fan operate normally? (Fan propeller loss, Motor error etc.)
- 5) Is the installation condition of outdoor unit good? (Piping, Space etc.)
- 6) Is there no ventilation obstruction at the surrounding of outdoor? (Outdoor unit cover, Fan front obstruction etc.)

2. Troubleshooting procedure

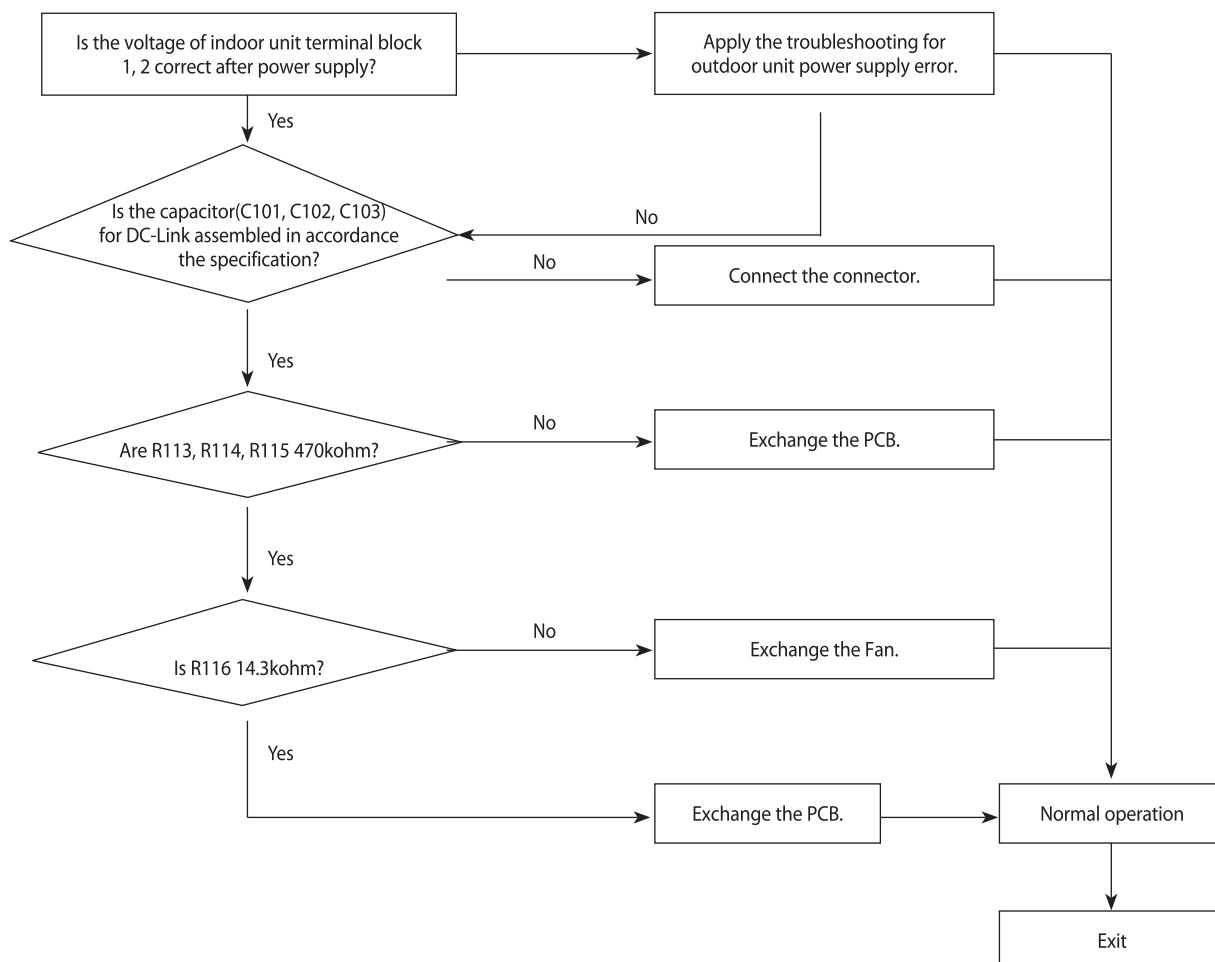


4-3-12 DC-Link voltage sensor error ↔ When E469 is displayed

1. Checklist :

- 1) Is the voltage of indoor unit terminal block 1, 2 correct after power supply?
- 2) Is the capacitor(C101, C102, C103) for DC-Link assembled in accordance the specification?
- 3) Are R112, R113, R114 470 Kohm?
- 4) Is R115 14.3Kohm?

2. Troubleshooting procedure

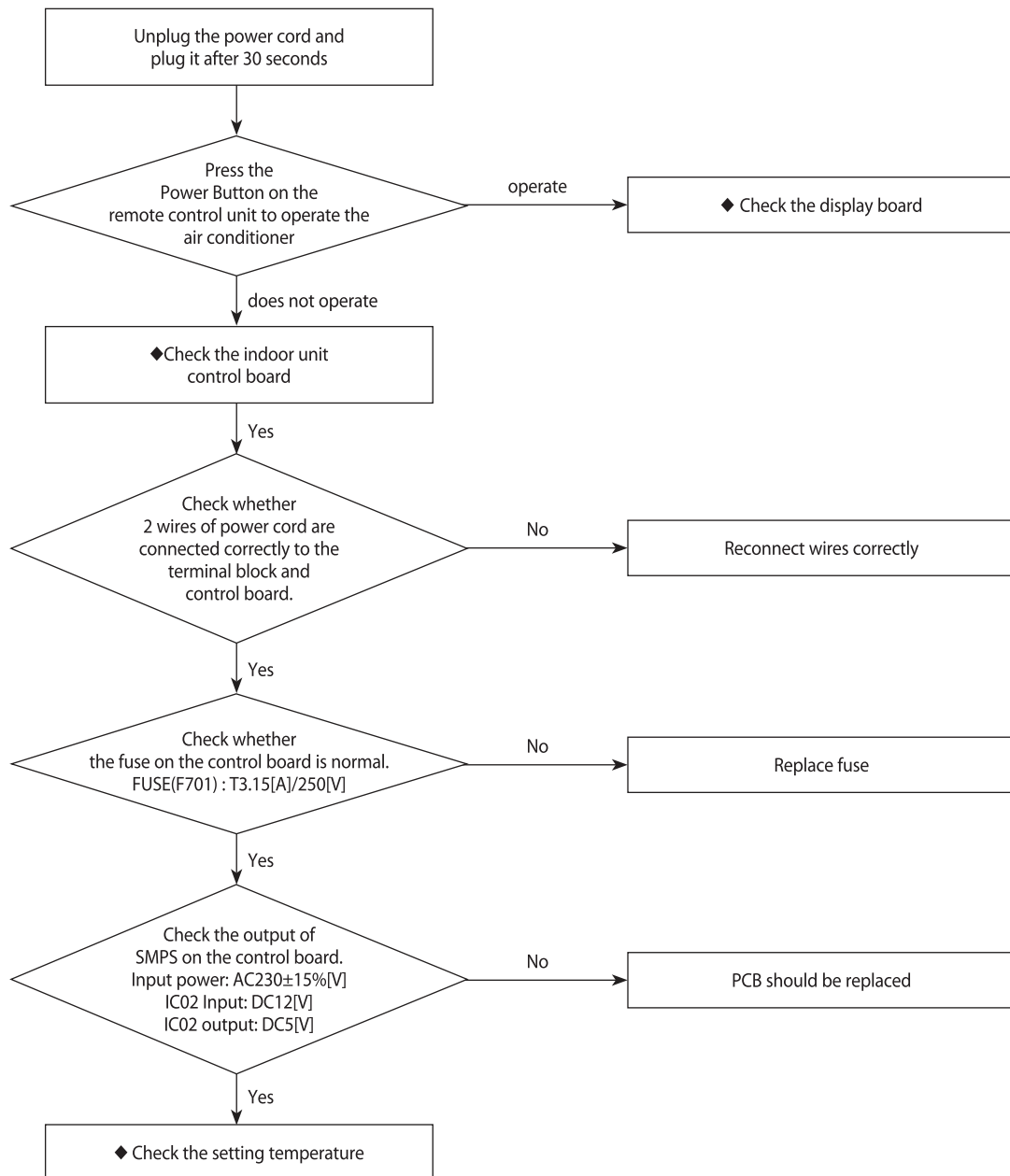


4-3-13 No Power (completely dead)-Initial diagnosis (Not displayed)

1. Checklist :

- 1) Is input voltage normal?
- 2) Is AC power linked correctly?
- 3) Is input voltage of DC regulator IC KA7805 (IC4202) normal? (11VDC-12.5VDC)
- 4) Is output voltage of DC regulator IC KA7805 (IC02) normal? (4.5VDC-5.5VDC)

2. Troubleshooting procedure

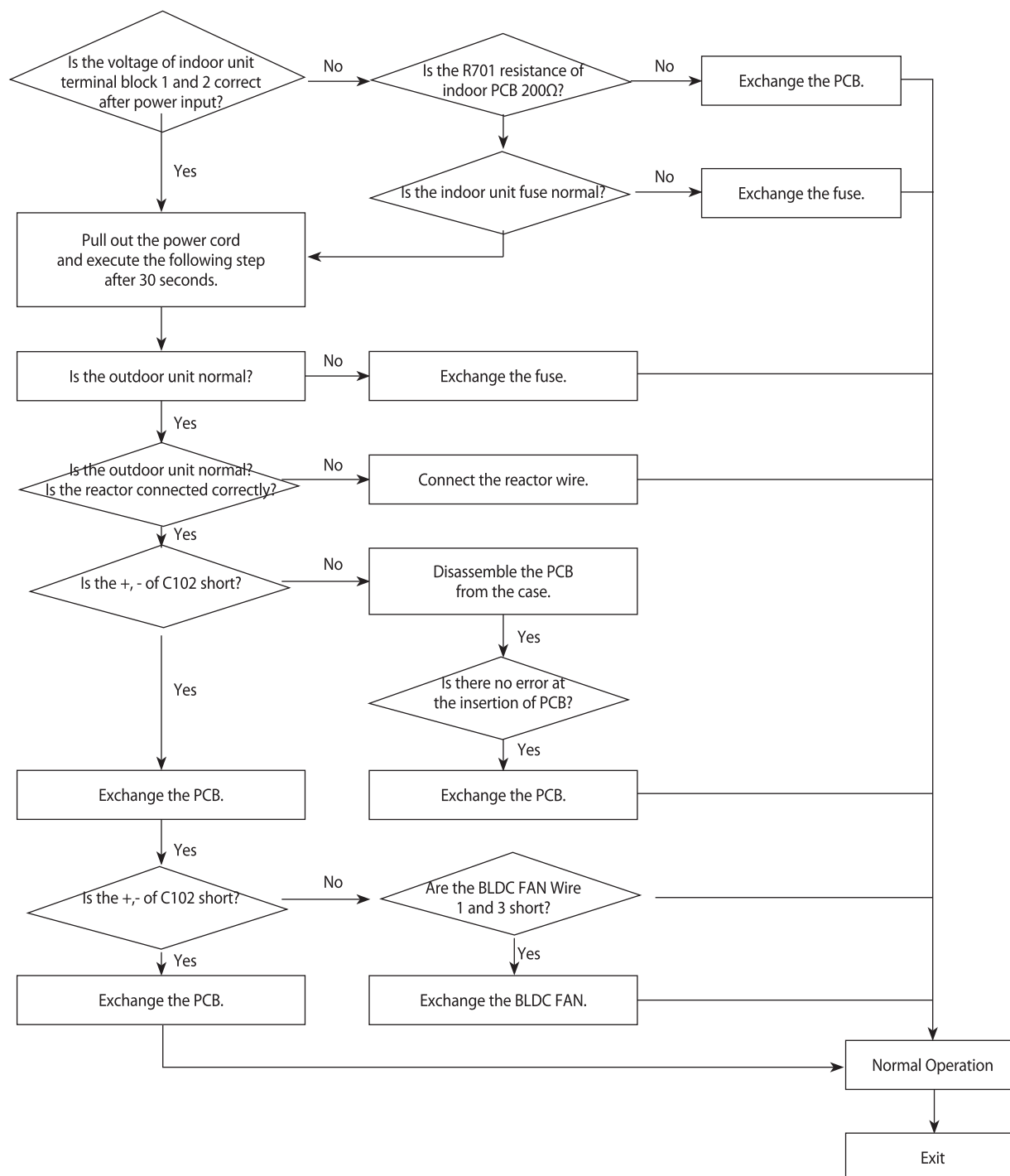


4-3-14 The Outdoor unit power supply error (Not displayed)

1. Checklist :

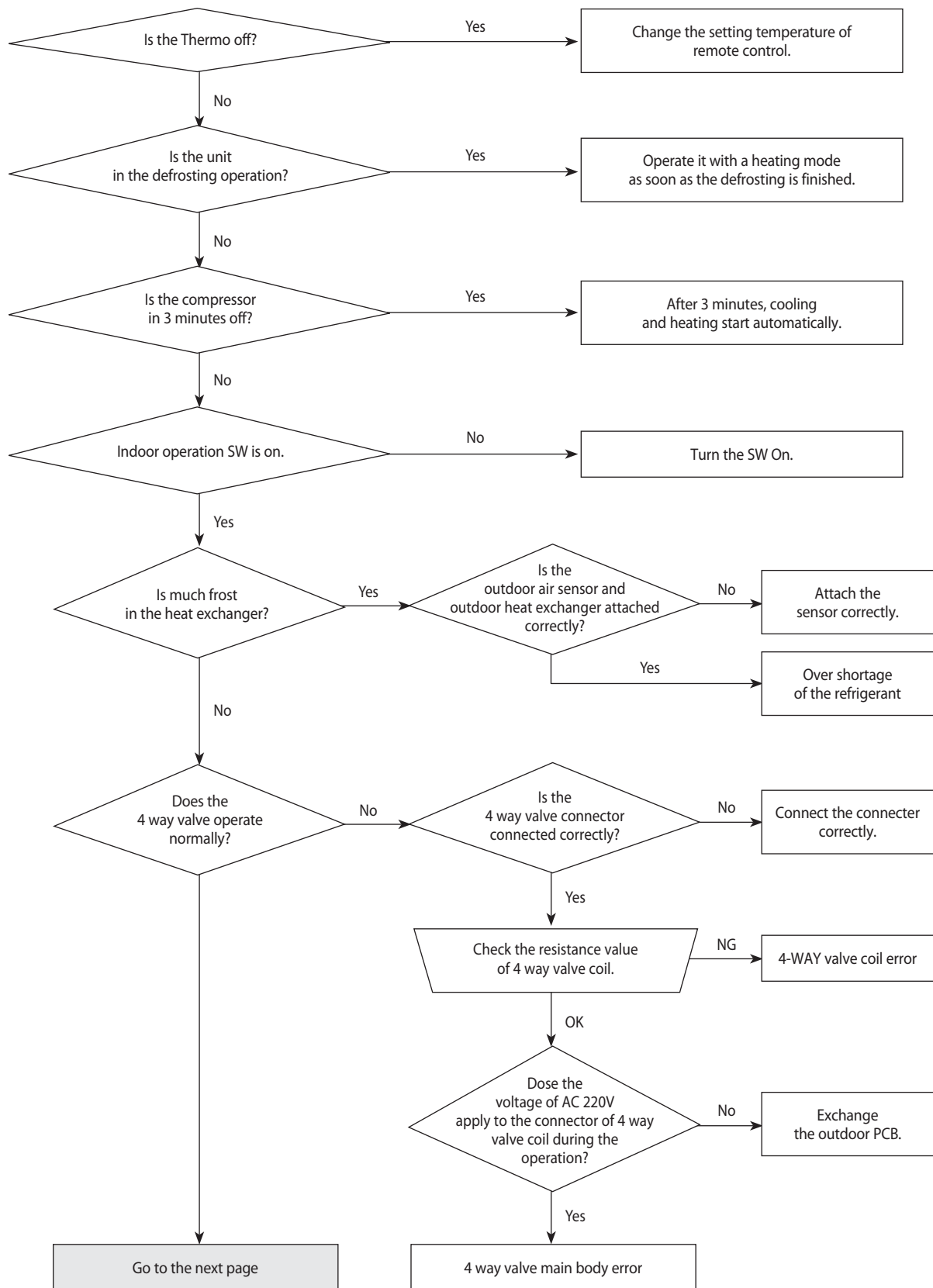
- 1) Are the input power voltage and the power connection correct?
- 2) Is there no Fuse short in the indoor unit and outdoor unit?
- 3) Is the cable connected correctly between the indoor unit and outdoor unit in order.
- 4) Is the wire connected correctly to the terminal block of the indoor unit and outdoor unit?

2. Troubleshooting procedure

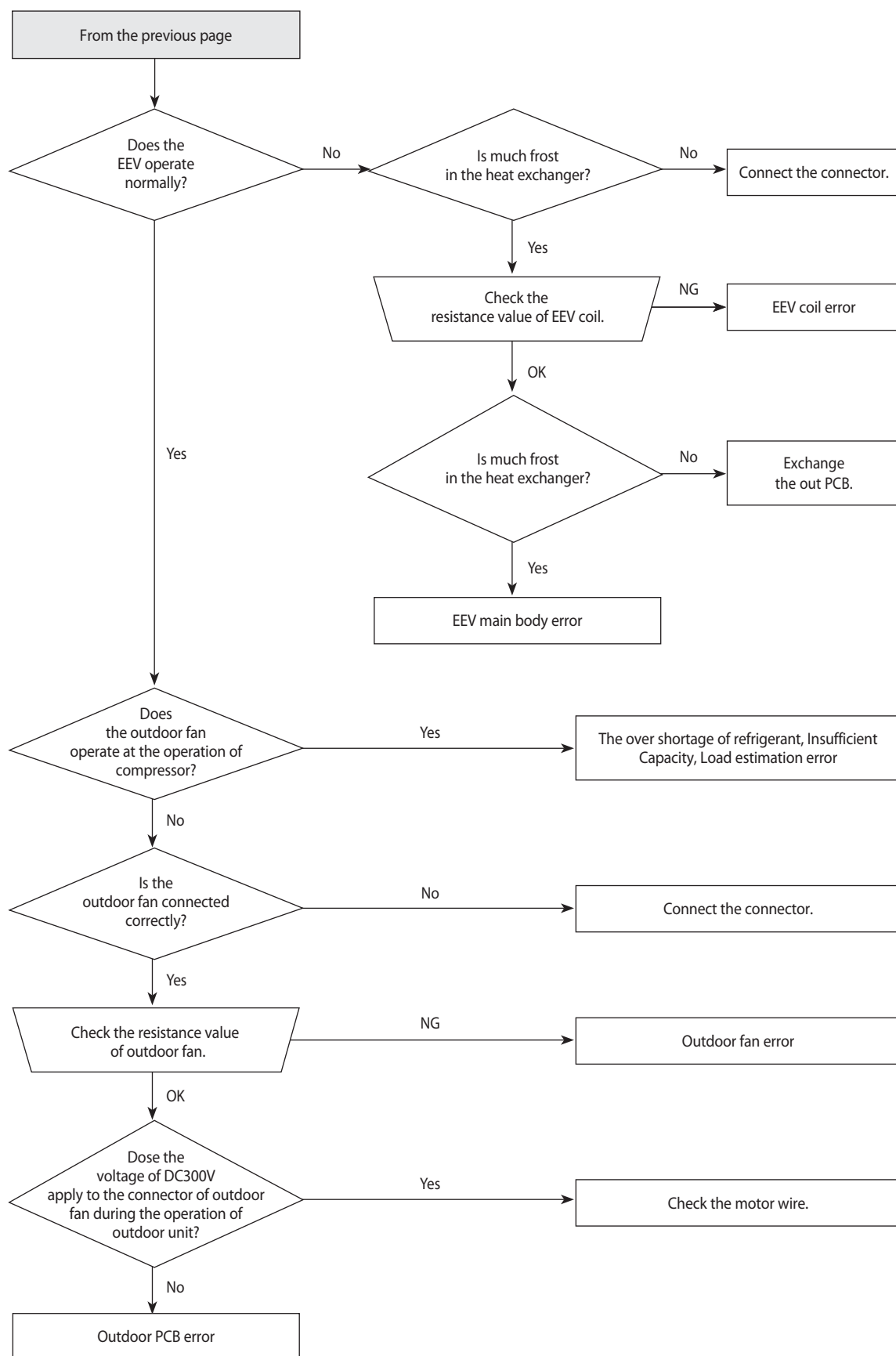


4-3-15 In case of heating at the cooling mode or cooling at the heating mode (Not displayed)

1. Troubleshooting procedure

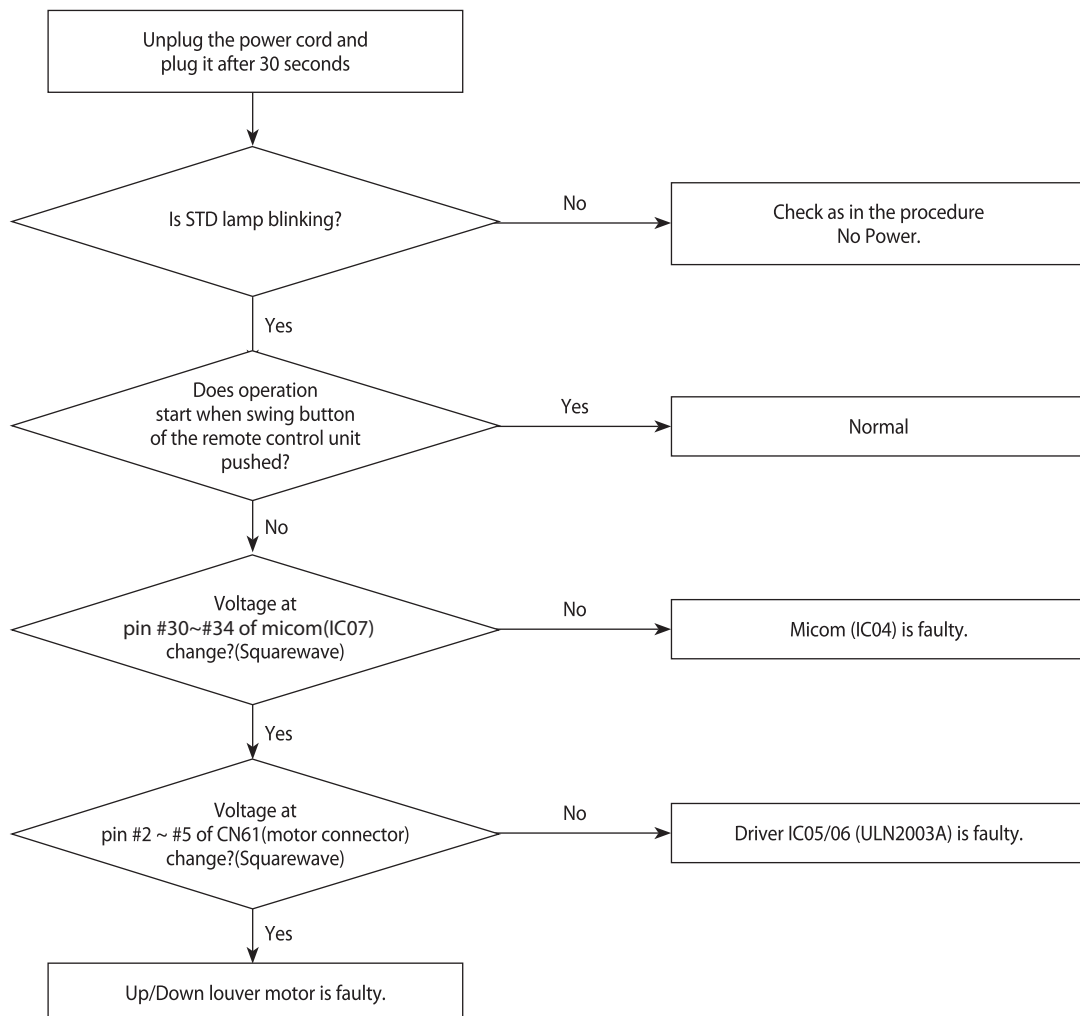


In case of heating at the cooling mode or cooling at the heating mode(cont.)



4-3-16 When the Up/Down Louver Motor Does Not Operate. (Initial Diagnosis) (Not displayed)

1. Checklist :
 - 1) Is input voltage normal?
 - 2) Is the Up/Down louver motor properly connected with the connector (CN61)?
2. Troubleshooting procedure



4-3-17 When the remote control is not receiving

1. Check if the connector was normally assembled.
2. Put the set in operation and check the voltage of No. 15(+) and No. 16(-) of the main PCB CN91 while operating the remote control. When the voltage descends below 3V, the assembly module PCB is normal and the main PCB is poor. Then replace the main PCB.
3. Replace the assembly display PCB because the module PCB is poor if the voltage between No. 15~16 of CN91 maintains 5V after the remote control starts operation.

4-3-18 The others

1. AC Line Zero Cross Signal OUT
Check the assembly condition of peripheral part of PC2321 and Q2321 on the PCB.
2. Capacity miss match
– Check again the indoor unit option code.

4-4 PCB Inspection Method

4-4-1 Pre-inspection Notices

1. Check if you pulled out the AC power plug when you eliminate the PCB or front panel.
2. Don't hold the PCB side not impose excessive force on it to eliminate the PCB.
3. Don't pull the lead wire but hold the whole housing to connect or disconnect a connector to the PCB.
4. In case of outdoor PCB disassembly, check first the complete discharge of condenser (C103) after 30 seconds power off.

4-4-2 Inspection Procedure

1. Check connector connection and peeling of PCB or bronze coating pattern when you think the PCB is broken.
2. The PCB is composed of the 3 parts.
 - Indoor Main PCB Part : MICOM and surrounding circuit, relay, room fan motor driving circuit and control circuit, sensor driving circuit, power circuit of DC12V and DC5V, and buzzer driving circuit.
 - Display part : LED lamp, Switch, Remocon module
 - Outdoor Main PCB part : MICOM and surrounding circuit. IPM and PFC circuit and control circuit.
 - EMI PCB Part : Line filter and Noise Capacitor, Varistor

4-4-3 Indoor Detailed Inspection Procedure

No	Procedure	Inspection Method	Cause
1	Plug out and pull the PCB out of the electronic box. Check the PCB fuse.	1) Is the fuse disconnected?	<ul style="list-style-type: none">• Over current• Indoor Fan Motor Short• AC Part Pattern Short of the MAIN PCB
2	Supply power. If the operating lamp twinkles at this time, the above 1)~3) have no relation.	Checking the power voltage.	
		1) Is the BD4201 input voltage AC200V~AC240V?	<ul style="list-style-type: none">• Power Cord is fault, Fuse open. Wrong Power Cable Wiring, AC Part is faulty.
		2) Is the voltage between both terminals of the C104 on the 2 nd side of the transformer DC12V $\pm 0.5V$?	<ul style="list-style-type: none">• Switching Trans or Power Circuit is faulty
		3) Is the voltage between both terminals of OUT and GND of IC4202(KA78L05) DC5V $\pm 0.5V$?	<ul style="list-style-type: none">• Power Circuit is faulty, Load Short
3	Press the ON/OFF button.	Checking the power voltage.	
		1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN72)?	<ul style="list-style-type: none">• Relay(RY71) Coil Disconnection, IC05 is faulty
		2) Check the voltage of both terminals of terminal block 1 and N(1) after 3 minute operation.: AC220V	<ul style="list-style-type: none">• Relay(RY71) Contact is faulty
4	Press the ON/OFF button. 1. FAN Speed [High] 2. Continuous Operation	1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN72)?	<ul style="list-style-type: none">• Fan Motor of the indoor is faulty
		2) The fan motor of the indoor unit doesn't run.	<ul style="list-style-type: none">• Fan Motor Connector(CN72) is faulty
		3) The power voltage between terminal #3 and #5 of the connector(CN72) is 0V.	<ul style="list-style-type: none">• ASS'Y Main PCB is faulty• Connection is faulty

4-4-4 Outdoor Detailed Inspection Procedure

No	Procedure	Inspection Method	Cause
1	Wait 30 seconds over after disconnecting the power cable Check the outdoor PCB.	1) Is C101 discharged? 2) Is the resistance of both terminals of C101 opened? 3) Is the fuse of EMI PCB normal? 4) Is the reactor wire connected?	<ul style="list-style-type: none"> • Over Current • Inner short of PCB • BLDC FAN Motor Error
2	Check the Outdoor unit PCB.	1) Is PTC 40 ohm(indoor PCB)? 2) Does RY74 operate normally(indoor PCB)? (IC05:0V,1:5V) 3) Is the fuse(F701) normal? 4) Is the Sub PCB assembled normally?	<ul style="list-style-type: none"> • Outdoor PCB Error • SUB Relay(RY74) Error • IC05 Error • Indoor PCB Error
3	Check the LED lighting after power supply.	1) Normal: Red: Light On, Green: Flickering, Yellow: Light Off? 2) Is the voltage of C101 250V over? 3) Is the input of IC19 8V, and the output 5V? 4) Recheck after disassembling BLDC FAN Wire.	<ul style="list-style-type: none"> • Inner short of outdoor PCB • Wrong assembly of outdoor PCB • BLDC FAN Error
4	Check the condition of indoor & outdoor connection cable.	1) Is the green LED light on once per second? 2) Is the indoor & outdoor connection cable connected in order? 3) Is the grounding wire connected to the both of indoor & outdoor unit? 4) Is the voltage of terminal block N(1), 225V?	<ul style="list-style-type: none"> • Wrong connection of Indoor/Outdoor wiring • Wrong assembly of outdoor communication circuit
5	Check the Comp Wire.	1) Is it connected red, blue, and yellow in order in counterclockwise. 2) Are the valve and its installation condition good? 3) Is the installation condition of outdoor unit?	<ul style="list-style-type: none"> • Wrong assembly • Installation condition is bad.
6	Check the BLDC Fan.	1) Is CN01 1, 3 over 250V? 2) Is CN01 3, 5 within 1V~5V? 3) Is the voltage of CN01 6 changed? 4) Is the resistance of BLDC Motor 1, 3 opened after power off?	<ul style="list-style-type: none"> • Outdoor PCB Error • BLDC Motor Error

4-5 Main Part Inspection Method

Part	Breakdown Inspection Method											
Room Temperature Sensor	Measure resistance with a tester											
	Normal	At the normal temperature 37kΩ~ 8.3kΩ(-7°C~+30°C) *Refer to Table 12-3-4.										
	Abnormal	∞, 0Ω . . . Open or Short										
Room Fan Motor	Measure the resistance between terminals of the connector (CN72) with a tester.											
	Normal	At the normal temperature (10°C ~ 30°C)										
		<table><tr><td>Compare terminal</td><td>Resistance</td><td>Remark</td></tr><tr><td>Yellow, Blue</td><td>404.4Ω ± 10%</td><td>Main</td></tr><tr><td>Yellow, Red</td><td>340Ω ± 10%</td><td>Sub</td></tr></table>		Compare terminal	Resistance	Remark	Yellow, Blue	404.4Ω ± 10%	Main	Yellow, Red	340Ω ± 10%	Sub
		Compare terminal	Resistance	Remark								
		Yellow, Blue	404.4Ω ± 10%	Main								
Yellow, Red	340Ω ± 10%	Sub										
Abnormal	∞, 0Ω . . . Open or Short											
Stepping Motor	Measure the resistance between the red wire and each terminal wire with a tester.											
	Normal	About 300Ω at the normal temperature (20°C ~ 30°C)										
	Abnormal	∞, 0Ω . . . Open or Short										

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