LG Checkpoint-codes

Versie 2.4P-M vervangt U02.3.M

• BEFORE SERVICING THE UNIT, READ THE SAFETY PRECAUTIONS IN THE SERVICEMANUAL.
• ONLY FOR AUTHORIZED SERVICE PERSONNEL.

Hoofdstukindeling

Single A (vloer- & plafond UV / cassette UT / kanaal UB).....04
- Aan / Uit - Inverter
UU..(W)

- Variabel (aan/uit).....26
AT-C.. / AT-H.. / LB-C.. / LB-D.. / LB-G.. / LB-H.. / LT-B.. / LT-C.. / LT-D.. / LT-E.. / LV-B.. / P..AH

Multi-split 39
- Inverter
FM..AH

- Variabel (aan/uit).....92
M..AC/AH

- Multi-split tot 2005.....94
A2-C.. / A3-C.. / A2-H.. / A3-H.. / LM..

RAC.....96
- Standaard wandunit (aan/uit).....97
LS-J.. / LS-K.. / LS-L.. / S..ACL / S..ACP / S..AH(P) / G..AH

- ART COOL Deluxe / Panel (aan/uit).....97
LS-P.. / A09AH* / -12- / -18- / C07AH* / -09- / -12-

- Standaard wandunit Inverter.....99
LS-N.. / LS-Q.. / LS-R.. / S..AN / S..AW

- ART COOL Deluxe Inverter.....101
C09AW* / C12AW*

- ART COOL Deluxe Inverter.....103
C18AW* / C24AW*

-ART COOL Panel Inverter.....105
A09AW* / A12AW* / A09AW1 / A12AW1

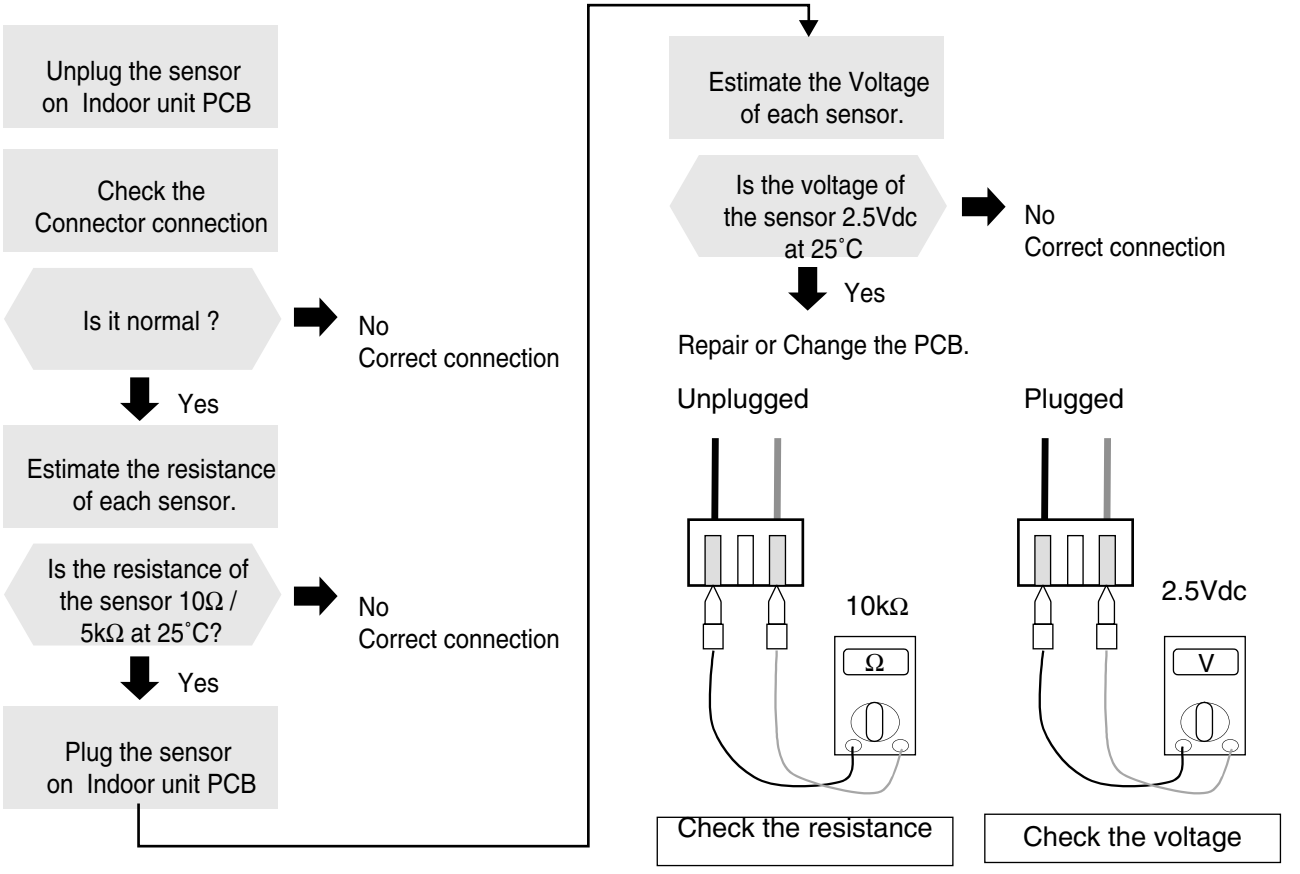
Single A (vloer- & plafond UV / cassette UT / UB kanaal) UU..(W)

Inverter 1-fase (single-split)
Inverter 3-fase (Single-split)
Synchro (master/slave)
Variabel (aan/uit, single-split)

6.6 Check code Trouble shooting CH01, CH02, CH06

Display code	Title	Cause of error	Check point & Normal condition
01	Indoor air sensor	• Connector connection error • Faulty PCB • Faulty sensor (Open / Short)	Normal resistor : 10KΩ/ at 25˚C (Unplugged) Normal voltage : 2.5Vdc / at 25˚C(Plugged) Refer to sensor resistance table.
02	Indoor inlet pipe sensor	• Connector connection error • Faulty PCB • Faulty sensor (Open / Short)	Normal resistor : 5KΩ/ at 25˚C(Unplugged) Normal voltage : 2.5Vdc / at 25˚C(Plugged) Refer to sensor resistance table.
06	Indoor outlet pipe sensor	• Connector connection error • Faulty PCB • Faulty sensor (Open / Short)	Normal resistor : 5KΩ/ at 25˚C(Unplugged) Normal voltage : 2.5Vdc / at 25˚C(Plugged) Refer to sensor resistance table.

Check Flow Chart



6.7 Check code Trouble shooting CH03

Display code	Title	Cause of error	Check point & Normal condition
03	Communication Error (Wired remote controller)	• Connector connection error • Faulty PCB / Remote controller • Connection wire break	• Connection of wire • Main PCB Volt. DC12V • Noise interference

Check Flow Chart

Check the wire connection(Open / Short / Miswirring)

Is it normal ?
- No → Correct connection Or change connection wire
- Yes ↓

Is the soldering state of connector is normal?
- No → Re-soldering component Or change the PCB
- Yes ↓

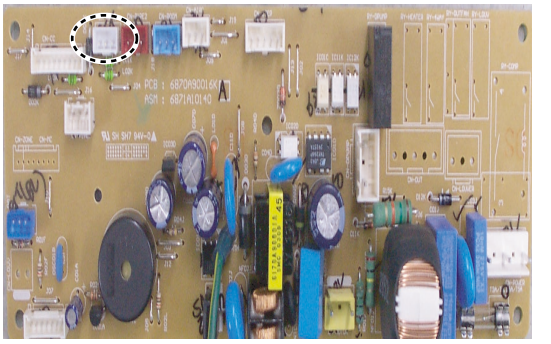
Check the volt. of main PCB power source. (DC 12V,DC 5V)

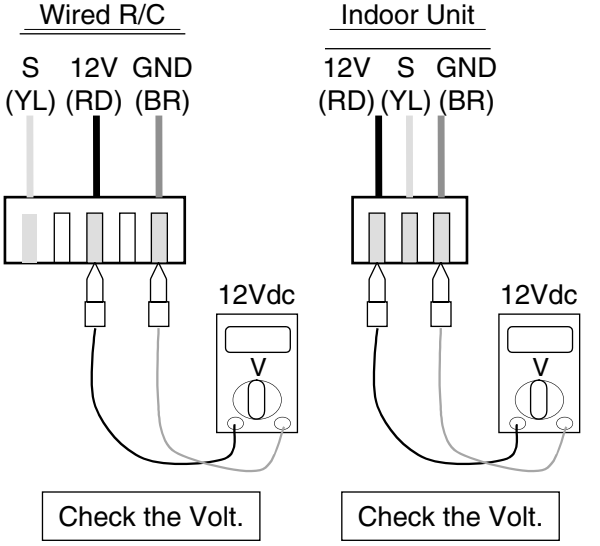
Is it normal ?
- No → Correct connection Or change the PCB
- Yes ↓

Check the installation of wired remote controller. (Noise interference)

Is it normal ?
- No → Adjust the state of installation

CN-REMO





6.8 Check code Trouble shooting CH04

Display code	Title	Cause of error	Check point & Normal condition
04	Drain pump / Float switch	• Float switch open. (Normal : short) • Water over flow	• The connection of wire (Drain pump/ Float switch) • Drain pump power input. (220V) • Drain tube installation. • Indoor unit installation. (Inclination)

Check Flow Chart

Check the level of water (Float moves top position)

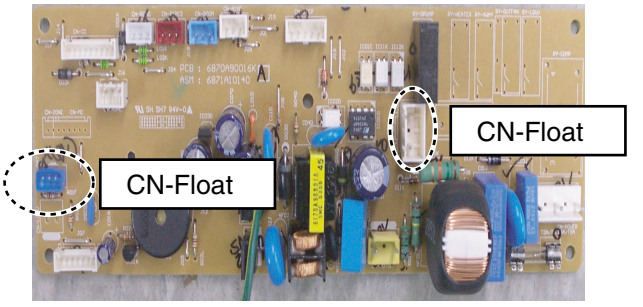
Is it normal ?
- No → Check Drain Pump
- Yes ↓

Is the float switch clean ?
- No → Clean float switch
- Yes ↓

Check the wire connection (Open, Soldered poorly)

Is it normal ?
- No → Correct connection Or re-soldering PCB
- Yes ↓

Is the resistance of f loat switch normal (short) ?
- No → Change the float switch



※ Drain pump check

Check the wire connection (Open, Soldered poorly)

Is it normal ?
- No → Correct connection Or re-soldering PCB
- Yes ↓

Is the resistance of Drain Pump? Normal (about 400Ω) ?
- No → Change the Drain Pump
- Yes ↓

Is the drain pump clean ?
- No → Clean drain pump
- Yes ↓

Check drain tube installation

6.9 Check code Trouble shooting CH09, CH10

Display code	Title	Cause of error	Check point & Normal condition
09	EEPROM Check sum (Indoor)	• Check sum error	• Check the poor soldering. • Change PCB
10	BLDC motor fan lock (Indoor)	• Fan motor break down • Fan motor & PCB poor contact • Obstruction to the fan	• Check the indoor fan motor. • Check the connection status between • PCB and fan motor.

Check Flow Chart

Check the indoor fan motor. (Fan is locked by obstruction)

Is it normal ? → No
Remove obstruction

↓ Yes

Check the connection status between PCB and fan motor

Is it normal ? → No
Correct connection Or re-soldering PCB

↓ Yes

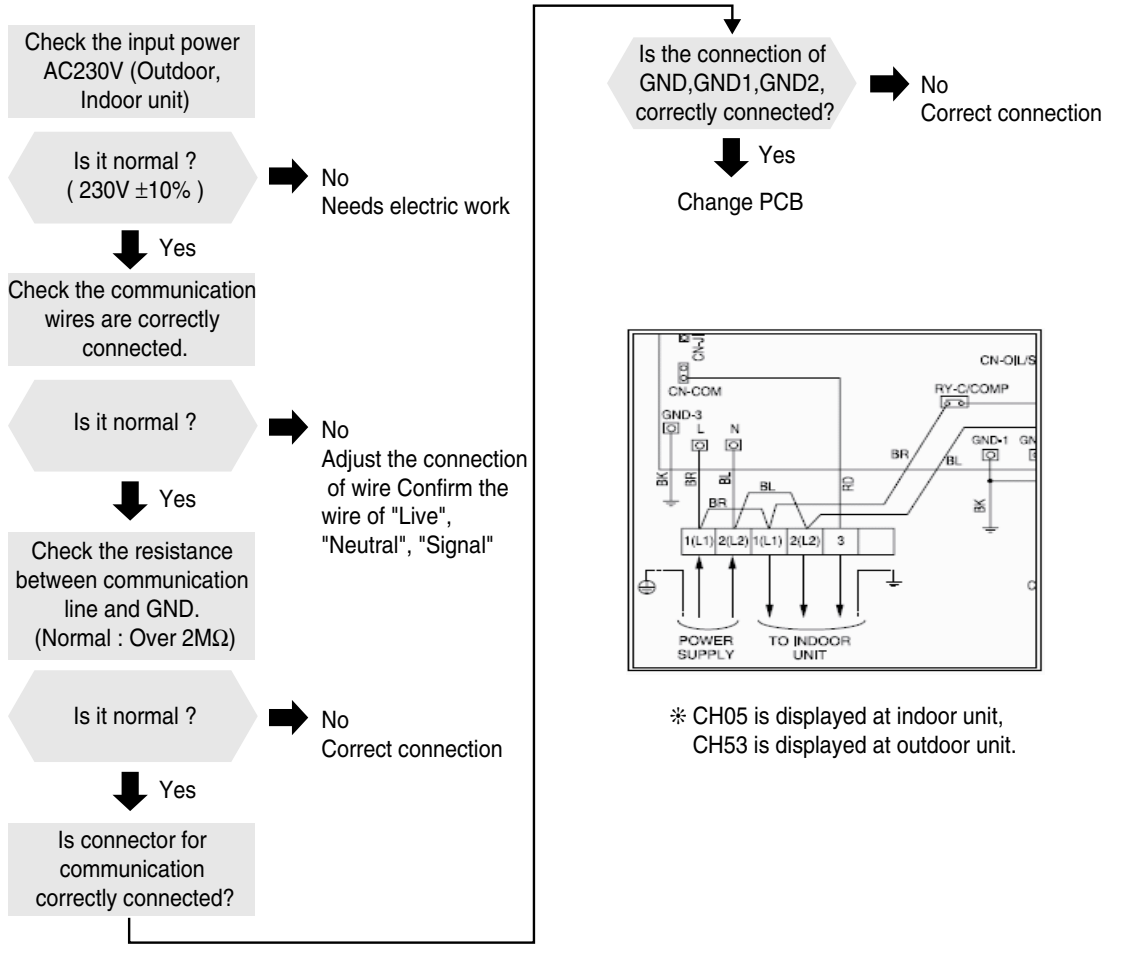
Check the DC Motor signal

Is it normal ? → No
Change Indoor Motor

6.10 Check code Trouble shooting CH05, CH53

Display code	Title	Cause of error	Check point & Normal condition
05 / 53	Communication (Indoor↔Outdoor)	• The connector for transmission is disconnected. • The connecting wires are misconnected. • The communication line is break • Outdoor PCB is abnormal. • Indoor PCB is abnormal.	• Check power input AC 230V. (Outdoor, Indoor) • Check connector for transmission • Check wires are misconnecting. • Check transmission circuit of outdoor PCB • Check transmission circuit of indoor PCB

Check Flow Chart

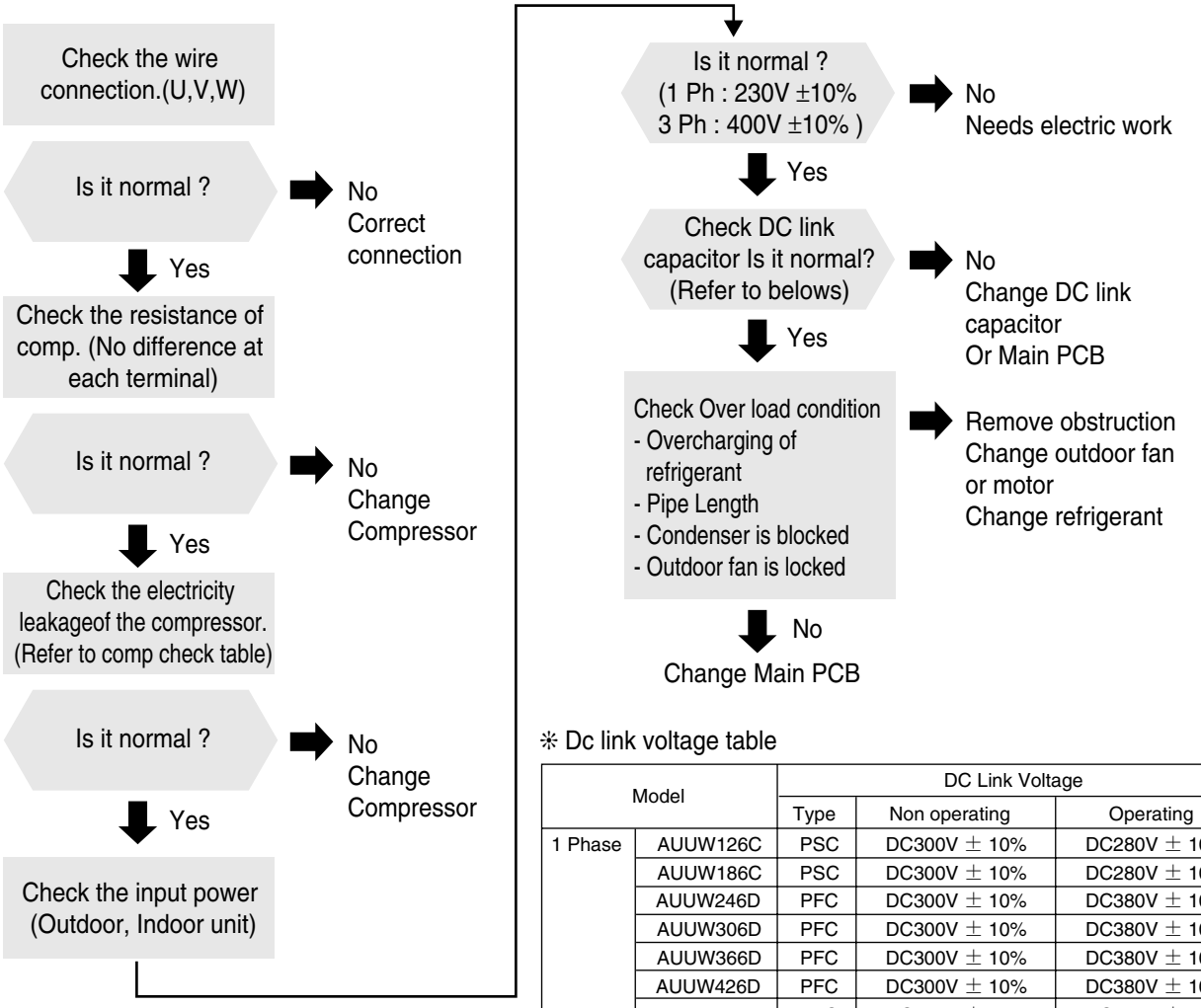


※ CH05 is displayed at indoor unit,
CH53 is displayed at outdoor unit.

6.11 Check code Trouble shooting CH21

Display code	Title	Cause of error	Check point & Normal condition
21	DC Peak	• Instant over current • Over Rated current • Poor insulation of IPM	• An instant over current in the U,V,W phase - Comp lock - The abnormal connection of U,V,W • Over load condition - Overcharging of refrigerant - Pipe length. • Poor insulation of compressor

Check Flow Chart



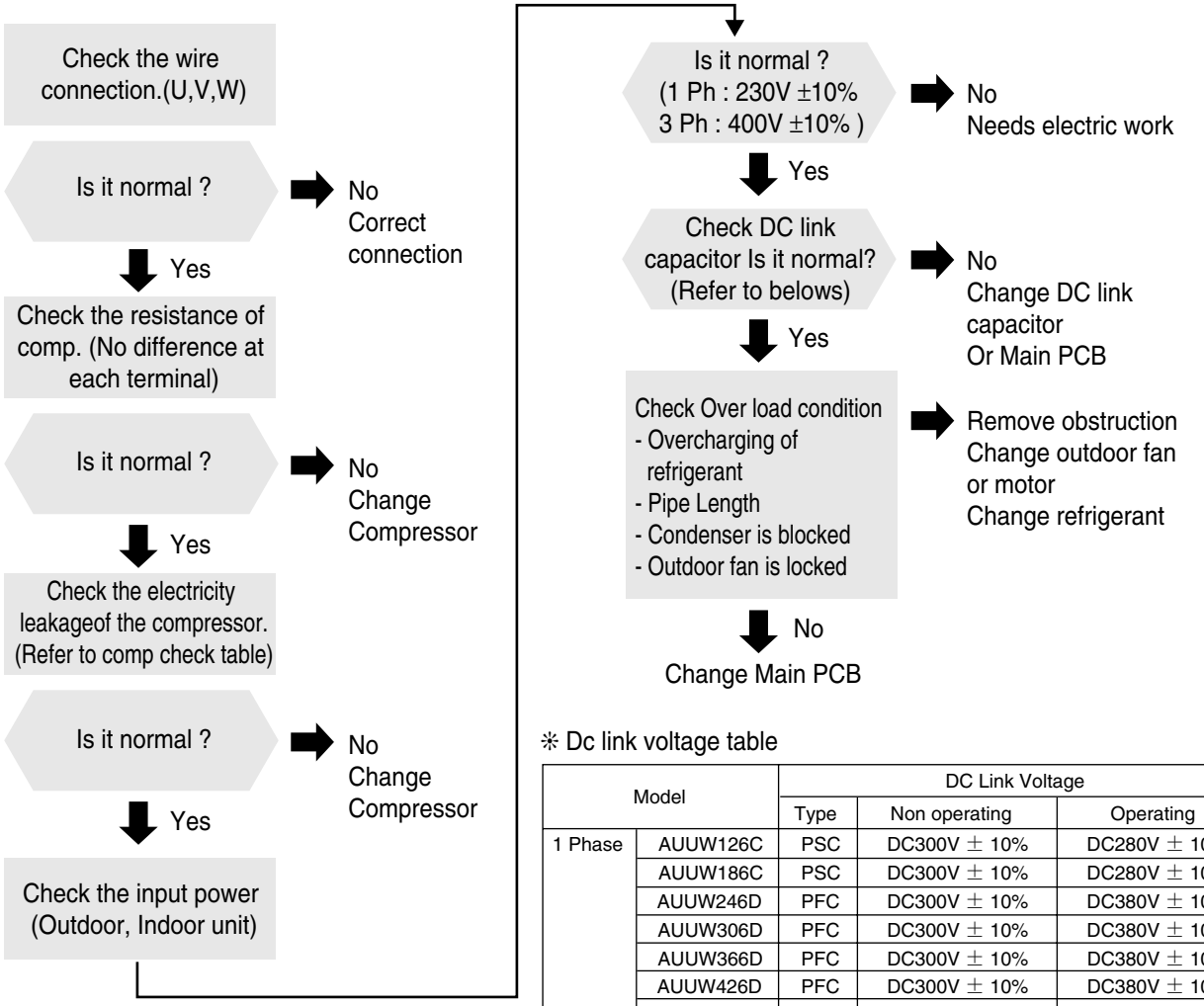
※ Dc link voltage table

Model		DC Link Voltage		
		Type	Non operating	Operating
1 Phase	AUUW126C	PSC	DC300V ± 10%	DC280V ± 10%
	AUUW186C	PSC	DC300V ± 10%	DC280V ± 10%
	AUUW246D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW306D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW366D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW426D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW486D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW606D	PFC	DC300V ± 10%	DC380V ± 10%
3 Phase	AUUW368D	PSC	DC540V ± 10%	DC500V ± 10%
	AUUW428D	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW488D	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW608D	PFC	DC540V ± 10%	DC680V ± 10%

6.12 Check code Trouble shooting CH22

Display code	Title	Cause of error	Check point & Normal condition
22	Max. C/T	• Over current	• Malfunction of compressor • Blocking of pipe • Low voltage input • Refrigerant, pipe length, blocked, …

Check Flow Chart



※ Dc link voltage table

Model		DC Link Voltage		
		Type	Non operating	Operating
1 Phase	AUUW126C	PSC	DC300V ± 10%	DC280V ± 10%
	AUUW186C	PSC	DC300V ± 10%	DC280V ± 10%
	AUUW246D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW306D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW366D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW426D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW486D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW606D	PFC	DC300V ± 10%	DC380V ± 10%
3 Phase	AUUW368D	PSC	DC540V ± 10%	DC500V ± 10%
	AUUW428D	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW488D	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW608D	PFC	DC540V ± 10%	DC680V ± 10%

6.13 Check code Trouble shooting CH40

Display code	Title	Cause of error	Check point & Normal condition
40	C/T Internal circuit	• Initial current error	• Malfunction of current detection circuit. (Open / Short) • The voltage of “C01N” Is 4.0Vdc (25A) ↑.

Check Flow Chart

Check the input power
AC230V
(Outdoor, Indoor unit)

↓

Is it normal ?
(230V±10%)

→ No
Correct connection

↓ Yes

Check “C01N”
Is it normal (4.0Vdc↓)?

→ No
Change Main PCB

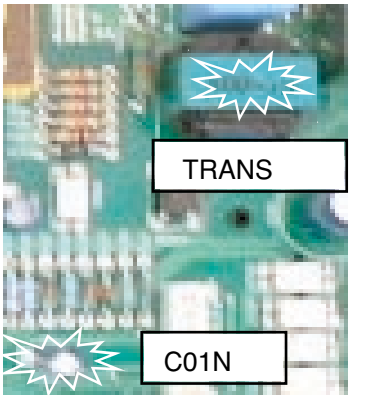
↓ Yes

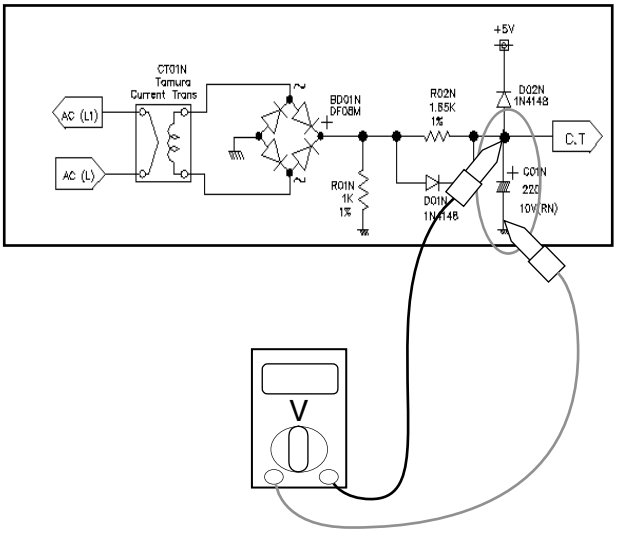
Check Check TRANS
Is it normal?

→ No
Change TRANS

↓ Yes

Change main PCB





6.14 Check code Trouble shooting CH23, CH28

Display code	Title	Cause of error	Check point & Normal condition
23	DC Link Low voltage.	• 1ph : DC link volt. is 140Vdc ↓ • 3ph : DC link volt. is 250Vdc ↓	• Check the power source. • Check the components.
28	DC Link High voltage	• 1ph : DC link volt. is 140Vdc ↑ • 3ph : DC link volt. is 250Vdc ↑	• Check the power source. • Check the components.
25	Input voltage	• Abnormal Input voltage (140Vac ↕300Vac)	• Check the power source. • Check the components.

Check Flow Chart

Check the wire connection.(U,V,W)

↓

Is it normal ? → No → Correct connection

↓ Yes

Is it normal ? → No → Change Compressor

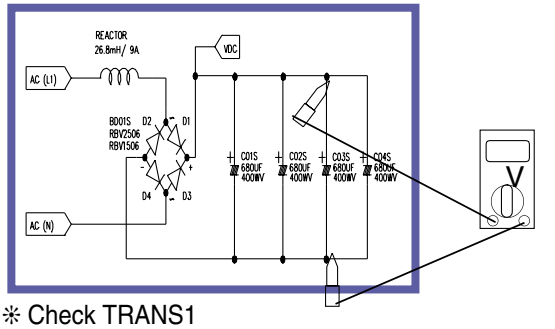
↓ Yes

Is it normal ? → No → Change Compressor

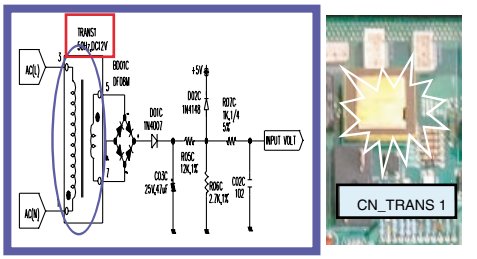
↓ Yes

Check the input power

※ Check DC link voltage



※ Check TRANS1



※ Dc link voltage table

Model		DC Link Voltage		
		Type	Non operating	Operating
1 Phase	AUUW126C	PSC	DC300V ± 10%	DC280V ± 10%
	AUUW186C	PSC	DC300V ± 10%	DC280V ± 10%
	AUUW246D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW306D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW366D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW426D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW486D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW606D	PFC	DC300V ± 10%	DC380V ± 10%
3 Phase	AUUW368D	PSC	DC540V ± 10%	DC500V ± 10%
	AUUW428D	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW488D	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW608D	PFC	DC540V ± 10%	DC680V ± 10%

6.15 Check code Trouble shooting CH24

Display code	Title	Cause of error	Check point & Normal condition
24	Press S/W Open	• Low / High press S/W open.	• Check the connection of “CN_PRESS” • Check the SVC V/V open. • Check the leakage of refrigerant.

Check Flow Chart

Is the wire connection normal ?
→ No: Correct connection
↓ Yes

Is the soldering state of connector is normal?
→ No: Re-soldering component
↓ Yes

Is the SVC Valve opened ?
→ No: Open SVC Valve
↓ Yes

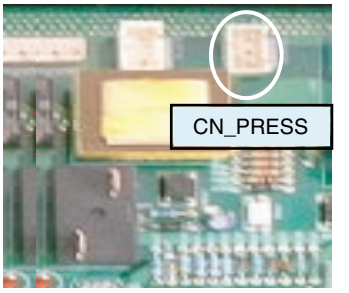
Check the leakage of refrigerant.
Check Pressure of suction pipe
Check Pressure of discharge pipe

Is it normal ?
→ No: Re-vaccuming system & Re-charging
↓ Yes

Change main PCB

※ Pressure switch table

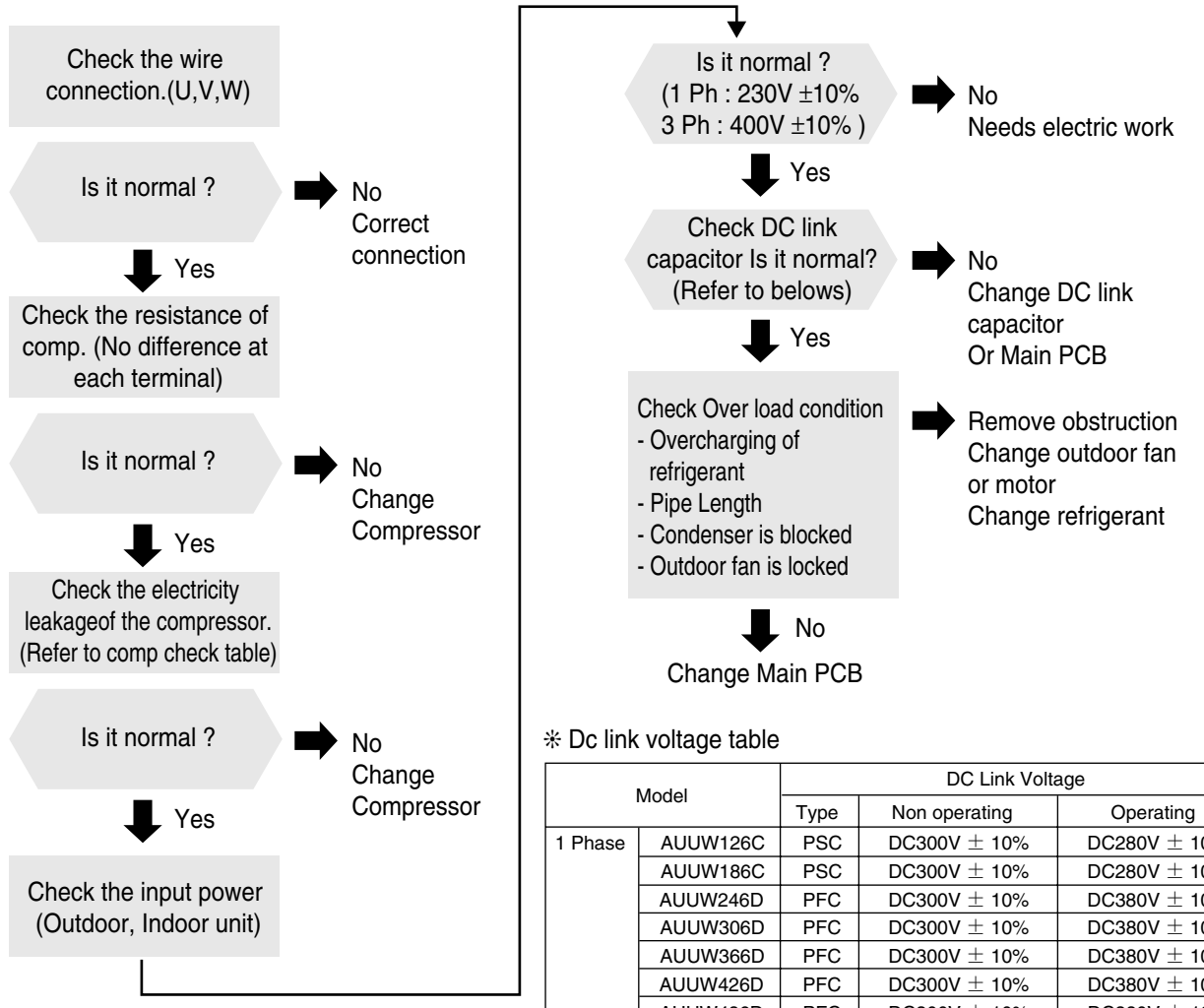
Switch	Low pressure switch	High pressure switch
Spec	0.03 Mpa	4.3 Mpa
Model	AUUW126C AUUW186C	AUUW246D AUUW306D AUUW366D AUUW426D AUUW486D AUUW606D AUUW368D AUUW428D AUUW488D AUUW608D



6.16 Check code Trouble shooting CH26, CH27

Display code	Title	Cause of error	Check point & Normal condition
26	DC Compressor Position	• Compressor position detect error	• Check the connection of comp wire "U,V,W" • Malfunction of compressor • Check the component of "IPM", detection parts.
27	PSC Fault PFC Fault	• Over current at "IGBT"/PFC module	• Check the component of "IGBT" /PFC module. • Check the components.

Check Flow Chart

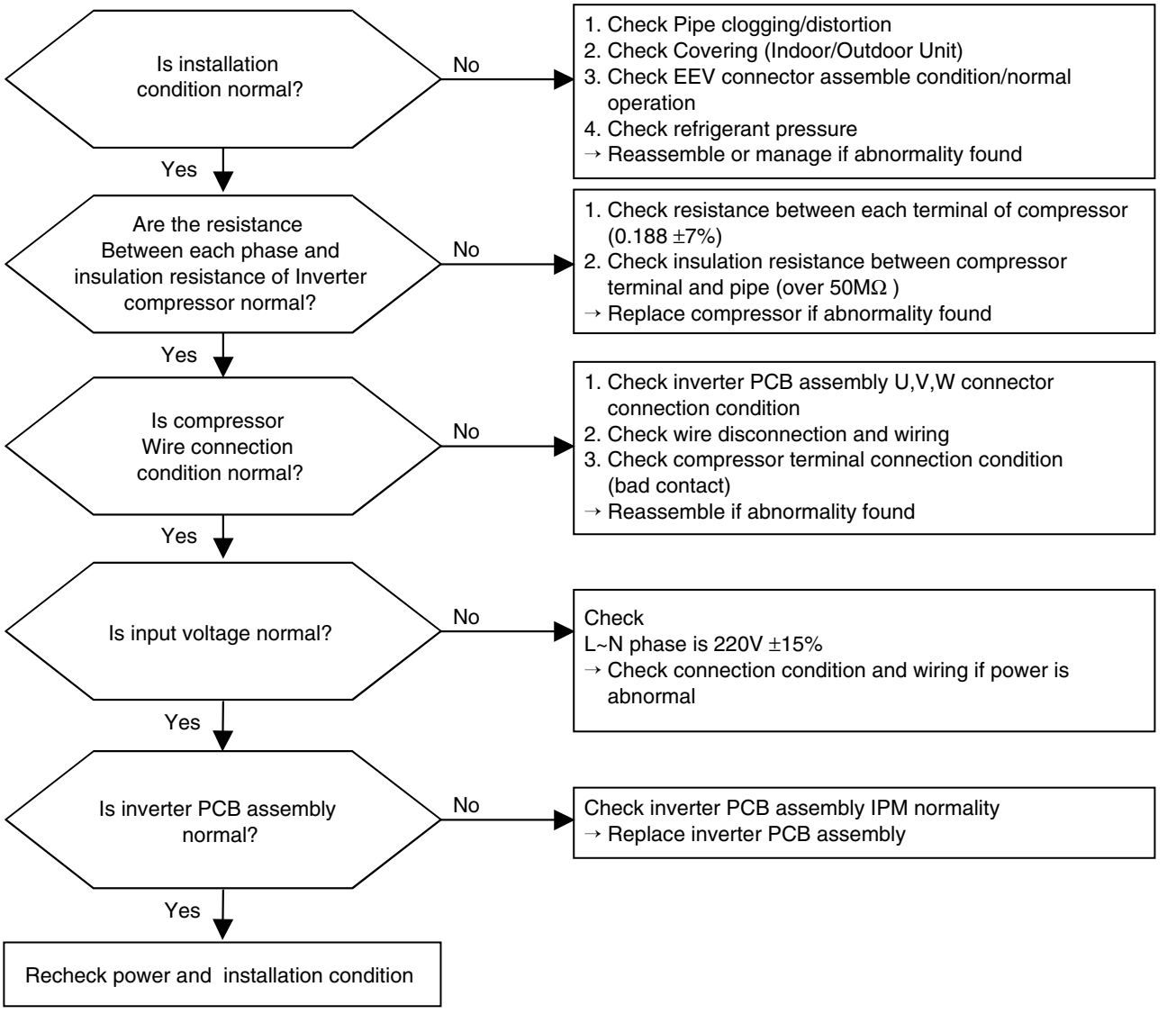


※ Dc link voltage table

Model		DC Link Voltage		
		Type	Non operating	Operating
1 Phase	AUUW126C	PSC	DC300V ± 10%	DC280V ± 10%
	AUUW186C	PSC	DC300V ± 10%	DC280V ± 10%
	AUUW246D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW306D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW366D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW426D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW486D	PFC	DC300V ± 10%	DC380V ± 10%
	AUUW606D	PFC	DC300V ± 10%	DC380V ± 10%
3 Phase	AUUW368D	PSC	DC540V ± 10%	DC500V ± 10%
	AUUW428D	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW488D	PFC	DC540V ± 10%	DC680V ± 10%
	AUUW608D	PFC	DC540V ± 10%	DC680V ± 10%

Display code	Title	Cause of error	Check point & Normal condition
29	Inverter compressor over current	Inverter compressor input current is over 30A	1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. over-charge) 2. Compressor damage(Insulation damage/Motor damage) 3. Input voltage low 4. ODU inverter PCB assembly damage

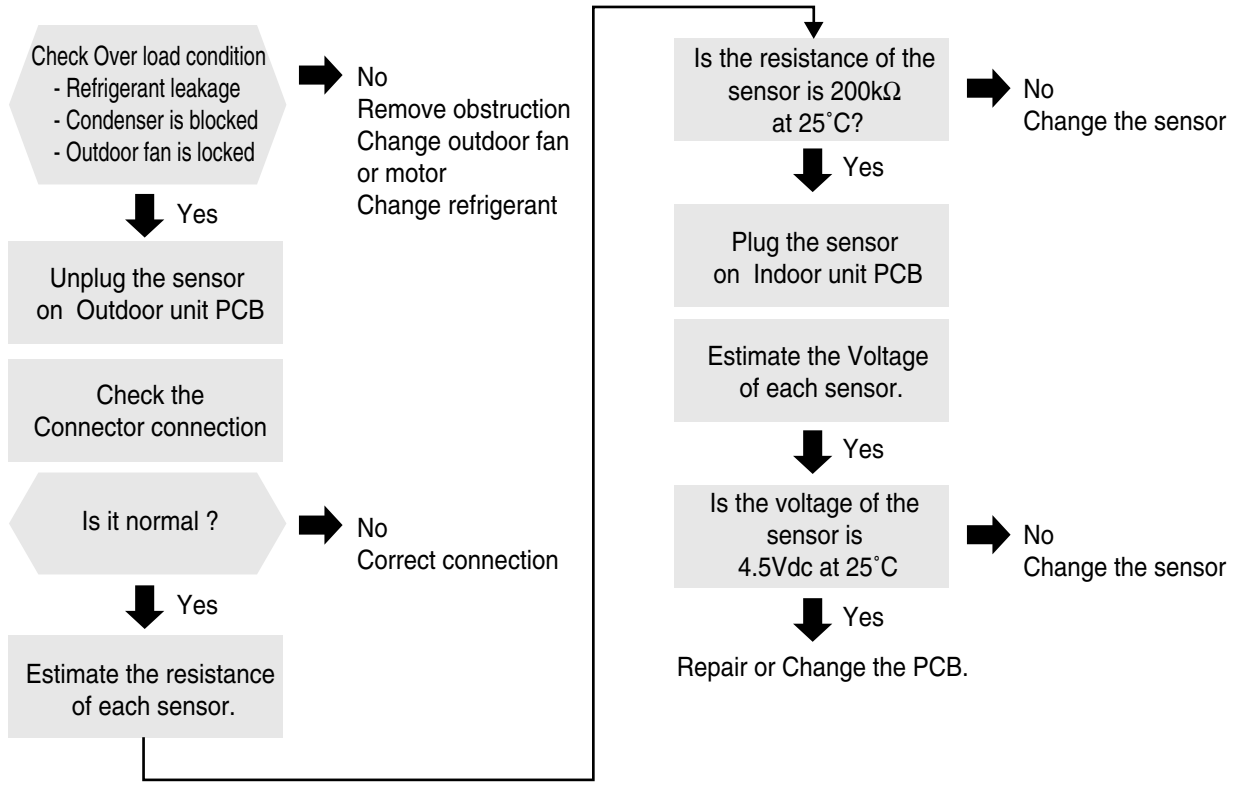
■ Error Diagnosis and Countermeasure Flow Chart



6.17 Check code Trouble shooting CH32, CH33

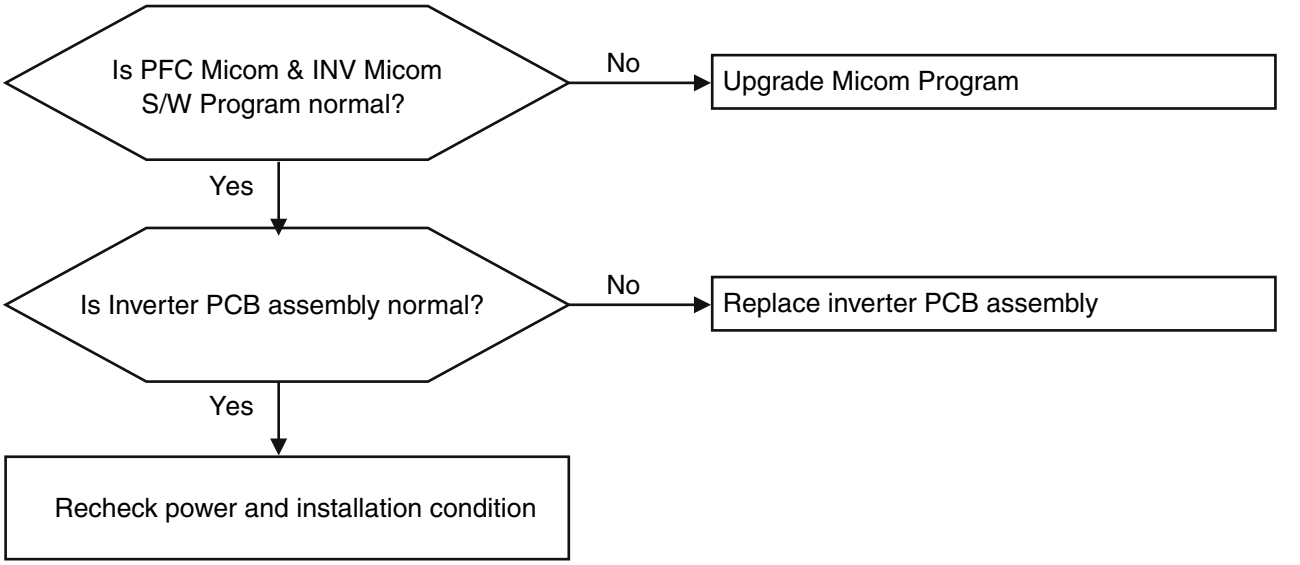
Display code	Title	Cause of error	Check point & Normal condition
32	D-pipe (Inverter) temp. high (105˚C↑)	• Discharge sensor (Inverter) temp. high	• Check the discharge pipe sensor for INV. • Check the install condition for over load. • Check the leakage of refrigerant. • Check the SVC V/V open. • Refer to sensor resistance table.
33	D-pipe (Constant) temp. high (105˚C↑)	• Discharge sensor (Cons.) temp. high	• Check the discharge pipe sensor for Cons. • Check the install condition for over load. • Check the leakage of refrigerant. • Check the SVC V/V open. • Refer to sensor resistance table.

Check Flow Chart



Display code	Title	Cause of error	Check point & Normal condition
39	Transmission Error Between (PFC Micom → INV Micom)	Communication Error Between PFC Micom and INV Micom.	1. Micom defect/Circuit defect 2. Different Micom S/W Version 3. ODU inverter PCB assembly damage

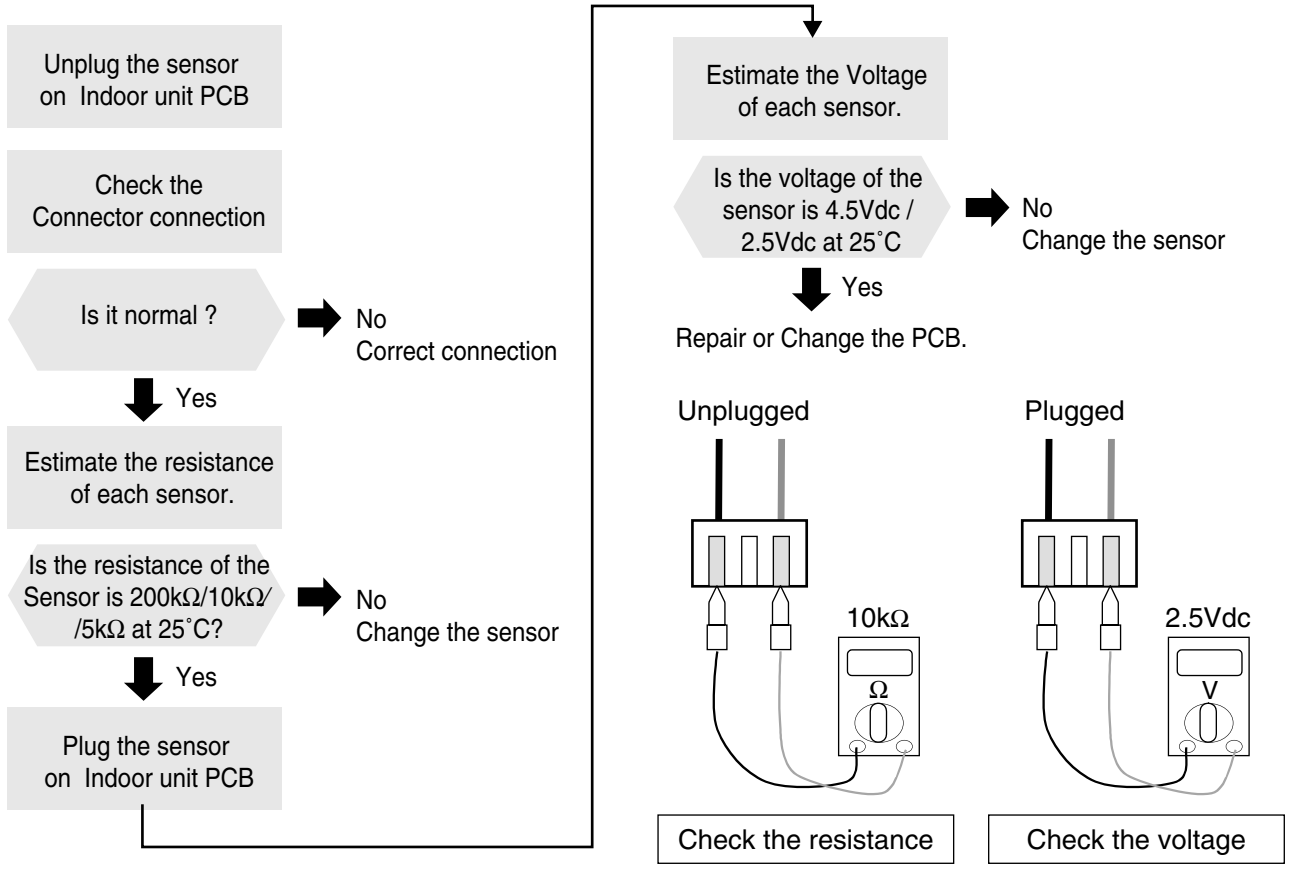
■ Error Diagnosis and Countermeasure Flow Chart



6.18 Check code Trouble shooting CH41, CH44, CH45, CH46, CH47, CH65

Display code	Title	Cause of error	Check point & Normal condition
41 **47**	D-pipe sensor(Inv) D-pipe sensor(Cons)	• Connector connection error • Faulty PCB • Faulty sensor (Open / Short)	• Normal resistor : 200KΩ/ at 25˚C (Unplugged) • Normal voltage : 4.5Vdc / at 25˚C (plugged) • Refer to sensor resistance table.
44	Air sensor	• Connector connection error • Faulty PCB • Faulty sensor (Open / Short)	• Normal resistor : 10KΩ/ at 25˚C (Unplugged) • Normal voltage : 2.5Vdc / at 25˚C (plugged) • Refer to sensor resistance table.
45 **46**	Condenser Pipe sensor Suction Pipe sensor	• Connector connection error • Faulty PCB • Faulty sensor (Open / Short)	• Normal resistor : 5KΩ/ at 25˚C (Unplugged) • Normal voltage : 2.5Vdc / at 25˚C (plugged) • Refer to sensor resistance table.
65	Heat sink sensor	• Connector connection error • Faulty PCB • Faulty sensor (Open / Short)	• Normal resistor : 5KΩ/ at 25˚C (Unplugged) • Normal voltage : 2.5Vdc / at 25˚C (plugged) • Refer to sensor resistance table.

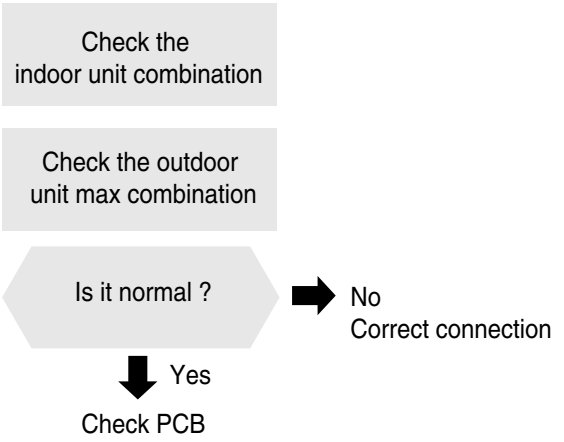
Check Flow Chart



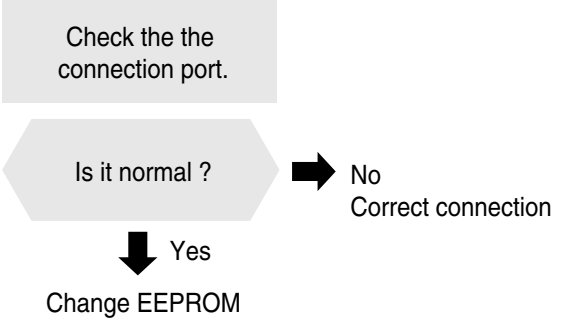
6.19 Check code Trouble shooting CH51, CH60

Display code	Title	Cause of error	Check point & Normal condition
51	Over capacity	• Over capacity Combination	• Check the indoor unit capacity. • Check the combination table.
60	EEPROM Check sum	• Check sum error	• Check the connection port. • Check the poor soldering.

Check Flow Chart (CH51)

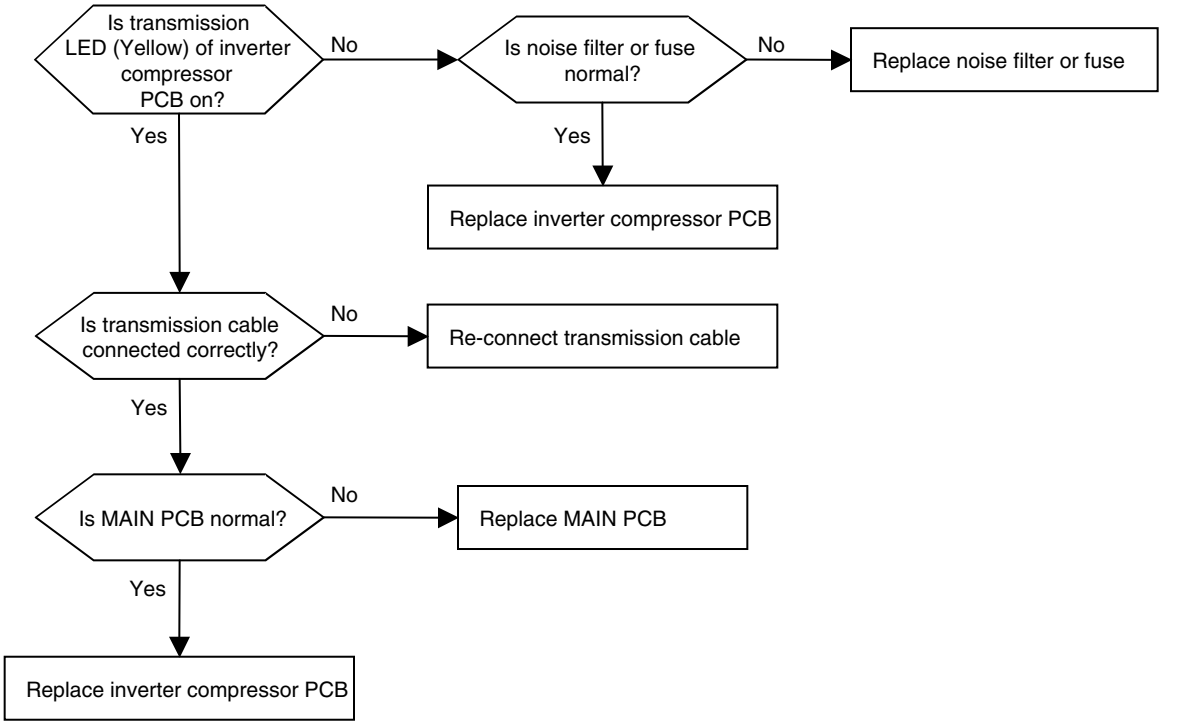


Check Flow Chart (CH60)



Display code	Title	Cause of error	Check point & Normal condition
52	Transmission error between (Inverter PCB ➔ Main PCB)	Main controller of Master unit of Master unit can't receive signal from inverter controller	1. Power cable or transmission cable is not connected 2. Defect of outdoor Main fuse/Noise Filter 3. Defect of outdoor Main / inverter PCB

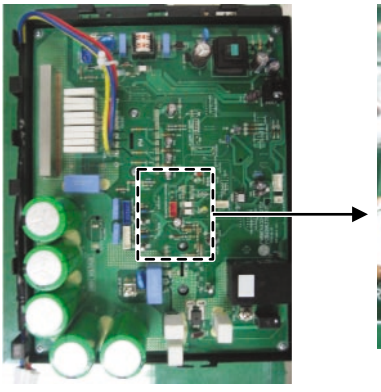
■ Error diagnosis and countermeasure flow chart

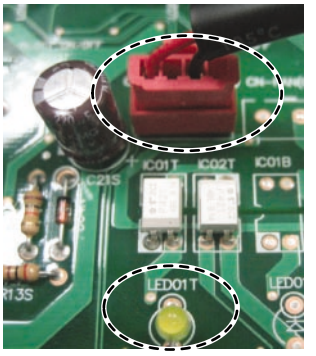


Check Point

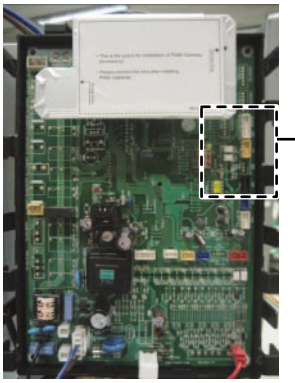
- Check the Transmission connector and LED (Main & Inverter)

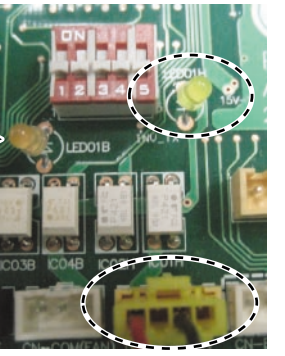
▸ 48/56k





<Inverter PCB>





<MAIN PCB>

14) Troubleshooting CH54

Display code	Title	Cause of error	Check point & Normal condition
54	3-phase wrong wiring of main outdoor unit	• 3-phase wrong wiring of outdoor unit (Reverse Phase /omission of phase)	• Abnormal Main PCB • No connection of CN_Phase • Changed R, S, T connection order

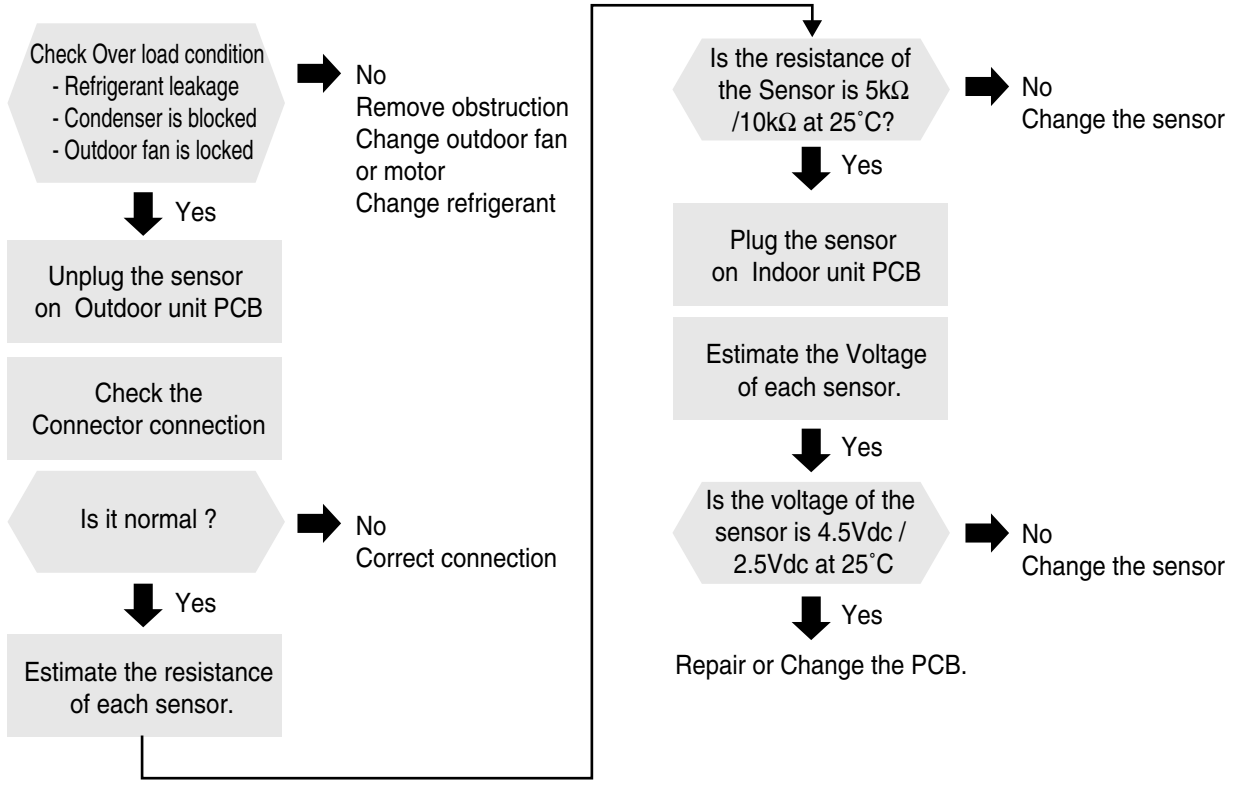
Check Point

1. Check the connection condition of R,S,T wire.
2. Check the connection condition of CN_Phase.
3. Check the outdoor main fuse.

6.20 Check code Trouble shooting CH61, CH62

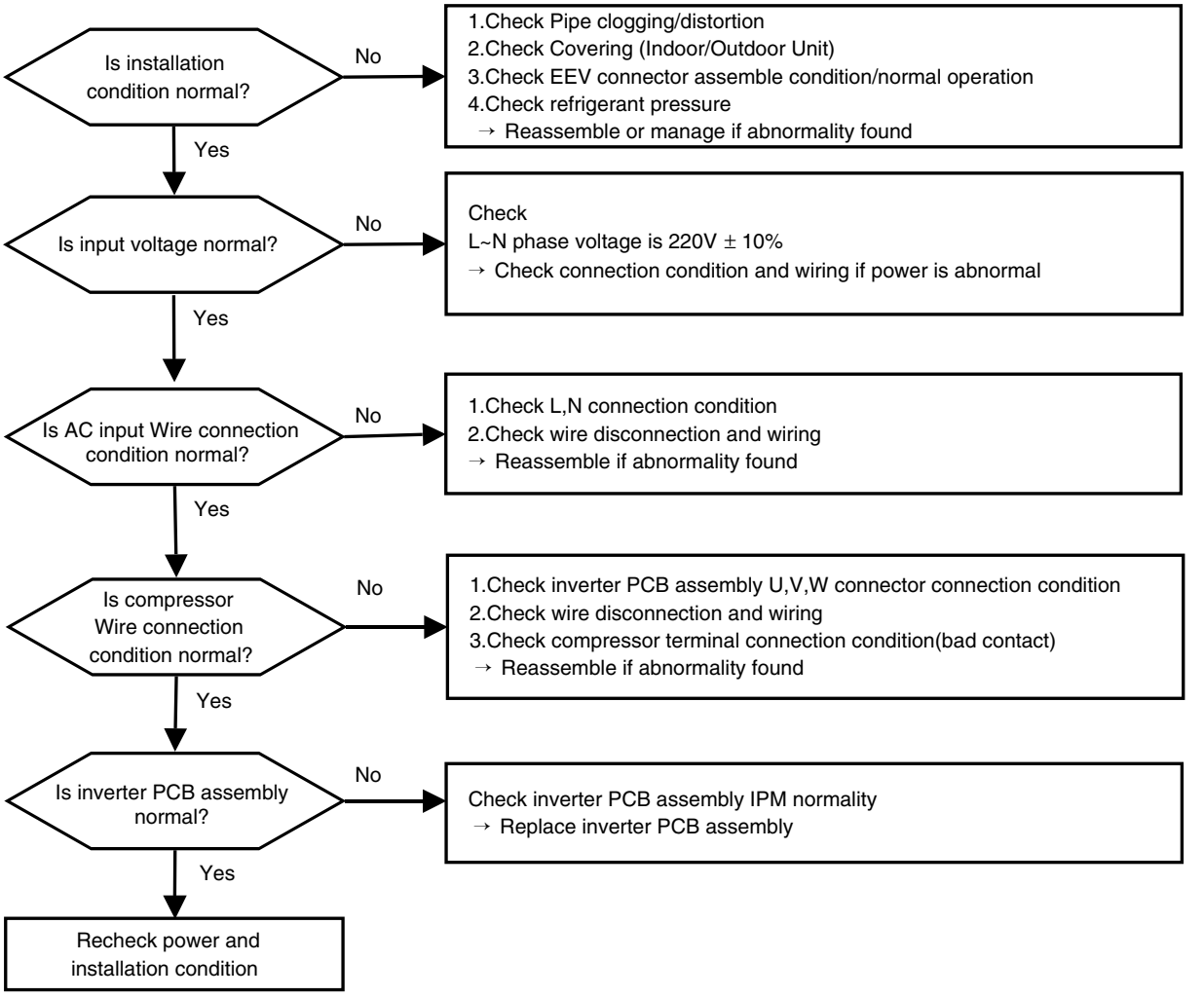
Display code	Title	Cause of error	Check point & Normal condition
61	Condenser pipe sensor temp. high	• condenser pipe sensordetected high temp.(65˚C)	• Check the load condition. • Check the sensor of Condenser pipe sensor. • Normal resistor : 5KΩ/ at 25˚C (Unplugged) • Normal voltage : 2.5Vdc / at 25˚C (Plugged)
62	Heat sink sensor temp. high	• heat sink sensor detected high temp. (85˚C)	• Check the load condition. • Check the sensor of heat sink. • Normal resistor : 10KΩ/ at 25˚C (Unplugged) • Normal voltage : 2.5Vdc / at 25˚C (Plugged)

Check Flow Chart



Display code	Title	Cause of error	Check point & Normal condition
73	AC input instant over current error (Matter of software)	Inverter PCB input power current is over 48A(peak) for 2ms	1. Overload operation (Pipe clogging/Covering/EEV defect/Ref.overcharge) 2. Compressor damage (Insulation damage/Motor damage) 3. Input voltage abnormal (L, N) 4. Power line assemble condition abnormal 5. Inverter PCB assembly damage (input current sensing part)

■ Error Diagnosis and Countermeasure Flow Chart



16) Troubleshooting CH67, CH105

Display code	Title	Cause of error	Check point & Normal condition
67	Outdoor fan lock	• Outdoor fan is not operating	• Check the fan condition. • Check the fan connector
105	Communication error between main PCB and fan PCB	• Communication error between main PCB and fan PCB	• Short or fusing of communication line • Poor outdoor unit PCB • Power input when the DC link capacitor discharges

Check Point

• CH 67

1. Check the install condition for fan.

• CH 105

1. Is communication line between the main PCB and the fan PCB normal?
2. Is the communication LED on?

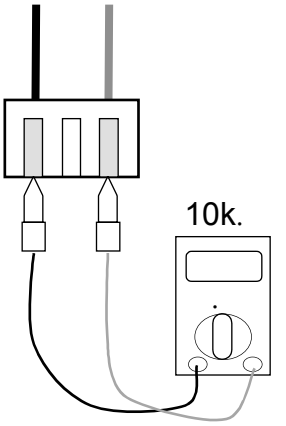
Single A

Aan / uit, Single-split

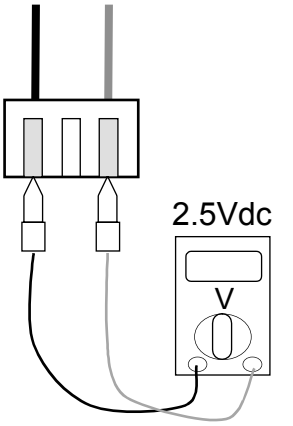
AT-C.. / AT-H..
LB-C.. / LB-D.. / LB-E.. / LB-G.. / LB-H..
LT-B.. / LT-C.. / LT-D.. / LT-E..
LV-B..
P03AH / P05AH / P08AH

1) Troubleshooting CH01, CH02, CH06

Display code	Title	Cause of error	Check point & Normal condition
01	Indoor air sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 10K. / at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)
02	Indoor inlet pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 5K. / at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)
06	Indoor outlet pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 5K. / at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)



Check the resistance



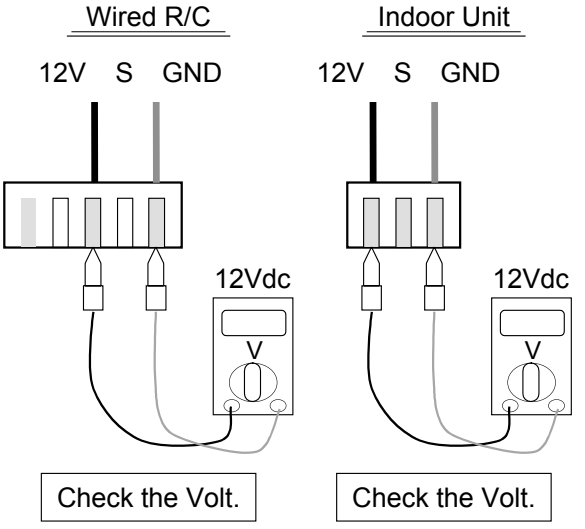
Check the voltage

Check Point

1. Unplug the sensor on Indoor unit PCB.
2. Estimate the resistance of each sensor.
3. If the resistance of the sensor is 10K. / 5K. at 25°C, then sensor is normal.
4. If the resistance of the sensor is 0 K. or 8 , then sensor is abnormal. → Change the sensor.
5. Plug the sensor on Indoor unit PCB and Power ON.
6. Estimate the voltage of each sensor.
7. If the voltage of the sensor is 2.5Vdc at 25°C, then sensor is normal.
8. If the resistance of the sensor is 0 or 5Vdc, then sensor is abnormal. → Repair or Change the PCB.

2) Troubleshooting CH03

Display code	Title	Cause of error	Check point & Normal condition
03	Communication Wired R/C	• Open / Short • Wrong connection	• Connection of wire • Main PCB Volt. DC12V • Noise interference

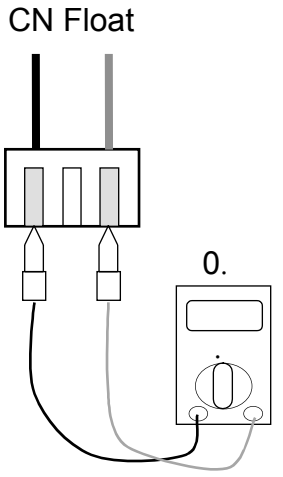


Check Point

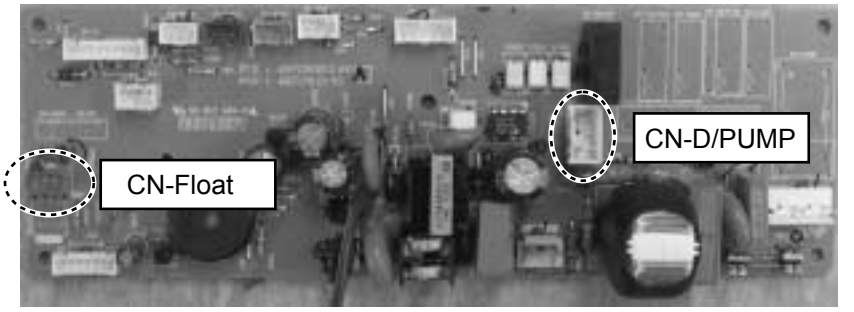
1. Check the wire connection. (Open / Short) → Repair the connection
2. Check the soldering state of connector. (Soldered poorly) → Repair or Change the PCB.
3. Check the volt. Of main PCB power source. (DC 12V, DC 5V) → Repair or Change the main PCB.
4. Check the installation of wired remote controller. (Noise interference) → Adjust the state of installation

3) Troubleshooting CH04

Display code	Title	Cause of error	Check point & Normal condition
04	Drain pump / Float switch	• Float switch Open. (Normal : short)	• The connection of wire(Drain pump/ Float switch) • Drain pump power input. (220V) • Drain tube installation. • Indoor unit installation. (Inclination)



Check the resistance

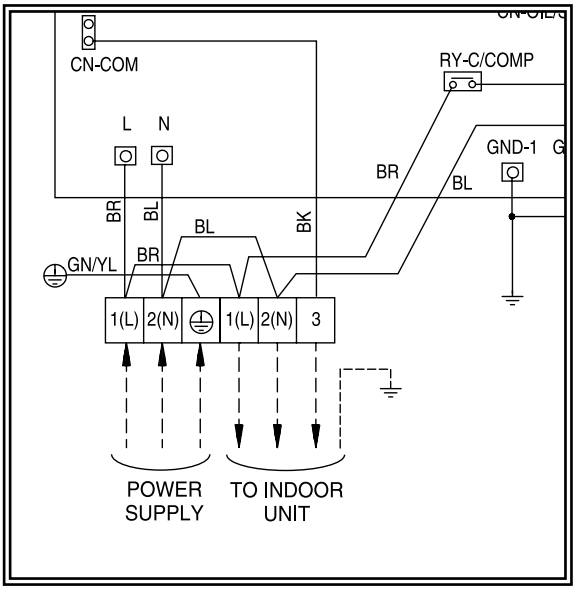


Check Point

1. Check the wire connection. (Open, Soldered poorly) → Repair the connection or change the PCB.
2. Check the resistance of float switch (Abnormal : Open, Normal : short) → Check the float switch.
3. Check the level of water
4. Check the volt. Of Drain pump power supply. (AC 230V) → Repair or Change the main PCB.

4) Troubleshooting CH05, CH53

Display code	Title	Cause of error	Check point & Normal condition
05 / 53	Communication (Indoor → Outdoor)	• Communication poorly	• Power input AC 220V. (Outdoor, Indoor) • The connector for transmission is disconnected. • The connecting wires are misconnected. • The GND1,2 is not connected at main GND. • The communication line is shorted at GND. • Transmission circuit of outdoor PCB is abnormal. • Transmission circuit of indoor PCB is abnormal.



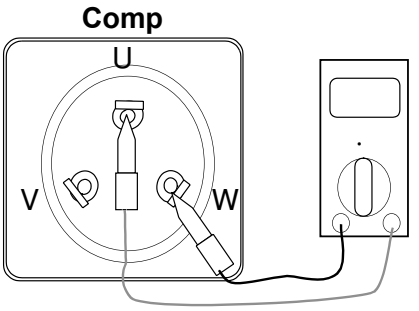
Check Point

1. Check the input power AC230V. (Outdoor, Indoor unit)
2. Check the communication wires are correctly connected.
   → Adjust the connection of wire
   → Confirm the wire of "Live", "Neutral"
3. Check the resistance between communication line and GND. (Normal : Over 2M.)
4. Check the connector for communication is correctly connected.
5. Check the connection of GND1, GND2, and main GND.
6. If one indoor unit is operated normally, outdoor PCB is no problem.
   → Check the another indoor unit.

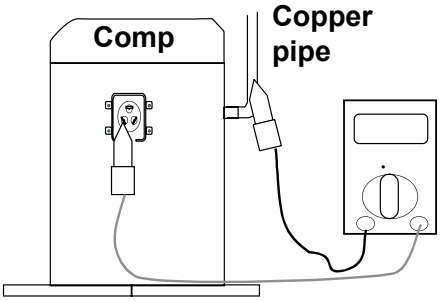
* CH05 is displayed at indoor unit, CH53 is displayed at outdoor unit.

5) Troubleshooting CH21

Display code	Title	Cause of error	Check point & Normal condition
21	DC Peak	• Instant over current • Over Rated current • Poor insulation of IPM	• An instant over current in the U,V,W phase - Comp lock - The abnormal connection of U,V,W • Over load condition - Overcharging of refrigerant - Pipe length. • Poor insulation of compressor



Resistance(.) at 20°C		
Terminal	Inverter comp.	Constant comp.
U–V	0.64	0.8
V–W	0.64	0.8
W–U	0.64	0.8



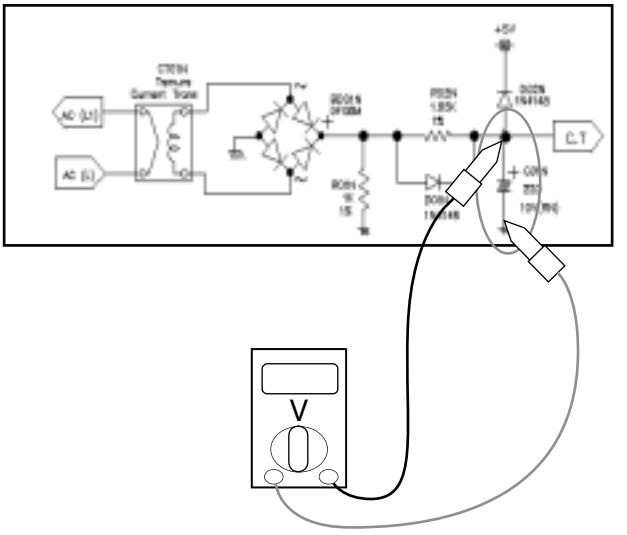
Resistance(.) at 20°C		
Terminal	Inverter comp.	Constant comp.
U-GND	2M.	2M.
V-GND	2M.	2M.
W-GND	2M.	2M.

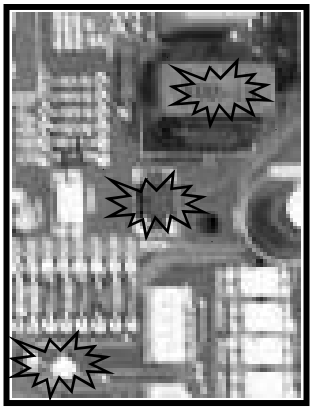
Check Point

1. Check the wire connection. (U,V,W)
2. Check the load condition. (Refrigerant, Pipe length, …) → Adjust the load condition
3. Check the electricity leakage of the compressor. → Normal : Over 2M. .
4. Check the resistance of compressor. → Normal : 0.65. (INV), 0.8. (Cons.) → No difference at each terminal.
5. Check the insulation from water at IPM part. → Check the trace of water.
6. Check the IPM circuit.

6) Troubleshooting CH21, CH22

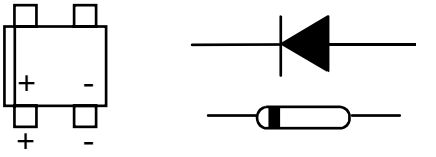
Display code	Title	Cause of error	Check point & Normal condition
21	Max. C/T	Over current (14A ↑)	Malfunction of compressor Blocking of pipe Low voltage input Refrigerant, pipe length, blocked, …
22	C/T Internal circuit	Initial current error	Malfunction of current detection circuit. (Open / Short) The voltage of “C01N” Is 4.0Vdc(25A) ↑.





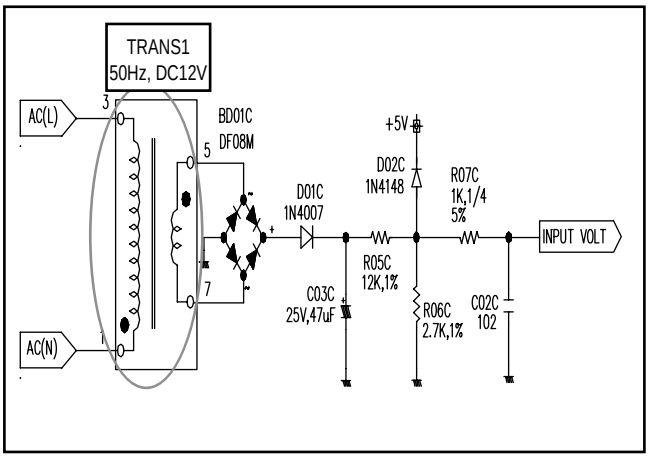
Check Point

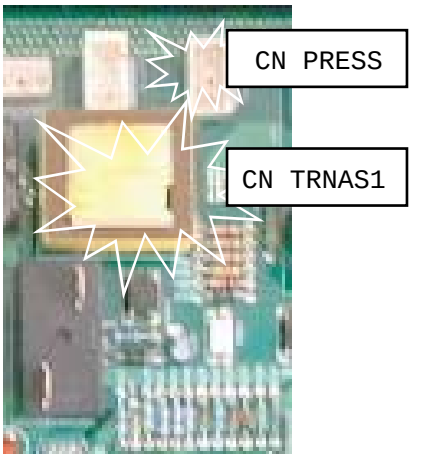
1. Check the power source.
2. Check the fan operation is right.
3. Check the current.
4. Check the install condition.
5. Check the internal circuit. (C/T, Diode, Resistor)



8) Troubleshooting CH24, CH25

Display code	Title	Cause of error	Check point & Normal condition
24	Press S/W Open	• Low / High press S/W open.	• Check the connection of “CN_Press”. • Check the components.
25	Input voltage	• Abnormal Input voltage (140Vac ↓, 300Vac ↑.	• Check the power source. • Check the components.





Check Point

• CH 24

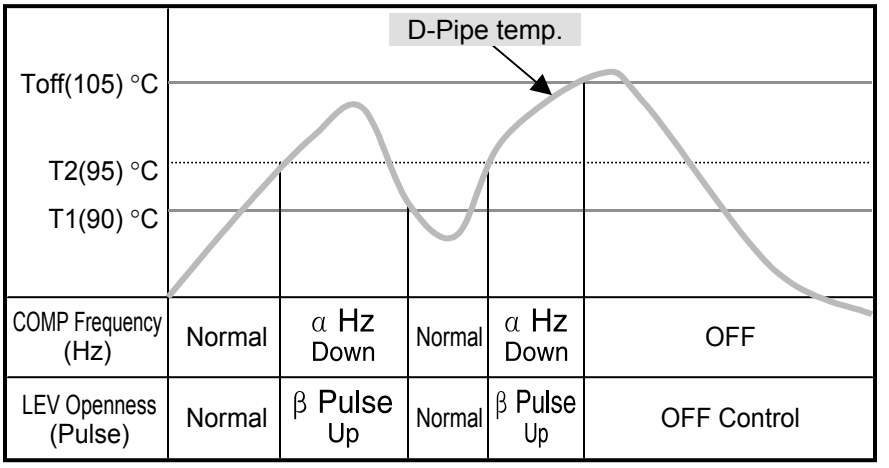
1. Check the connection of “CN_PRESS”
2. Check the install condition for over load.
3. Check the SVC V/V open.
4. Check the leakage of refrigerant.

• CH 25

1. Check the power source.
2. Check the components
   (Trans1, B/Diode, Diode, Resistance)

10) Troubleshooting CH32, CH33

Display code	Title	Cause of error	Check point & Normal condition
32	D-pipe (Inverter) temp. high (105°C ↑)	• Discharge sensor (Inverter) temp. high	• Check the discharge pipe sensor for INV. • Check the install condition for over load. • Check the leakage of refrigerant. • Check the SVC V/V open.
33	D-pipe (Constant) temp. high (105°C ↑)	• Discharge sensor (Cons.) temp. high	• Check the discharge pipe sensor for Cons. • Check the install condition for over load. • Check the leakage of refrigerant. • Check the SVC V/V open.



Check Point

• CH 32

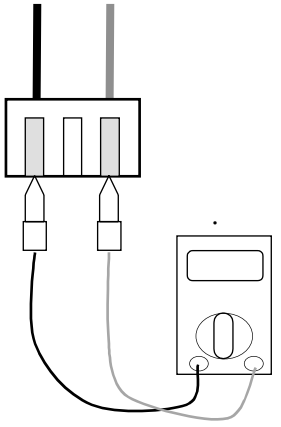
1. Check the install condition for over load.
2. Check the SVC V/V open.
3. Check the leakage of refrigerant.

• CH 33

1. Check the install condition for over load.
2. Check the SVC V/V open.
3. Check the leakage of refrigerant.
4. Check the constant compressor. (same with CH21)

11) Troubleshooting CH41, CH44, CH45, CH46, CH47, CH65

Display code	Title	Cause of error	Check point & Normal condition
41	D-pipe sensor (Inverter)	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 200K. / at 25°C (Unplugged) • Normal voltage : 4.5Vdc / at 25°C (plugged)
44	Air sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 10K. / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
45	Condenser Pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 5K. / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
46	Suction Pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 5K. / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
47	D-pipe sensor (Constant)	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 200K. / at 25°C (Unplugged) • Normal voltage : 4.5Vdc / at 25°C (plugged)
65	Heat sink sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 10K. / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)



Check Point

1. Estimate the resistance of each sensor.(Unplugged)
2. Estimate the voltage of each sensor.(Plugged)
3. If the resistance of the sensor is 0 k. or ∞, then sensor is abnormal.
   If the voltage of the sensor is 0 V or 5Vdc, then sensor is abnormal.

12) Troubleshooting CH51, CH60

Display code	Title	Cause of error	Check point & Normal condition
51	Over capacity	• Over capacity Combination	• Check the indoor unit capacity. • Check the combination table.
60	EEPROM Check sum	• Check sum error	• Check the PCB ASM P/No. • Check the poor soldering.

Model	Gross max. capacity	Max. single indoor unit capacity
AUUW126B	21k	12k
AUUW186B AUUW246B	24k	12K
AUUW306B AUUW366B	33k	18K
AUUW4860	39k	18K
AUUW6060	52k	24K

Check Point

• CH 51

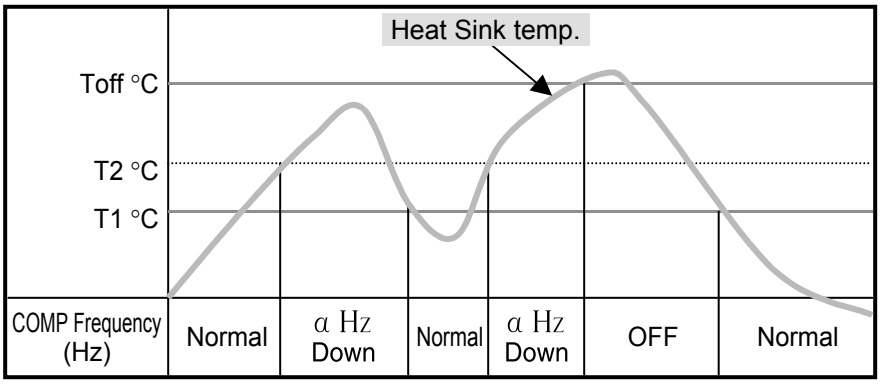
1. Check the indoor unit capacity.

• CH 60

1. Check the insertion condition of EEPROM.
2. Check the poor soldering

13) Troubleshooting CH61, CH62

Display code	Title	Cause of error	Check point & Normal condition
61	Condenser pipe sensor temp. high	• Condenser pipe sensor detected high temp.(65°C)	• Check the load condition. • Check the sensor of Condenser pipe sensor.
62	Heat sink sensor temp. high	• Heat sink sensor detected high temp.(85°C)	• Check the fan is locked. • Check the sensor of heat sink.



Check Point

• CH 61

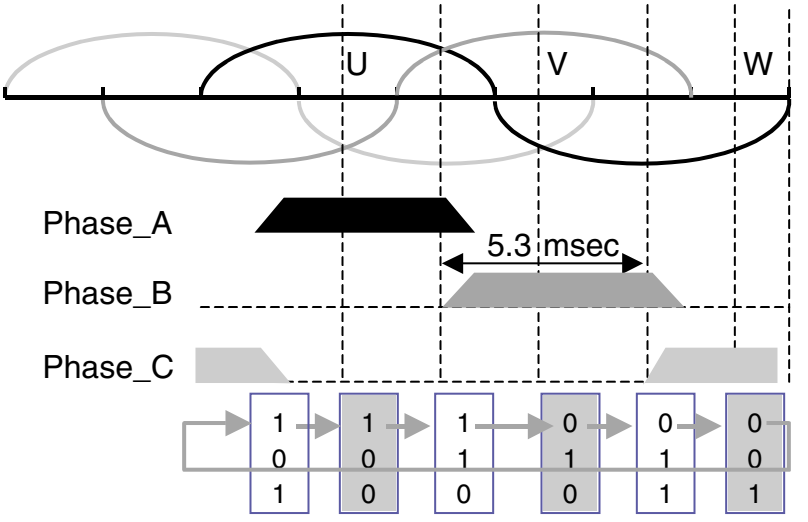
1. Check the install condition for over load.
   (Refrigerant, Pipe length, Blocked, …)

• CH 62

1. Check the fan is locked.
2. Check the Outdoor temp. is very high.

Troubleshooting CH54

Display code	Title	Cause of error	Check point & Normal condition
54	Phase error	• Phase change	• Check the Main power • Check the CN_PHASE connector



Check Point

1. Check the Main power.
2. Check the connecting state of connector CN_3PHASE on the outdoor pcb ass'y.

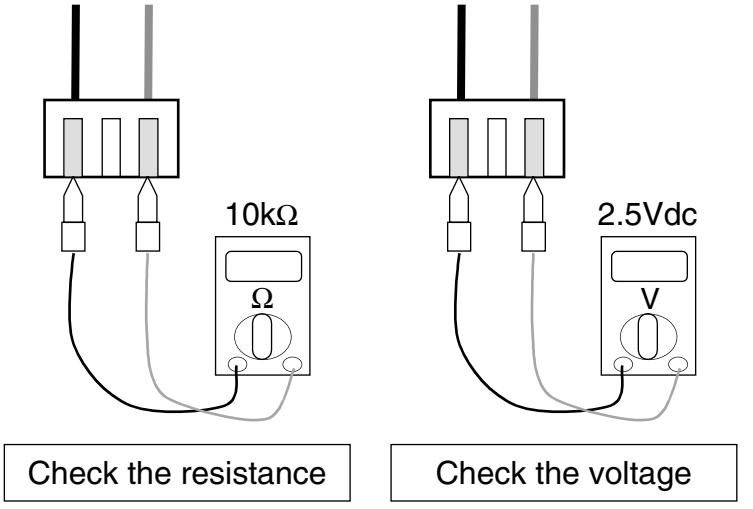
Multi-split

Inverter

FM..AH

6.6 Troubleshooting Indoor Error

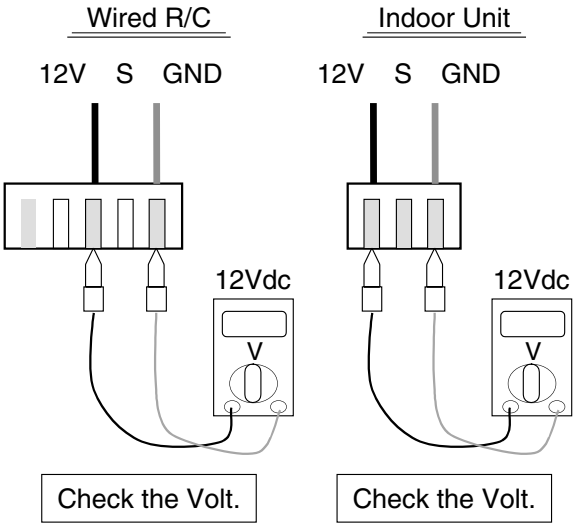
Display code	Title	Cause of error	Check point & Normal condition
01	Indoor air sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 10KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)
02	Indoor inlet pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 5KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)
06	Indoor outlet pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	Normal resistor : 5KΩ/ at 25°C (Unplugged) Normal voltage : 2.5Vdc / at 25°C (plugged)

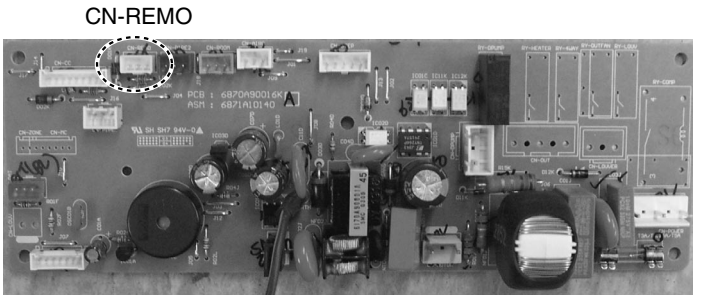


Check Point

1. Unplug the sensor on Indoor unit PCB.
2. Estimate the resistance of each sensor.
3. If the resistance of the sensor is 10KΩ/ 5KΩ at 25°C, then sensor is normal.
4. If the resistance of the sensor is 0 KΩ or ∞, then sensor is abnormal. → Change the sensor.
5. Plug the sensor on Indoor unit PCB and Power ON.
6. Estimate the voltage of each sensor.
7. If the voltage of the sensor is 2.5Vdc at 25°C, then sensor is normal.
8. If the resistance of the sensor is 0 or 5Vdc, then sensor is abnormal. → Repair or Change the PCB.

Display code	Title	Cause of error	Check point & Normal condition
03	Communication Wired R/C	• Open / Short • Wrong connection	• Connection of wire • Main PCB Volt. DC12V • Noise interference



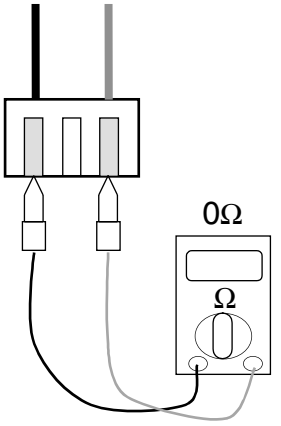


Check Point

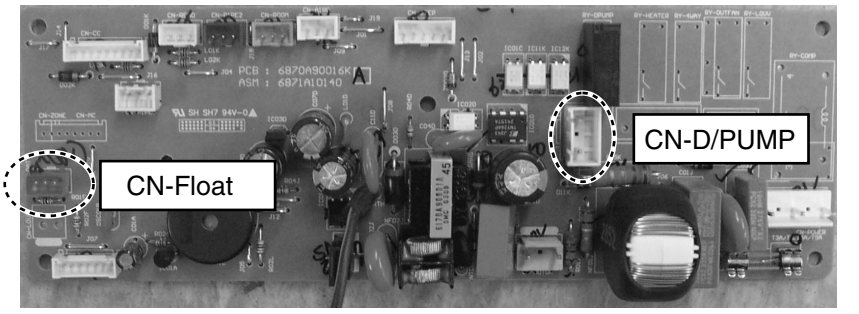
1. Check the wire connection. (Open / Short) → Repair the connection
2. Check the soldering state of connector. (Soldered poorly) → Repair or Change the PCB.
3. Check the volt. Of main PCB power source. (DC 12V, DC 5V) → Repair or Change the main PCB.
4. Check the installation of wired remote controller. (Noise interference) → Adjust the state of installation

Display code	Title	Cause of error	Check point & Normal condition
04	Drain pump / Float switch	• Float switch Open. (Normal : short)	• The connection of wire(Drain pump/ Float switch) • Drain pump power input. (220V) • Drain tube installation. • Indoor unit installation. (Inclination)

CN Float



Check the resistance



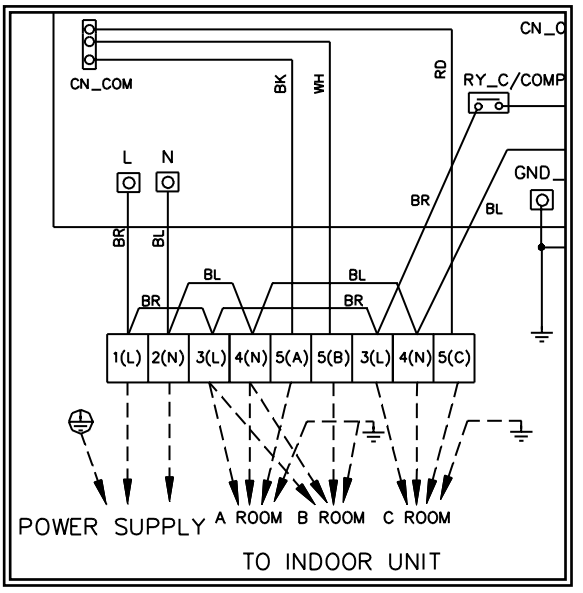
Check Point

1. Check the wire connection. (Open, Soldered poorly) → Repair the connection or change the PCB.
2. Check the resistance of float switch (Abnormal : Open, Normal : short) → Check the float switch.
3. Check the level of water
4. Check the volt. Of Drain pump power supply. (AC 230V) → Repair or Change the main PCB.

6.7 Troubleshooting Outdoor Error

▶FM15AH t/m FM25AH

Display code	Title	Cause of error	Check point & Normal condition
05 / 53	Communication (Indoor → Outdoor)	• Communication poorly	• Power input AC 220V. (Outdoor, Indoor) • The connector for transmission is disconnected. • The connecting wires are misconnected. • The GND1,2 is not connected at main GND. • The communication line is shorted at GND. • Transmission circuit of outdoor PCB is abnormal. • Transmission circuit of indoor PCB is abnormal.



Check Point

1. Check the input power AC230V. (Outdoor, Indoor unit)
2. Check the communication wires are correctly connected.
   → Adjust the connection of wire
   → Confirm the wire of "Live", "Neutral"
3. Check the resistance between communication line and GND. (Normal : Over 2MΩ)
4. Check the connector for communication is correctly connected.
5. Check the connection of GND1, GND2, and main GND.
6. If one indoor unit is operated normally, outdoor PCB is no problem.
   → Check the another indoor unit.

* CH05 is displayed at indoor unit, CH53 is displayed at outdoor unit.

▶ **FM27AH t/m FM57AH**

Display code	Title	Cause of error	Check point & Normal condition
05 / 53	Title Communication (Indoor → Outdoor)	• Communication poorly	• Power input AC 220V. (Outdoor, Indoor) • The connector for transmission is disconnected. • The connecting wires are misconnected. • The communication line is shorted at GND. • Transmission circuit of outdoor PCB is abnormal. • Transmission circuit of indoor PCB is abnormal.

Check Point

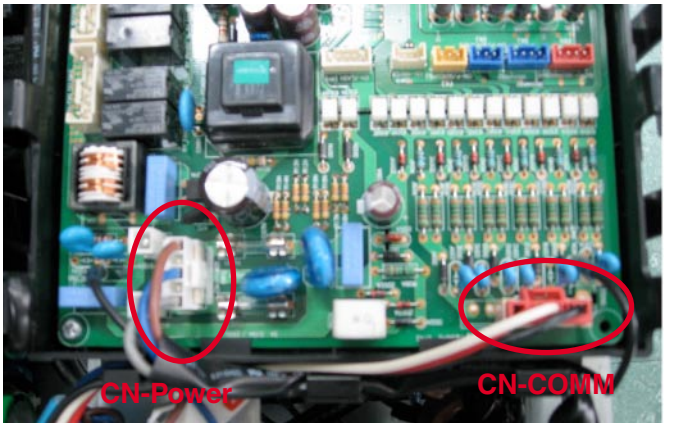
1. Check the input power AC230V. (Outdoor, Indoor unit)
2. Check the communication wires are correctly connected.
   Adjust the connection of wire Confirm the wire of "Live", "Neutral"
3. Check the resistance between communication line and GND. (Normal : Over 2MΩ)
4. Check the connector for communication is correctly connected.
5. If one indoor unit is operated normally, outdoor PCB is no problem.
   Check the another indoor unit.
   * CH05 is displayed at indoor unit, CH53 is displayed at outdoor unit.
6. If all indoor unit is displayed CH05 but outdoor PCB not display
   CH53 : Check the CN_COM and CN_POWER is correctly connected.

• 27/30/40k

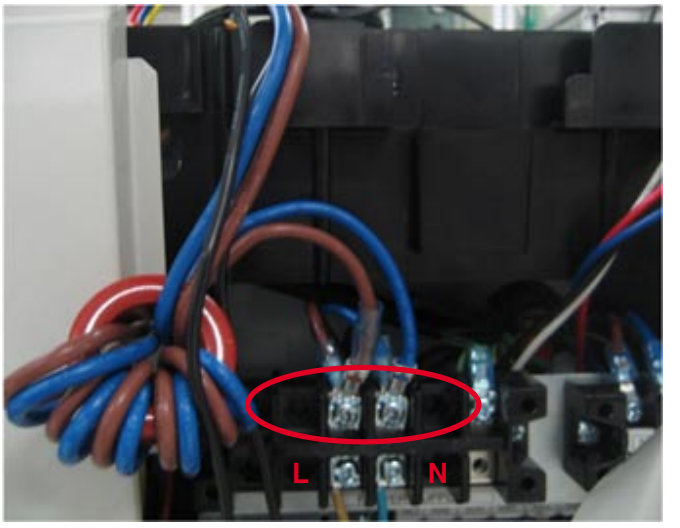
1. In Case of CH53, Check the Connection → L , N at the terminal block

• 48/56k

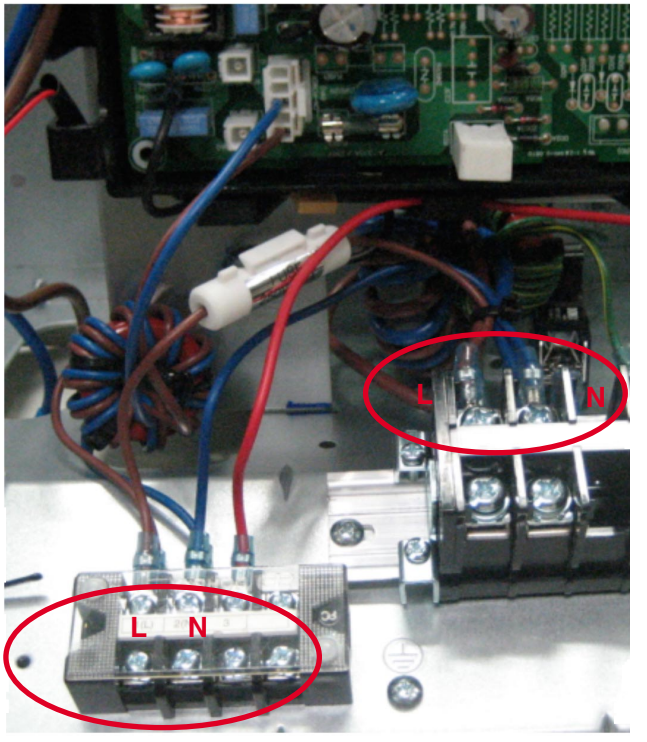
1. In Case of CH05, Check the Connection → CN-POWER, CN-COMM at the Main PCB
2. In Case of CH53, Check the Connection → CN-COMM at the Main PCB → L , N at the terminal block



< MAIN PCB >

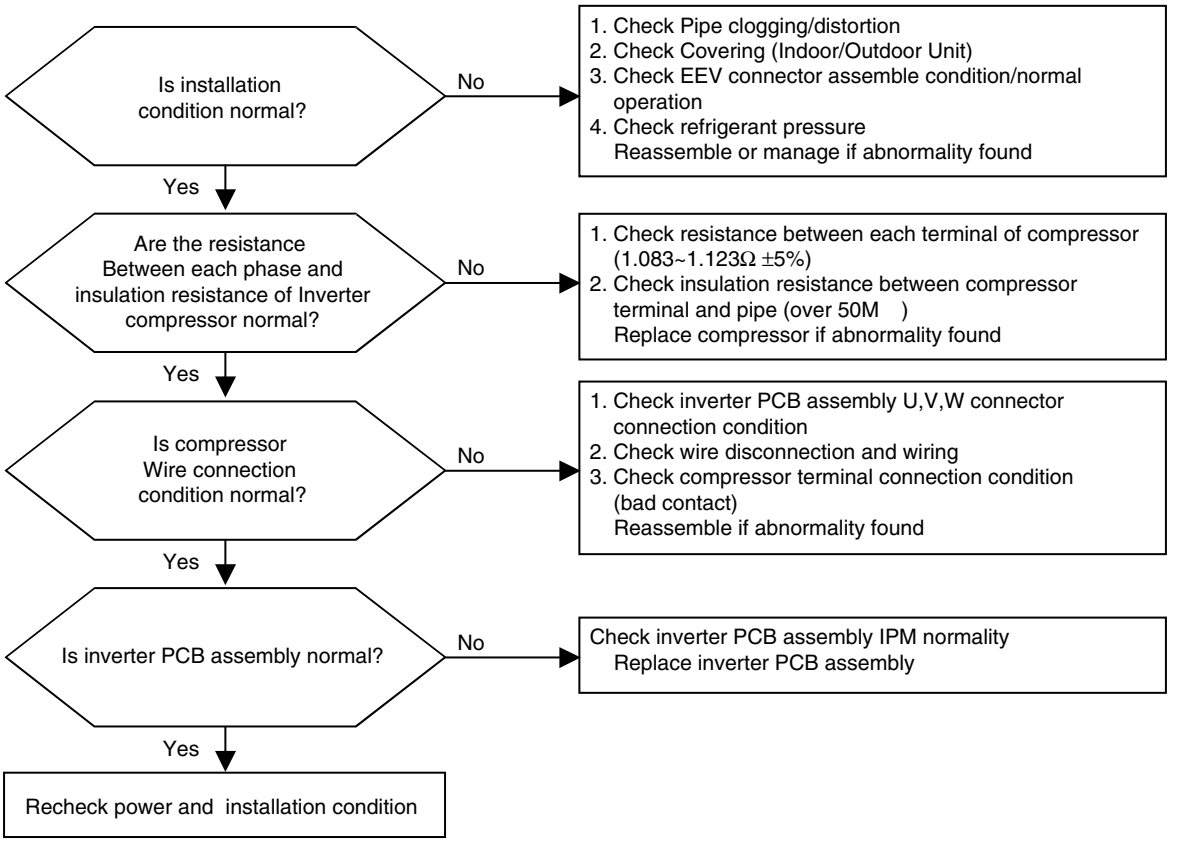


< TERMINAL BLOCK >

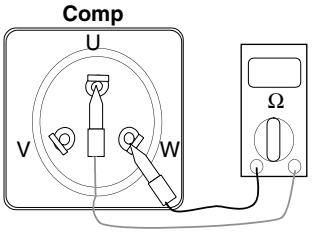


Display code	Title	Cause of error	Check point & Normal condition
21	DC PEAK (IPM Fault)	• Instant over current • Over Rated current • Poor insulation of IPM	• An instant over current in the U,V,W phase - Comp lock - The abnormal connection of U,V,W • Over load condition - Overcharging of refrigerant Pipe length. Outdoor Fan is stop • Poor insulation of compressor

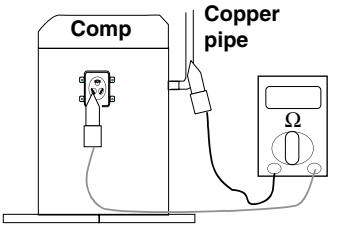
■ Error Diagnosis and Countermeasure Flow Chart



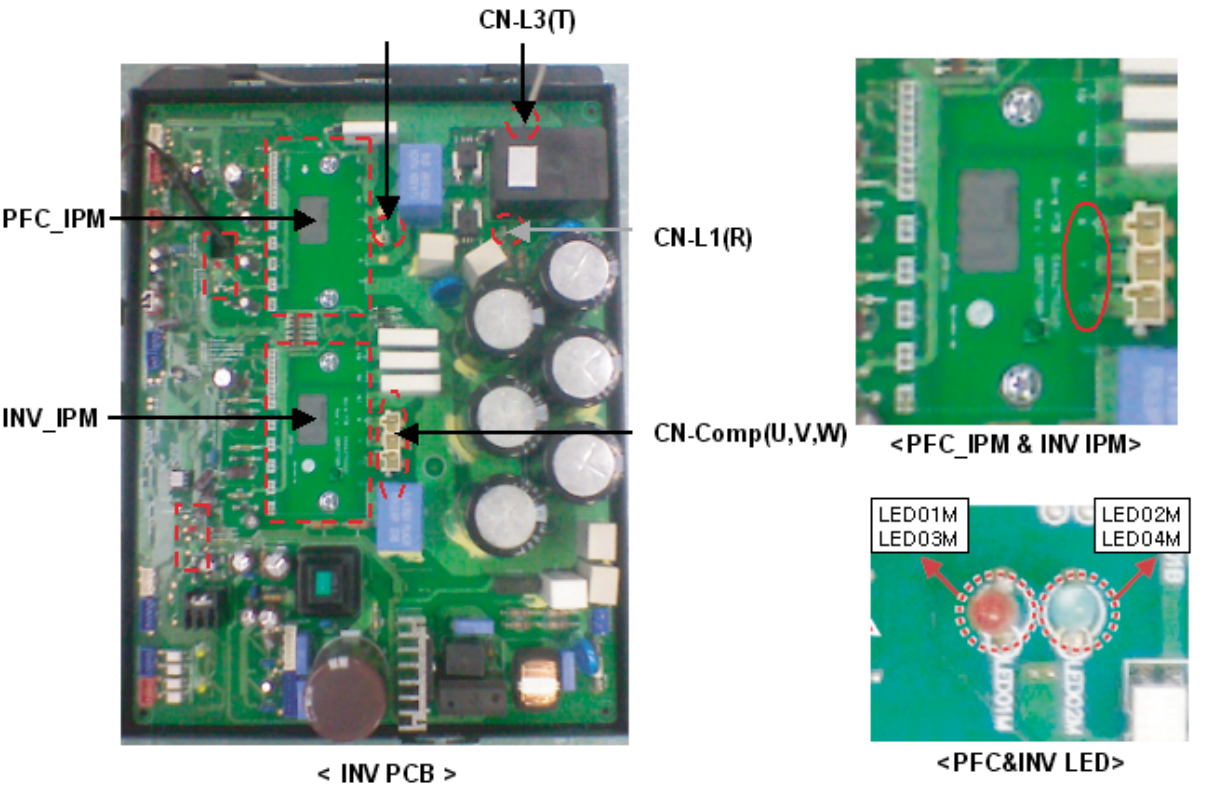
■ Comp checking method



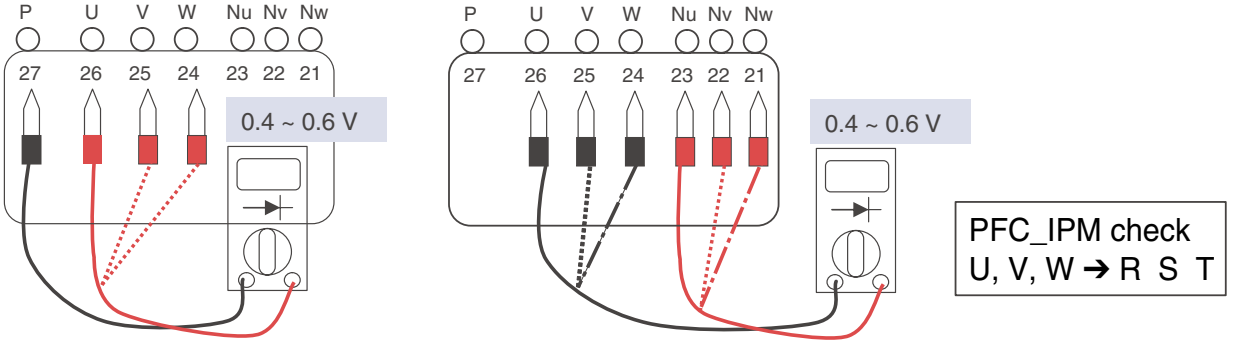
Resistance(Ω) at 20°C	
Terminal	Inverter comp.
U-V	1.083
V-W	1.123
W-U	1.096



Resistance(Ω) at 20°C	
Terminal	Inverter comp.
U-GND	50MΩ
V-GND	50MΩ
W-GND	50MΩ



1. Wait until inverter PCB DC voltage is discharged after main power off.
2. Pull out CN-L1(R), CN-L2(S), CN-L3(T) and CN-COMP Connector.
3. Set multi tester to resistance mode.
4. If the value between P and N terminal of IPM is short(0Ω) or open(hundreds MΩ), PCB needs to be replaced.(IPM damaged)
5. Set the multi tester to diode mode.
6. In case measured value is different from the table, PCB needs to be replaced.(PCB damaged).

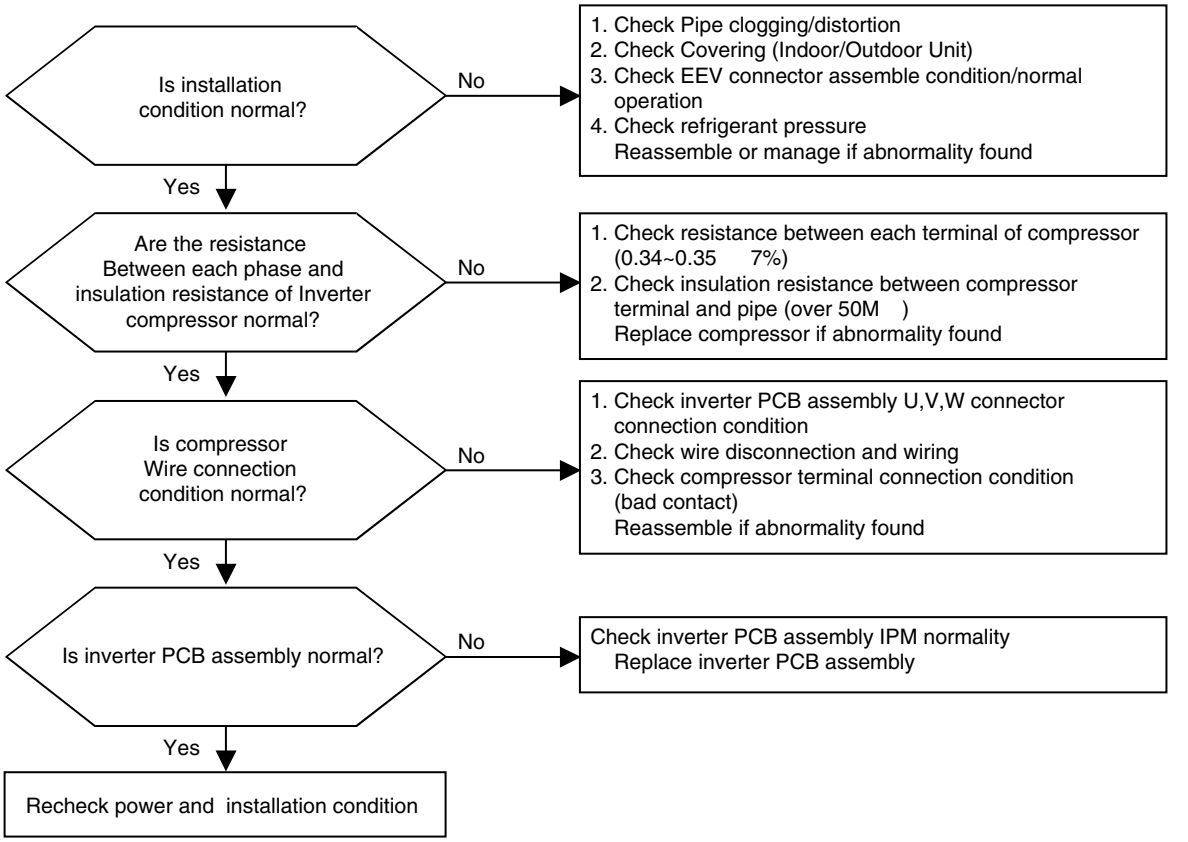


CAUTION

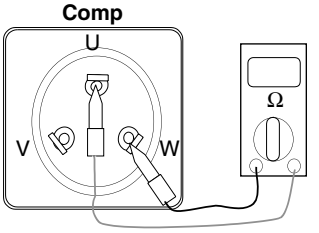
In case that the control box is opend and before checking electrical parts, it should be checked that the LED 01M, 02M turned off(wait 7 minutes after main power OFF), otherwise it may cause electrical shock.

Display code	Title	Cause of error	Check point & Normal condition
21	DC PEAK (IPM Fault)	• Instant over current • Over Rated current • Poor insulation of IPM	• An instant over current in the U,V,W phase - Comp lock - The abnormal connection of U,V,W • Over load condition - Overcharging of refrigerant Pipe length. Outdoor Fan is stop • Poor insulation of compressor

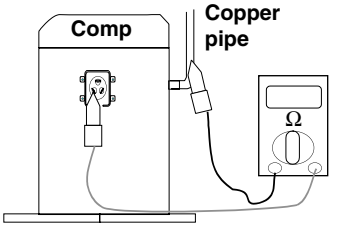
■ Error Diagnosis and Countermeasure Flow Chart



■ Comp checking method

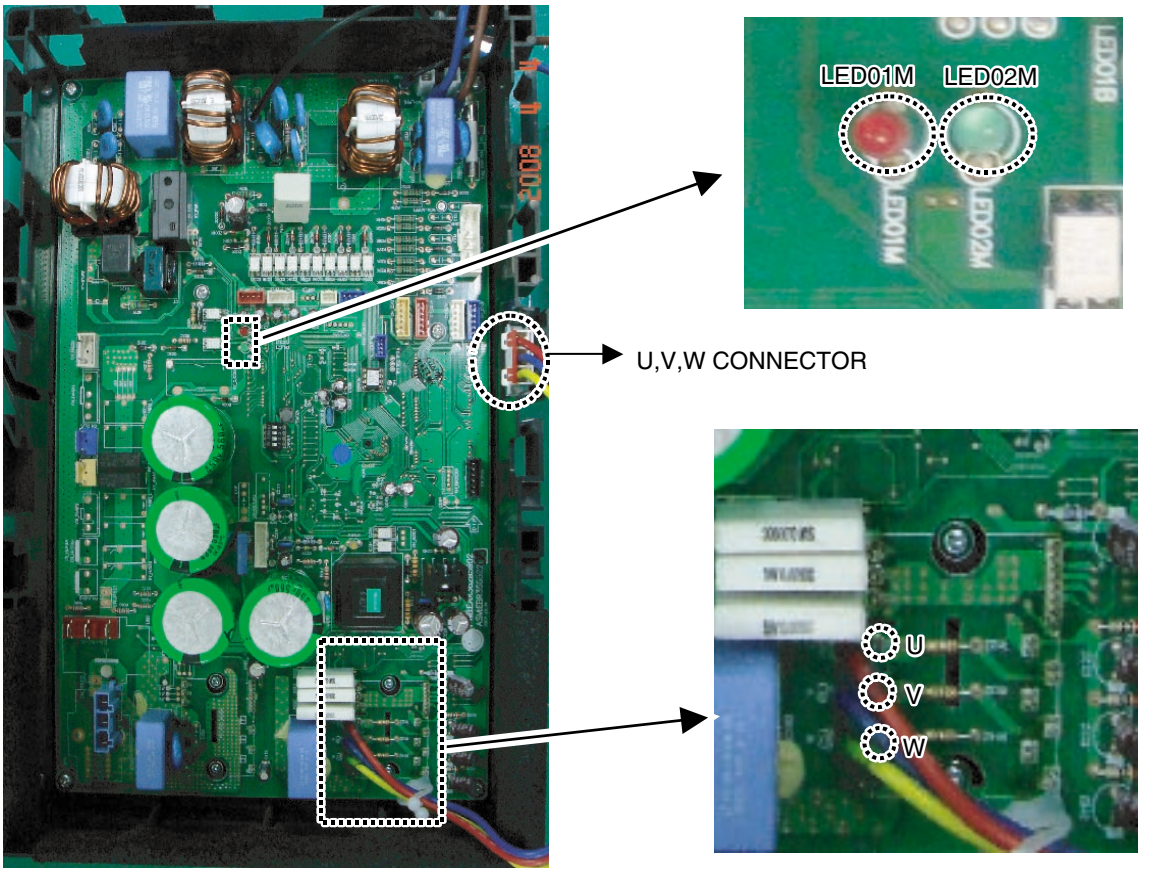


Resistance(Ω) at 20°C		
Terminal	Inverter comp.	Constant comp.
U-V	0.64	0.8
V-W	0.64	0.8
W-U	0.64	0.8

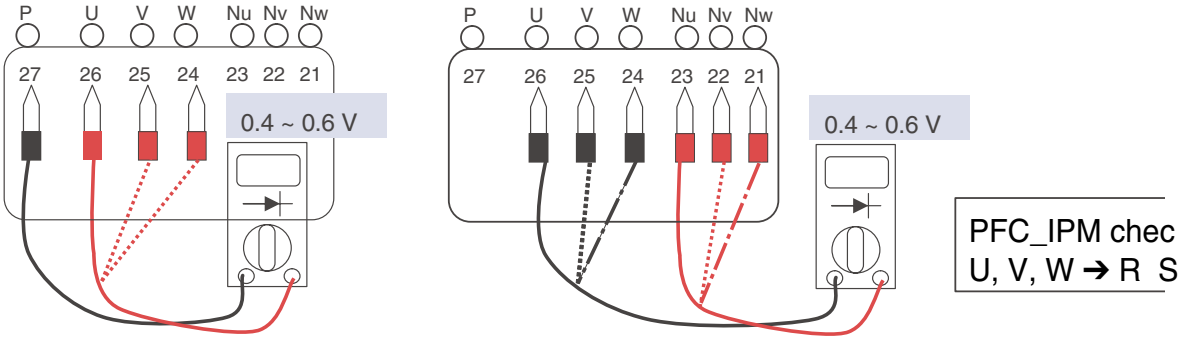


Resistance(Ω) at 20°C		
Terminal	Inverter comp.	Constant comp.
U-GND	2MΩ	2MΩ
V-GND	2MΩ	2MΩ
W-GND	2MΩ	2MΩ

■FM27AH t/m FM41AH



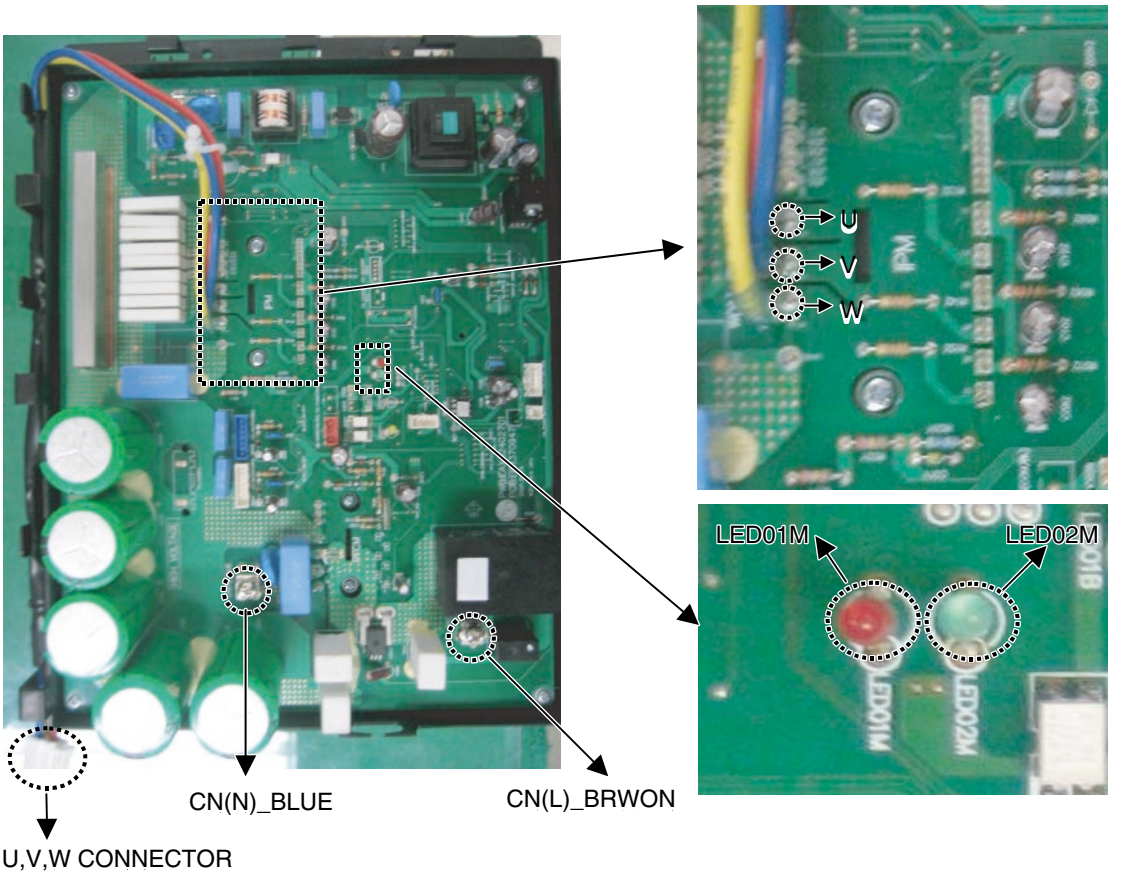
1. Wait until inverter PCB DC voltage is discharged after main power off.
2. Pull out V, V, W COMP connector.
3. Set multi tester to resistance mode.
4. If the value between P and N terminal of IPM is short(0Ω) or open(hundreds MΩ), PCB needs to be replaced.(IPM damaged)
5. Set the multi tester to diode mode.
6. In case measured value is different from the table, PCB needs to be replaced.(PCB damaged).



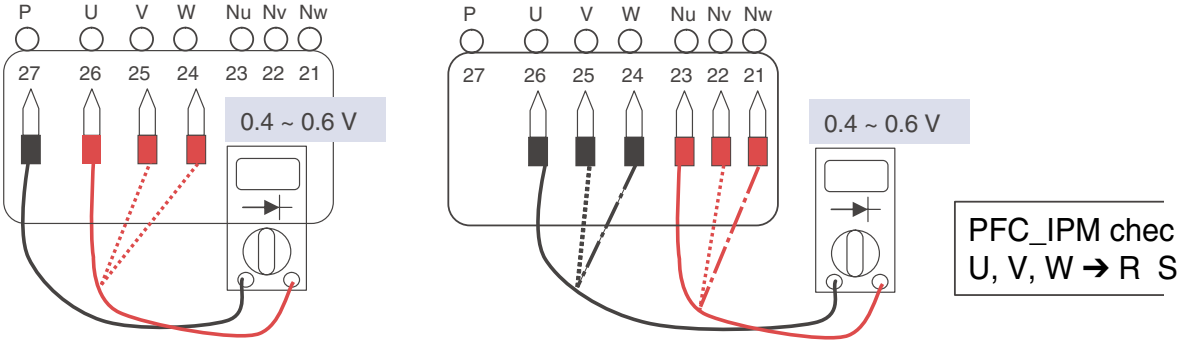
⚠ CAUTION

In case that the control box is opend and before checking electrical parts, it should be checked that the LED 01M, 02M turned off(wait 7 minutes after main power OFF), otherwise it may cause electrical shock.

■ FM49AH t/m FM57AH



1. Wait until inverter PCB DC voltage is discharged after main power off.
2. Pull out CN(L), CN(N) connectors and U,V,W COMP Connector.
3. Set multi tester to resistance mode.
4. If the value between P and N terminal of IPM is short(0Ω) or open(hundreds MΩ), PCB needs to be replaced.(IPM damaged)
5. Set the multi tester to diode mode.
6. In case measured value is different from the table, PCB needs to be replaced.(PCB damaged).

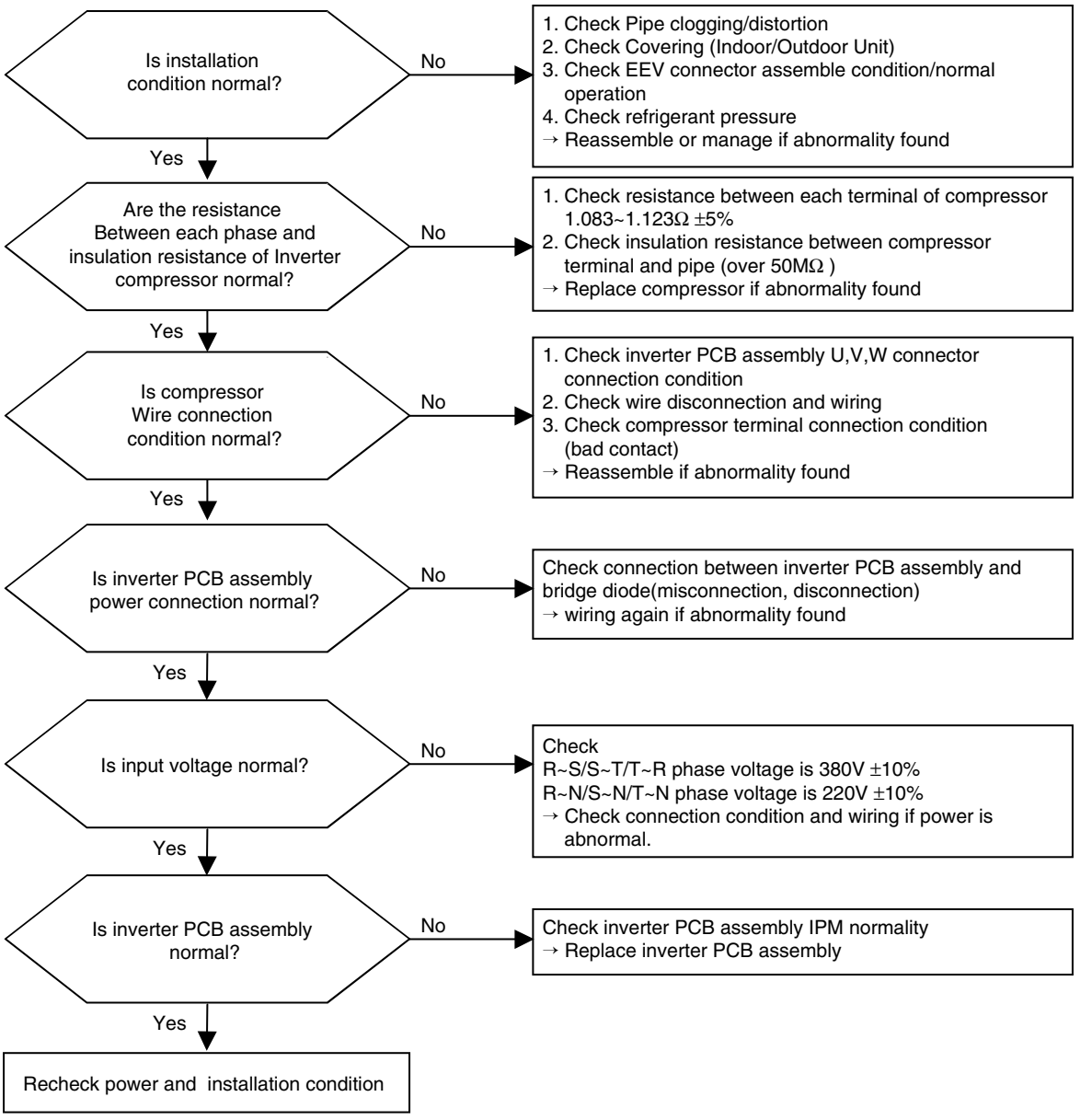


CAUTION

In case that the control box is opend and before checking electrical parts, it should be checked that the LED 01M, 02M turned off(wait 7 minutes after main power OFF), otherwise it may cause electrical shock.

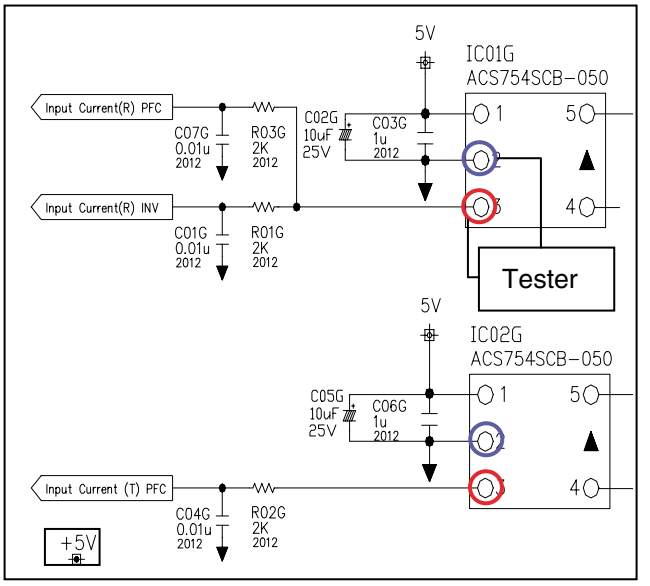
Display code	Title	Cause of error	Check point & Normal condition
22	Max. C/T	Input Over Current	1. Malfunction of Compressor 2. Blocking of Pipe 3. Low Voltage Input 4. Refrigerant, Pipe length, Blocked...

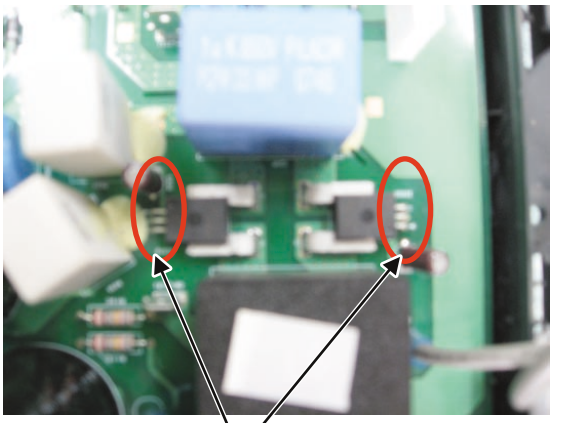
■ Error Diagnosis and Countermeasure Flow Chart



Check Point

1. Check the power source.(200~240V)
2. Check the fan operation is right.
3. Check the current.
4. Check the install condition.
5. Check the CT Sensor Output signal (Check output pin 1.2 of the CT Sensor : 5V)

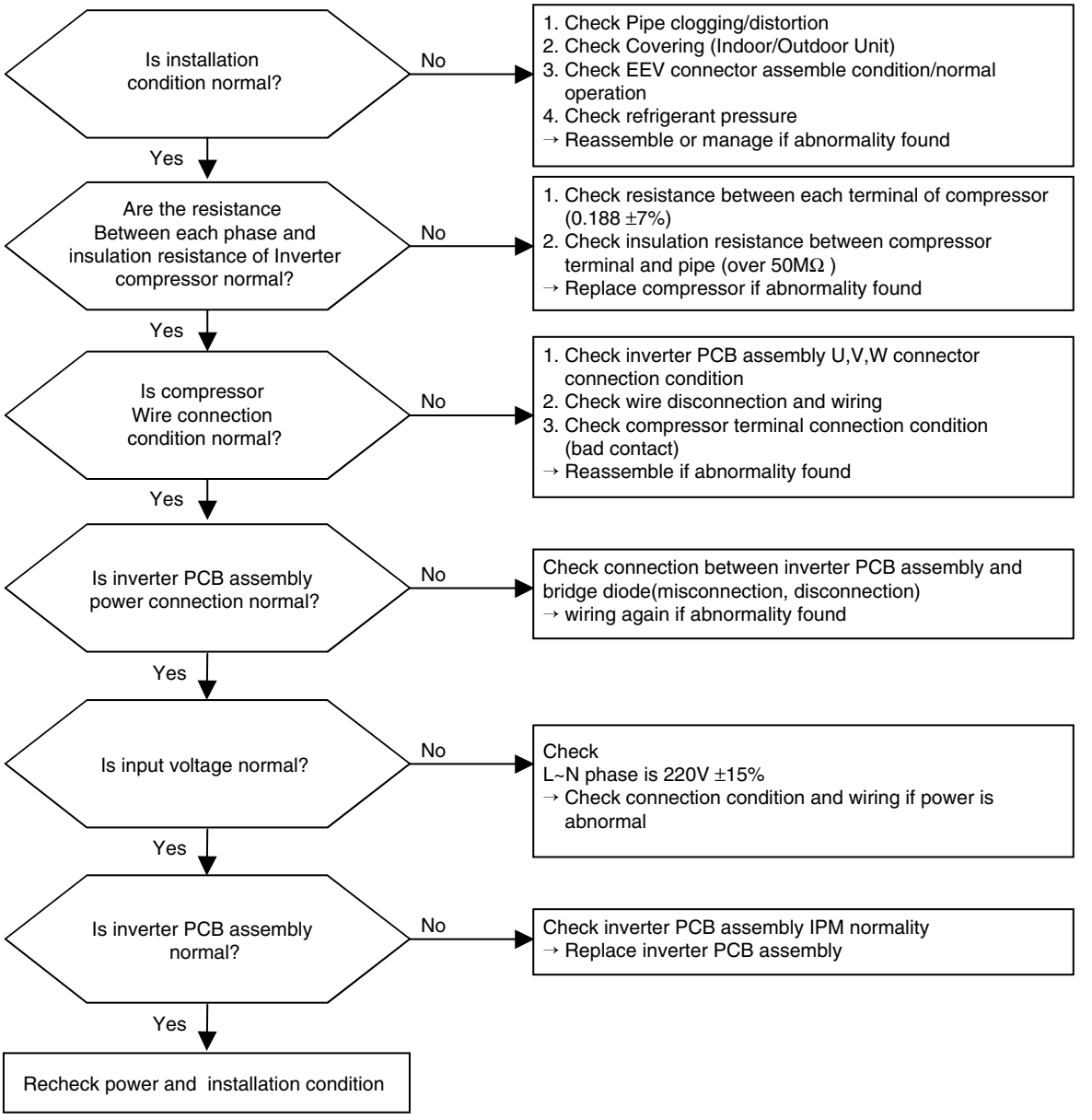




CT Sensor Output
(at the INVERTER PCB)

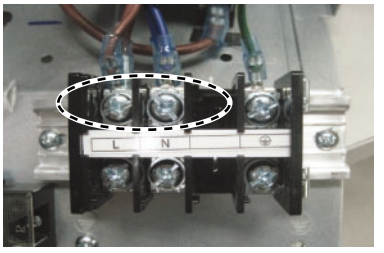
Display code	Title	Cause of error	Check point & Normal condition
22	Max. C/T	Input Over Current(27/30/40k-17A↑ 48/56k-29A↑)	1. Malfunction of Compressor 2. Blocking of Pipe 3. Low Voltage Input 4. Refrigerant, Pipe length, Blocked...

■ Error Diagnosis and Countermeasure Flow Chart

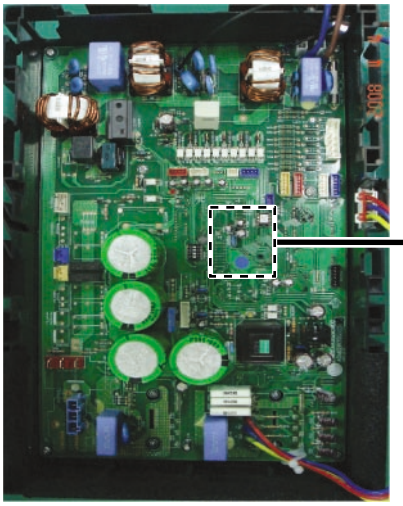


Check Point

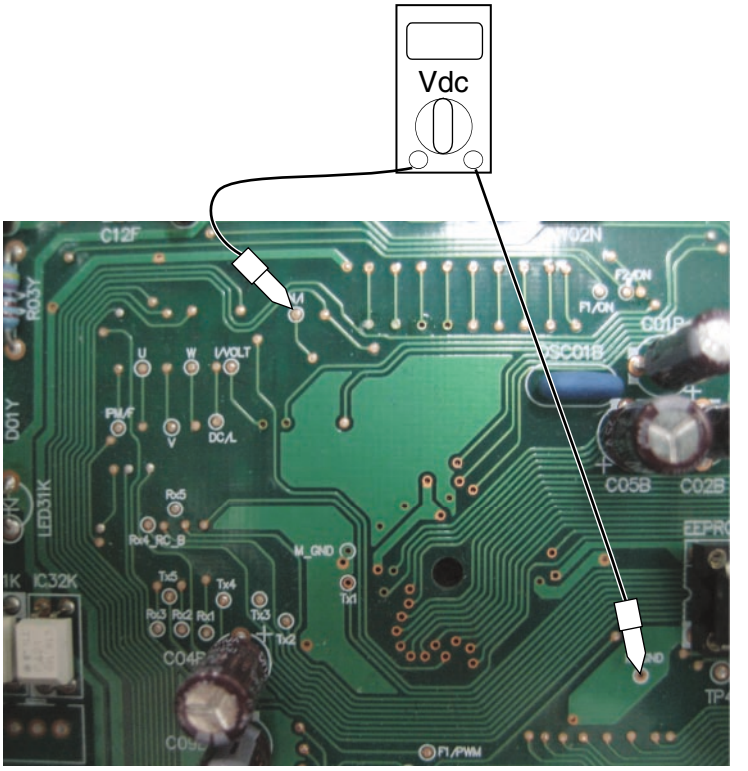
1. Check the power source.(220V ±15%)
2. Check the fan operation is right.
3. Check the current.
4. Check the install condition.
5. Check the CT Sensor Output signal
   (27/30/40k - Check output the CT Sensor : DC 2.5±0.2V)
   (48/56k - Check output pin 1.2 of the CT Sensor : 5V)



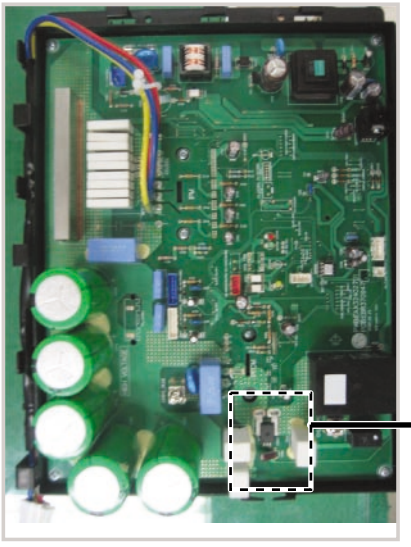
< Input Power Source Check Point >



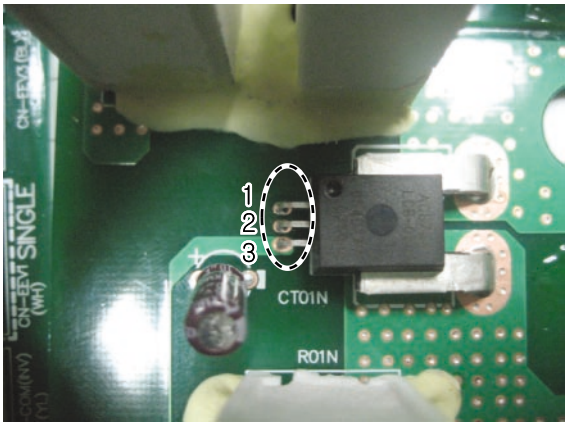
< Main PCB>



<CT Sensing Check Point>



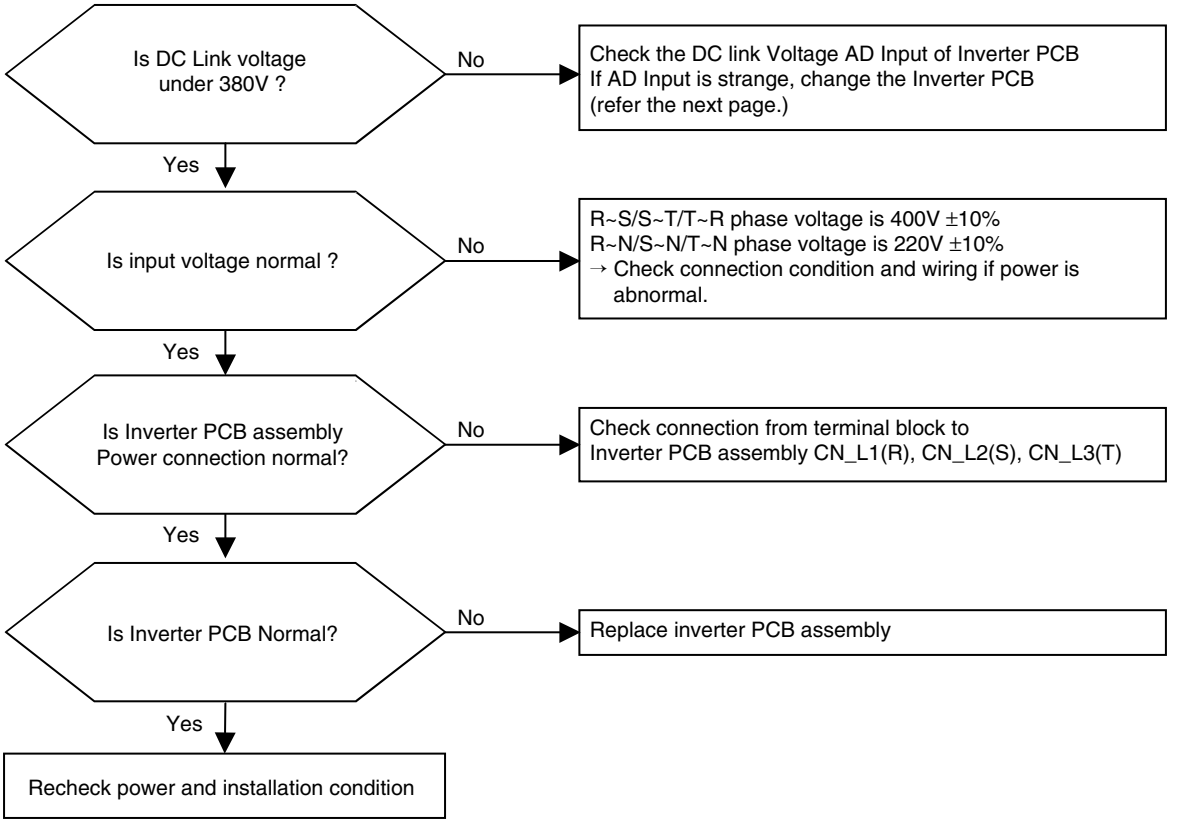
< Inverter PCB>



<CT Sensing Check Point>

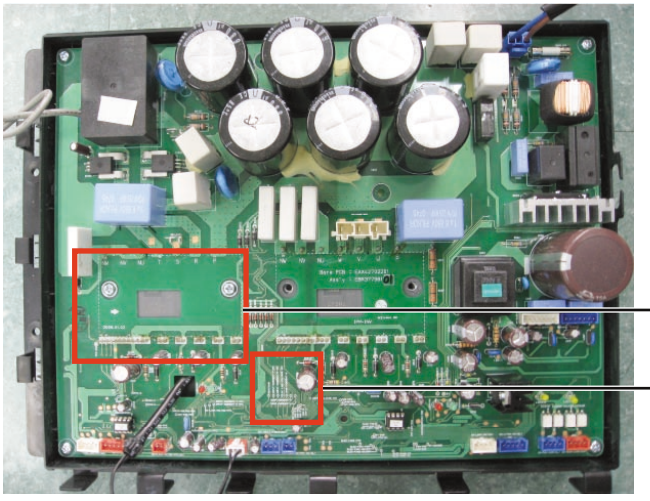
Display code	Title	Cause of error	Check point & Normal condition
23	DC Link Low voltage	• DC Link volt is below 300V	• Check point & Normal condition • Check the TAB1 is connect. • At not operating : DC Link voltage(260V↑) • At Comp operating : DC Link voltage(500V↑)

■ Error Diagnosis and Countermeasure Flow Chart

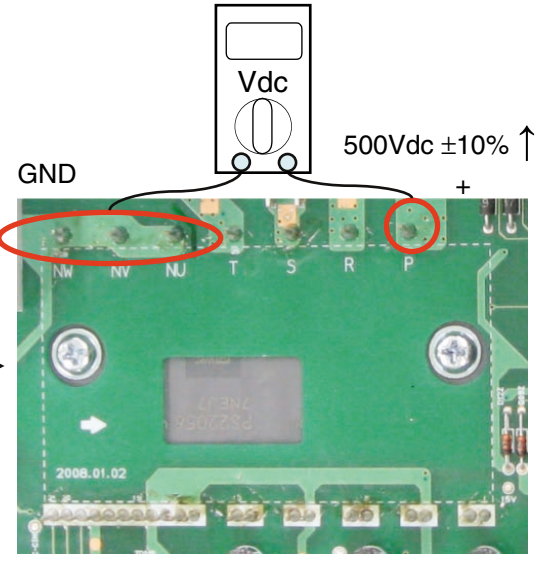


Check Point

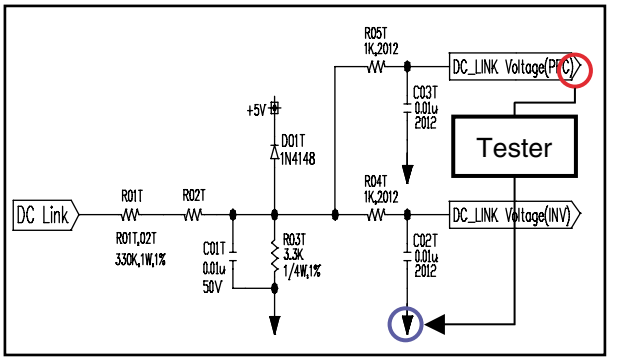
1. Check the Tab1 connection condition. (Refer to outdoor wiring diagram)
2. Check the CN_L1(R), CN_L2(S), CN_L3(T) connection condition
3. Check the DC Link voltage at not operating(380V↑)
4. Check the DC Link voltage at Comp operating(500V↑)
5. Check DC Link Sensing Signal (Refer the Picture)

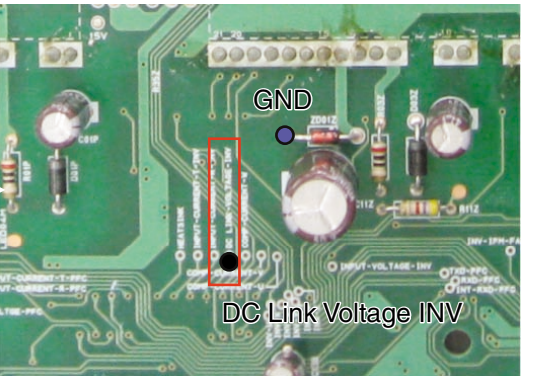


<INVERTER PCB>



<DC Link Voltage Check Point>

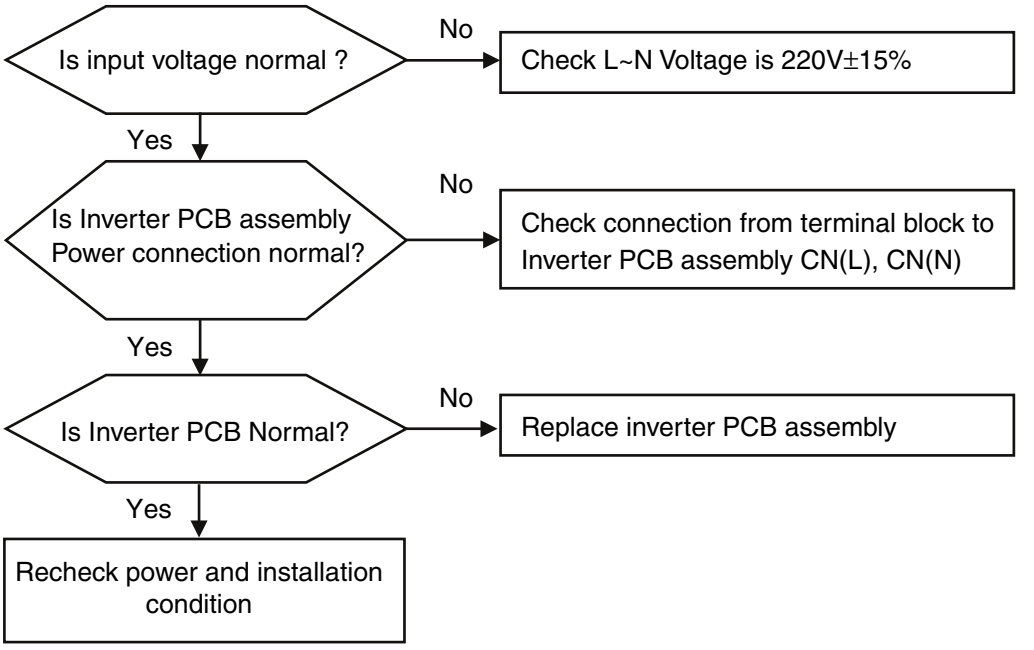




<INPUT VOLTAGE Check Point>

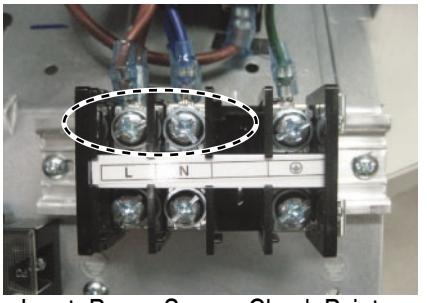
Display code	Title	Cause of error	Check point & Normal condition
23	DC Link Low voltage	• DC Link volt is below 140Vdc	• Check point & Normal condition • Check theCN_(L),CN_(N) Connection. • At not operating : DC Link voltage(280V↑) • At Comp operating : DC Link voltage(340V↑)

■ Error Diagnosis and Countermeasure Flow Chart



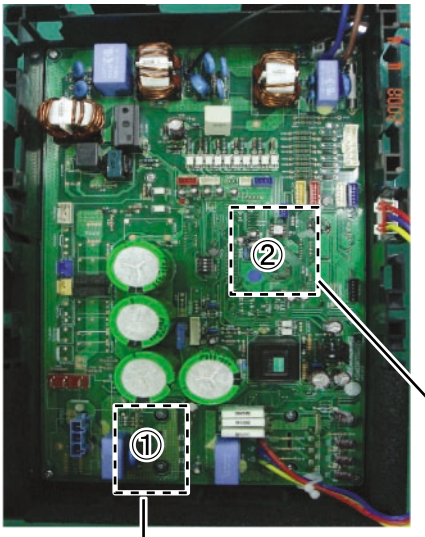
Check Point

1. Check the WCN_P(L),P(N) Connection condition at the Main PCB.(Refer to outdoor wiring diagram)
2. Check the DC Link voltage at not operating(280V↑)
3. Check the DC Link voltage at Comp operating(340V↑)
4. Check DC Link Sensing Signal :2.4~2.8V (Refer the Picture)



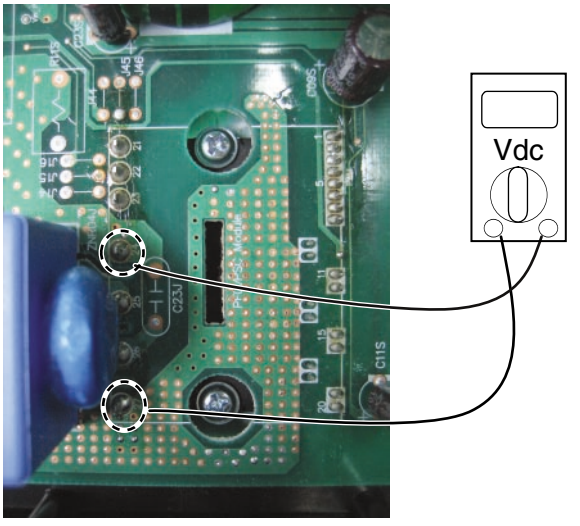
< Input Power Source Check Point >

▸ 27/30/40k



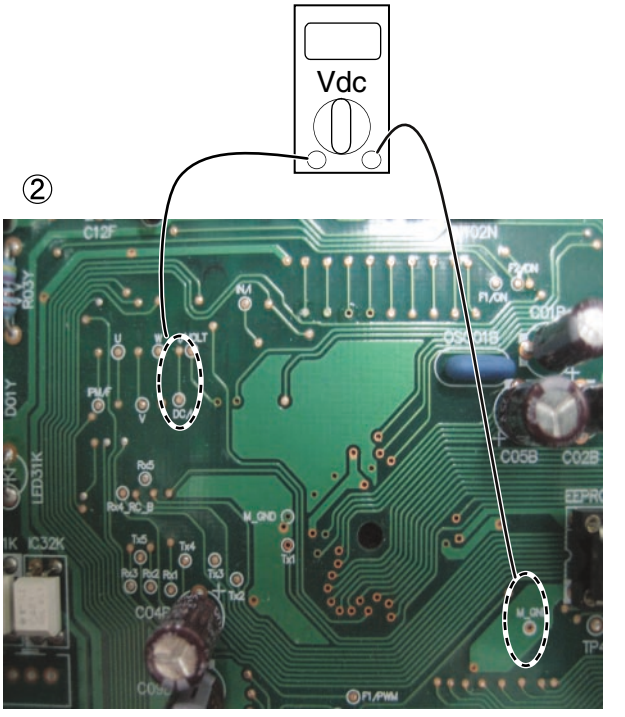
< Main PCB>

①



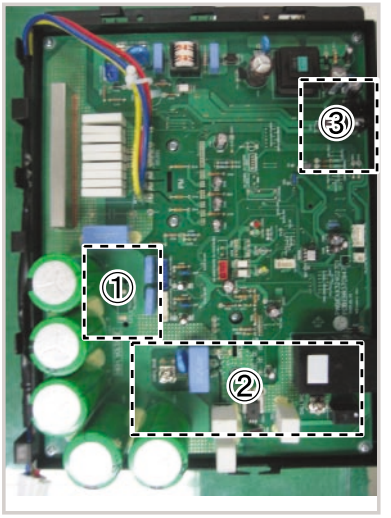
<DC Link Voltage Check Point>

②

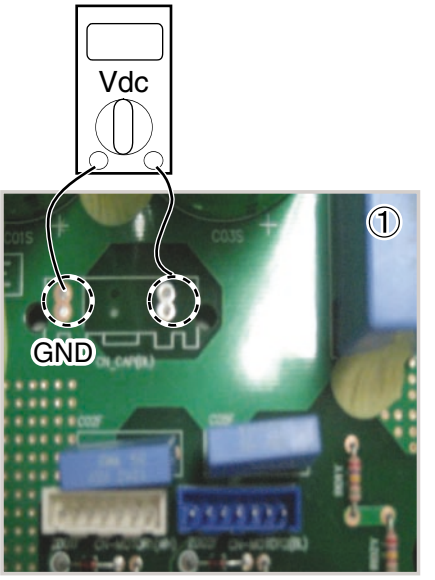


<DC_LINK Sensing Check Point>

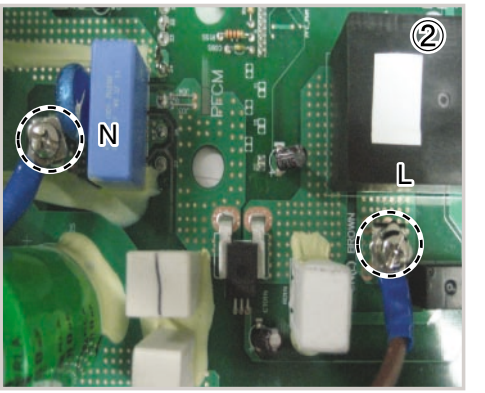
▸ FM49AH t/m FM57AH



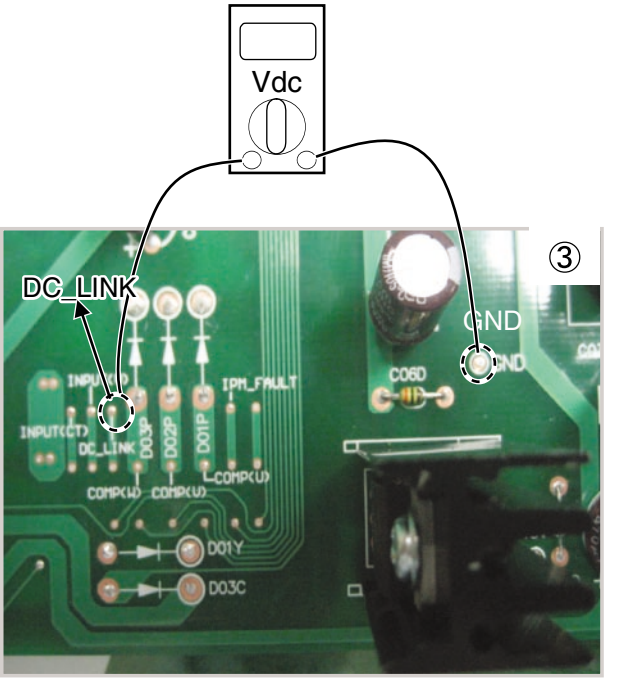
< Inverter PCB>



<DC Link Voltage Check Point>



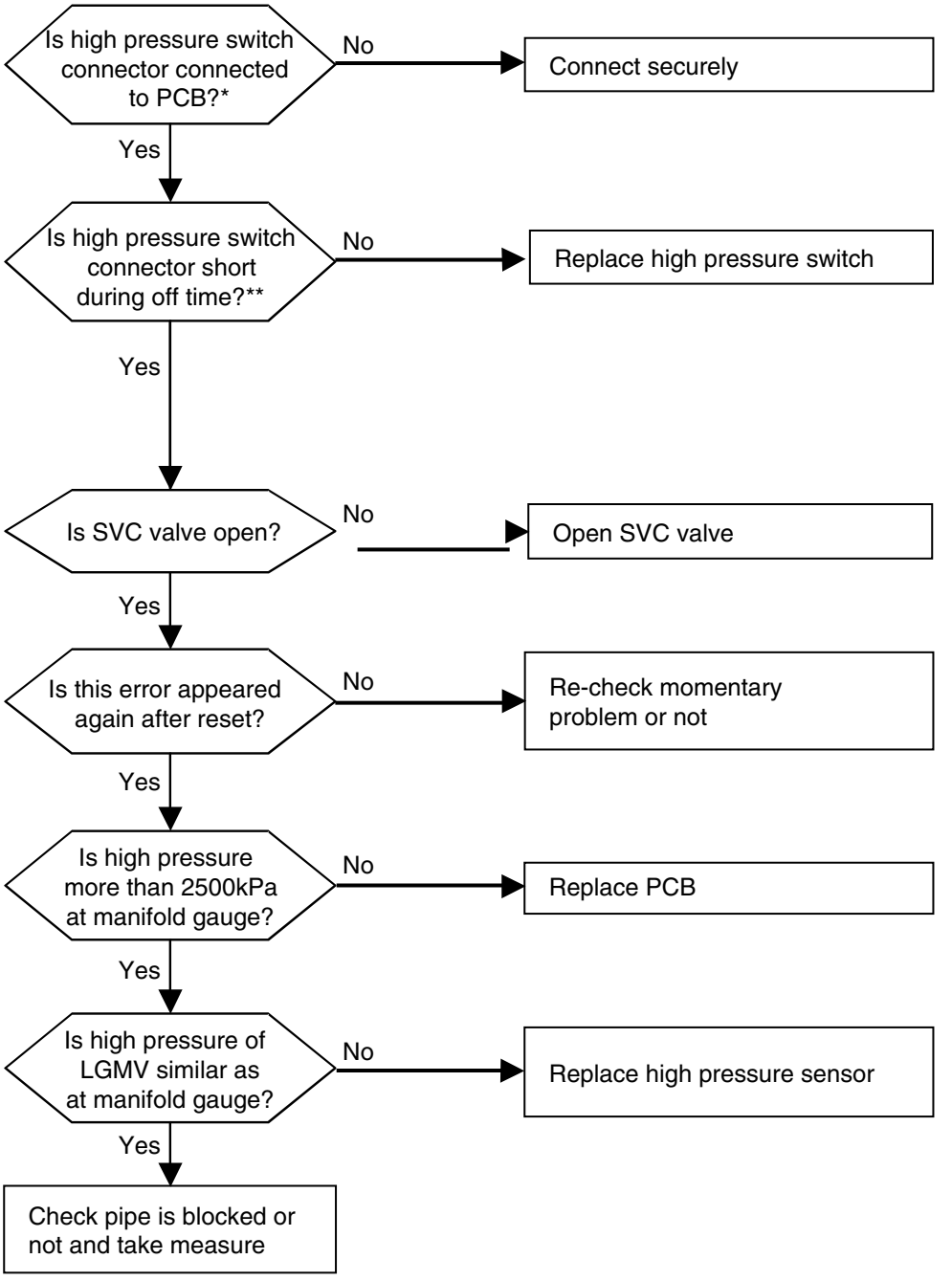
<Connection Check Point>



<DC_LINK Sensing Check Point>

Display code	Title	Cause of error	Check point & Normal condition
24	Press S/W Open	• Low / High press S/W open.	• Check the connection CN_L/PRESS,H/PRESS • Check the components.

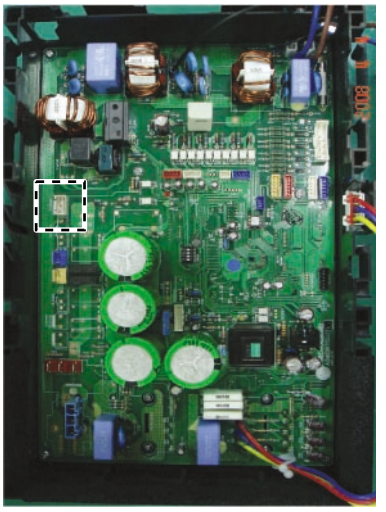
■ Error diagnosis and countermeasure flow chart



Check Point

1. Check the connection of H/press switch
2. Check short or not at the connector of high pressure switch (Normal open)

▶ 27/30/40k



< Main PCB : Connection Check Point >

< Checking the Press switch >

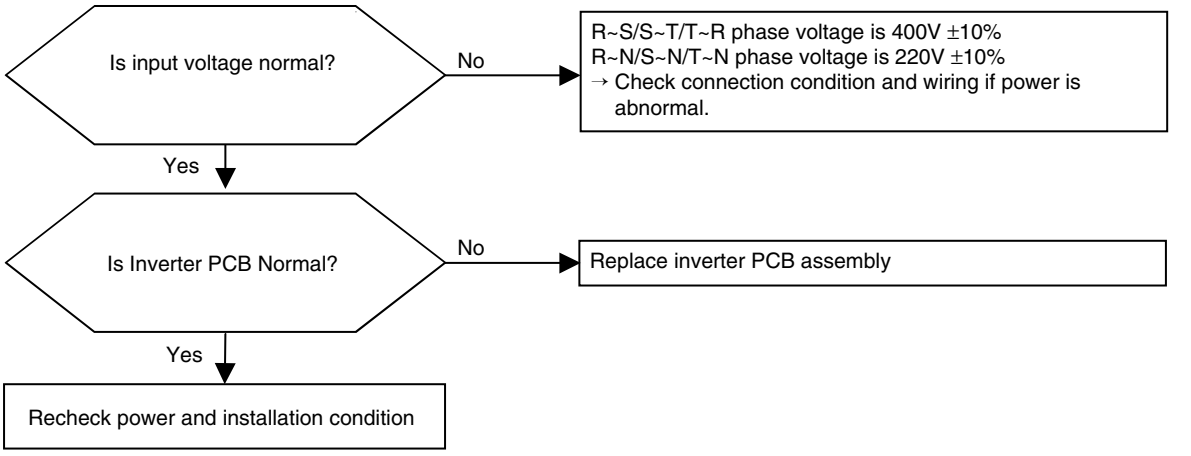
▶ 48/56k

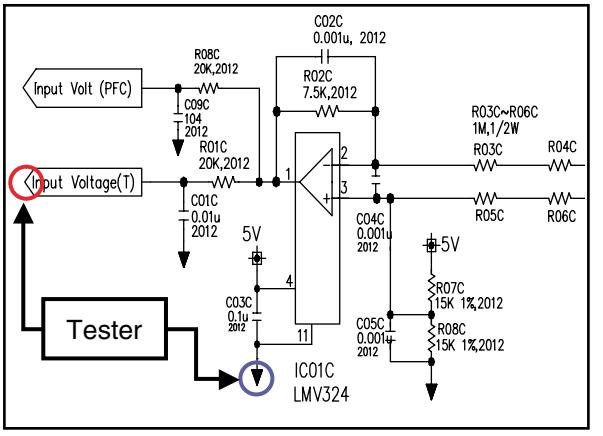
< Main PCB : Connection Check Point >

< Checking the H/press switch >

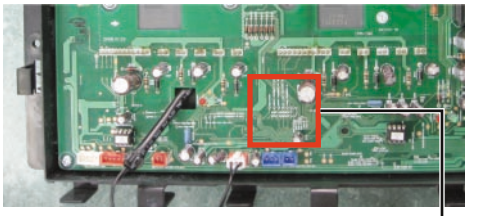
Display code	Title	Cause of error	Check point & Normal condition
25	Input voltage	Abnomal Input Voltage (R,S,T -N /140Vac↓ , 300Vac ↑)	Check the power source. • Check the components.

■ Error Diagnosis and Countermeasure Flow Chart

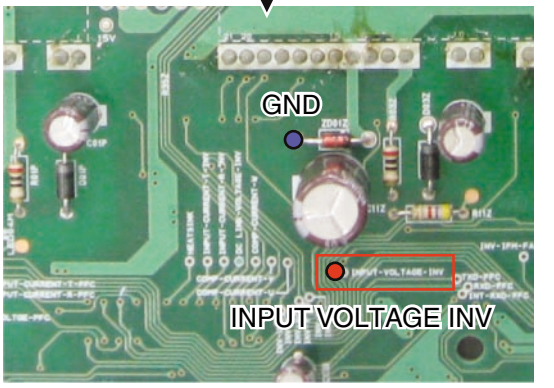




< CH25 Check Point >



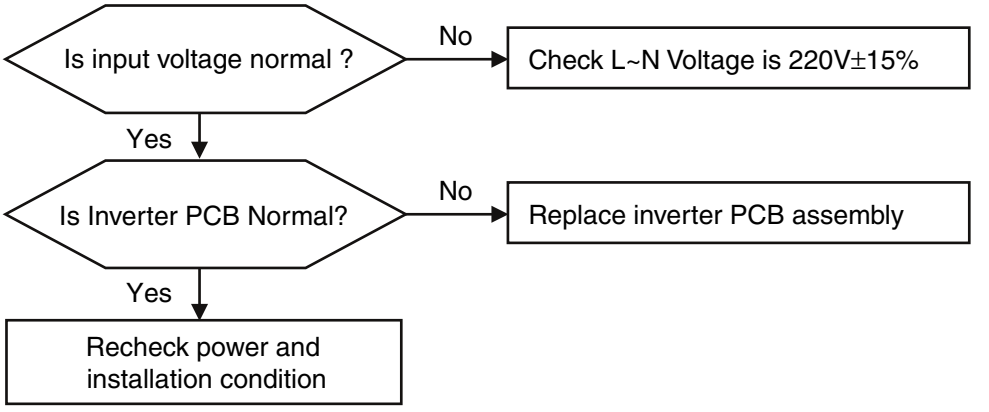
<INVERTER PCB>



<INPUT VOLTAGE Check Point>

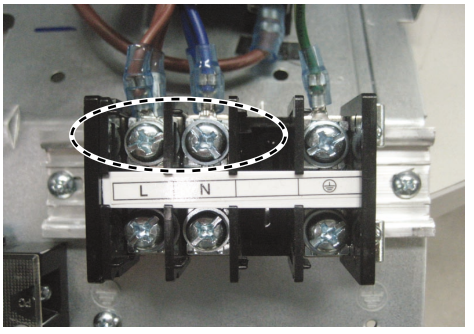
Display code	Title	Cause of error	Check point & Normal condition
25	Input voltage	• Abnormal Input voltage (140Vac , 300Vac)	• Check the power source. • Check the components.

■ Error Diagnosis and Countermeasure Flow Chart



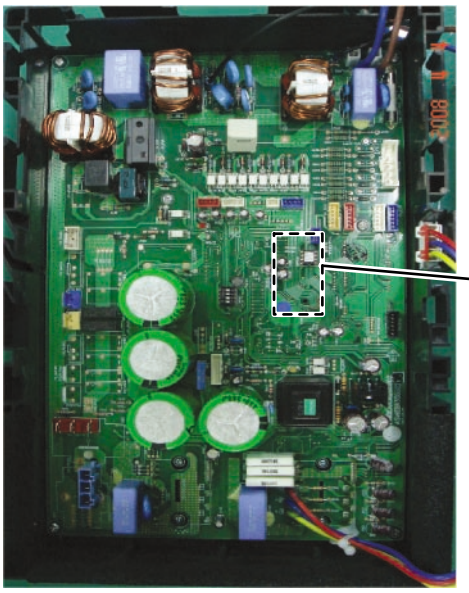
Check Point

1. Check the Input Voltage (L–N ➔ 220V±10%)
2. Check Input Voltage Sensor output voltage (2.5Vdc±10%)

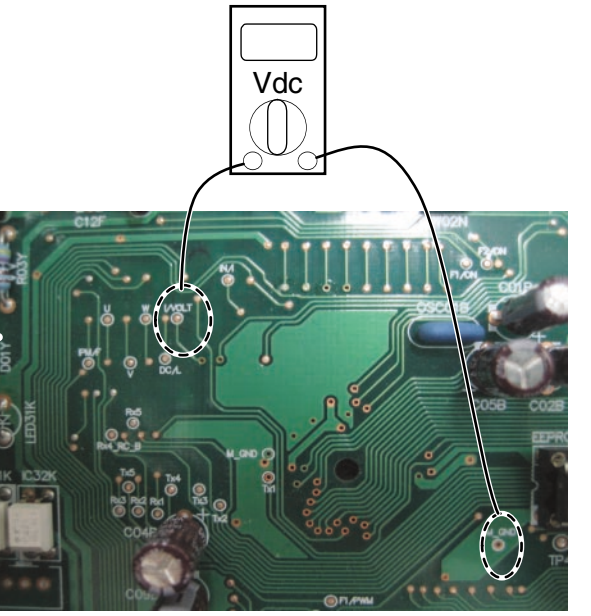


< Input Power Source Check Point >

▶ **FM27AH t/m FM57AH**

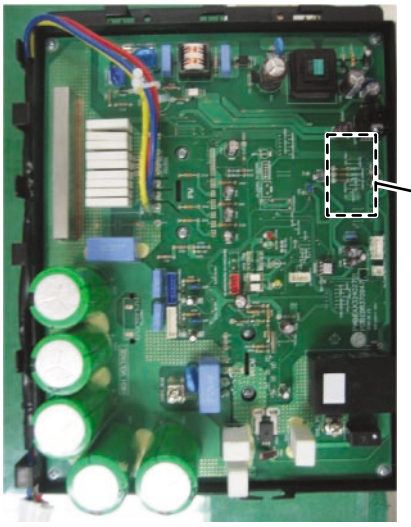


< Inverter PCB>

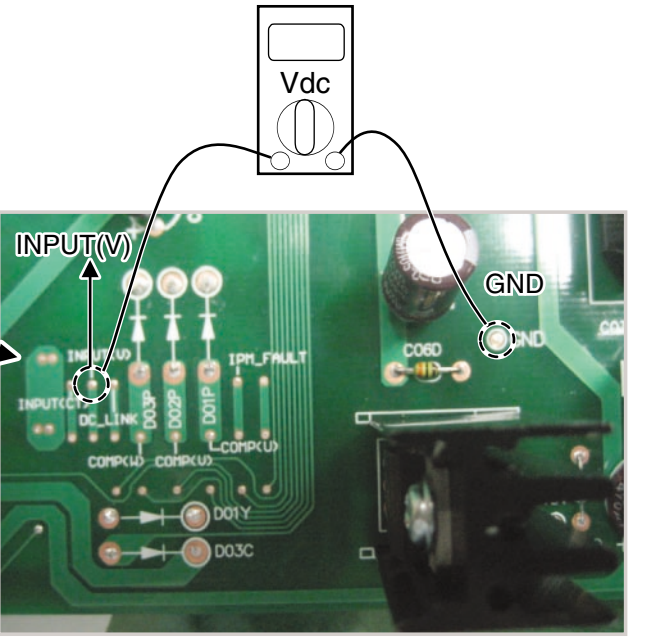


< Input Voltage Sensing Check Point >

▶ **FM49AH t/m FM57AH**



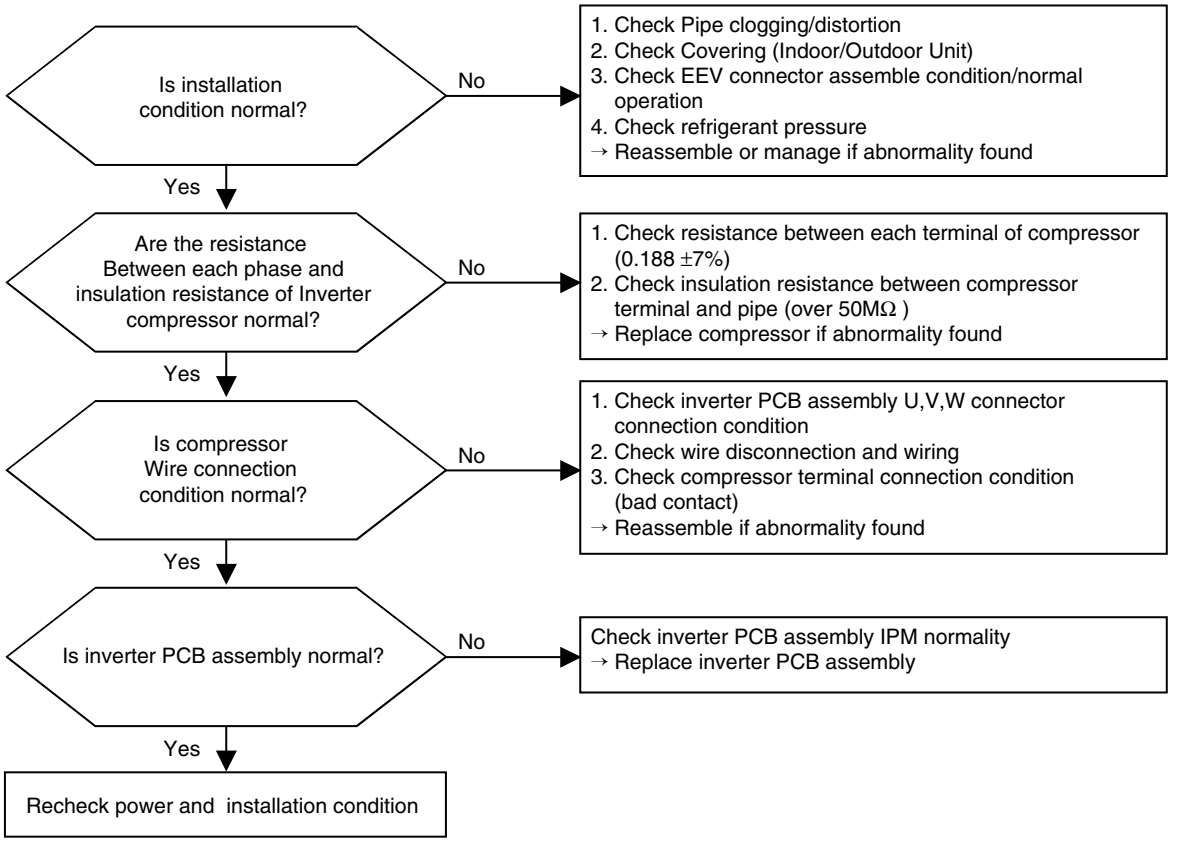
< Inverter PCB>



< Input Voltage Sensing Check Point >

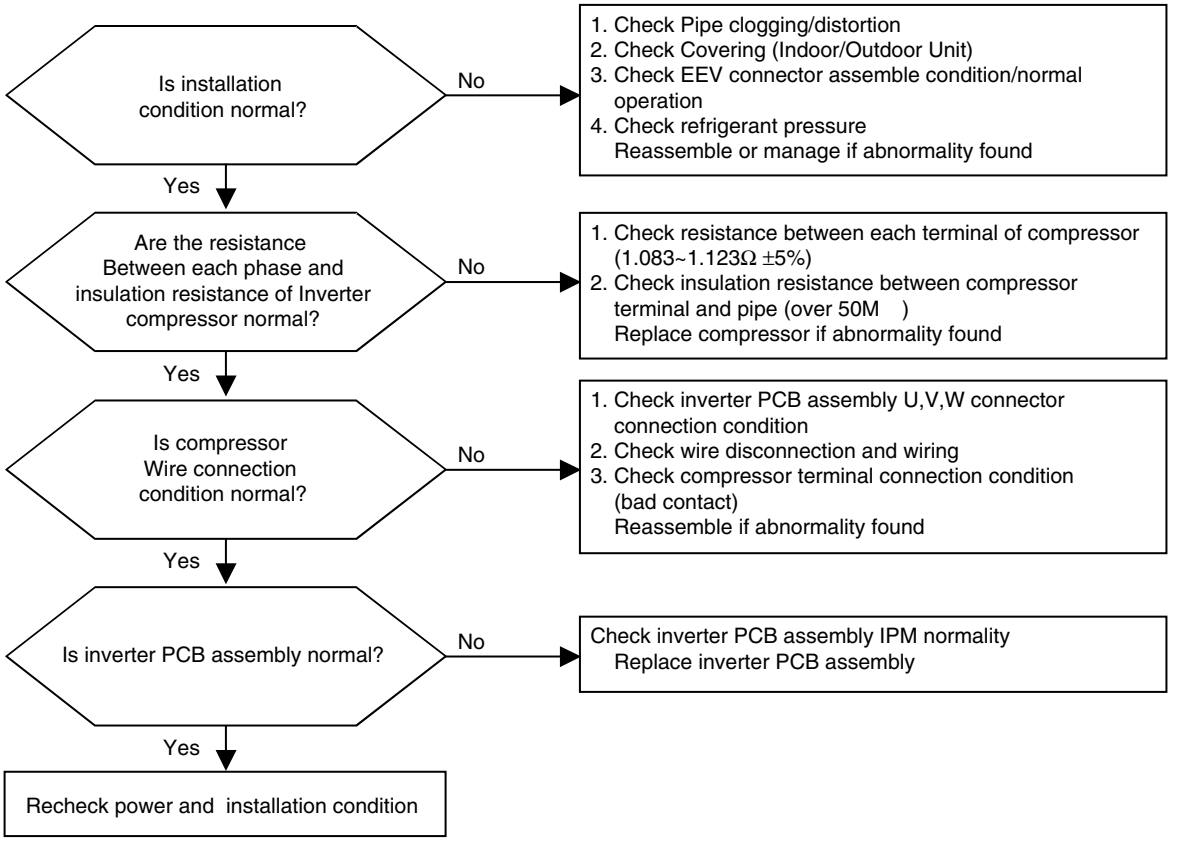
Display code	Title	Cause of error	Check point & Normal condition
26	DC Compressor Position	• Compressor Starting fail error	• Check the connection of comp wire “U,V,W” • Malfunction of compressor • Check the component of “IPM”, detection parts.

■ Error Diagnosis and Countermeasure Flow Chart



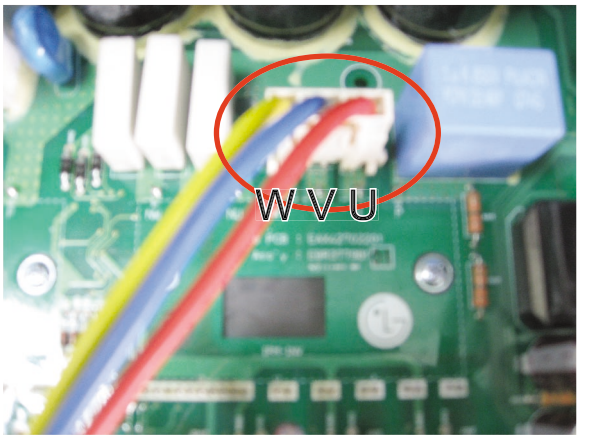
Display code	Title	Cause of error	Check point & Normal condition
26	DC Compressor Position	• Compressor Starting fail error	• Check the connection of comp wire “U,V,W” • Malfunction of compressor • Check the component of “IPM”, detection parts.

■ Error Diagnosis and Countermeasure Flow Chart



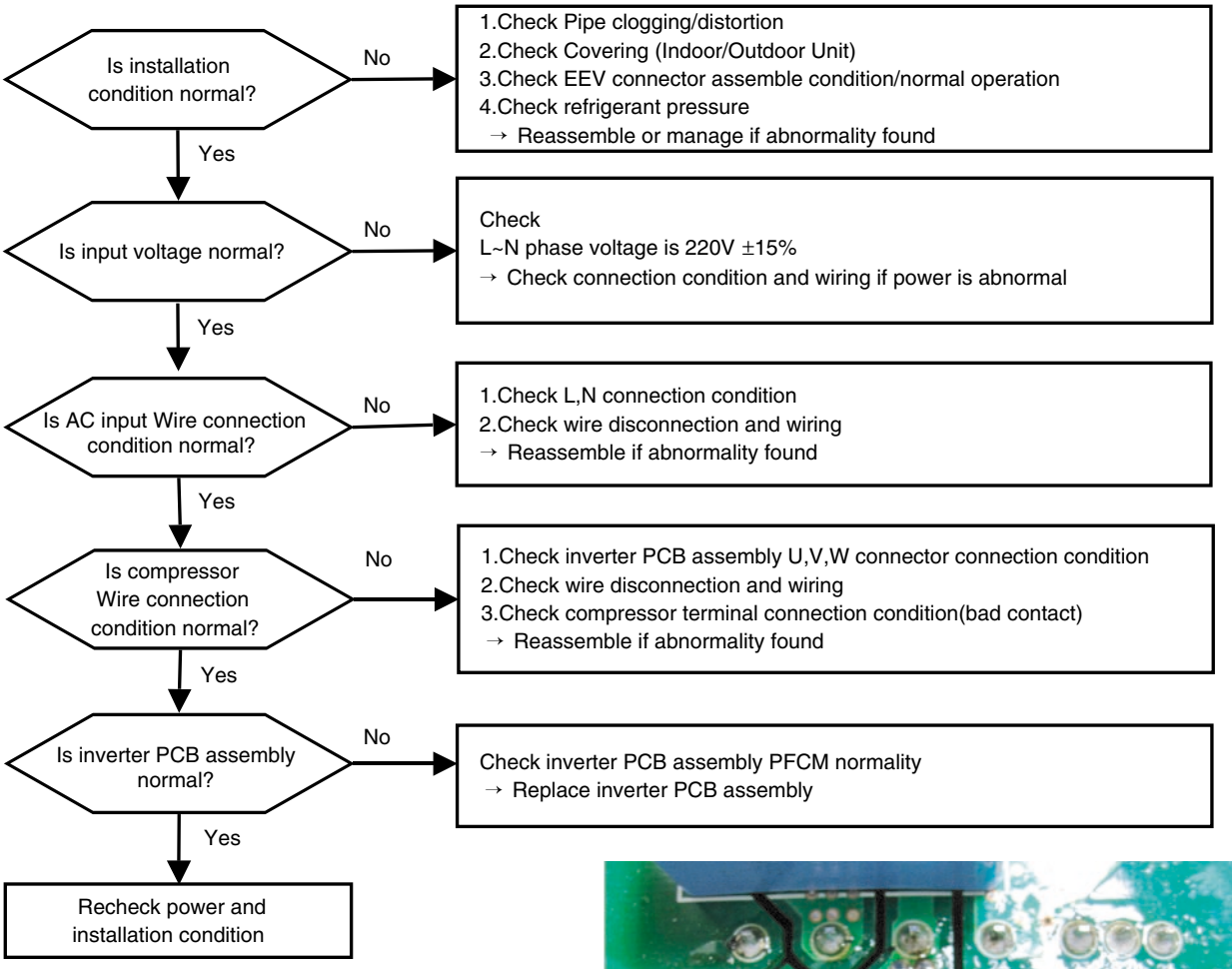
Check Point

1. Check the connection condition of PCB.
2. Check the connection condition of Comp. U,V,W wire.
3. Check the comp resistor and insulation resistance .
4. Check the IPM.(Refer 106 page)
5. Check the pressure of refrigerant.
6. Check the Service Valve Open.



Display code	Title	Cause of error	Check point & Normal condition
27	AC Input Instant over Current Error	Inverter PCB input current is over100A(peak) for 2us	1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. overcharge) 2. Compressor damage (Insulation damage/Motor damage) 3. Input voltage abnormal (L,N) 4. Power line assemble condition abnormal 5. Inverter PCB assembly Damage (input current sensing part)

■ Error Diagnosis and Countermeasure Flow Chart

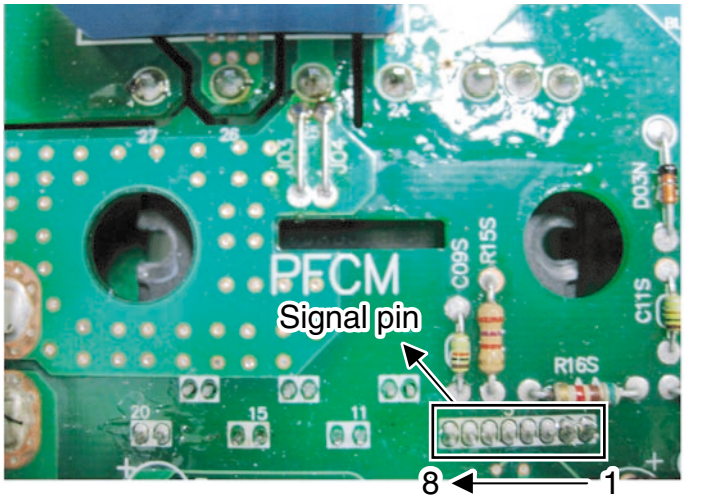


※ PFCM Moudle checking method

① Set the multi tester to diode mode.

② Check short between input signal pin which are placed below PFC Module

③ Replace PCB assembly if it is short between pins except No.4,5 pins.

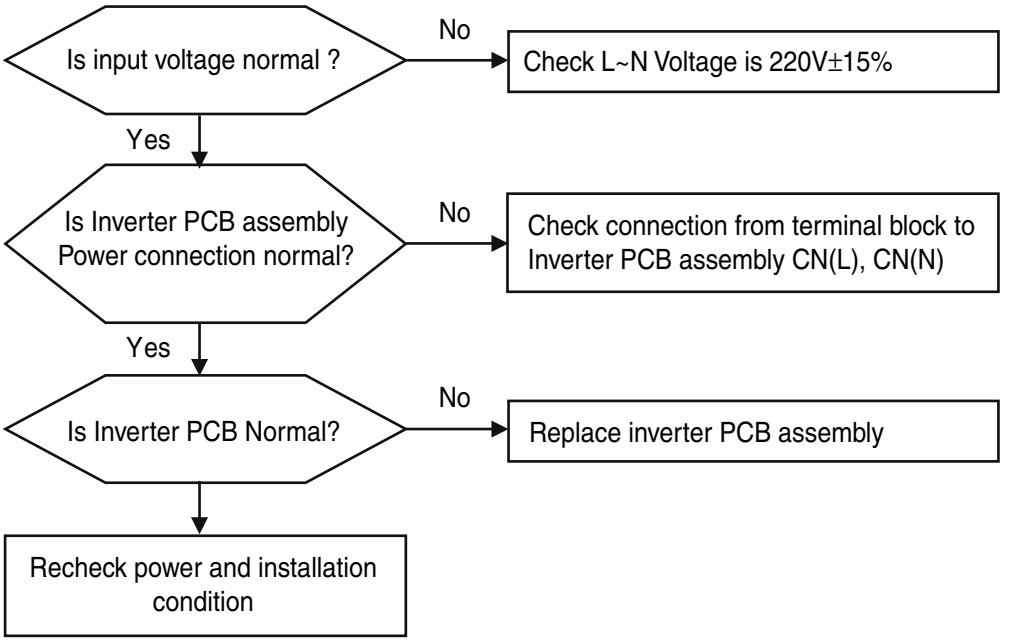


CAUTION

PFCM module No.4,5 pins are internal short state.

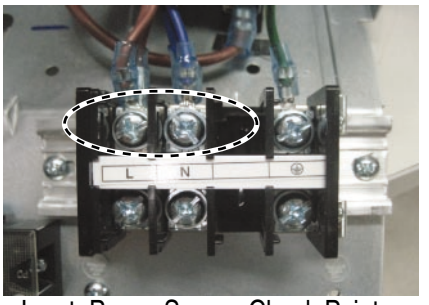
Display code	Title	Cause of error	Check point & Normal condition
28	Inverter DC link high voltage error	Inv PCB DC link voltage supplied over 420V	1. Input voltage abnormal (L~N) 2. ODU inverter PCB damage(DC Link voltage sensing part)

■ Error Diagnosis and Countermeasure Flow Chart



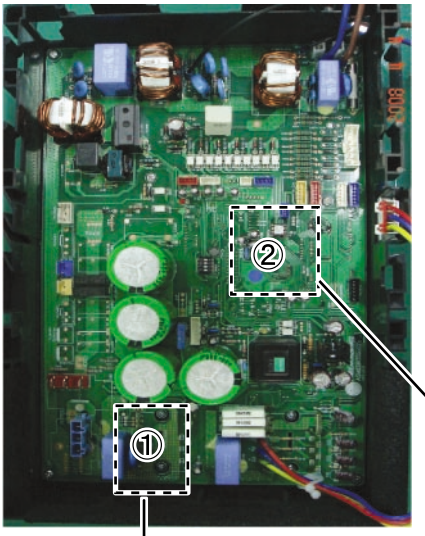
Check Point

1. Check the CN_(L),CN_(N) Connection condition at the Inverter PCB.(Refer to outdoor wiring diagram)
2. Check the DC Link voltage at not operating(280V↑)
3. Check the DC Link voltage at Comp operating(340V↑)
4. Check DC Link Sensing Signal : 2.4~2.8V (Refer the Picture)



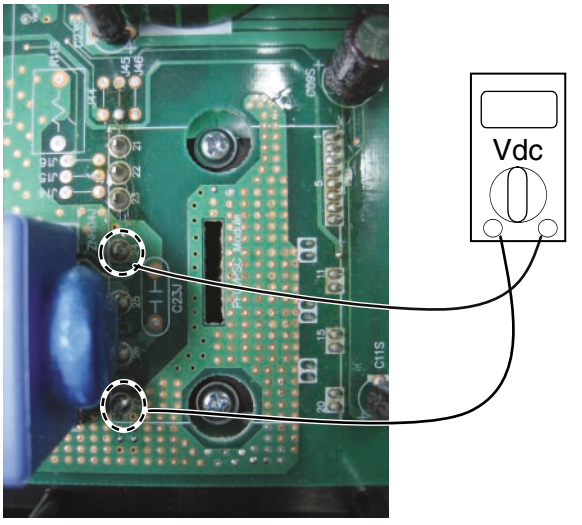
< Input Power Source Check Point >

▸ 27/30/40k



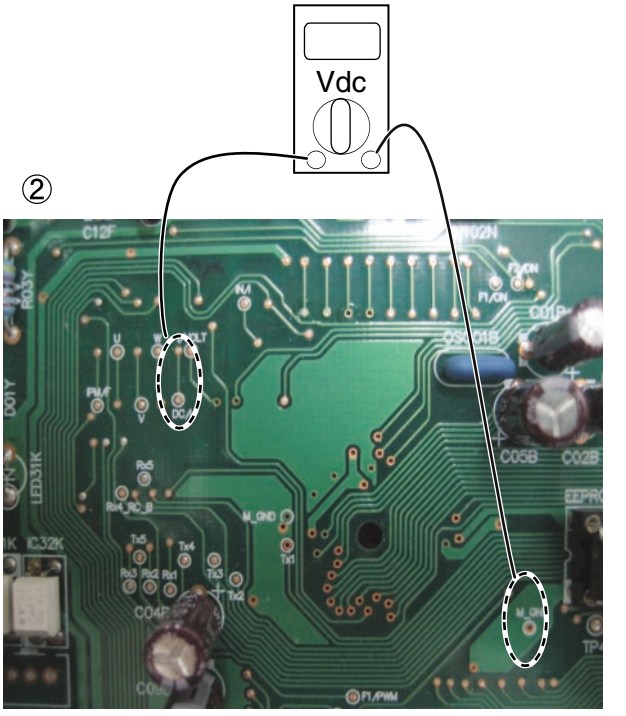
< Main PCB>

①



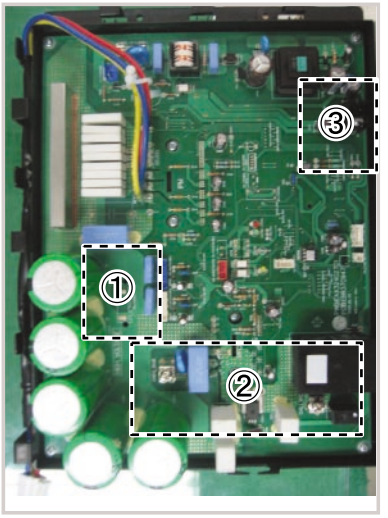
<DC Link Voltage Check Point>

②

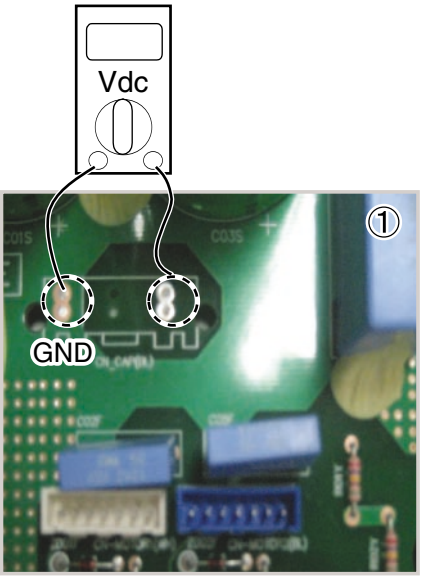


<DC_LINK Sensing Check Point>

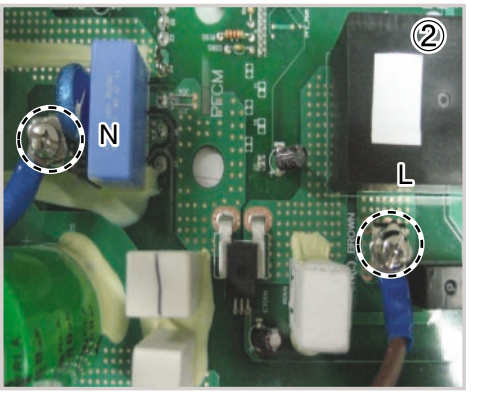
▸ 48/56k



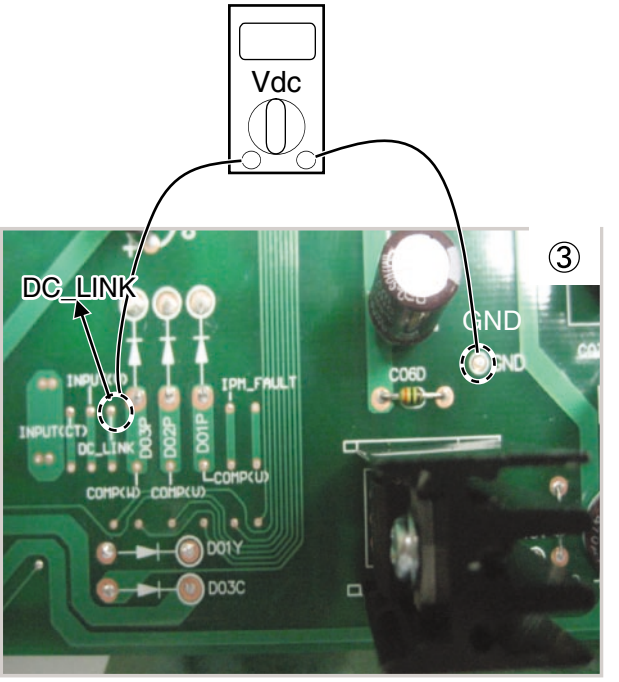
< Inverter PCB>



<DC Link Voltage Check Point>



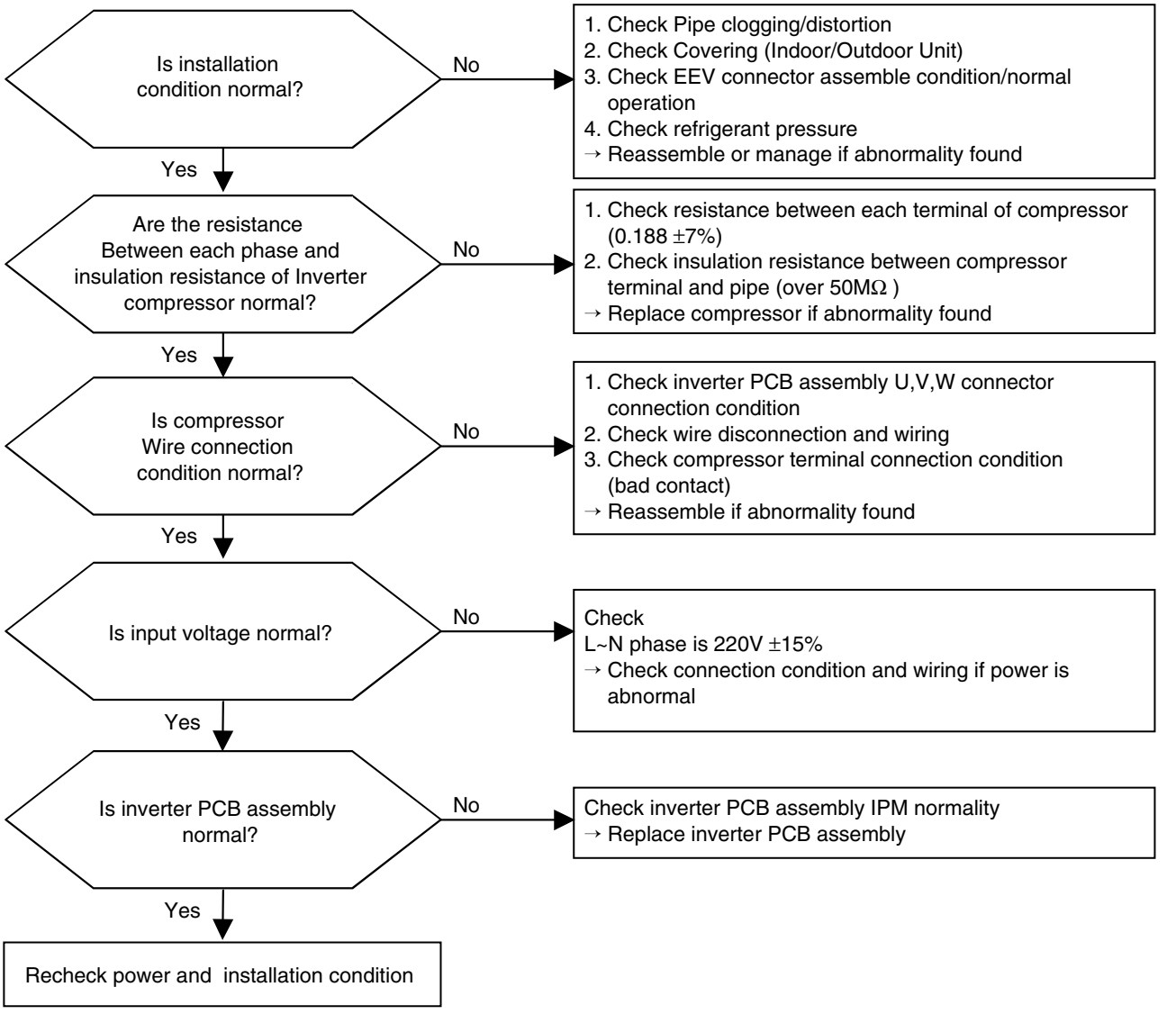
<Connection Check Point>



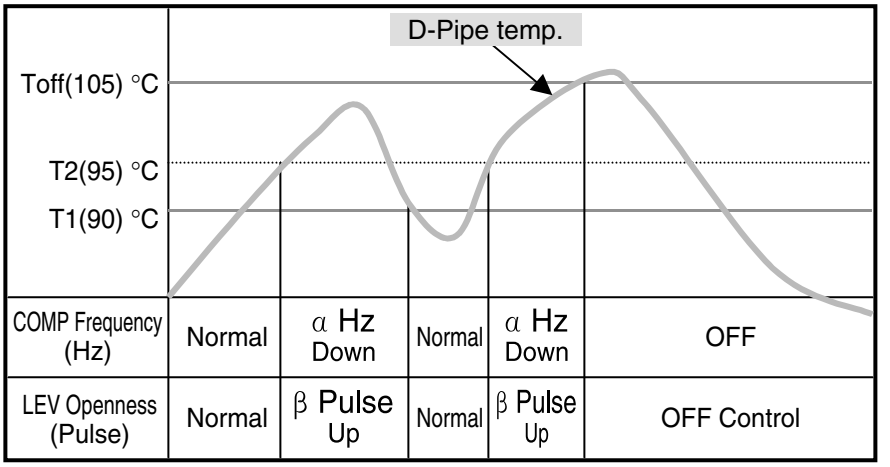
<DC_LINK Sensing Check Point>

Display code	Title	Cause of error	Check point & Normal condition
29	Inverter compressor over current	Inverter compressor input current is over 30A	1. Overload operation (Pipe clogging/Covering/EEV defect/Ref. over-charge) 2. Compressor damage(Insulation damage/Motor damage) 3. Input voltage low 4. ODU inverter PCB assembly damage

■ Error Diagnosis and Countermeasure Flow Chart



Display code	Title	Cause of error	Check point & Normal condition
32	D-pipe (Inverter) temp. high (105°C↑)	• Discharge sensor (Inverter) temp. high	• Check the discharge pipe sensor for INV. • Check the install condition for over load. • Check the leakage of refrigerant. • Check the SVC V/V open.
33	D-pipe (Constant) temp. high (105°C↑)	• Discharge sensor (Cons.) temp. high	• Check the discharge pipe sensor for Cons. • Check the install condition for over load. • Check the leakage of refrigerant. • Check the SVC V/V open.



Check Point

• CH 32

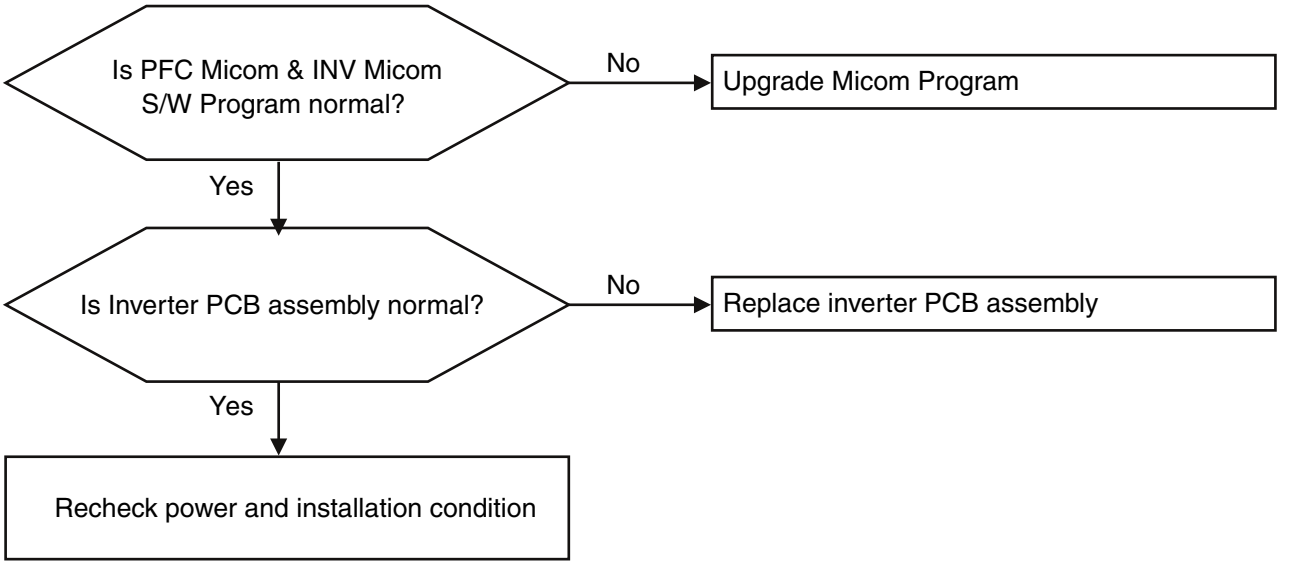
1. Check the install condition for over load.
2. Check the SVC V/V open.
3. Check the leakage of refrigerant.

• CH 33

1. Check the install condition for over load.
2. Check the SVC V/V open.
3. Check the leakage of refrigerant.
4. Check the constant compressor. (same with CH21)

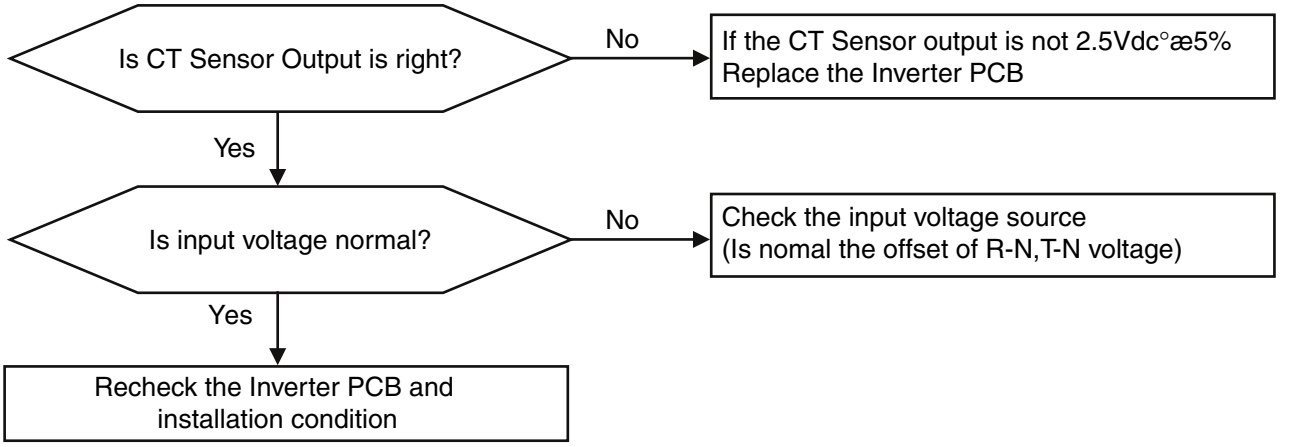
Display code	Title	Cause of error	Check point & Normal condition
39	Transmission Error Between (PFC Micom → INV Micom)	Communication Error Between PFC Micom and INV Micom.	1. Micom defect/Circuit defect 2. Different Micom S/W Version 3. ODU inverter PCB assembly damage

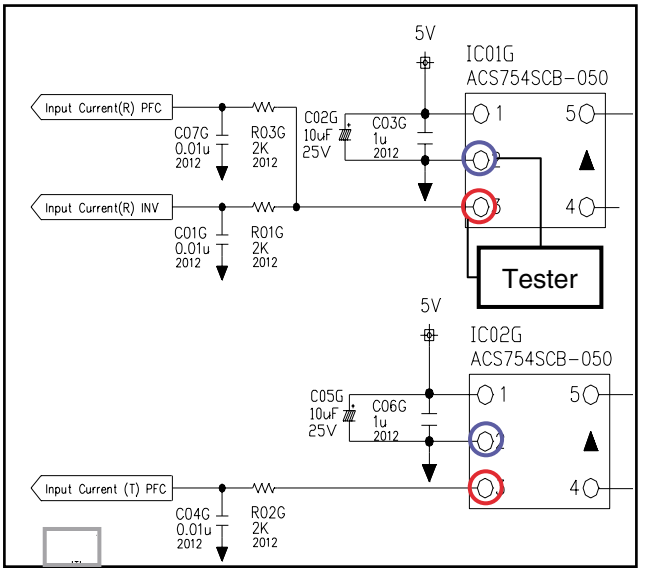
■ Error Diagnosis and Countermeasure Flow Chart

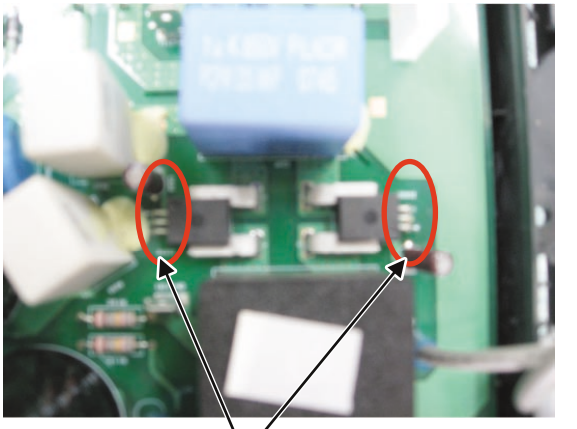


Display code	Title	Cause of error	Check point & Normal condition
40	C/T Sensor Error	• Initial current error	• Malfunction of current detection circuit. (Open / Short) • The voltage of "C01N" Is 4.0Vdc(25A) . • Check CT Sensor output voltage : 2.5Vdc ±5%

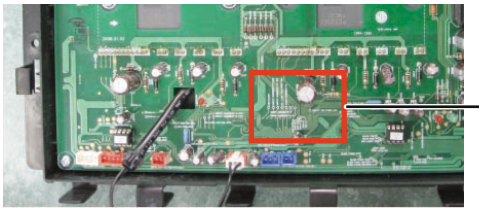
■ Error Diagnosis and Countermeasure Flow Chart



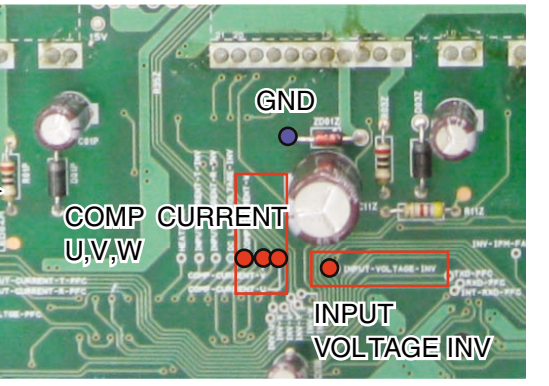




CT Sensor Output
(at the INVERTER PCB)



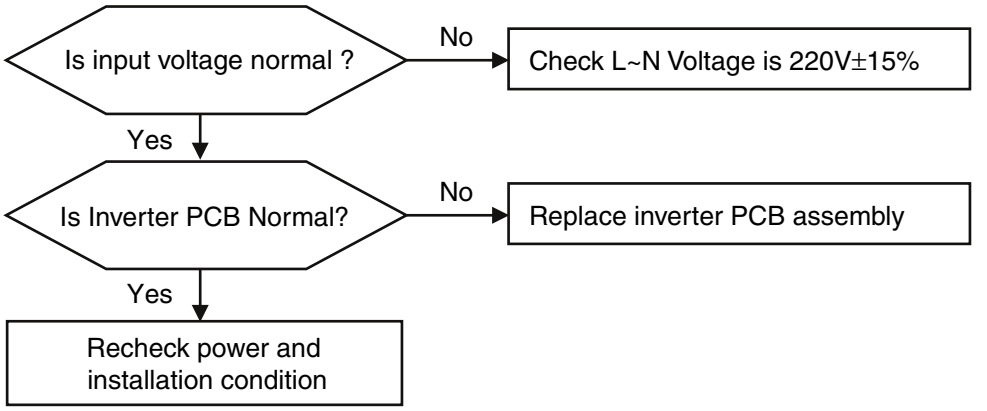
<INVERTER PCB>



<INPUT VOLTAGE Check Point>

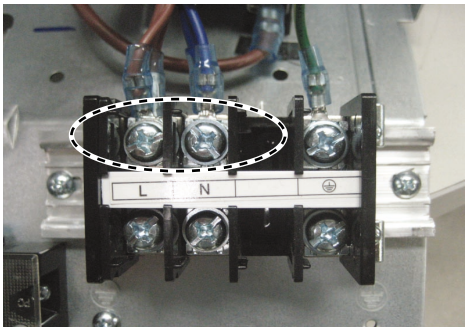
Display code	Title	Cause of error	Check point & Normal condition
40	C/T Sensor Error	• Initial current error	• Malfunction of current detection circuit. (Open / Short) • Check CT Sensor output voltage : 2.5Vdc ±5%

■ Error Diagnosis and Countermeasure Flow Chart



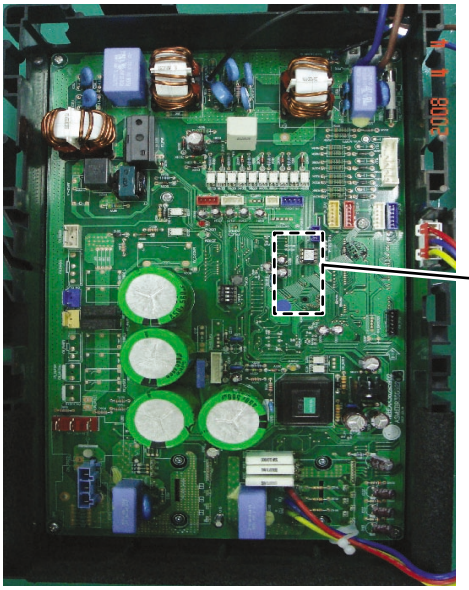
Check Point

1. Check the Input Voltage (L–N ➔ 220V±10%)
2. Check Input Voltage Sensor output voltage (2.5Vdc±10%)

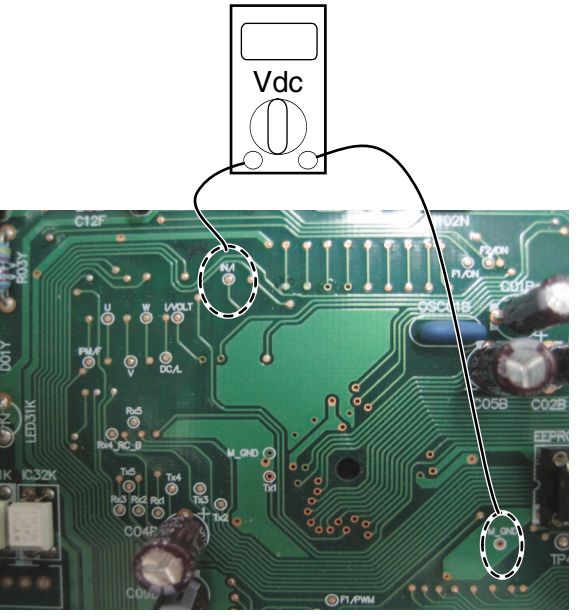


< Input Power Source Check Point >

▶ **FM27AH t/m FM41AH**

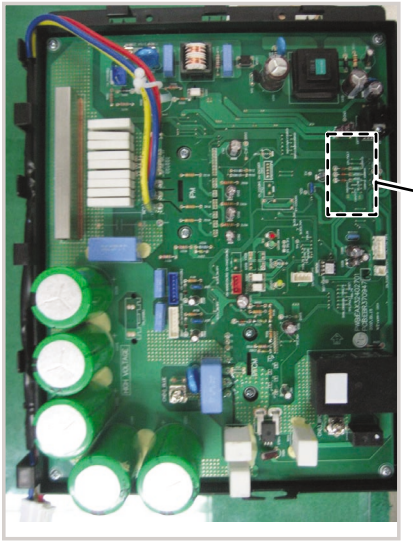


< Inverter PCB>

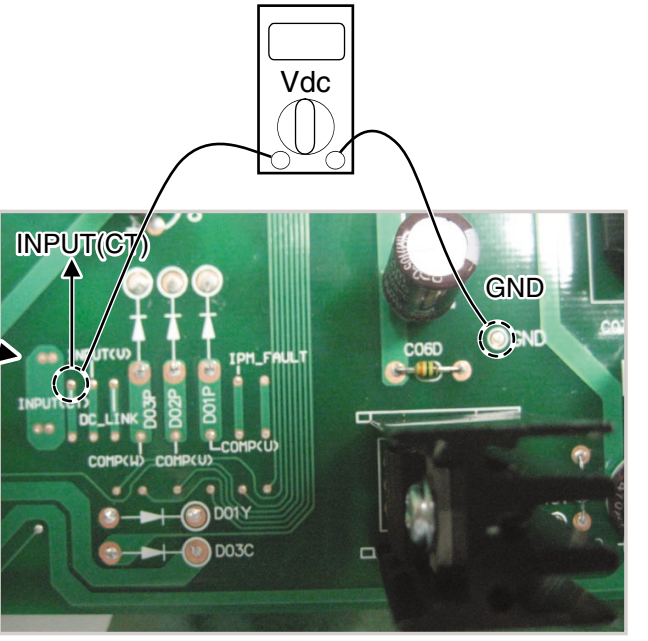


< CT Sensing Check Point >

▶ **FM49AH t/m FM57AH**

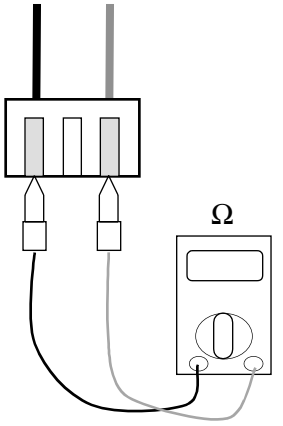


< Inverter PCB>



< CT Sensing Check Point >

Display code	Title	Cause of error	Check point & Normal condition
41	D-pipe sensor (Inverter)	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 200KΩ / at 25°C (Unplugged) • Normal voltage : 4.5Vdc / at 25°C (plugged)
44	Air sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 10KΩ / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
45	Condenser Pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 5KΩ / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
46	Suction Pipe sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 5KΩ / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)
47	D-pipe sensor (Constant)	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 200KΩ / at 25°C (Unplugged) • Normal voltage : 4.5Vdc / at 25°C (plugged)
65	Heat sink sensor	• Open / Short • Soldered poorly • Internal circuit error	• Normal resistor : 10KΩ / at 25°C (Unplugged) • Normal voltage : 2.5Vdc / at 25°C (plugged)



Check Point

1. Estimate the resistance of each sensor.(Unplugged)
2. Estimate the voltage of each sensor.(Plugged)
3. If the resistance of the sensor is 0 kΩ or ∞, then sensor is abnormal.
   If the voltage of the sensor is 0 V or 5Vdc, then sensor is abnormal.

Display code	Title	Cause of error	Check point & Normal condition
51	Over capacity	• Over capacity Combination	• Check the indoor unit capacity. • Check the combination table.
60	EEPROM Check sum	• Check sum error	• Check the PCB ASM P/No. • Check the poor soldering.

Model	Gross max. capacity	Max. single indoor unit capacity
A2UW146FA3	21k	12k
A2UW166FA0	24k	
A2UW166FA1		
A3UW186FA0		
A3UW216FA3	33k	
A4UW246FA3		18k

Check Point

• CH 51

1. Check the indoor unit capacity.

• CH 60

1. Check the insertion condition of EEPROM.
2. Check the poor soldering

Display code	Title	Cause of error	Check point & Normal condition
51	Over capacity	• Over capacity	• Check the indoor unit capacity. • Check the combination table.
60	Over capacity	• Check sum error	• Check the PCB ASM P/No. • Check the poor soldering.

Model	Gross Max. Capacity[Btu/h]	Max. Single Indoor Unit Capacity[Btu/h]
A7UW428FA3	54k	24k
A8UW488FA3	62k	
A9UW548FA3	73k	

Check Point

• CH 51

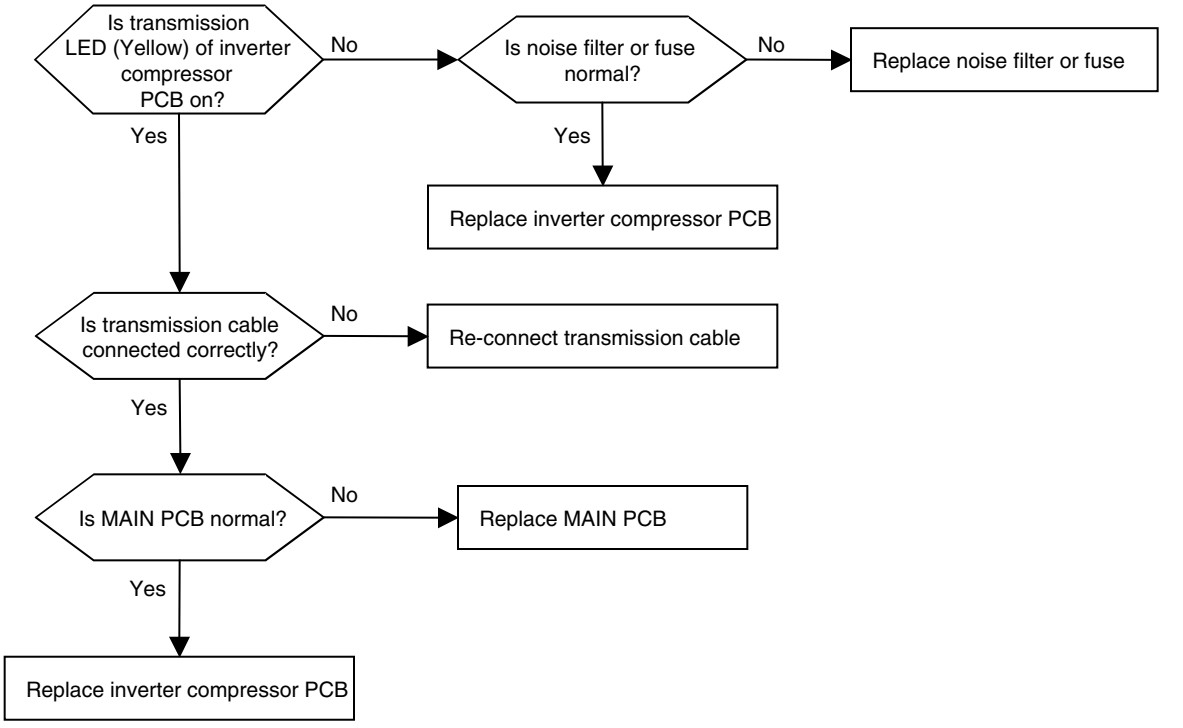
1. Check the indoor unit capacity.

• CH 60

1. Check the insertion condition of EEPROM.
2. Check the poor soldering

Display code	Title	Cause of error	Check point & Normal condition
52	Transmission error between (Inverter PCB ➔ Main PCB)	Main controller of Master unit of Master unit can't receive signal from inverter controller	1. Power cable or transmission cable is not connected 2. Defect of outdoor Main fuse/Noise Filter 3. Defect of outdoor Main / inverter PCB

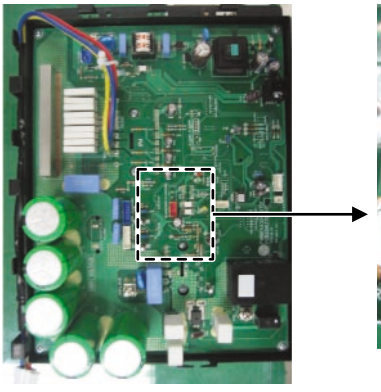
■ Error diagnosis and countermeasure flow chart

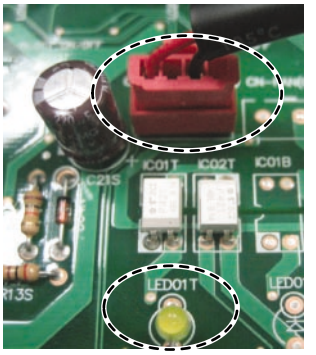


Check Point

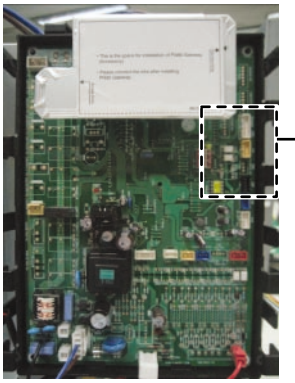
- Check the Transmission connector and LED (Main & Inverter)

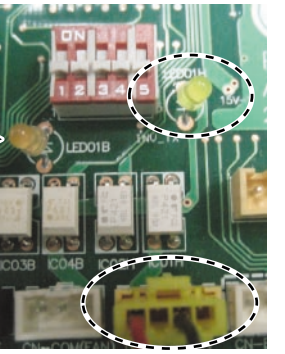
▸ 48/56k





<Inverter PCB>

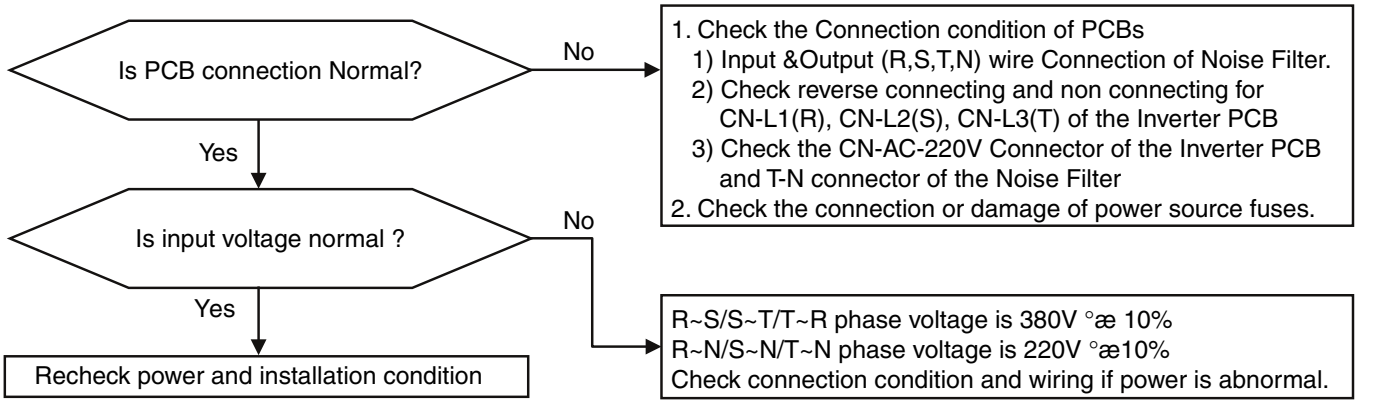


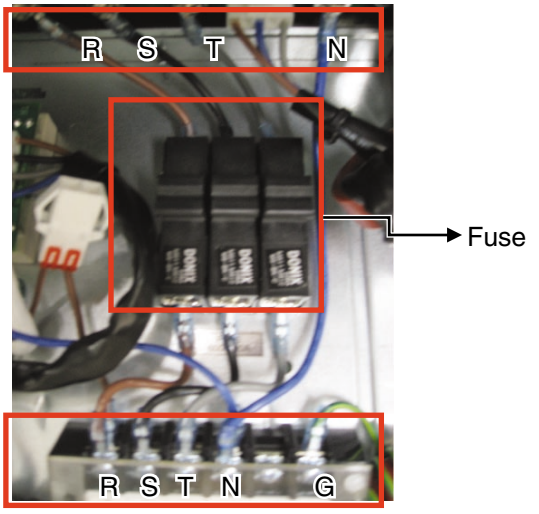


<MAIN PCB>

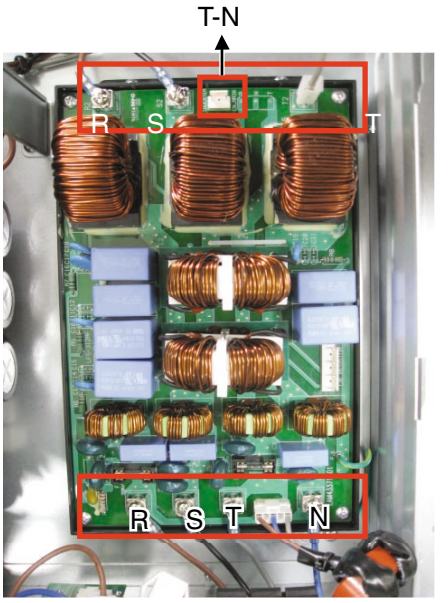
Display code	Title	Cause of error	Check point & Normal condition
54	3-phase wrong wiring of main outdoor unit	• 3-phase wrong wiring of outdoor unit (Reverse Phase /omission of phase)	• Abnormal Main PCB • No connection of CN_Phase • Changed R, S, T connection order

■ Error Diagnosis and Countermeasure Flow Chart

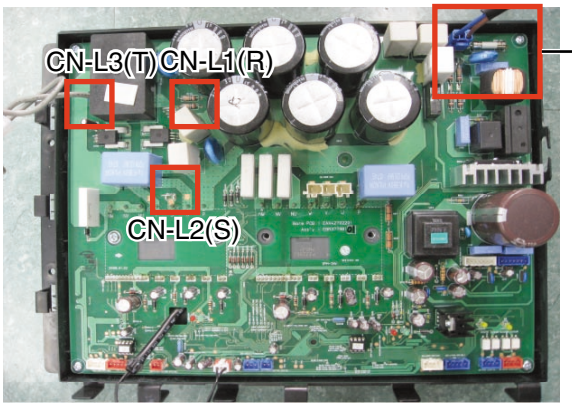




<Terminal Block&Fuse Check>



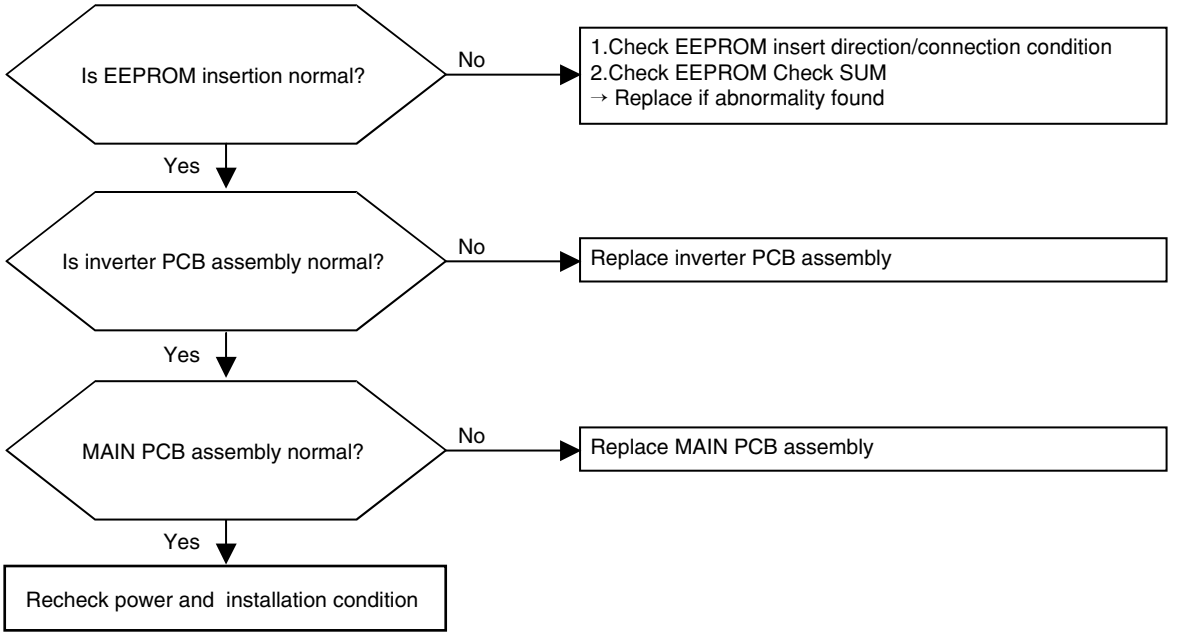
<Noise Filter Connection Check>



<INVERTER PCB Connection Check>

Display code	Title	Cause of error	Check point & Normal condition
60	Inverter PCB & Main EEPROM check sum error	EEPROM Access error and Check SUM error	1. EEPROM contact defect/wrong insertion 2. Different EEPROM Version 3. ODU Inverter & Main PCB assembly damage

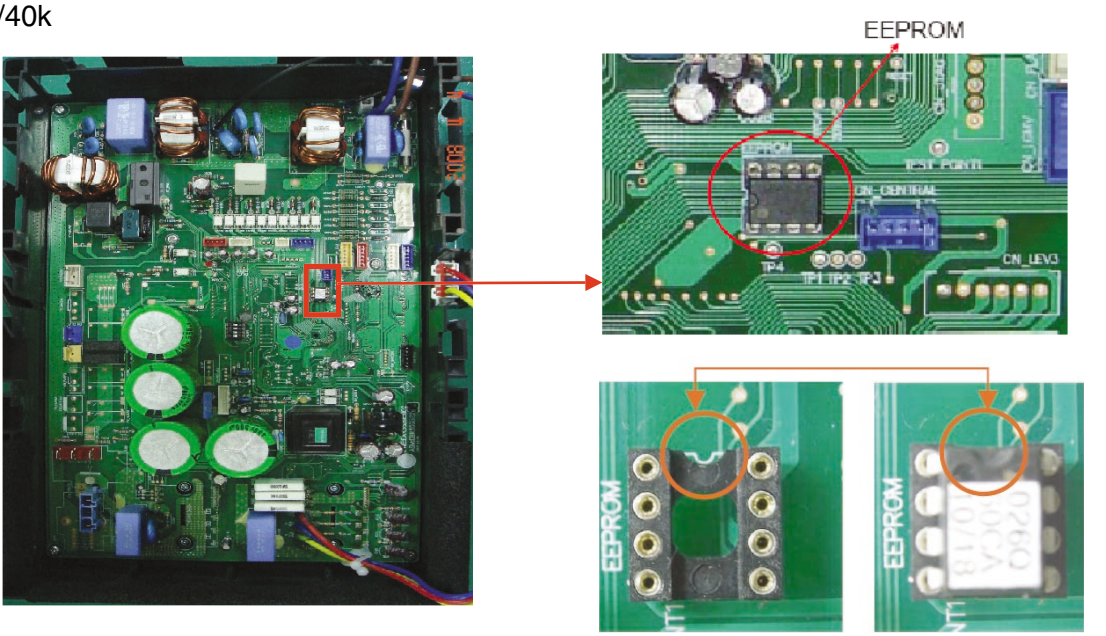
■ Error Diagnosis and Countermeasure Flow Chart



Check Point

- Check the EEPROM Check sum & Direction

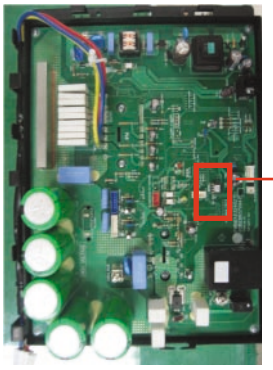
▸ 27/30/40k



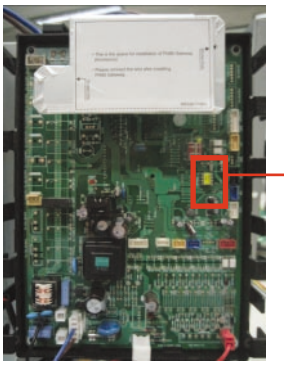
<MAIN PCB>

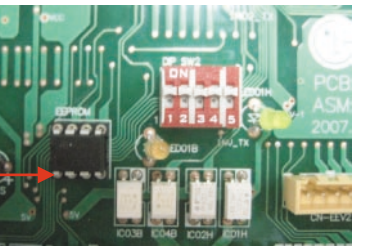
<EEPROM Direction Check Point>

▶ FM49AH t/m FM57AH

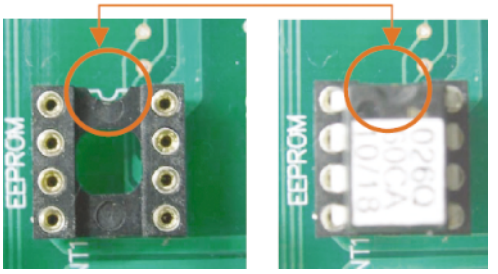


<Inverter PCB>



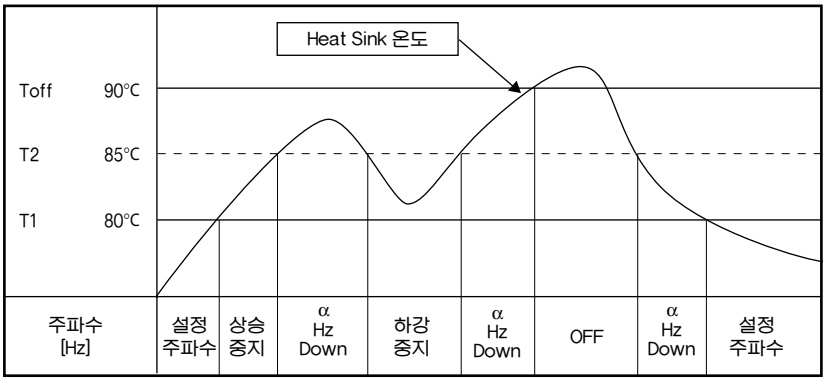


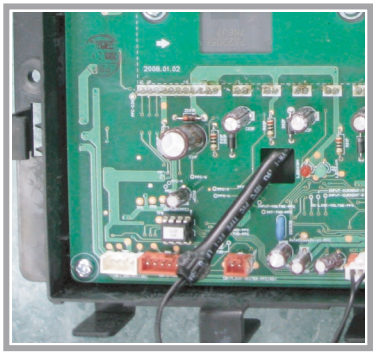
<MAIN PCB>



<EEPROM Direction Check Point>

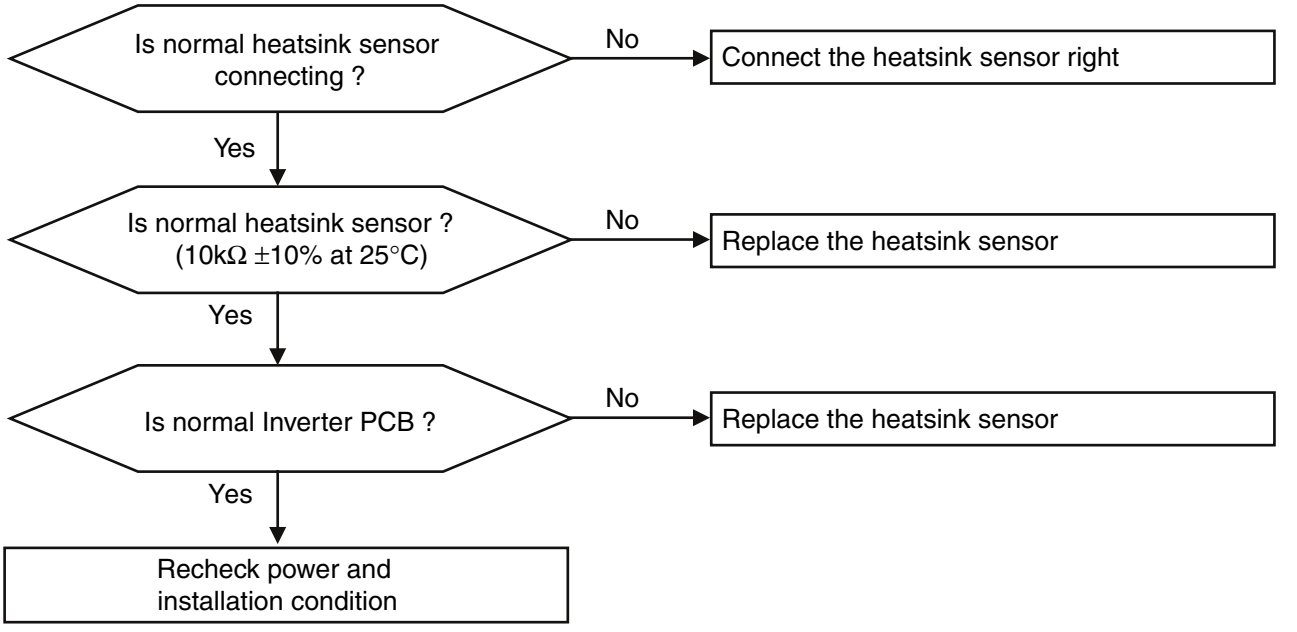
Display code	Title	Cause of error	Check point & Normal condition
61	Condenser pipe sensor temp. high	• Condenser pipe sensor detected high temp.(65°C)	• Check the load condition. • Check the sensor of Condenser pipe sensor.
62	Heat sink sensor temp. high	• Heat sink sensor detect-ed high temp.(85°C)	• Check the Heat sink sensor (10kΩ ±10% at 25°C) • Check that outdoor fan is driving rightly





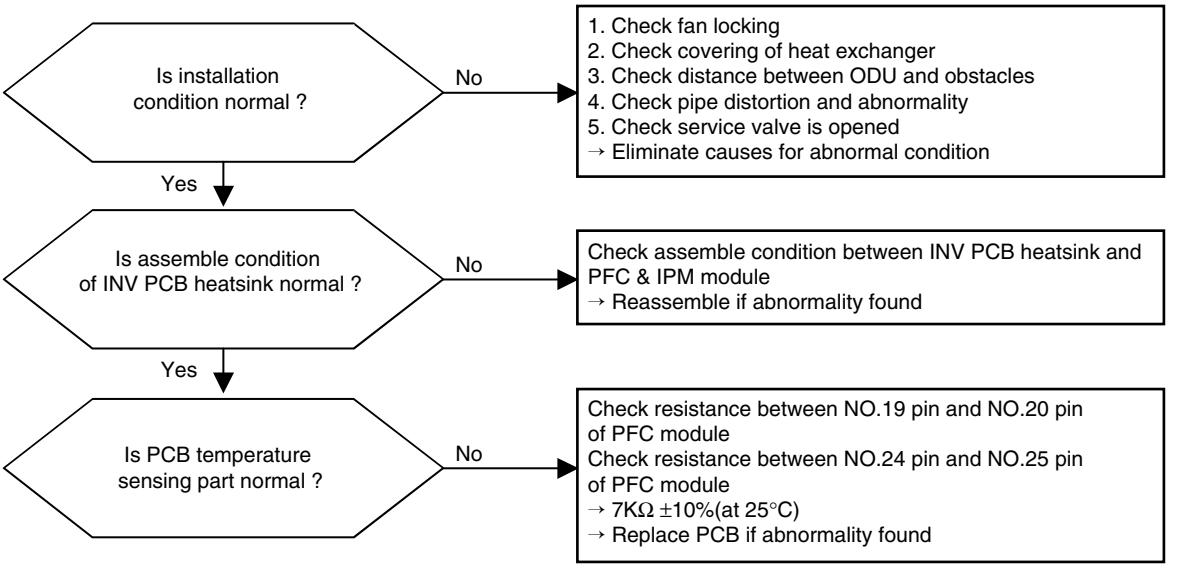
Comp frequecy control accoding to heatsink temp.

■ Comp frequency control according to heat sink temp.



Display code	Title	Cause of error	Check point & Normal condition
65	Heatsink High error	Inverter PCB heatsink sensor is open or short	1. ODU fan locking 2. Heatsink assembly of INV PCB assemble condition abnormal 3. Defect of temperature sensing circuit part defect of INV PCB

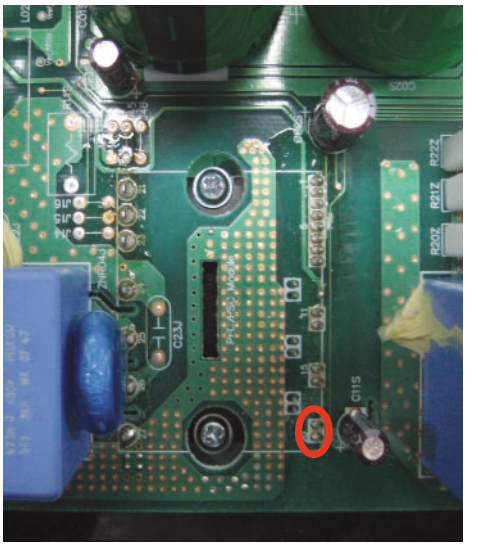
■ Error Diagnosis and Countermeasure Flow Chart



Check Point

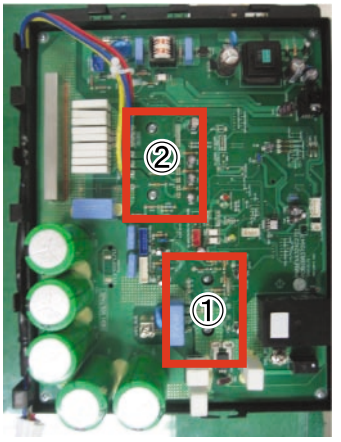
1. Check resistance between No.19 pin and NO.20 pin of PCB PFC module
2. Check resistance between No.24 pin and NO.25 pin of PCB PFC module - only 48/56k
3. Resistance value should be in 7kΩ ±10%.(at 25°C).
4. Check the PFC Module No.19, 20 and IPM Module No.24, 25 pin soldering condition.

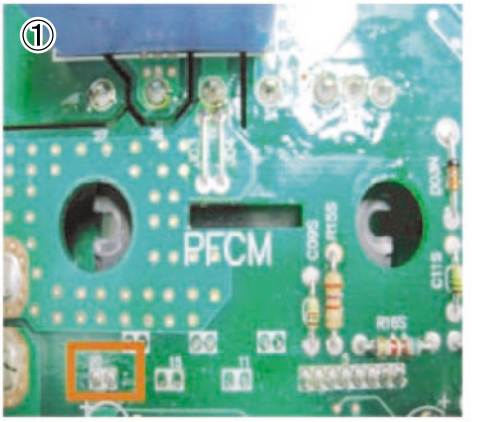
▸ FM27AH t/m FM40AH



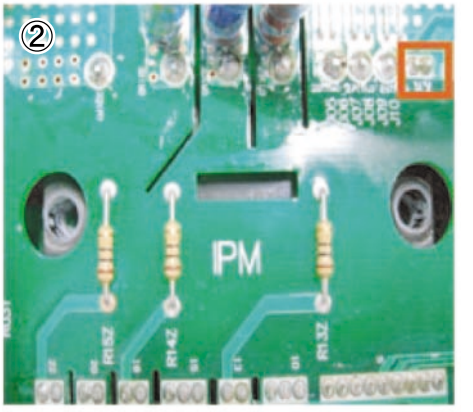
PFCM :
Measuring resistance
between No.19,20 pin

▸ FM49AH t/m FM57AH





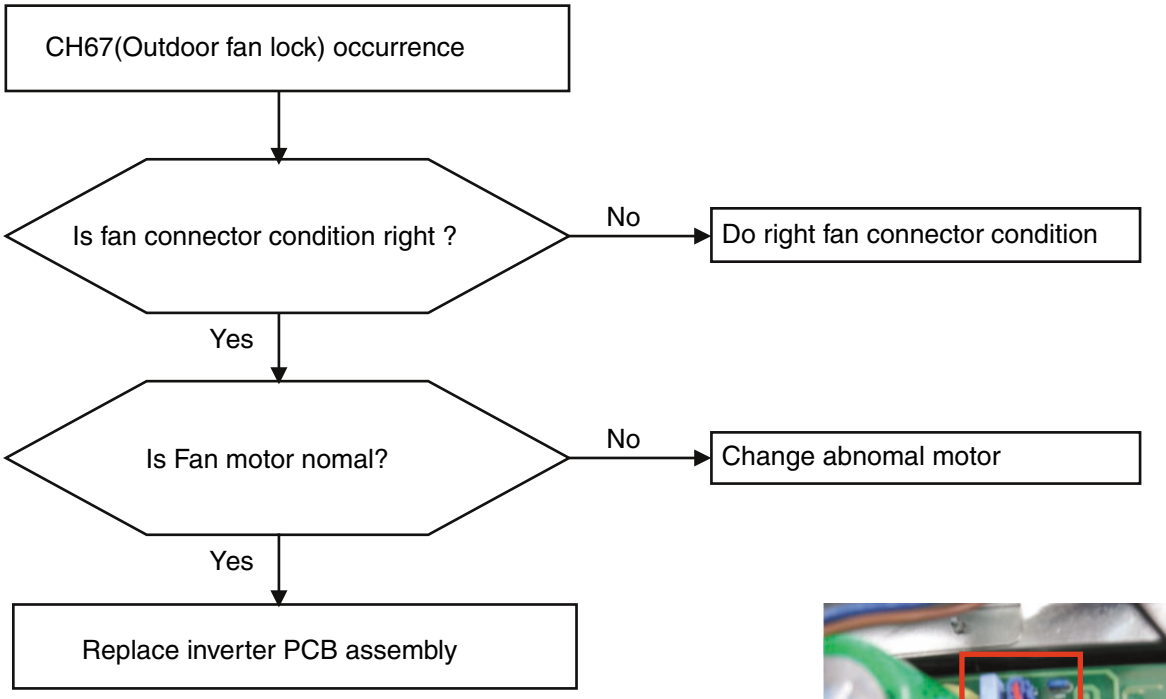
PFCM :
Measuring resistance
between No.19,20 pin

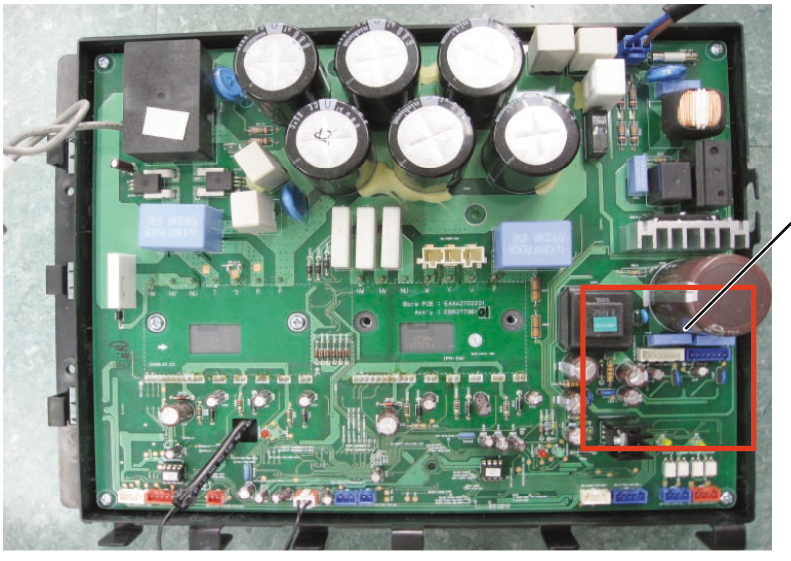


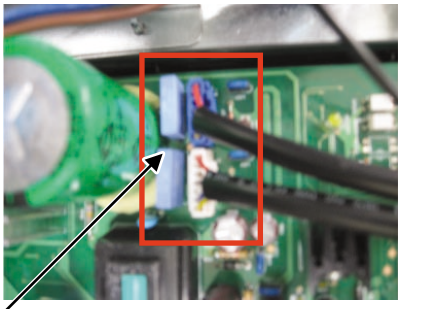
IPM :
Measuring resistance
between No.24,25 pin

Display code	Title	Cause of error	Check point & Normal condition
67	Outdoor fan lock	• Outdoor fan is not operating	• Check the fan condition. • Check the fan connector • Check the fan control part of the INVERTER PCB

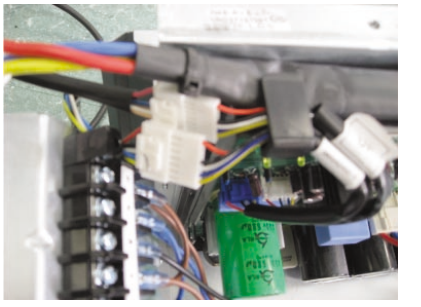
■ Error Diagnosis and Countermeasure Flow Chart







<INVERTER PCB connection>

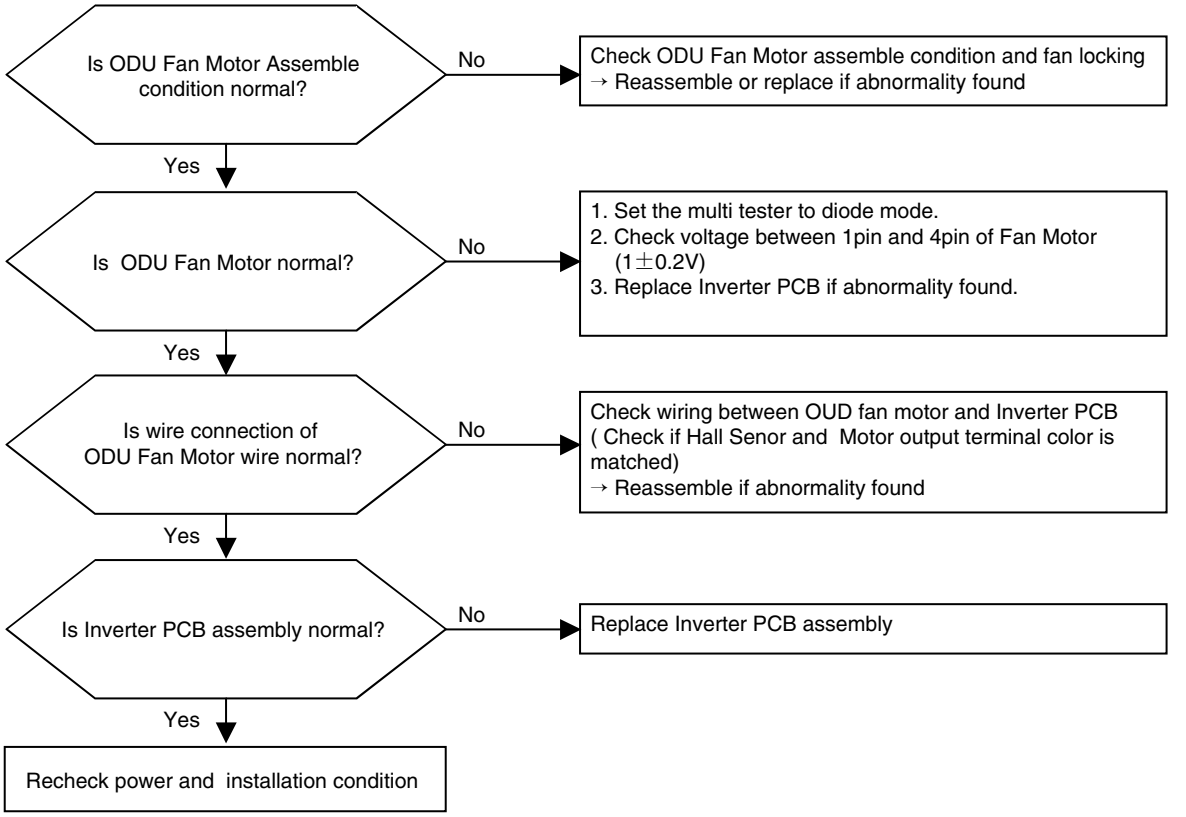


<fan motor middle connection>

<FAN Motor Connection check>

Display code	Title	Cause of error	Check point & Normal condition
67	Fan Lock Error	Fan RPM is 10RPM or less for 5 sec. when ODU fan starts or 40 RPM or less after fan starting.	1. ODU fan locking 2. Heatsink assembly of INV PCB assemble condition abnormal 3. Defect of temperature sensing circuit part defect of INV PCB

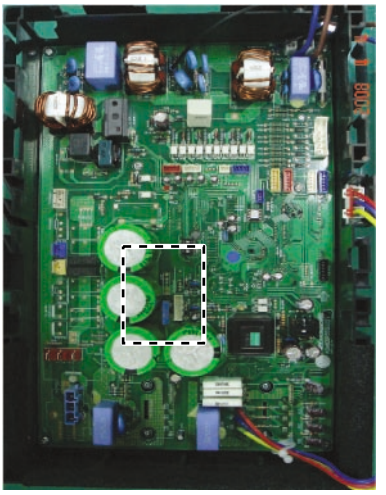
■ Error Diagnosis and Countermeasure Flow Chart

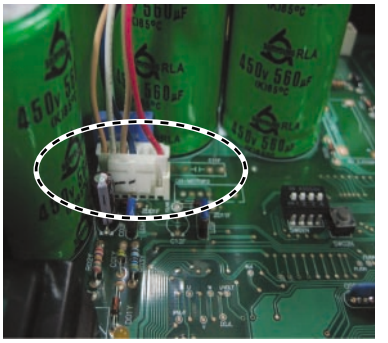


Check Point

1. Check voltage between 1pin and 4pin of Fan Mortor connector (Tester diode mode)
2. Voltage vaule should be in 1V ±0.2V.

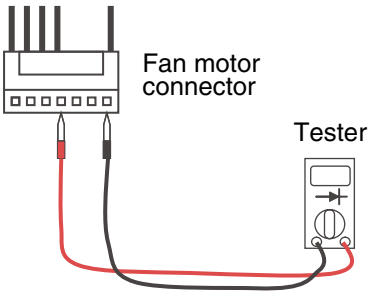
▶ FM27AH t/m FM41AH



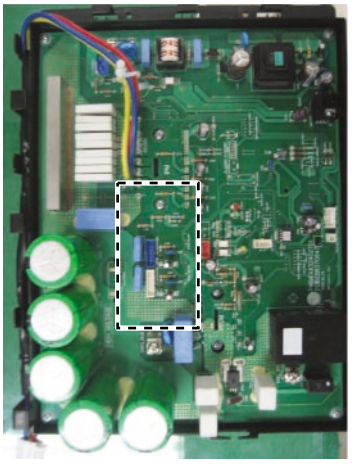


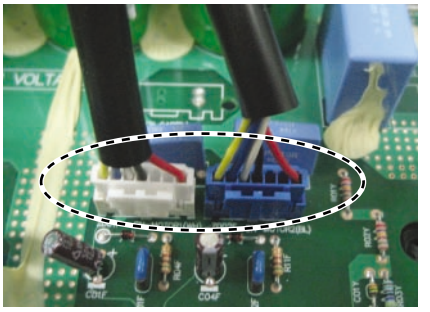
<Main PCB>

Check voltage betwen
1pin and 4pin of fan motor



▶ FM49AH t/m FM57AH

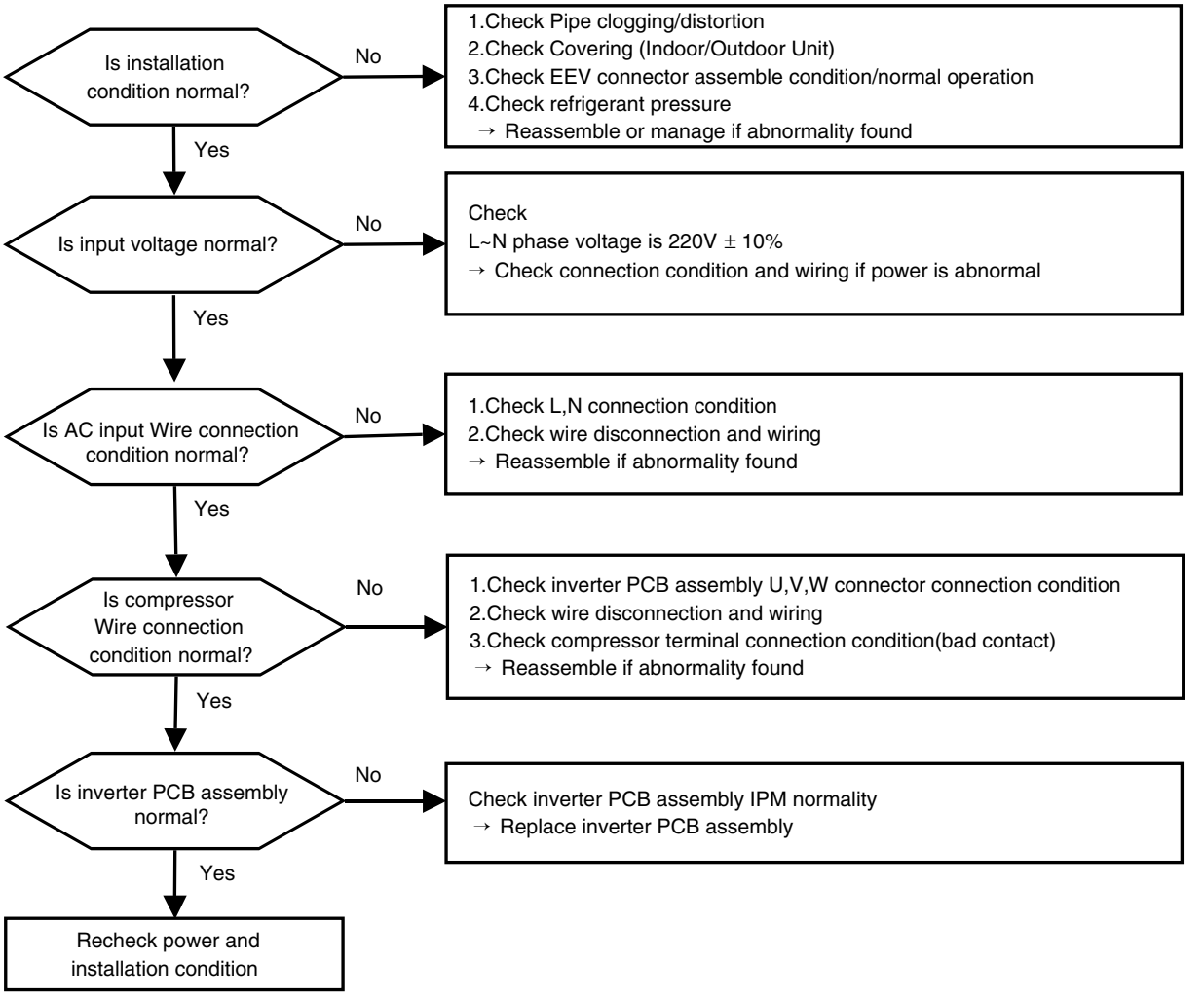




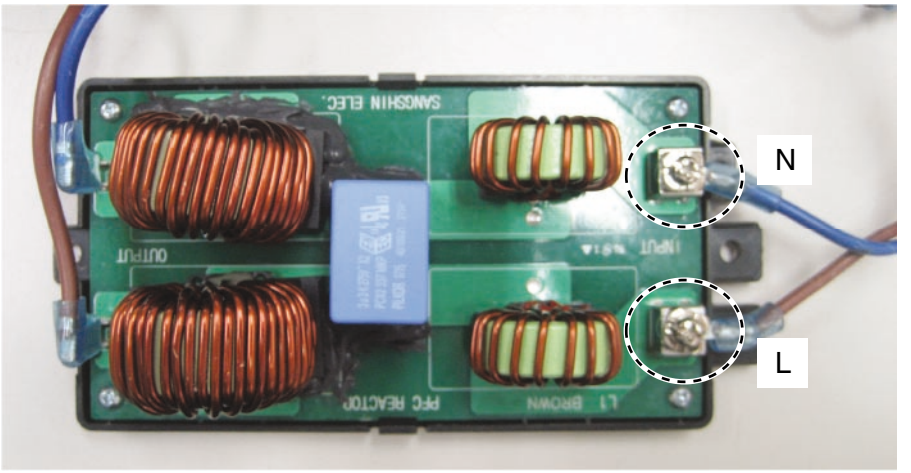
<Inverter PCB>

Display code	Title	Cause of error	Check point & Normal condition
73	AC input instant over current error (Matter of software)	Inverter PCB input power current is over 48A(peak) for 2ms	1. Overload operation (Pipe clogging/Covering/EEV defect/Ref.overcharge) 2. Compressor damage (Insulation damage/Motor damage) 3. Input voltage abnormal (L, N) 4. Power line assemble condition abnormal 5. Inverter PCB assembly damage (input current sensing part)

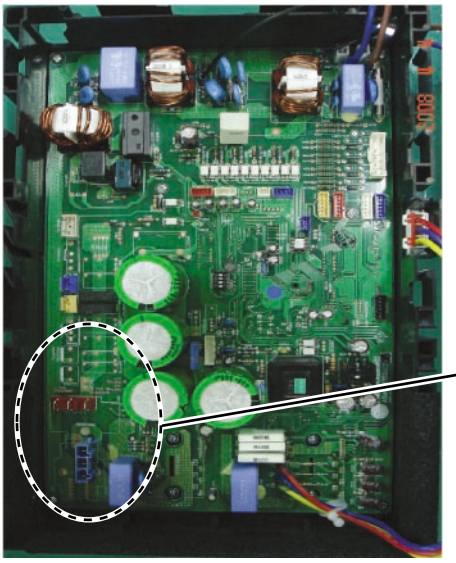
■ Error Diagnosis and Countermeasure Flow Chart

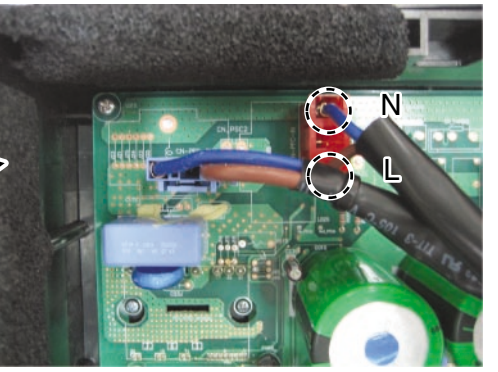


▸ 27/30/40k

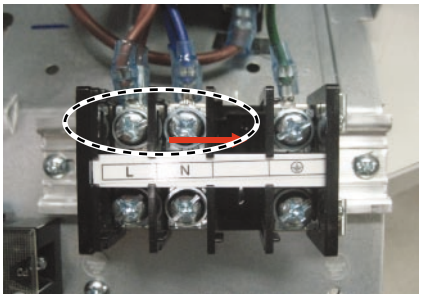


< Noise Filter wiring Check Point >



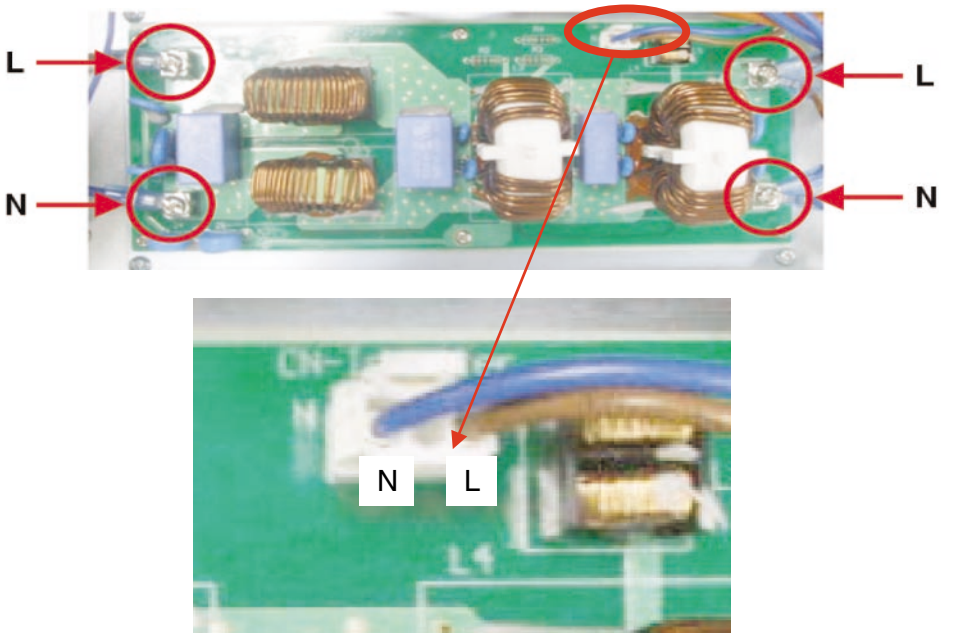


< Main PCB wiring Check Point >

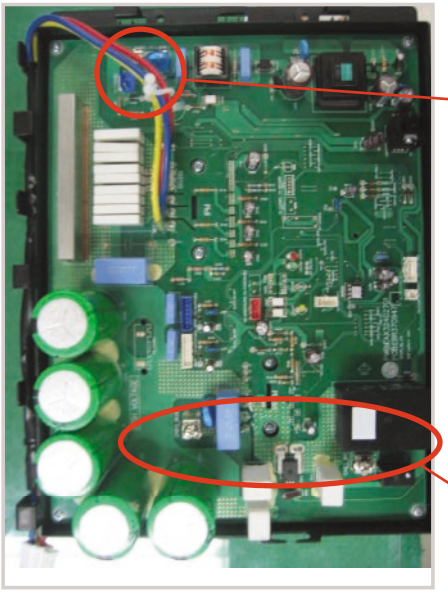


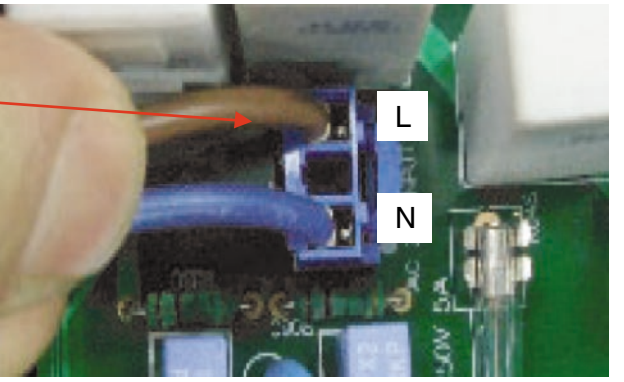
< Input Power Source Check Point >

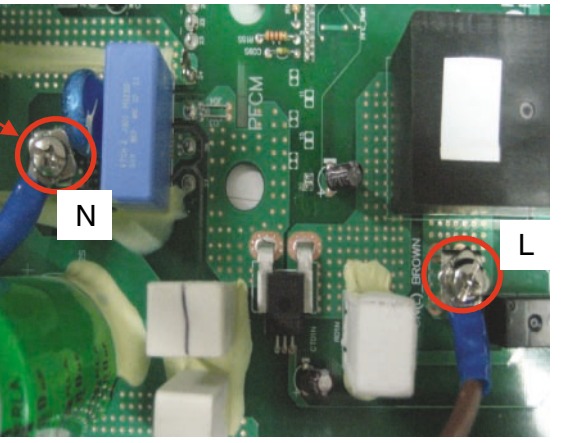
▸ 48/56k

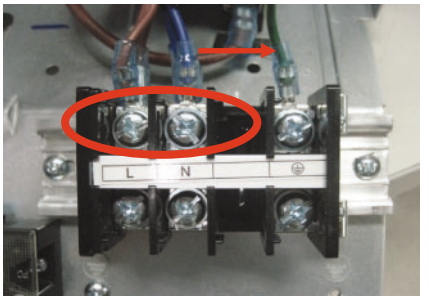


< Noise Filter wiring Check Point >









< Input Power Source Check Point >

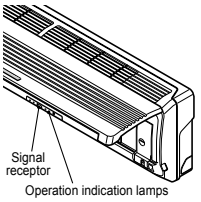
< Inverter PCB wiring Check Point >

Multi-split

Variabel (aan/uit)

M..AC/AH

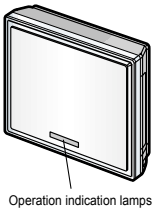
Signal Receptor



Receives the signals from the remote controller.(Signal receiving sound: two short beeps or one long beep.)

Operation Indication Lamps

⏻	On/Off	: Lights up during the system operation.
☆	Sleep Mode	: Lights up during Sleep Mode Auto operation.
◷	Timer	: Lights up during Timer operation.
✳	Defrost Mode	: Lights up during Defrost Mode or Hot Start operation (Heat pump model only)
OUT DOOR	OUTDOOR UNIT OPERATION	: Lights up during outdoor unit operation. (Cooling model only)



Receives the signals from the remote controller.(Signal receiving sound: two short beeps or one long beep.)

Operation Indication Lamps

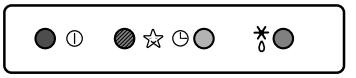
⏻	On/Off	: Lights up during the system operation.
☆	Sleep Mode	: Lights up during Sleep Mode Auto operation.
◷	Timer	: Lights up during Timer operation.
✳	Defrost Mode	: Lights up during Defrost Mode or Hot Start operation.(Heat pump model only)
⊛	Outdoor unit operation	: Lights up during outdoor unit operation.(Cooling model only)
)))	PLASMA	: Indicate PLASMA purifier operation.

Self-diagnosis Function

■ Error Indicator

- The function is to self-diagnoisis airconditioner and express the troubles identifically if there is any trouble.
- Error mark is ON/OFF for the operation LED of evaporator body in the same manner as the following table.
- If more than two troubles occur simultaneously, primarily the highest trouble fo error code is expressed.
- After error occurrence, if error is released, error LED is also released simultaneously.
- To operate again on the occurrence of error code, be sure to turn off the power and then turn on.
- Having or not of error code is different from Model.

Error Code	Error LED (Indoor body operation LED)	Error contents	SVC check point
1	(once) 3sec 3sec 3sec 5sec	• Indoor air temperature thermistor open/short.	• Indoor air TH ass'y check
2	(twice) 3sec 3sec	• Indoor inlet pipe temperature thermistor open/short.	• Indoor inlet pipe TH ass'y check
5	(5times) 3sec	• Poor communication	• Communication line/circuit
6	(6times) 3sec	• Indoor outlet pipe temperature thermistor open/shor	• Indoor outlet pipe TH ass'y check
7	(7times) 3sec	• Defferent Operation (Simultanueous operation of cooling and heating.	• Operate indoor units only heating or cooling mode.
9	(9times) 3sec	• Indoor EEP ROM data (Art type only)	• Replace main PCB DC ASM
44	3sec 3sec	• Outdoor air temperature thermistor open/short	• Outdoor air TH ass'y check
45	3sec	• Outdoor pipe themperature thermistor open/short	• Outdoor pipe TH ass'y check
51	3sec 3sec	• Overload combination	• Indoor unit combination check (Refer to Max. capacity)



☆ : ten digits
⏻ : one digits

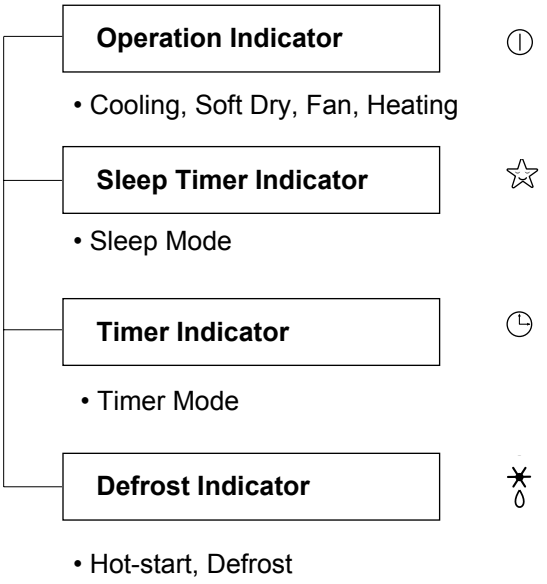
Multi-split

Multi-split tot 2005

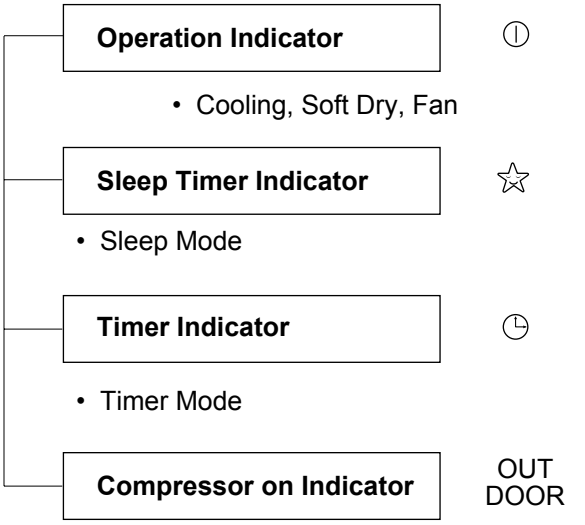
A2-C..
A3-C..
A2-H..
A3-H..
LM..

Display Function

1. Heating Model



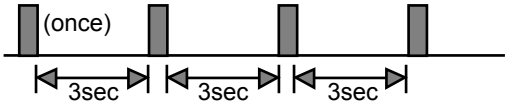
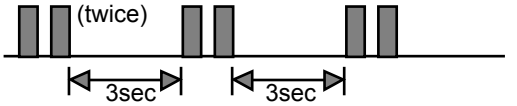
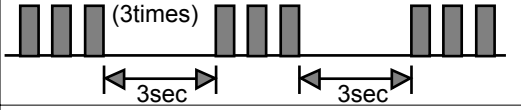
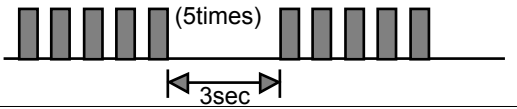
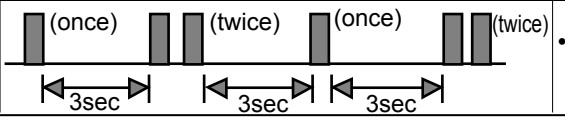
2. Cooling Model



Self-diagnosis Function

■ Error Indicator

- The function is to self-diagnoisis airconditioner and express the troubles identifically if there is any trouble.
- Error mark is ON/OFF for the operation LED of evaporator body in the same manner as the following table.
- If more than two troubles occur simultaneously, primarily the highest trouble fo error code is expressed.
- After error occurrence, if error is released, error LED is also released simultaneously.
- To operate again on the occurrence of error code 12, be sure to pull out power cord and then re-insert.
- Having or not of error code is different from Model.

Error Code	Error LED (Indoor body operation LED)	Error contents	SVC check point
1		• Indoor suction temperature thermistor open/short. • Indoor pipe temperature thermistor open/short.	• Indoor TH ass'y check
2		• Outdoor suction temperature thermistor open/short. • Outdoor pipe temperature thermistor open/short.	• Outdoor TH ass'y check
3		• Abnormal operation of multi product. (Simultanueous operation of cooling and heating)	• Resetting of remocon operating mode
5		• Poor communication	• Communication line/circuit check
12		• Misconnection of connecting cables	• Primarily check refrigerant pressure • Connecting pipe check • Connecting cable check

RAC

Standaard wandunit (aan/uit & Inverter)
Art Cool Deluxe (aan/uit & Inverter) (hoge wand)
Art Cool Panel (aan/uit & Inverter)

RAC

Standaard wandunit (aan/uit)

Alle typen/uitvoeringen o.a:

LS-J.. / LS-K.. / LS-L..
S..ACL / S..AH / S..ACP / S..AHP
G..AH

ART COOL Panel / Deluxe (aan/uit)

LS-P.... ..
A09/12/18AH*
C07/09/12AH*

Display Function

1. Heating Model

Operation Indicator

- Cooling, Soft Dry, Fan, Heating

Deicer Indicator

- Hot-start, Deice

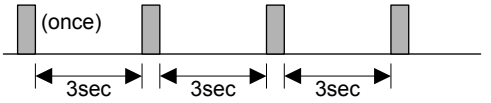
2. Cooling Model

Operation Indicator

- Cooling, Soft Dry, Fan

Compressor on Indicator — OUT DOOR

Self-diagnosis Function

Error Code	Error Display LED (Indoor body operation LED)	Error contents	SVC check point
1		• Indoor room temperature thermistor open/short • Indoor pipe temperature thermistor open/short.	• Indoor Thermistor assembly check

RAC

Standaard wandunit Inverter

LS-N....
LS-Q....
LS-R....
S..AN
S..AW

Self-diagnosis function

1. The malfunction indicator of indoor (see the operating LED of the INDOOR)

Error Code	The cause of malfunction	Malfunction indicator	The operating state
①	Indoor TH. is short or open.	The operating LED will be blinking once.	Keep operating state.
②	Outdoor TH. is short or open.	The operating LED will be blinking twice.	Keep operating state.
④	Temp. of Heat sink is over 95°C. /Heat sink TH. is short or open.	The operating LED will be blinking 4 times.	Restart compressor when Heat sink Temp is 85°C below.
⑤	Comunication error (serial comunication).	The operating LED will be blinking 5 times.	The operation is off(enable to restart by remote controller).
⑥	DC peak error.	The operating LED will be blinking 6 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑦	Running current is over-loaded. (CT2)	The operating LED will be blinking 7 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑧	Indoor fan lock error (BLDC fan model)	The operating LED will be blinking 8 times.	The operation is off(enable to restart by remote controller).
⑨	Outdoor fan lock error (BLDC fan model)	The operating LED will be blinking 9 times.	The operation is off(enable to restart by remote controller).
⑩	D-PIPE TH is short or open.	The operating LED will be blinking 10 times.	Compressor will be turned off immediately. (restart compressor when D-PIPE TH. is recovred)

✵ Error code ⑥, ⑦ can't be operated unless the power cord is removed.

2. The malfunction indicator of outdoor (see the LED01M on the outdoor PCB ass'y)

Error Code	The cause of malfunction	Malfunction indicator	The operating state
②	Indoor TH. is short or open.	The LED01M will be blinking twice.	Keep operating state.
④	Temp. of Heat sink is over 95°C, or Heat sink TH. is shortor open.	The LED01M will be blinking 4 times.	Restart compressor when heat sink Temp. is 85°C below.
⑤	Comunication error (serial comunication).	The LED01M will be blinking 5 times.	The operation is off(enable to restart by remote controller).
⑥	DC peak error.	The LED01M will be blinking 6 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑦	Running current is over-loaded.	The LED01M will be blinking 7 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑨	Outdoor fan lock error (BLDC fan model)	The LED01M will be blinking 9 times.	The operation is off(enable to restart by remote controller).
⑩	D-PIPE TH is short or open.	The LED01M will be blinking 10 times.	Compressor will be turned off immediately. (restart compressor when D-PIPE TH. is recovered)

RAC

ART COOL Deluxe Inverter

C09AW*
C12AW*

Self-diagnosis function

1. The malfunction indicator of indoor (see the operating LED of the INDOOR)

Error Code	The cause of malfunction	Malfunction indicator	The operating state
①	Indoor TH. is short or open.	The operating LED will be blinking once.	Keep operating state.
②	Outdoor TH. is short or open.	The operating LED will be blinking twice.	Keep operating state.
④	Temp. of Heat sink is over 95°C. /Heat sink TH. is short or open.	The operating LED will be blinking 4 times.	Restart compressor when Heat sink Temp is 85°C below.
⑤	Comunication error (serial comunication).	The operating LED will be blinking 5 times.	The operation is off(enable to restart by remote controller).
⑥	DC peak error.	The operating LED will be blinking 6 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑦	Running current is over-loaded. (CT2)	The operating LED will be blinking 7 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑧	Indoor fan lock error (BLDC fan model)	The operating LED will be blinking 8 times.	The operation is off(enable to restart by remote controller).
⑨	Outdoor fan lock error (BLDC fan model)	The operating LED will be blinking 9 times.	The operation is off(enable to restart by remote controller).
⑩	D-PIPE TH is short or open.	The operating LED will be blinking 10 times.	Compressor will be turned off immediately. (restart compressor when D-PIPE TH. is recovred)

✵ Error code ⑥, ⑦ can't be operated unless the power cord is removed.

2. The malfunction indicator of outdoor (see the LED01M on the outdoor PCB ass'y)

Error Code	The cause of malfunction	Malfunction indicator	The operating state
②	Indoor TH. is short or open.	The LED01M will be blinking twice.	Keep operating state.
④	Temp. of Heat sink is over 95°C, or Heat sink TH. is shortor open.	The LED01M will be blinking 4 times.	Restart compressor when heat sink Temp. is 85°C below.
⑤	Comunication error (serial comunication).	The LED01M will be blinking 5 times.	The operation is off(enable to restart by remote controller).
⑥	DC peak error.	The LED01M will be blinking 6 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑦	Running current is over-loaded.	The LED01M will be blinking 7 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑨	Outdoor fan lock error (BLDC fan model)	The LED01M will be blinking 9 times.	The operation is off(enable to restart by remote controller).
⑩	D-PIPE TH is short or open.	The LED01M will be blinking 10 times.	Compressor will be turned off immediately. (restart compressor when D-PIPE TH. is recovered)

RAC

ART COOL Deluxe Inverter

C18AW*
C24AW*

Self-diagnosis function

1. The malfunction indicator of indoor (see the operating LED of the INDOOR)

Error Code	The cause of malfunction	Malfunction indicator	The operating state
①	Indoor TH. is short or open.	The display show "C1"	Keep operating state.
②	Outdoor TH. is short or open.	The display show "C2"	Keep operating state.
④	Temp. of Heat sink is over 95°C. /Heat sink TH. is short or open.	The display show "C4"	Restart compressor when Heat sink Temp is 85°C below.
⑤	Comunication error (serial comunication).	The display show "C5"	The operation is off(enable to restart by remote controller).
⑥	DC peak error.	The display show "C6"	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑦	Running current is over-loaded. (CT2)	The display show "C7"	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑧	Indoor fan lock error (BLDC fan model)	The display show "C8"	The operation is off(enable to restart by remote controller).
⑨	Outdoor fan lock error (BLDC fan model)	The display show "C9"	The operation is off(enable to restart by remote controller).
⑩	D-PIPE TH is short or open.	The display show "CA"	Compressor will be turned off immediately. (restart compressor when D-PIPE TH. is recovred)

✵ Error code ⑥, ⑦ can't be operated unless the power cord is removed.

2. The malfunction indicator of outdoor (see the LED01M on the outdoor PCB ass'y)

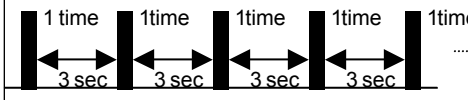
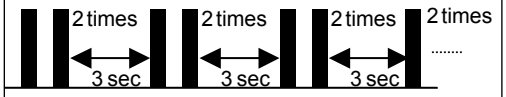
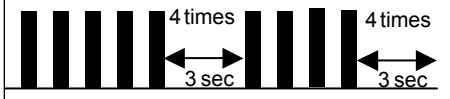
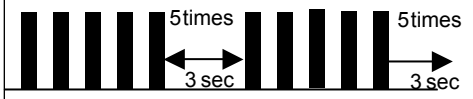
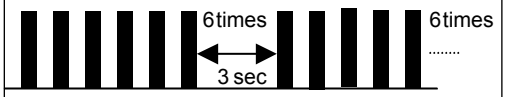
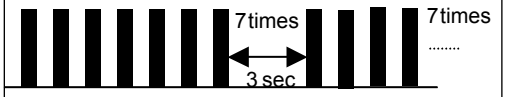
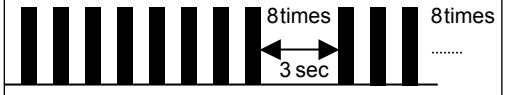
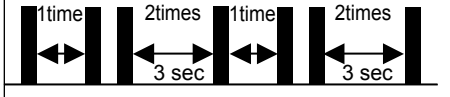
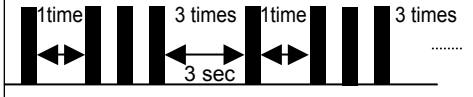
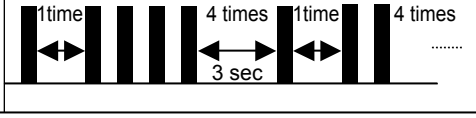
Error Code	The cause of malfunction	Malfunction indicator	The operating state
②	Indoor TH. is short or open.	The LED01M will be blinking twice.	Keep operating state.
④	Temp. of Heat sink is over 95°C, or Heat sink TH. is shortor open.	The LED01M will be blinking 4 times.	Restart compressor when heat sink Temp. is 85°C below.
⑤	Comunication error (serial comunication).	The LED01M will be blinking 5 times.	The operation is off(enable to restart by remote controller).
⑥	DC peak error.	The LED01M will be blinking 6 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑦	Running current is over-loaded.	The LED01M will be blinking 7 times.	Compressor will be turned off immediately. (not enable to restart by remote controller)
⑨	Outdoor fan lock error (BLDC fan model)	The LED01M will be blinking 9 times.	The operation is off(enable to restart by remote controller).
⑩	D-PIPE TH is short or open.	The LED01M will be blinking 10 times.	Compressor will be turned off immediately. (restart compressor when D-PIPE TH. is recovered)

RAC

ART COOL Panel Inverter

A09AW
A12AW
A09AW1
A12AW1

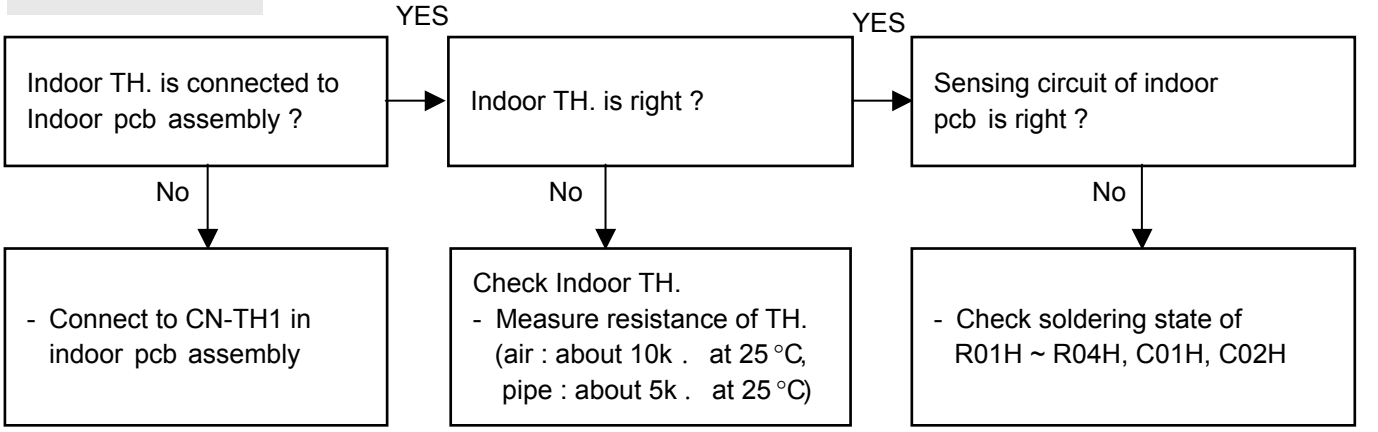
Self diagnosis Function

Error Code	Error Indicator	Cause of Error	Display		Indoor Operation
			Indoor	Outdoor	
1		• Indoor Temp. sensor error - Sensor open or short	O		ON
2		• Outdoor Temp. sensor error - Sensor open or short	O	O	ON
4		• Heat Sink sensor error - Sensor open or short - Heat Sink temp is over 95.	O	O	ON
5		• Communication error	O	O	OFF
6		• DC Peak error	O	O	SHUT DOWN
7		• Over current error (CT2)	O	O	SHUT DOWN
8		• Indoor fan lock error (BLDC fan model only)	O		OFF
9		• Outdoor fan lock error (BLDC fan model only)	O	O	OFF
10		• D-Pipe TH. is short or open.	O	O	ON
12		• EEPROM Error - EEPROM Check sum Error		O	ON
13		• PSC Error - PSC Fault Error		O	ON
14		• Comp Phase Current Error (180 Driver Comp Control Model Only)		O	ON

Troubleshooting for error code

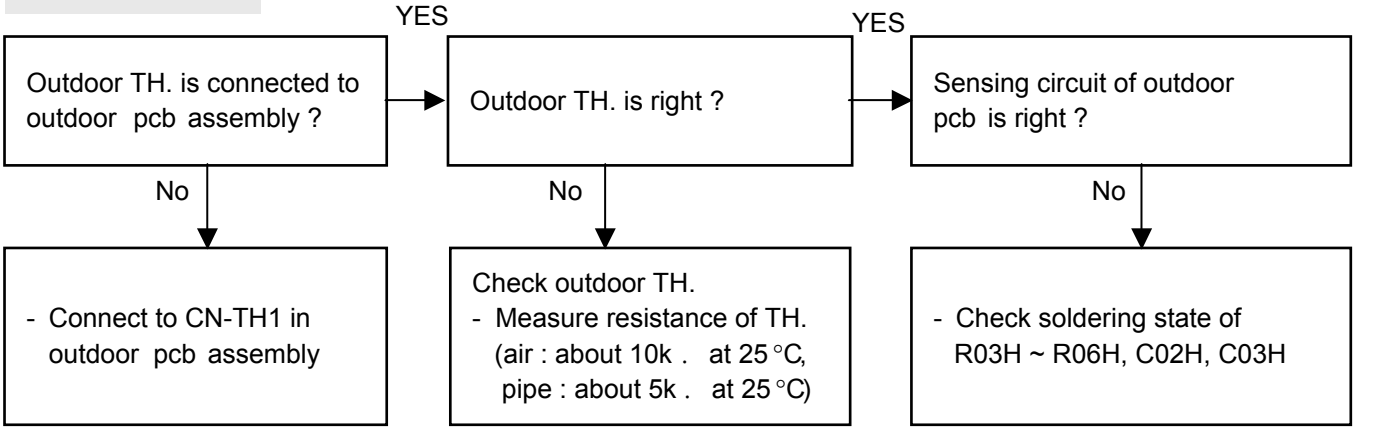
Error code	Description	Cause of error
1	Indoor TH. is short or open	• Indoor TH. (sensor) is short or open • Indoor TH. (sensor) is not connected to the indoor pcb assembly • Damage or defect on the sensing circuit of indoor pcb assembly. (R01H, R02H, R03H, R04H, C01H, C02H)

Check flow



Error code	Description	Cause of error
2	Outdoor TH. is short or open	• Outdoor TH. (sensor) is short or open • Outdoor TH. (sensor) is not connected to the outdoor pcb assembly • Damage or defect on the sensing circuit of outdoor pcb assembly. (R03H~R06H, C02H, C03H)

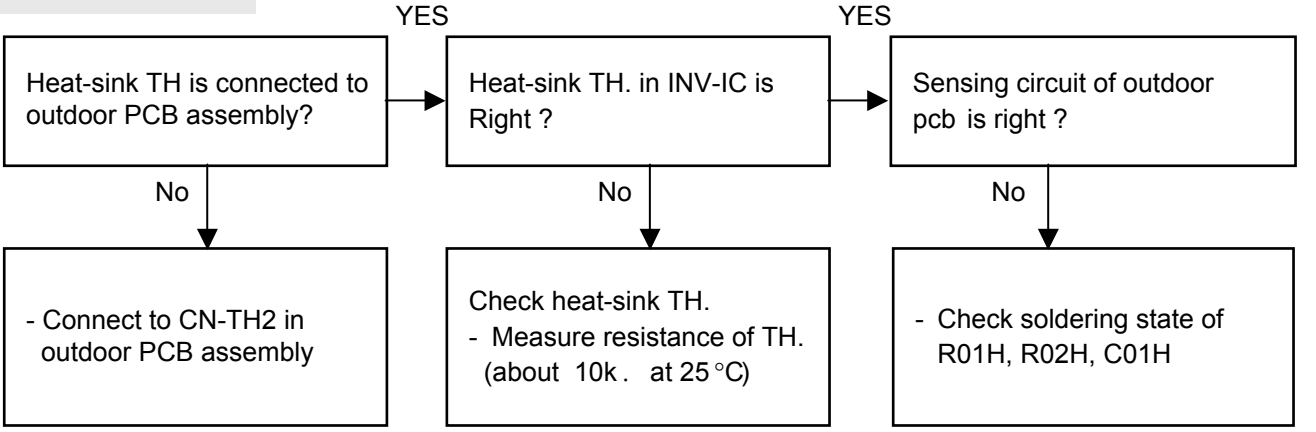
Check flow



• 9K / 12K

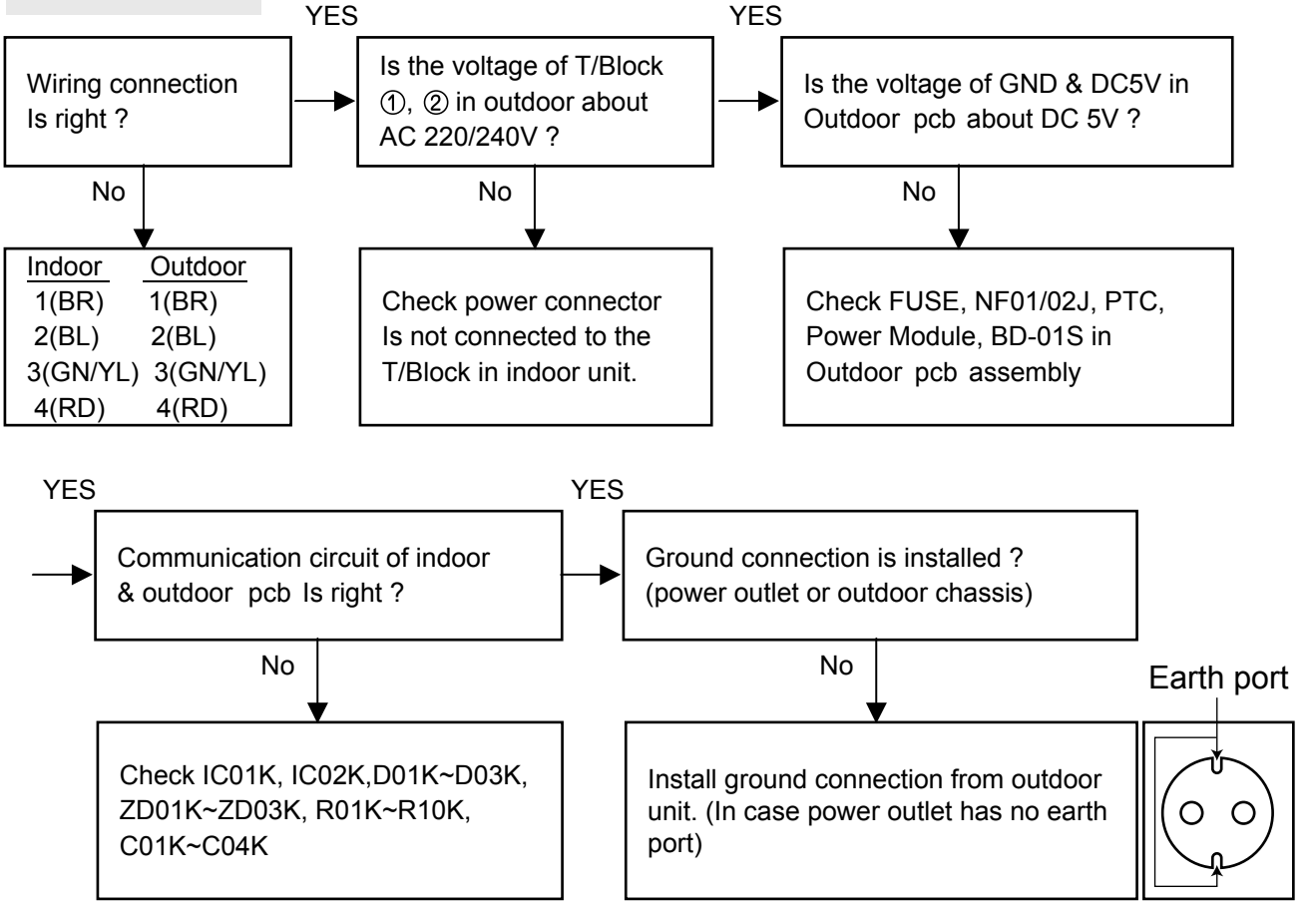
Error code	Description	Cause of error
4	Heat-sink Temp. is over 95°C Heat-sink TH. is open or short	• Heat-sink TH. is damaged(short or open). • Heat-sink Temp. is over 95°C • Damage or defect on the sensing circuit of outdoor pcb assembly. (R01H, R02H, C01H)

Check flow



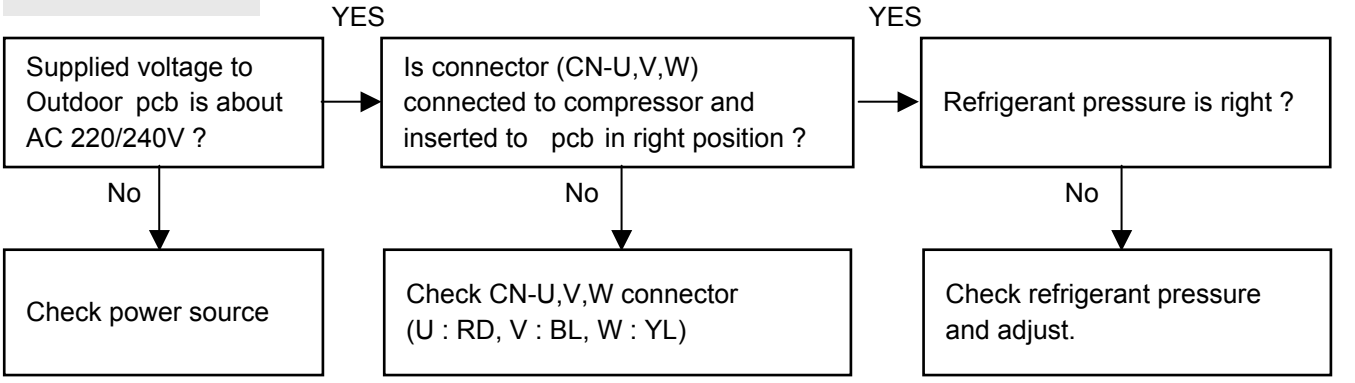
Error code	Description	Cause of error
5	Communication Error	• Wrong or missing wiring between indoor and outdoor unit cable • Defect of communication components in indoor pcb assembly • Defect of communication components in outdoor pcb assembly • Defect of power supply components in outdoor pcb assembly • No ground connection in air conditioner unit (affected by noise in power source)

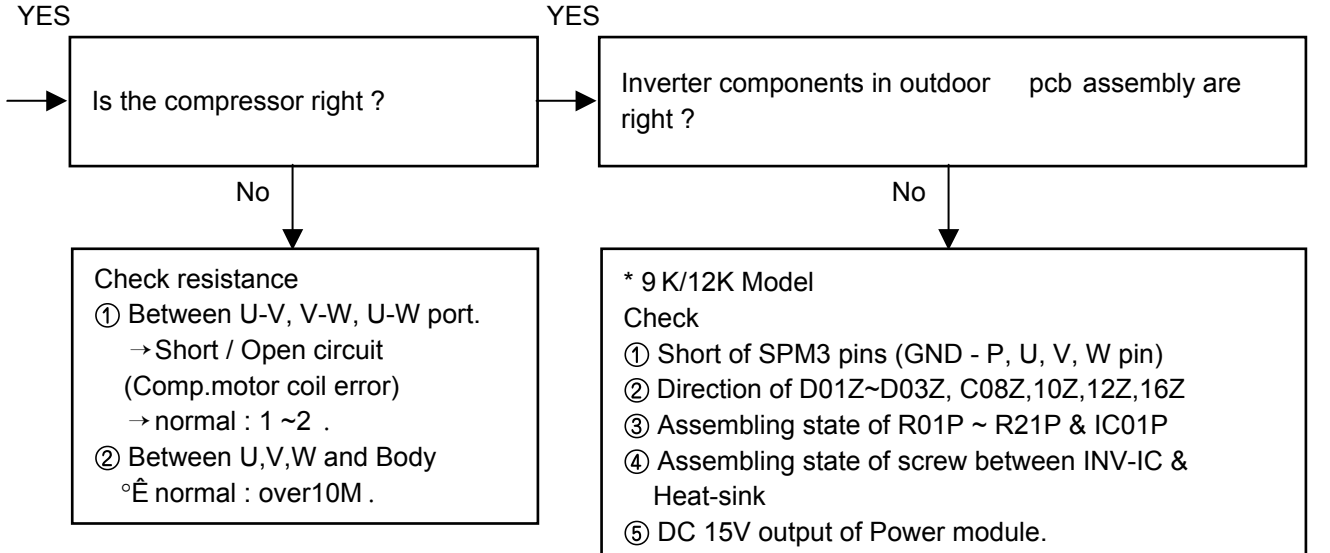
Check flow

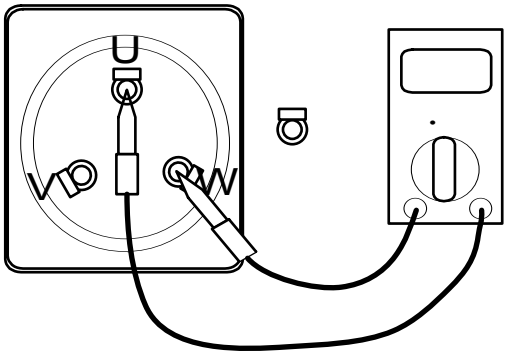


Error code	Description	Cause of error
6	DC Peak Error	• Supplied power is not normal • Comp Connector (CN-U,V,W) is disconnected or inserted to wrong position • Compressor is damaged (coil short) → replace compressor • Too much Refrigerant • Defect in outdoor pcb assembly → replace pcb assembly

Check flow

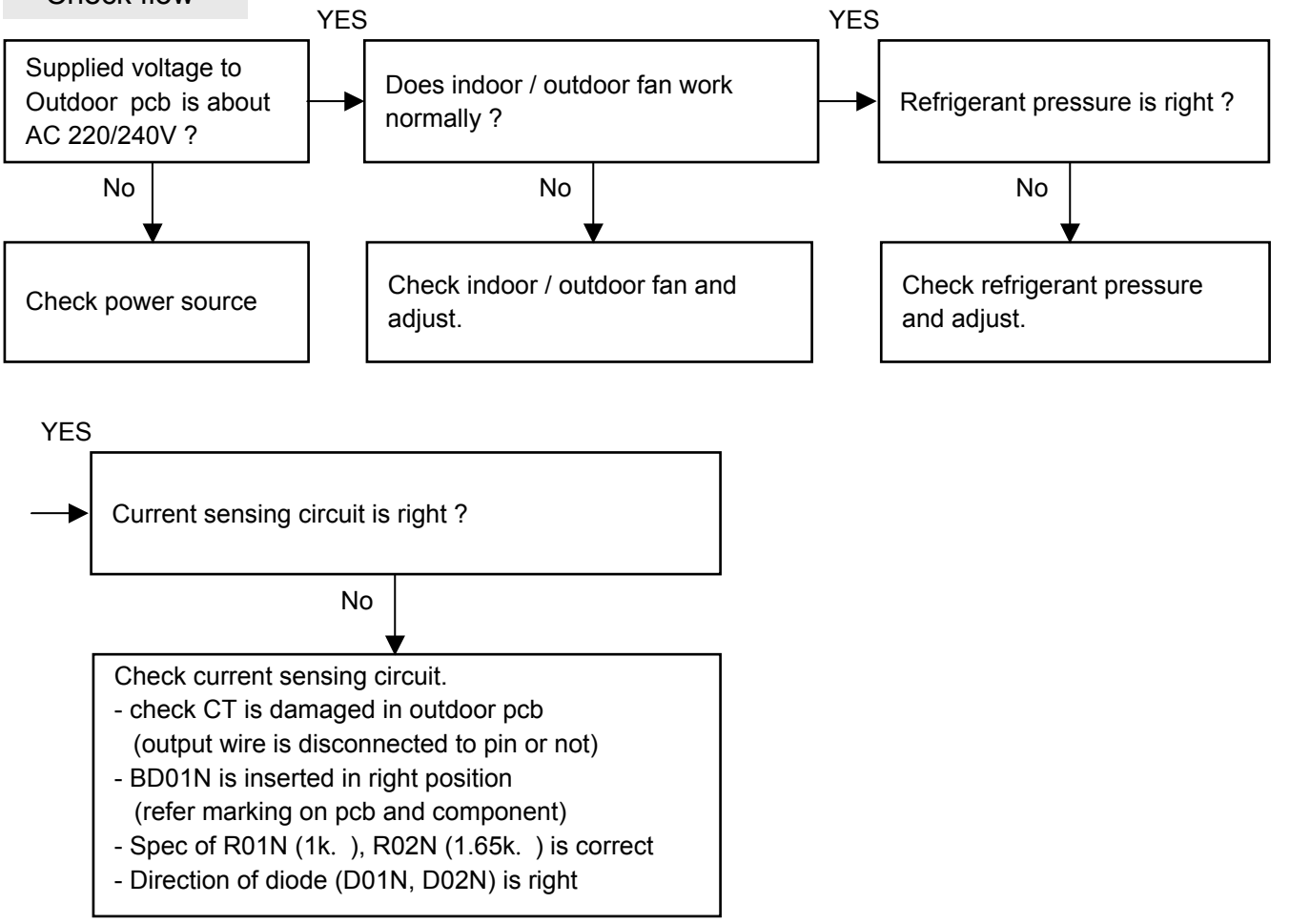






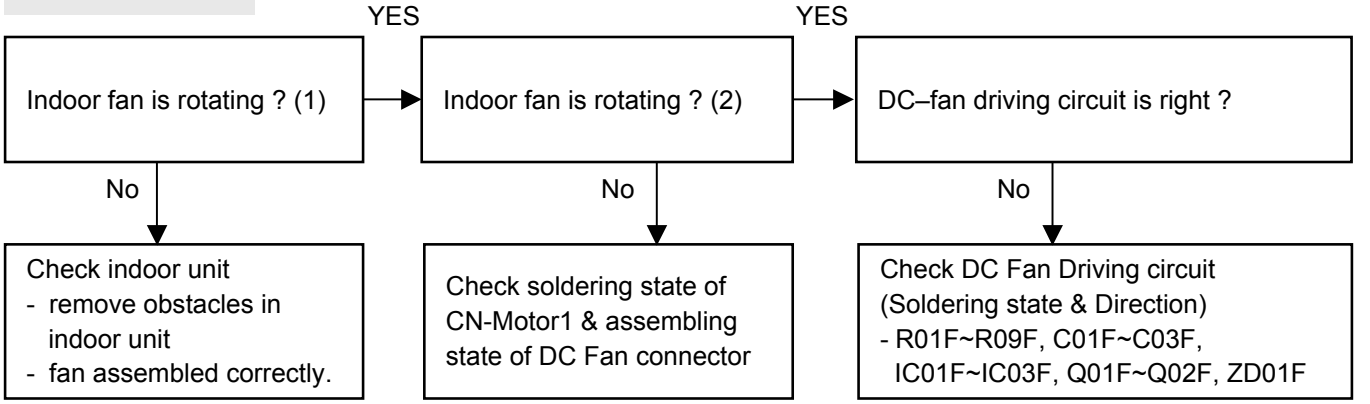
Error code	Description	Cause of error
7	Over current Error (CT2)	• Supplied power is not normal • Indoor/outdoor fan is locked • Too much refrigerant • Defect in current sensing circuit in outdoor pcb assembly

Check flow



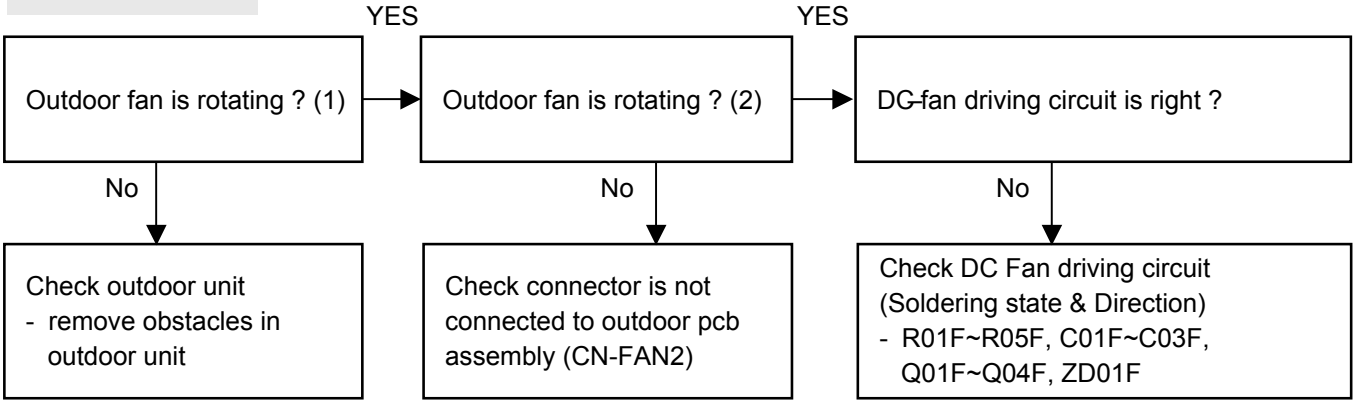
Error code	Description	Cause of error
8	Indoor fan is locked (BLDC fan model only)	• Indoor fan is locked or separated • Fan connector is not connected to indoor pcb assembly • Defective in DC-fan driving circuit

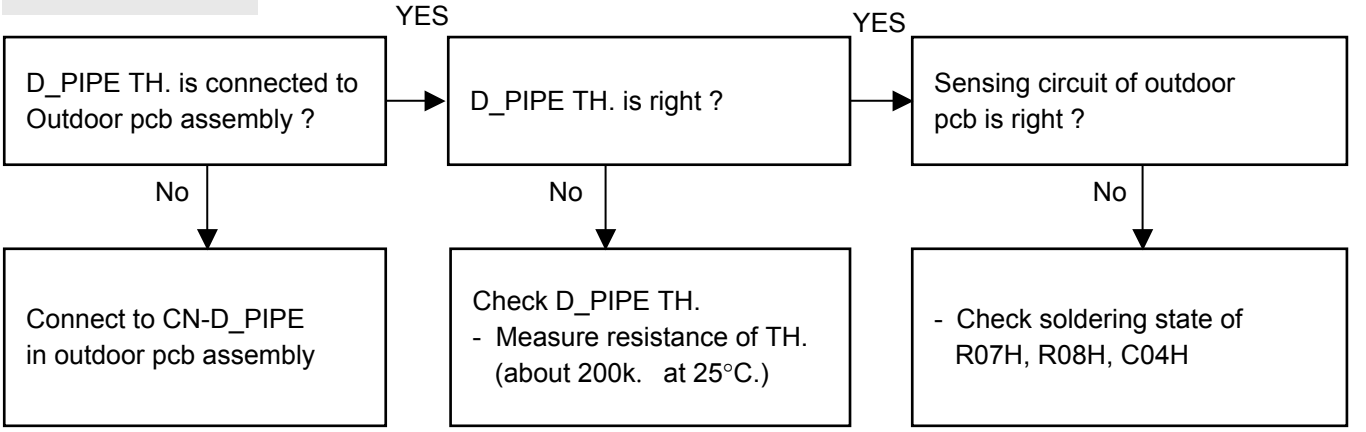
Check flow



Error code	Description	Cause of error
9	Outdoor fan is locked (BLDC fan model only)	• Outdoor fan is locked by an obstacle (ex : branch of tree, bar…etc) • Fan connector is not connected to outdoor pcb assembly • Defective in DC-fan driving circuit

Check flow



Error code	Description	Cause of error
10	D-Pipe TH. is short or open	• D_pipe TH. is short or open • D_pipe TH. is not connected to the outdoor pcb assembly • Damage or defect on the sensing circuit of outdoor pcb assembly

Check flow