SPLIT-TYPE AIR CONDITIONER

	INDOOR UNIT	OUTDOOR UNIT
Basic :	AQV09AWA	
	AQV12AWA	
Model :	AQV09AWB	
	AQ V12AWB	
Model Code :	AQV09AWBN	AQV09AWBX
	AQV12AWBN	AQV12AWBX

SERVICE Manual

AIR CONDITIONER

AQV09AWBN/AQV12AWBN

AQV09AWBX/AQV12AWBX

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Refer to the service manual in the GSPN(see the rear cover) for the more information.

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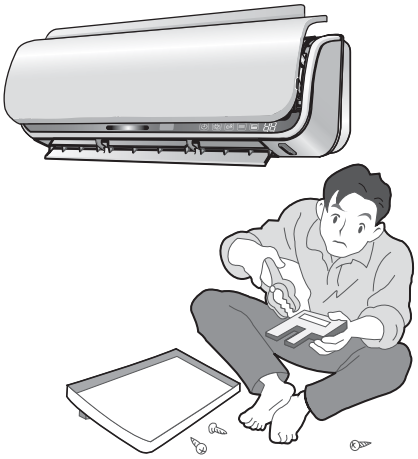
1. Precautions

1-1 Precautions for the Service

- **Use the standard parts when replacing the electric parts.**
  - Confirm the model name, rated voltage, rated current of the electric parts.
- **Repair the disconnection of HARNESS securely when repairing the break down.**
  - If there is any connection error, it causes an abnormal noise and incorrect operation.
- **In case that you assemble or disassemble the products with laying it on the side, do work on the work cloth.**
  - If not, the exterior of products can be scratched.
- **Remove dust and foreign materials from harness, connection part, and inspection part thoroughly when repairing the break down.**
  - It protects the danger of fire such as tracking and short.
- **Tighten tightly the service valve of outdoor unit and the cap of charging valve with a monkey spanner.**
- **Check the assembly status of parts after repairing the break down.**
  - It should be same as the status before repairing.

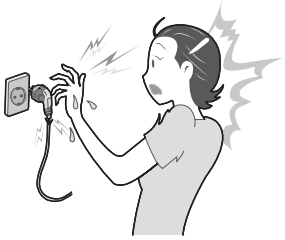
1-2 Precautions for the Static Electricity and PL

- **As the PCB power terminal has a weakness for the static electricity, pay attention to it during the repair and measurement.**
  - Work with insulation gloves during the repair and measurement of PCB.
- **Check the distance between the product and the other electronic appliances such as TV, Video, and audio. It should be over 2m.**
  - If not, it causes a bad picture quality or a noise.
- **Repairing the products by consumer should be strictly prohibited.**
  - There is a danger of electric shock or fire due to incorrect disassembly.

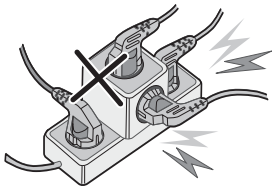


1-3 Precautions for the Safety

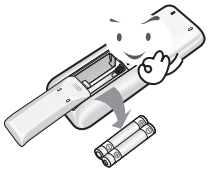
- Do not pull any electric wires and do not touch an auxiliary power switch with a wet hand.
  - There is a danger of electric shock or fire.



- In case any wire or power plug has been damaged, replace it to eliminate any possible danger.
- Do not bend the power cord by force and do not put any heavy object on the power cord.
  - There is a danger of electric shock or fire.



- Do not use multi socket.
  - There is a danger of electric shock or fire.
- Ground the product if necessary.
  - Be sure to ground the product if there is any danger of electric leakage due to water or moisture.
- Be sure to turn off the auxiliary power switch or pull out the power plug during replacement or repair of electric parts.
  - There is a danger of electric shock.
- In case the product will not be in use for a long time, the battery of remote control should be kept separately.
  - Leakage of inside fluid can cause break down of remote control.



2. Product Specifications

2-1 The Feature of Product

2-1-1 The Feature of Product

■ **High Energy Efficiency BLDC Air Conditioner**

BLDC Technique arises the efficiency of air conditioner and makes a room cool and warm with high energy saving.

■ **Luxury Half Mirror Design**

With a Luxurious and Fashionable style, the high impressive interior design allow this product to set place in anywhere.

■ good'sleep **Mode**

good'sleep Mode can help you sleep quickly and soundly and wake up refreshed.

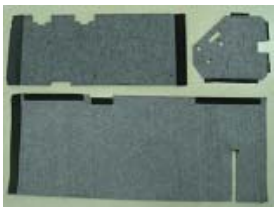
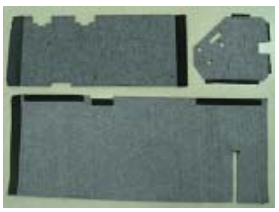
■ **mpi**zone **Mode**

The Micro Plasma Ion mode creates strong purified zone in your room.

■ **Silence Mode**

When you use the "Silence Mode", you can experience extremely quiet operation of your air conditioner.

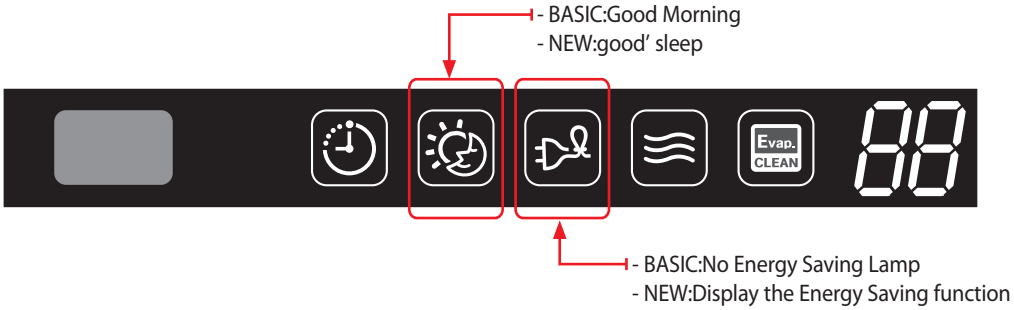
2-1-2 Modified items compared with Basic model

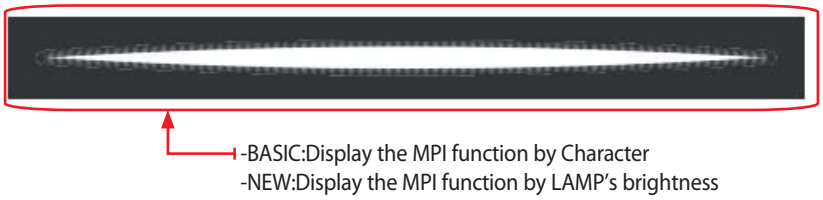
Modified part	New contents and characteristic	Basic model	New model
Indoor	Indoor Design changed		
Indoor	Grille inlet - LOGO design changed - Grille shape changed		
Indoor	Using the new concept mechanism of the moving grille		
Indoor	ASSY WINDOW DISPLAY		
Outdoor	Cabinet part		
Outdoor	Using double-sealed compressor felt		

2-1-3 New components to be applied

Part	New contents and characteristic	Image
Indoor	MPI LAMP (New concept)	
	DNA filter (New concept) - To intensify the Fresh air fuction	
	Grille door (New concept) - preventing the infiltration of dust	
	Cross flow fan (New application)	

2-1-4. Characteristic of display



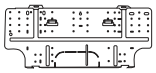
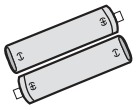
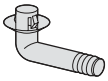


2-2 The Comparative Specifications of Product

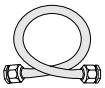
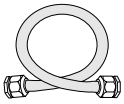
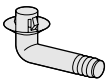
Item				Development Model		Comparative Model	
				AQV09A series	AQV12A series	AQV09A series	AQV12A series
Design	Indoor Unit						
	Outdoor Unit						
	Inverter Logo			S·INVERTER		S·INVERTER	
Performance	Capacity	Cooling	kW (Low/Std/Max)	0.99/2.50/3.20	0.99/3.50/4.00	0.92/2.50/3.20	0.92/3.50/4.00
		Heating		0.99/3.40/4.50	0.99/4.00/5.20	0.92/3.40/5.00	0.92/4.00/5.50
	Operating Frequency	Cooling	Hz (Low/Std/Max)	20/45/61	20/69/81	15/39/53	15/60/72
		Heating		20/65/85	20/78/95	15/53/83	15/65/90
	Noise	Indoor Unit	dB ↓	39	41	40	42
		Outdoor Unit		51	51	51	53
	Energy Efficiency Ratio	Cooling	W/W (Std)	4.3	3.6	4.4	3.6
		Heating		4.3	3.64	4.2	3.7
Power	Power		ph-V-Hz	1-220/240-50		1-220/240-50	
	Power Consumtion	Cooling	kW (Low/Std/Max)	0.250/0.581/0.840	0.250/0.972/1.200	0.210/0.570/0.840	0.210/0.970/1.220
		Heating		0.220/0.791/1.300	0.220/1.100/1.500	0.190/0.810/1.500	0.190/1.080/1.750
	Operating Current	Cooling	A (Low/Std/Max)	1.5/3.0/4.0	1.5/4.7/5.8	1.3/3.0/4.0	1.3/4.5/5.6
		Heating		1.4/4.0/6.0	1.4/5.2/7.0	1.2/4.0/7.0	1.2/5.2/8.0
	Power Factor	Cooling	% (Low/Std/Max)	70/85/90	70/90/90	70/85/90	70/90/90
		Heating		70/85/90	70/90/90	70/85/90	70/90/90
	Power Cord	Length	m	2		2	
		Nomber of Core Wire		3		3	
		Capacity	A	10		10	
Size	Net Weight	Indoor Unit	Kg	10.2		10.2	
		Outdoor Unit		32.6		35	
	Outer Dimension	Indoor Unit	mm (W X H X D)	900 X 304 X 185		900 X 304 X 185	
		Outdoor Unit		790 X 548 X 285		790 X 548 X 285	
	Refrigerant Pipe	Liquid	D X L (mm)	Φ6.35 X 5000		6.35 X 5000	
		Gas		Φ9.52 X 5000		9.52 X 5000	
		Max Length	m	15		15	
		Max Height		8		8	
	Drain Hose		D X L (mm)	Φ18 X 550		Φ18 X 550	
Heat Exchanger		Indoor Unit		2 Row 14 Step		2 Row 14 Step	
		Outdoor Unit		1 Row 24 Step		2 Row 24 Step	
Refrigerant (R410A)			g	900		950	
Refrigerant Control Unit				Expansion Valve		Expansion Valve	
Compressor				G4C090LUDER,Rotary		G4T110FUAEQ	
Protection Device (OLP)				None		None	
Air Purifying System				mpi Zone (Micro Plasma Ion) Silver Nano Coated Evaporator DNA Filter Deodorizing Filter		mpi Zone (Micro Plasma Ion) Silver Nano Coated Evaporator Anti-Allergy Filter Deodorizing Filter	
Option Code				004877-17520C	012877-17521D	004777-17520C	014777-17521D

2-3 Accessory and Option Specifications

2-3-1 Accessories

Item	Descriptions	Code-No.	Q'TY	Remark
	Plate-hanger	DB70-00819A	1	Indoor Unit
	Remote Control	DB93-07547L	1	
	Batteries for Remote Control	DB47-90024A	2	
	User's Manual	DB98-31006A	1	
	Installation Manual	DB98-31012A	1	
	Drain Plug	DB67-20011A	1	Outdoor Unit
	Rubber Leg	DB73-20134A	4	

Accessories(cont.)

Item	Descriptions	Code-No.	Q'TY	Remark
	4-wire Assembly Cable	DB39-01092B	1	Accessory Box
	Assembly Pipe, ø6.35mm	DB96-10453B	1	
	Assembly Pipe, ø9.52mm	DB96-10453F	1	
	PE T3 Foam Tube Insulation	DB72-50165A	1	
	Vinyl Tape, Width 50mm	DB72-00459A	1	
	Drain Plug	DB67-20011A	1	
	Rubber Leg	DB73-20134A	4	

Accessories(cont.)

Item	Descriptions	Code-No.	Q'TY	Remark
	Pipe Clamps A	DB39-20224A	3	Accessory Box
	Pipe Clamps B	DB39-20224B	3	
	Cement Nail	-	6	
	M4x16 Tapping Screws	6002-000215	10	
	Drain Hose, length 2m	DB62-00487A	1	
	Putty 100g	DB98-10568A	1	

2-3-2 Filter

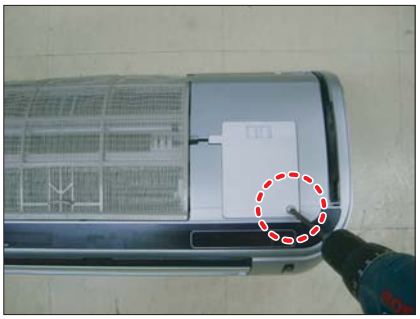
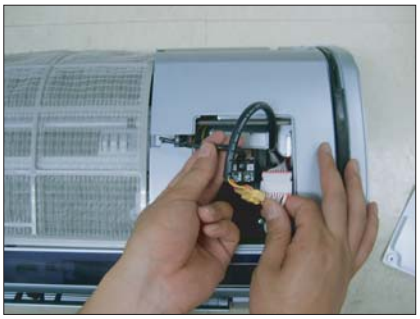
Image	Part name	Code no	Remark
	Pre-filter	DB63-01826A	wash in water
	DNA filter	DB63-02010A	Clean with vaccum cleaner or soft brush
	Deodorizing filter	DB63-00616A	

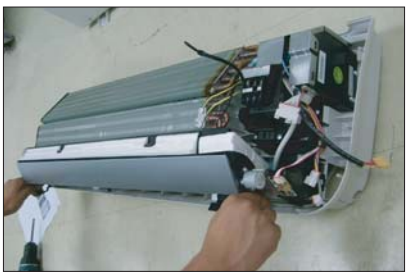
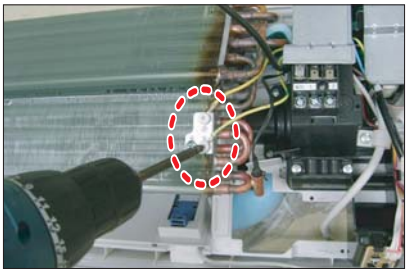
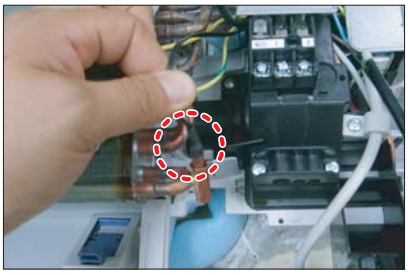
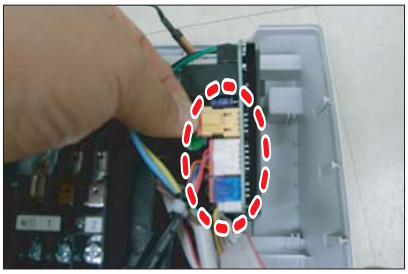
3. Disassembly and Reassembly

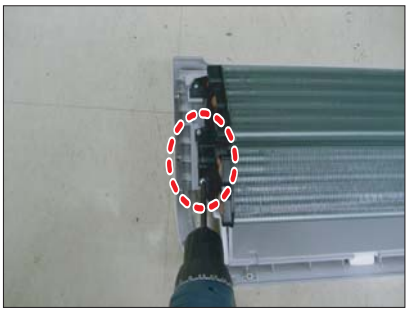
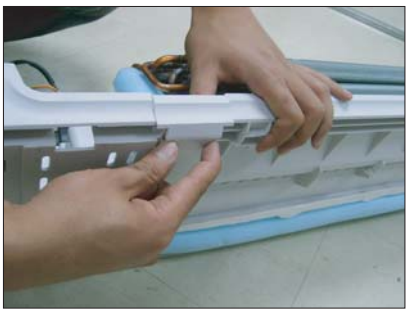
■ Necessary Tools

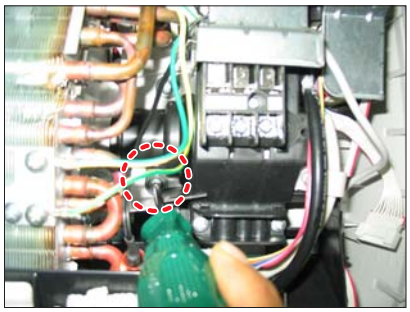
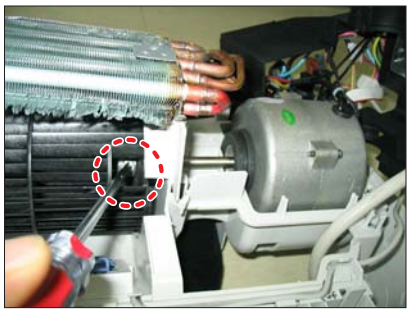
Item	Remark
+SCREW DRIVER	
MONKEY SPANNER	

3-1 Indoor Unit

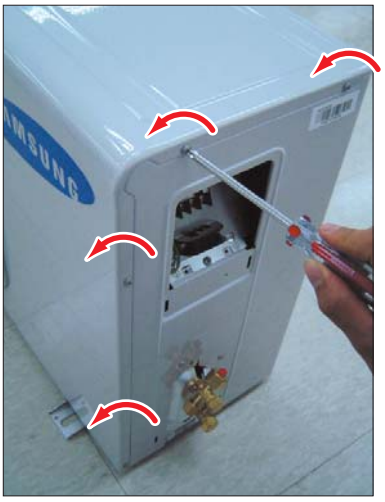
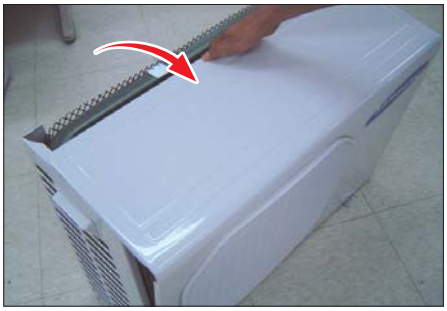
No	Parts	Procedure	Remark
1	PANEL-FRONT	1) Stop the driving of air conditioner and shut off main power supply. 2) Please open the FRONT-GRILLE.	
		3) Please detach COVER-TERMINAL from the main frame. (Use + Screw Driver.)	
		4) loosen 2 connector wires (yellow, white) and detach the sensor wire. (black)	
		5) To detach the FRONT-PANEL frome the main frame, Please unfasten 2 screw at the bottom. (Use + Screw Driver.)	
		6) Please take off the FRONT-PANEL lifting up the bottom.	

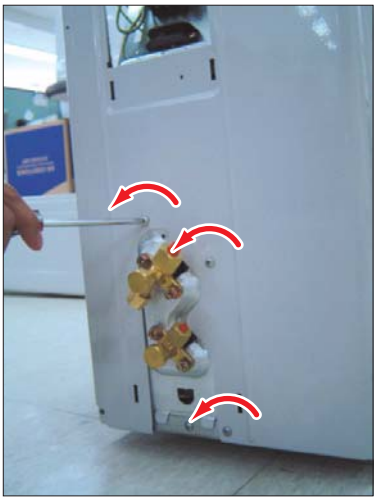
No	Parts	Procedure	Remark
2	TRAY DRAIN	1) Please loosen stepping motor wire. 2) To detach TRAY-DRAIN from the main frame, Please pull the bottom of the TRAY-DRAIN towards you.	
3	CONTROL IN	1) Please unfasten the earth screw from the EVAPORATOR. (Use + Screw Driver.)	
		2) Please detach the temperature sensor.	
		3) Please detach COVER-CONTROL from the CASE CONTROL.	
		4) Please loosen MPI connector wire (yellow), and MOTOR wires(white, blue).	
		5) Please take off the CASE CONTROL from the main frame.	

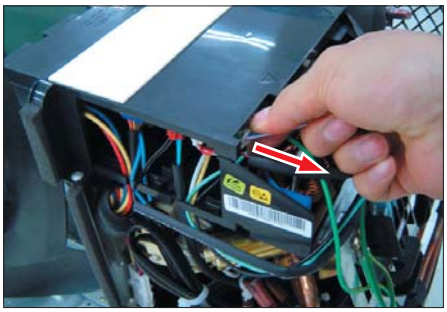
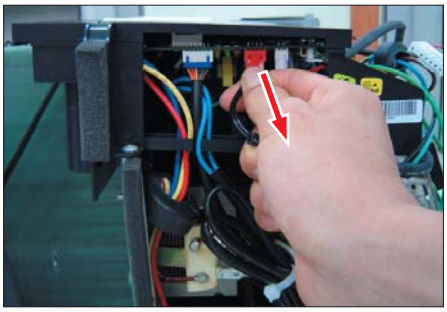
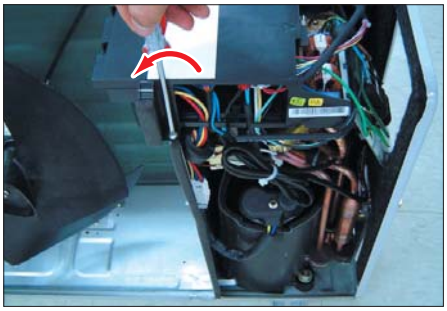
No	Parts	Procedure	Remark
4	EVAPORATOR	1) Please unfasten the screw at the right side. (Use + Screw Driver.)	
		2) Please unfasten 2 screw at the left side. (Use + Screw Driver.)	
		3) Please detach the HOLDER PIPE.	
		4) Please take off the EVAPORATOR from the main frame.	

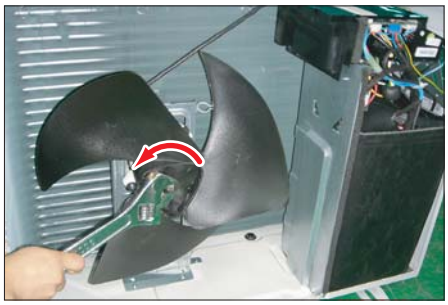
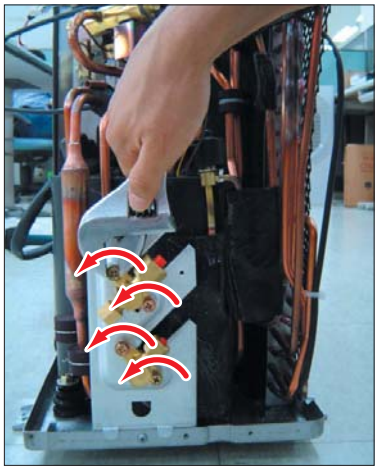
No	Parts	Procedure	Remark
5	FAN MOTOR & CROSS FAN	1) Please unfasten the screws in tne Holder evap on the left side of evaporator.	
		2) Please unfasten the 3 points screws in the Control box, and then detach the control box.	
		3) Please unfasten the screw a little.	
		4) Please pull the cross fan to the left side. if difficult, life the motor up slighrtly.	

3-2 Outdoor Unit

No	Parts	Procedure	Remark
1	Common Work	1) Loosen 1 fixing screw(CCW) of the Cover-Side. (Use +Screw Driver.)	
		2) Loosen each 4 screws(CCW) on both right and left Cabinet Side edges and a fixing screw on the Cabinet Front lower to detach the Cabinet Front. (Use +Screw Driver.)	
		3) Detach the Cabinet Front like the picture on the right side.	
		4) Loosen 1 screw(CCW) fixed to assemble Plate Control Out with Cabinet-Side RH. (Use +Screw Driver.)	

No	Parts	Procedure	Remark
		5) Loosen 2 fixing screws(CCW) on the rear side of Cabinet-Side RH. (Use +Screw Driver.)	
		6) Loosen 3 screws(CCW) fixed to assemble Bracket Valve with Cabinet-Side RH. (Use +Screw Driver.)	
		7) Loosen 2 fixing screws(CCW) of Cabinet Side LF. (Use +Screw Driver.)	

No	Parts	Procedure	Remark
2	Ass'y Control Out	1) Detach the Motor Wire from the PCB of Ass'y Control Out.	
		2) Detach several connectors from the PCB of Ass'y Control Out.	
		3) Detach 2 Connect Wires from Reactor.	
		4) Loosen 1 screw(CCW) fixed to assemble Ass'y Control Out with Partition. (Use +Screw Driver.)	

No	Parts	Procedure	Remark
3	Fan & Motor	1) Release the refrigerant at first. 2) Loosen fixing screw(CW). (Use Monkey Spanner.) 3) Disassemble the pipes in both inlet and outlet with welding torch. 4) Detach the Heat Exchanger.	
4	Heat Exchanger	1) Loosen 2 fixing screws(CCW) on both sides. (Use +Screw Driver.) 2) Disassemble the pipes in both inlet and outlet with welding torch. 3) Detach the Heat Exchanger. ⚠ Before you disassemble the pipes and Condenser, be sure that there should be no refrigerant remained in the unit.	
5	Ass'y Valve 4-Way & Ass'y Valve EEV	1) Loosen 4 bolts(CCW) fixed to assemble Valve Service with Bracket Valve like the picture on the right side. (Use Monkey Spanner.) 2) Disassemble the pipes assembled the suction and discharge sides of the Compressor with welding torch.	
6	Compressor	1) Loosen the Nut(CCW) of Terminal Cover. (Use Monkey Spanner.) 2) Detach the Terminal Cover and detach the Connect Comp Wire from Compressor. 3) Disassemble the Felt Comp Sound. 4) Loosen the 3 bolts(CCW) at the bottom of Compressor like the picture on the right side. (Use Monkey Spanner.)	

MEMO

4. Troubleshooting

4-1 Setting Option Setup Method

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

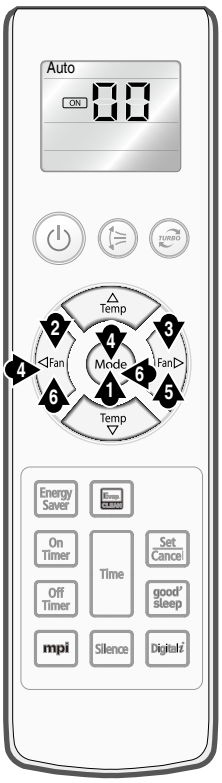
Step 1 : Enter the Option Setup mode.

1st Take out the batteries of remote control.

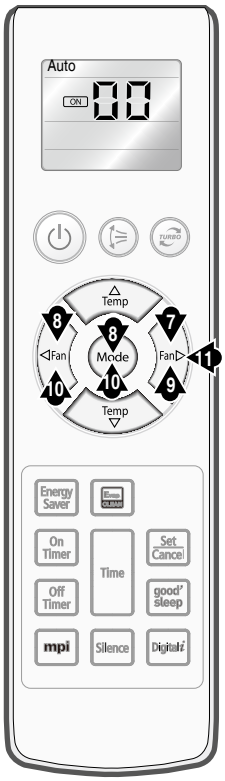
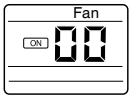
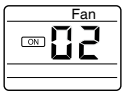
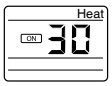
2nd Press the temperature button simultaneously and insert the battery again.

3rd Make sure the remote contr display shown as .

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



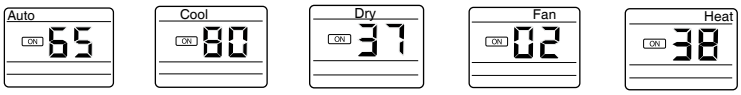
	Feature	Display
1	The default value is . Every time you push the Mode button, the display panel reads ON Auto ➡ Cool ➡ Dry ➡ Fan ➡ Heat , OFF Auto ➡ Cool ➡ Dry ➡ Fan ➡ Heat repeatedly.	Auto ON 00
2	Push the button to set the display panel to 1 . Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Auto ON 60
3	Push the button to set the display panel to 4. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Auto ON 65
4	Push the Mode button to . Push the button to set the display panel to 7. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Cool ON 80
5	Push the button to set the display panel to 7. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Cool ON 80
6	Push the Mode button to . Push the button to set the display panel to 7. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Dry ON 30

	Feature	Display
	**7** Push the button to set the display panel to 7. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	
	8 Push the Mode button to Fan 00 . Push the button to set the display panel to 5 . Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	
	9 Push the button to set the display panel to 2 . Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	
	10 Push the Mode button to Heat 00. Push the button to set the display panel to 1. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	
	11 Push the button to set the display panel to d. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	

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

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

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



Step 4 : Pressing the ON/OFF button ( )

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

Step 5 : Unit operation test-run

First, Remove the battery from the remote control.

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

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

• Error Mode

1st If all lamps of indoor unit are flickering, Plug out, plug in power plug again and press ON/OFF key to retry.

2nd If the unit is not working properly or all lamps are continuously flickering after setting the option code, see if the correct option code is set up for its model.

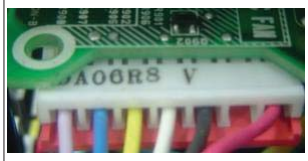
■ OPTION ITEMS

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

4-2 Display Error and Check Method

4-2-1 Display Error mode

<table>
<tr><th colspan="4">Error Mode</th><th rowspan="3">Cauase</th><th rowspan="3">Follow-up Measures</th><th colspan="4">operation</th><th rowspan="3">Trouble Shooting</th></tr>
<tr><th rowspan="2">Indoor 7-Segment</th><th colspan="3">Outdoor LED</th><th rowspan="2">Comp.</th><th rowspan="2">Outdoor Fan</th><th rowspan="2">Indoor Fan</th><th rowspan="2">MPI</th></tr>
<tr><th>Y</th><th>G</th><th>R</th></tr>
<tr><td>E 101</td><td colspan="3">no display</td><td>1min.Time out Communicatiion (Indoor detection)</td><td>- Check the connector of indoor-outdoor cable
- Check the fuse</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>page</td></tr>
<tr><td>E 121</td><td colspan="3">no display</td><td>Indoor Temperature Sensor Error(OPEN/ SHORT)</td><td rowspan="2">- Check assembling status of the sensor part's connector on the indoor unit main PCB
- Measure the resistance value on both sides connector no. 1 and no. 2 (E121), no. 3 and no. 4 (E122) - by separating the sensor part's connector
<table><tr><th>Temp. (˚C)</th><th>Resistance Valve(KΩ)</th><th>Temp. (˚C)</th><th>Resistance Valve(KΩ)</th><th>Others</th></tr><tr><td>15</td><td>14.68</td><td>30</td><td>8.31</td><td rowspan="3">The error of DATA is ±2%.</td></tr><tr><td>20</td><td>12.09</td><td>35</td><td>6.94</td></tr><tr><td>25</td><td>10.00</td><td>40</td><td>5.83</td></tr></table>* If not meet the above DATA, replace sensors.</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>page</td></tr>
<tr><td>E 122</td><td colspan="3">no display</td><td>Indoor Heat Exchanger Temperature Sensor Error (OPEN/SHORT)</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>page</td></tr>
<tr><td>E 154</td><td colspan="3">no display</td><td>Indoor Fan Motor Speed Detecting Error (Occur when it continues for 15 ssecond at below 450rpm)</td><td>- Check assembling status of the Motor Hall IC output connector (CN44) on the indoor unit main PCB</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>page</td></tr>
<tr><td>E 162</td><td colspan="3">no display</td><td>EEPROM Error</td><td></td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>page</td></tr>
<tr><td>E 186</td><td colspan="3">no display</td><td>MPI Feedback Error</td><td>- Check the assembly status of the mpizone connector (CN6601)
- Change the mpizone</td><td>Continue</td><td>Continue</td><td>Continue</td><td>OFF</td><td>page</td></tr>
<tr><td>All blink</td><td colspan="3">no display</td><td>Option is erased or wrong option code is input</td><td>-Reset remote-control option code</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>page</td></tr>
<tr><td>E 102</td><td>⊙</td><td>●</td><td>●</td><td>1min. Time out Communication (Outdooe detection)</td><td>- Check the connector of indoor-outdoor cable
- Check the fuse</td><td>OFF</td><td>After 1 minute, set OFF</td><td>OFF</td><td>Continue</td><td>page</td></tr>
<tr><td>E221</td><td>⊙</td><td>○</td><td>⊙</td><td>Outdoor temp sensor error</td><td rowspan="3">- Check the assembling statue of sensor parts on the outdoor PCB
E221 : CN54 PIN#1,#2
E237 : CN54 PIN#5,#6
E251 : CN54 PIN#3,#4</td><td>OFF</td><td>After 1 minute, set OFF</td><td>OFF</td><td>Continue</td><td>page</td></tr>
<tr><td>E237</td><td>⊙</td><td>●</td><td>⊙</td><td>Coil temp sensor error</td><td>OFF</td><td>After 1 minute, set OFF</td><td>OFF</td><td>Continue</td><td>page</td></tr>
<tr><td>E251</td><td>⊙</td><td>⊙</td><td>○</td><td>Discharge temp sensor error</td><td>OFF</td><td>After 1 minute, set OFF</td><td>OFF</td><td>Continue</td><td>page</td></tr>
<tr><td>E416</td><td>⊙</td><td>○</td><td>●</td><td>Discharge over temperature</td><td>- Check the assembling statue of sensor parts on the outdoor PCB CN54 PIN#3,#4</td><td>OFF</td><td>After 1 minute, set OFF</td><td>OFF</td><td>Continue</td><td>page</td></tr>
</table>

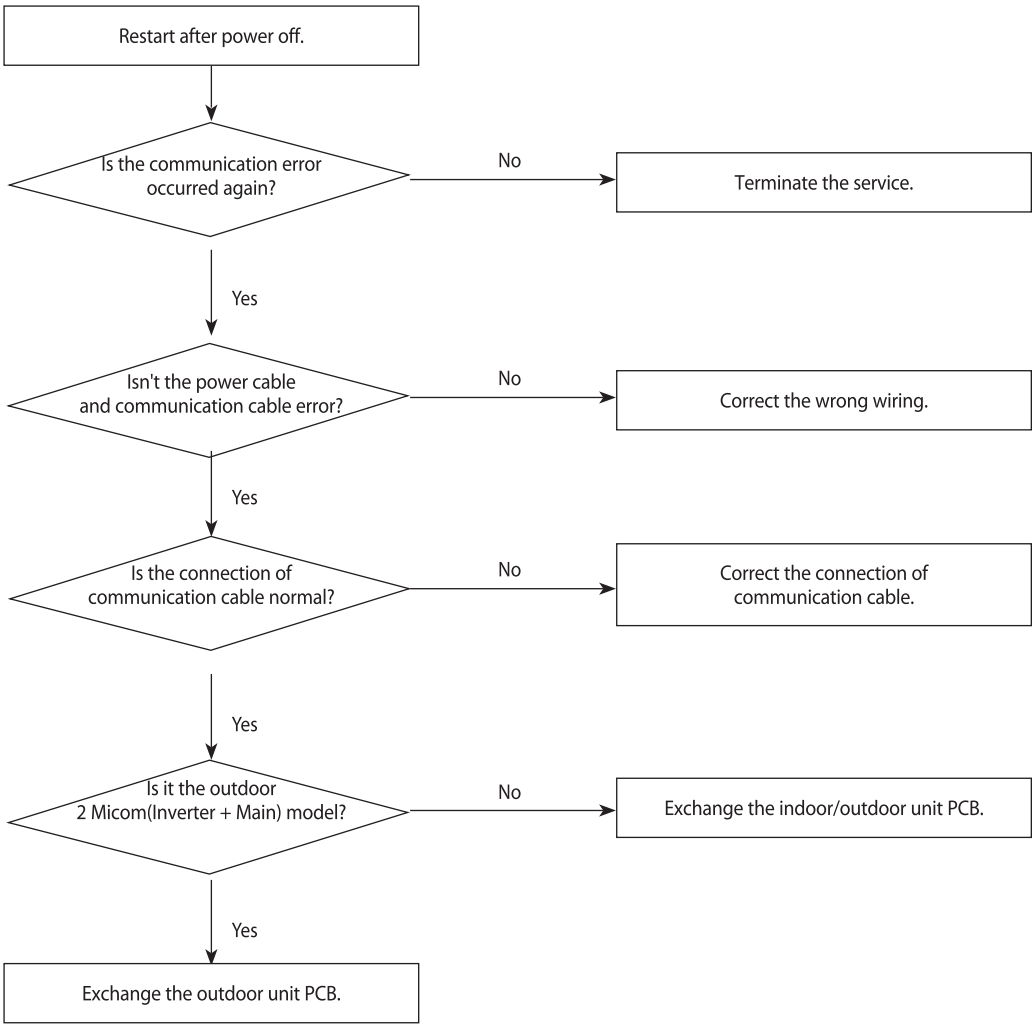
Error Mode				Causase	Follow-up Measures	operation				Trouble Shooting
Indoor 7-Segment	Outdoor LED					Comp.	Outdoor Fan	Indoor Fan	MPI	
	Y	G	R							
E458	●	○	○	Outdoor Fan error	- Check the fan was locked. - Check the assembling status of Fan connector(CN01) the outdoor PCB - Check the wire color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

4-3 Fault Diagnosis by Symptom

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

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

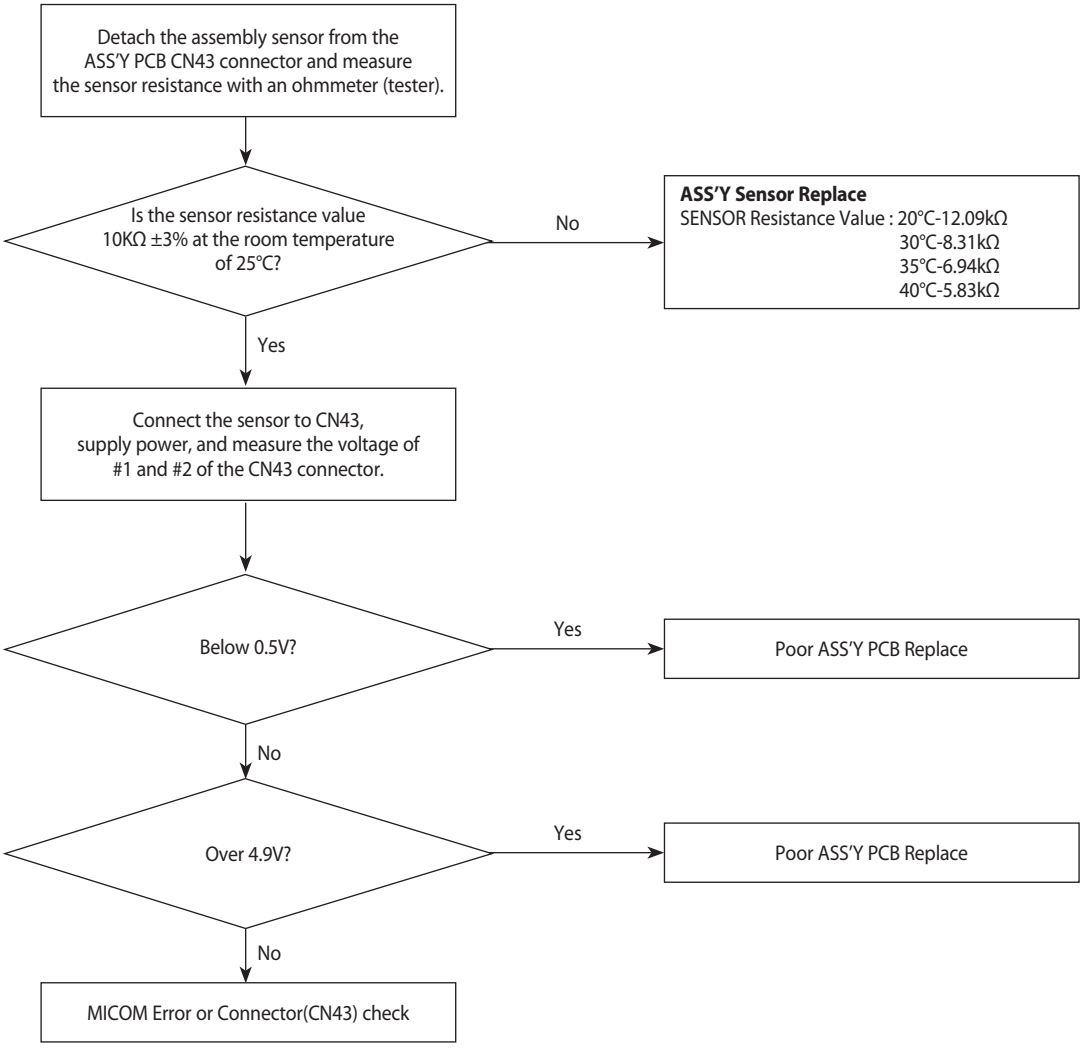
2. Troubleshooting procedure



4-3-2 Indoor Temperature Sensor Error↔When E 12 1 is diplayed

1. Checklist :
   1) Is the indoor units temperature sensor connected correctly?

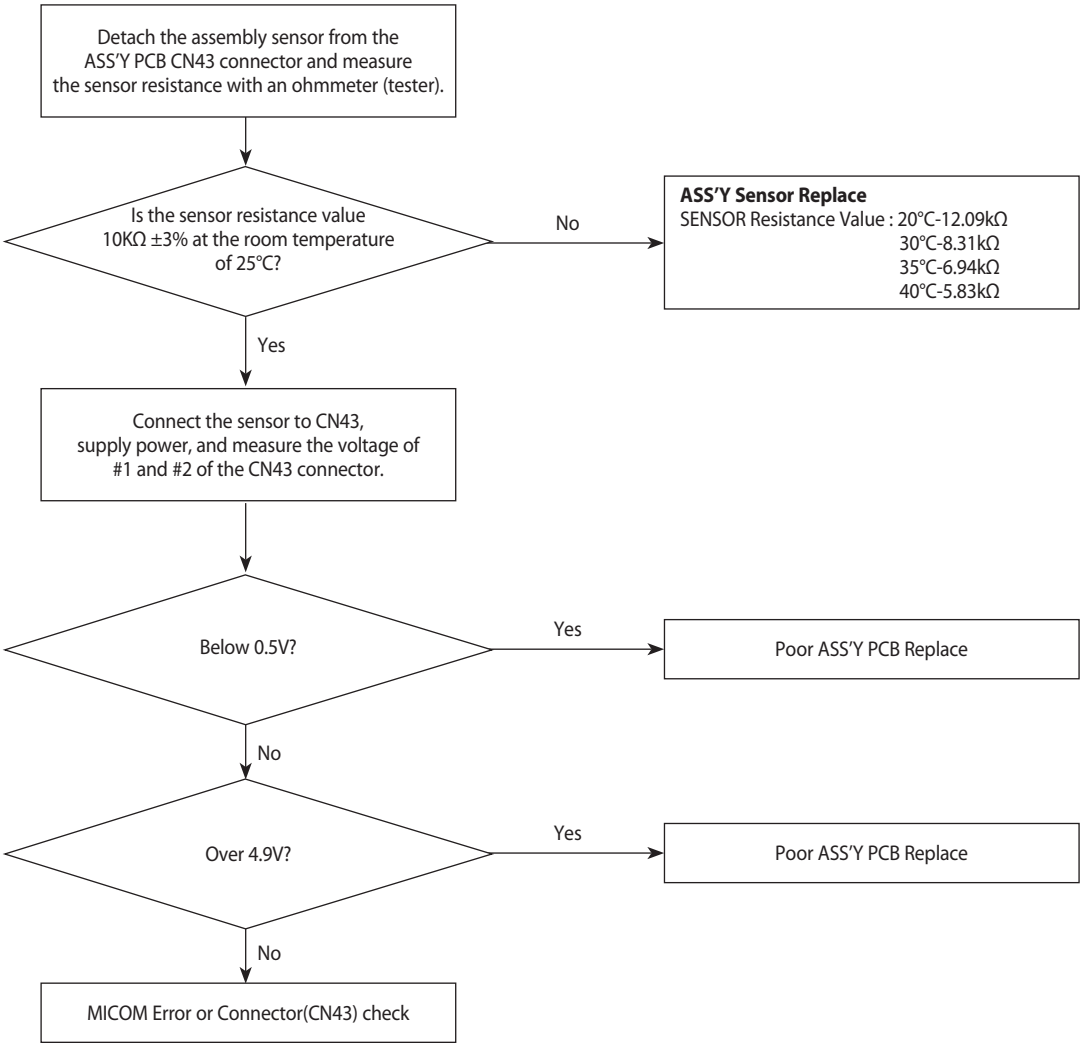
2. Troubleshooting procedure



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

1. Checklist :
   1) Is the indoor units temperature sensor connected correctly?

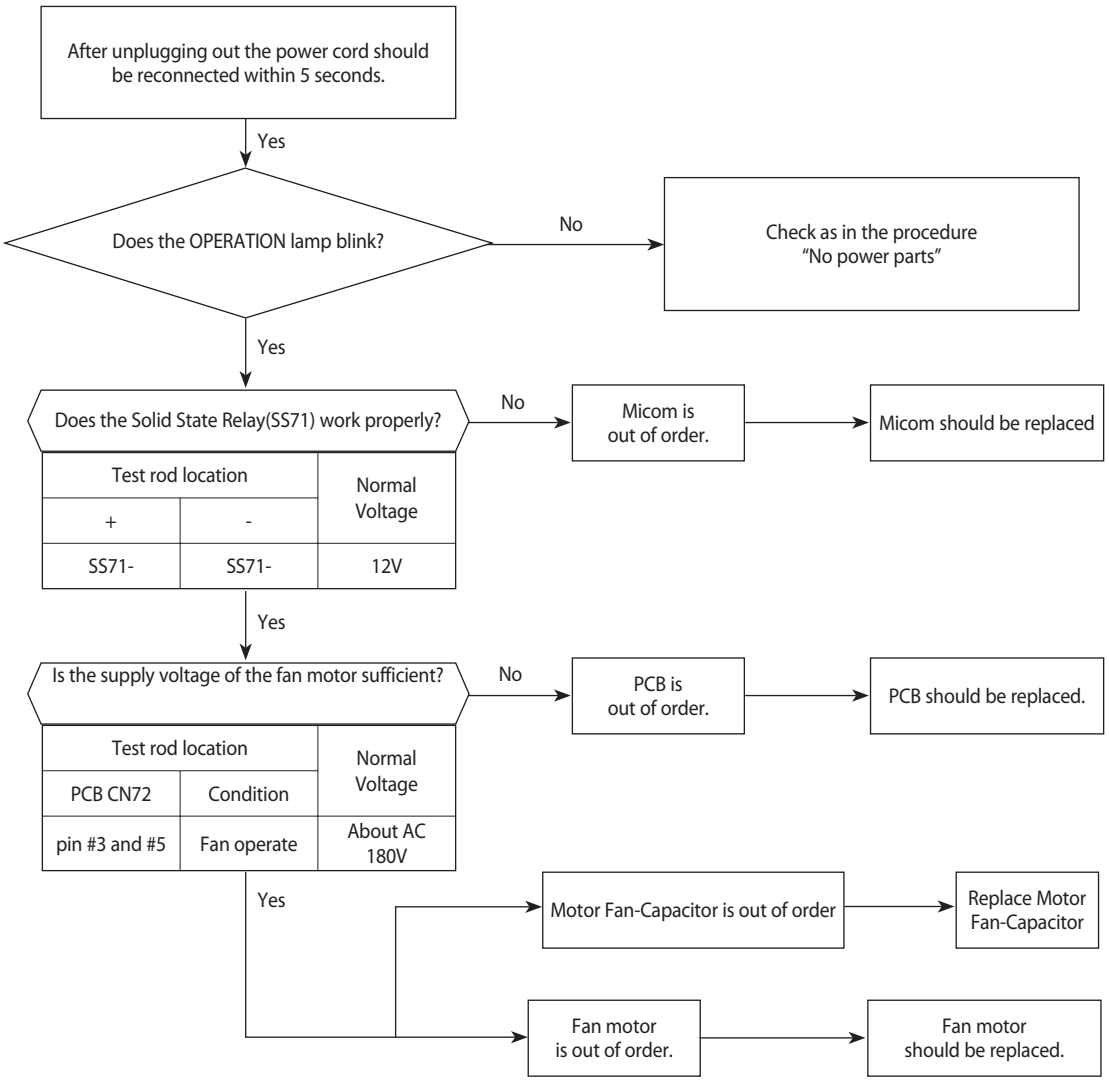
2. Troubleshooting procedure



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

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

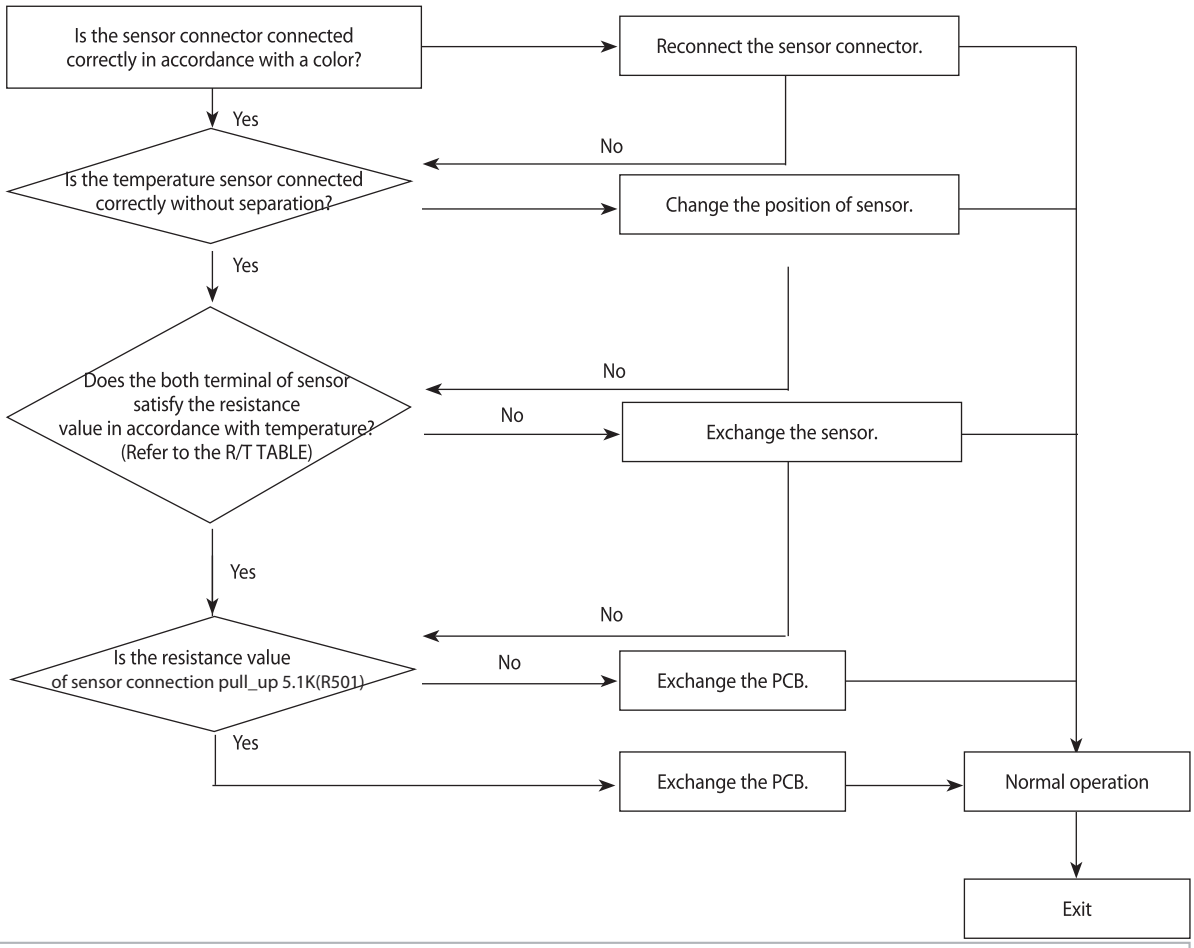
2. Troubleshooting procedure

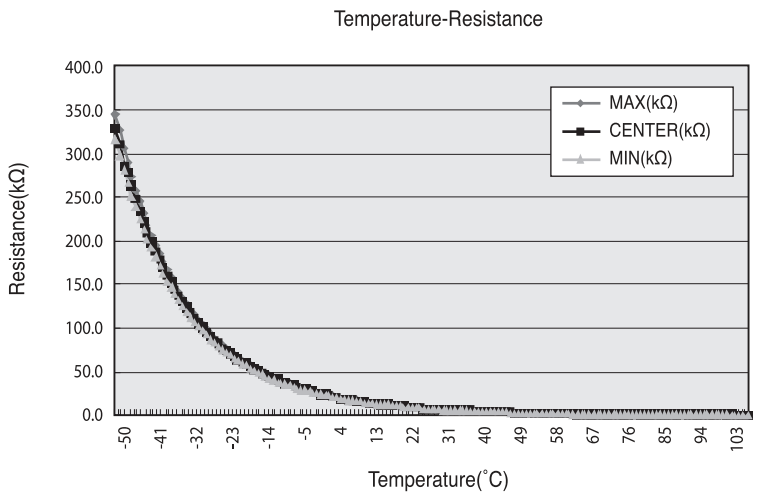


4-3-5 Outdoor temperature sensor error↔When E22 1 is diplayed

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

2. Troubleshooting procedure

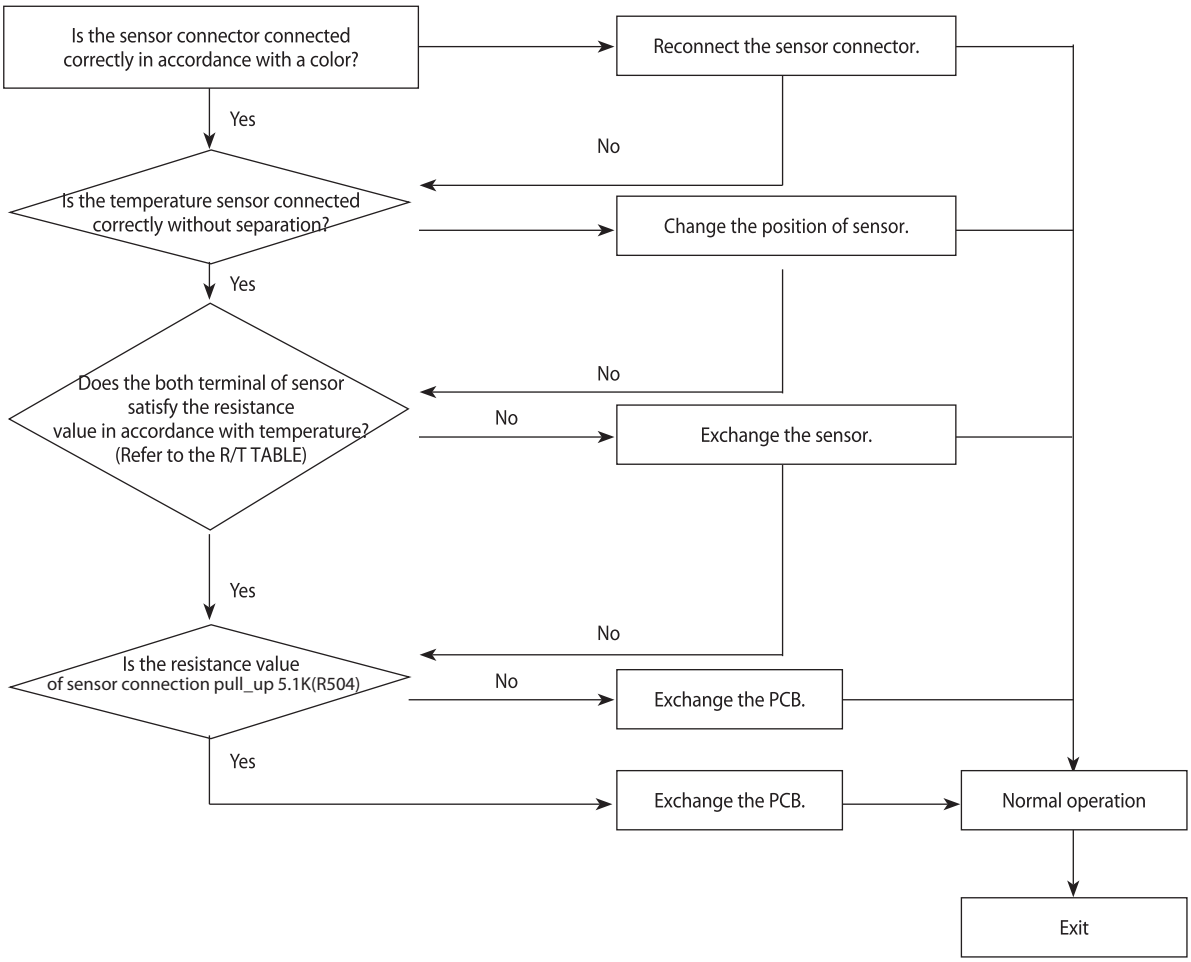


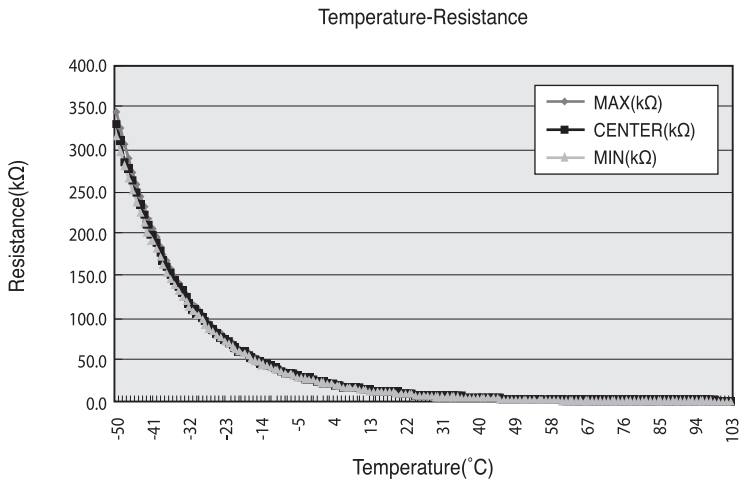


4-3-6 Coil temperature sensor error↔When E237 is diplayed

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

2. Troubleshooting procedure

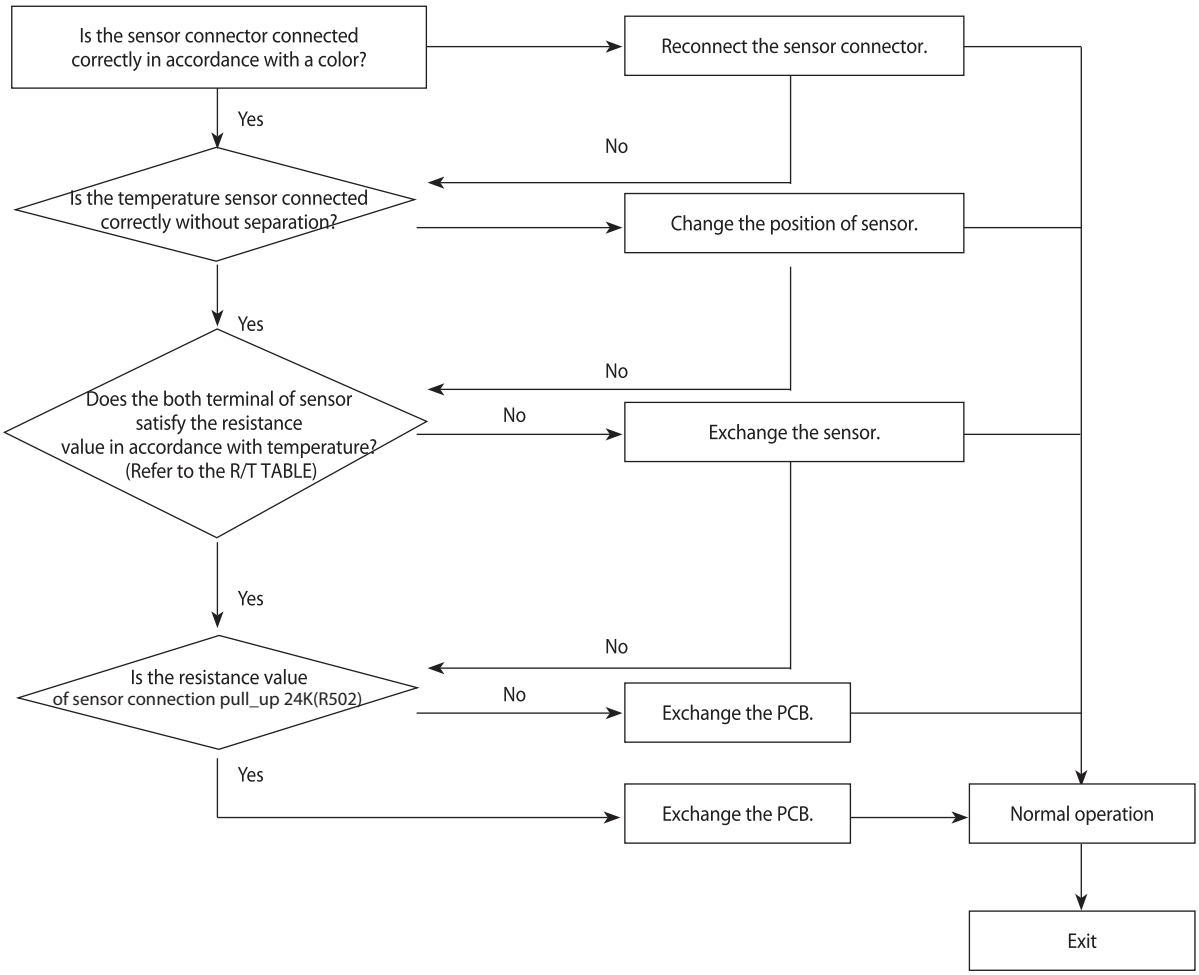


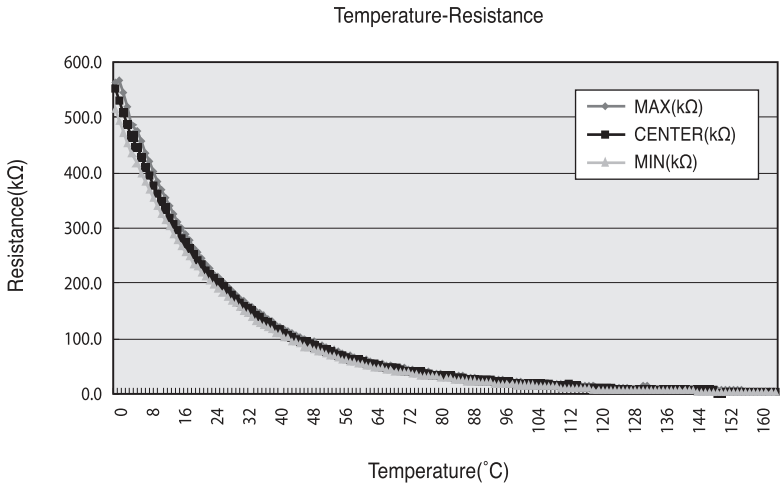


4-3-7 Discharge temperature sensor error↔When E25 1 is diplayed

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

2. Troubleshooting procedure

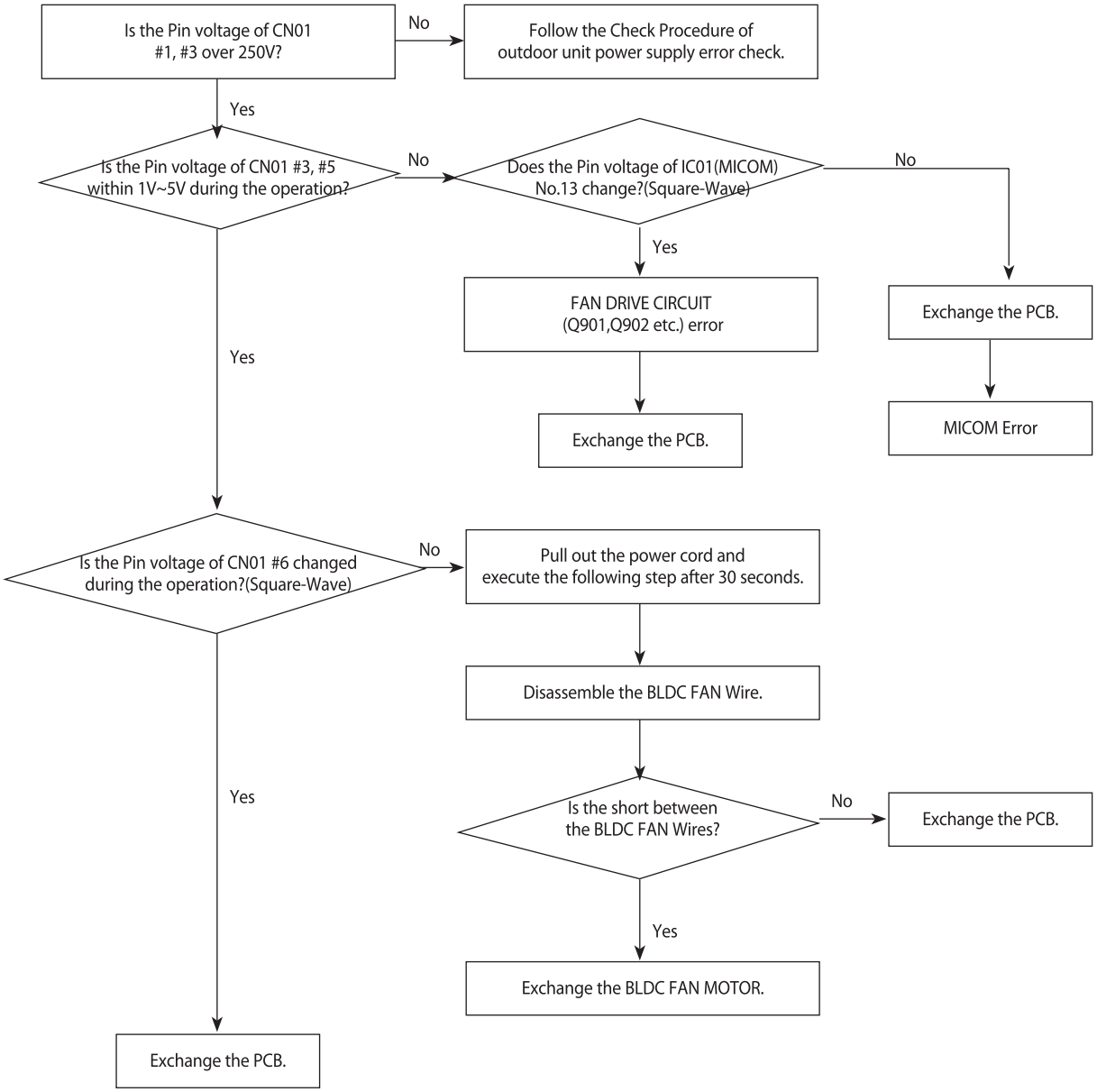




4-3-8 The Outdoor unit Fan error↔When E458 is diplayed

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

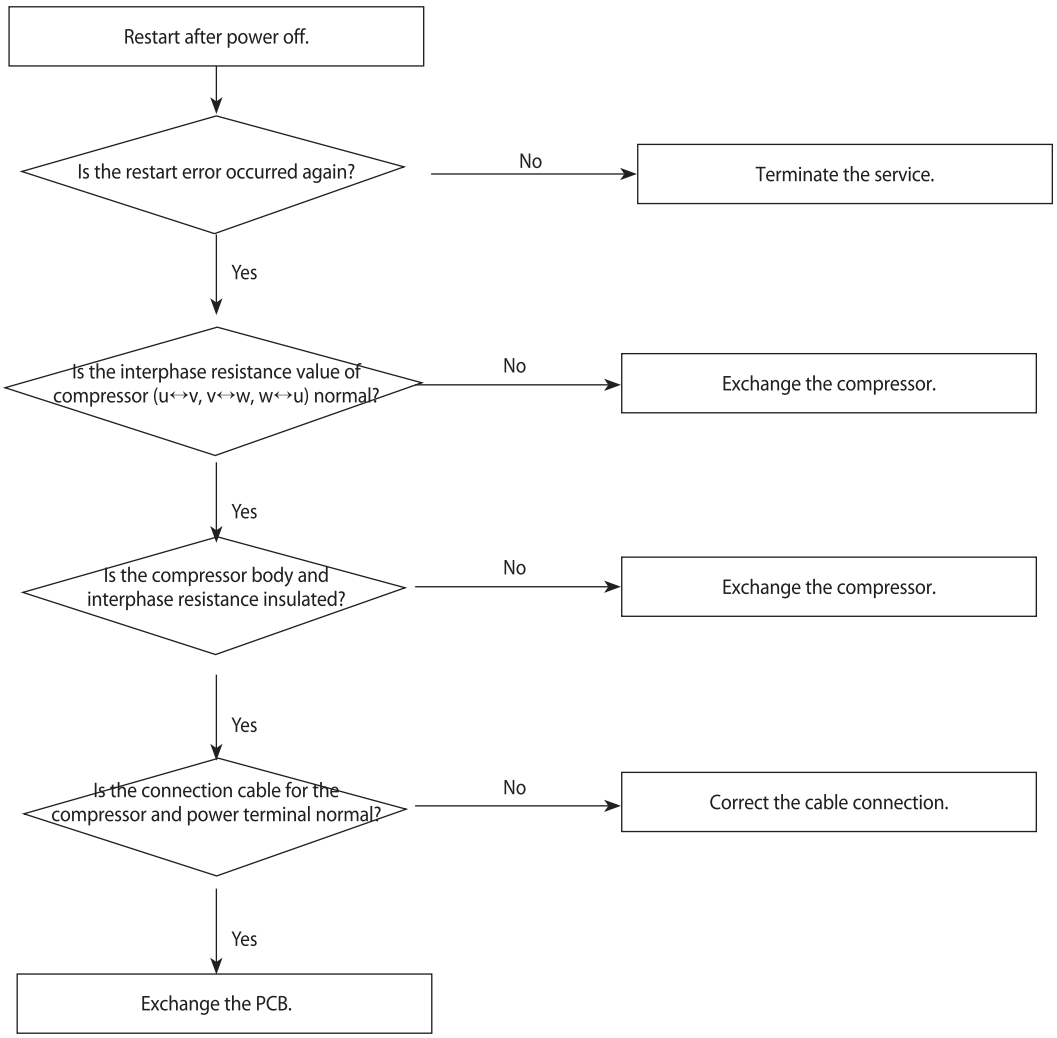
2. Troubleshooting procedure



4-3-9 Compressor start error↔When E46 1 is diplayed

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

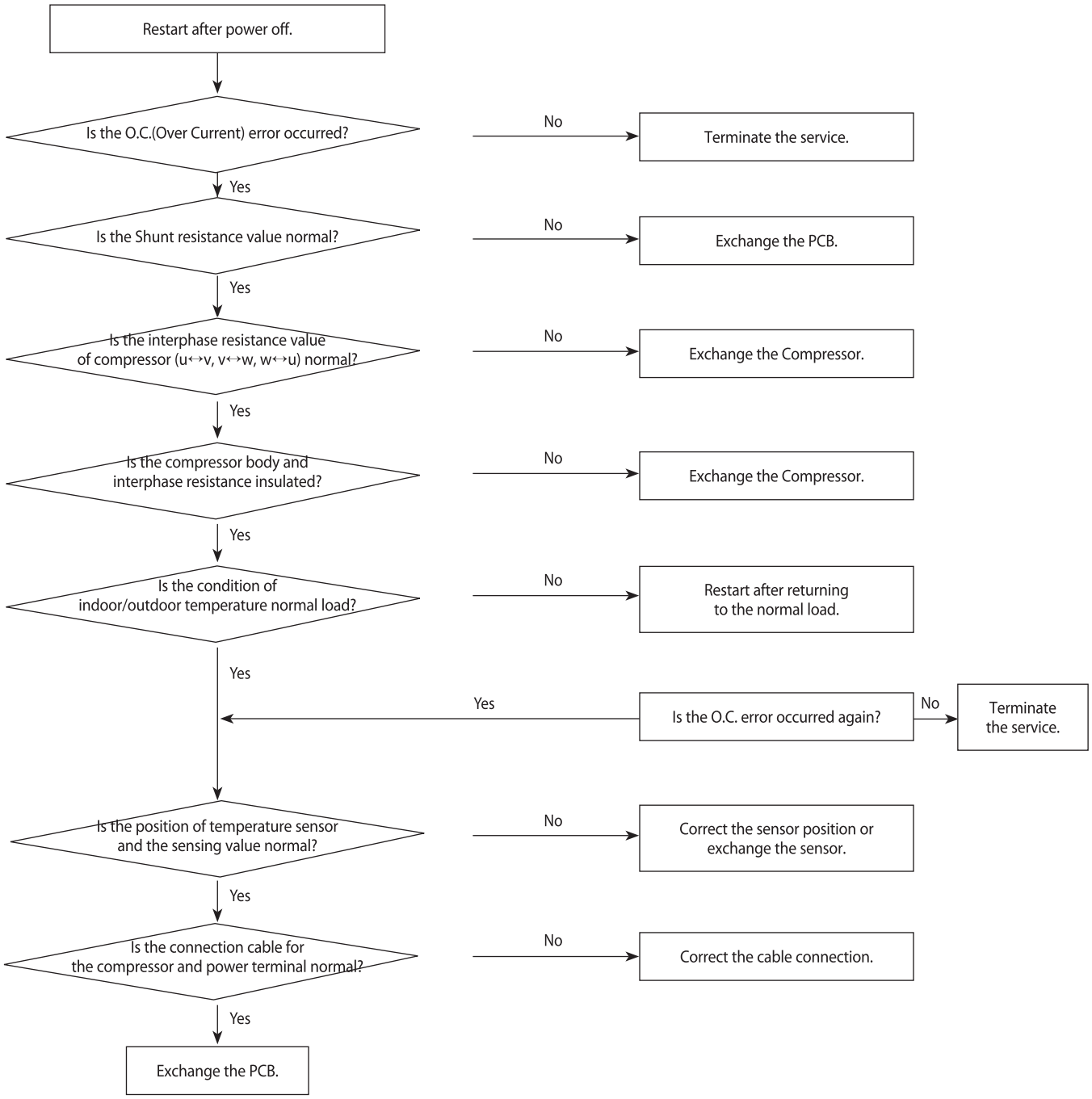
2. Troubleshooting procedure



4-3-10 O.C.(Over Current) error↔When E464 is diplayed

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

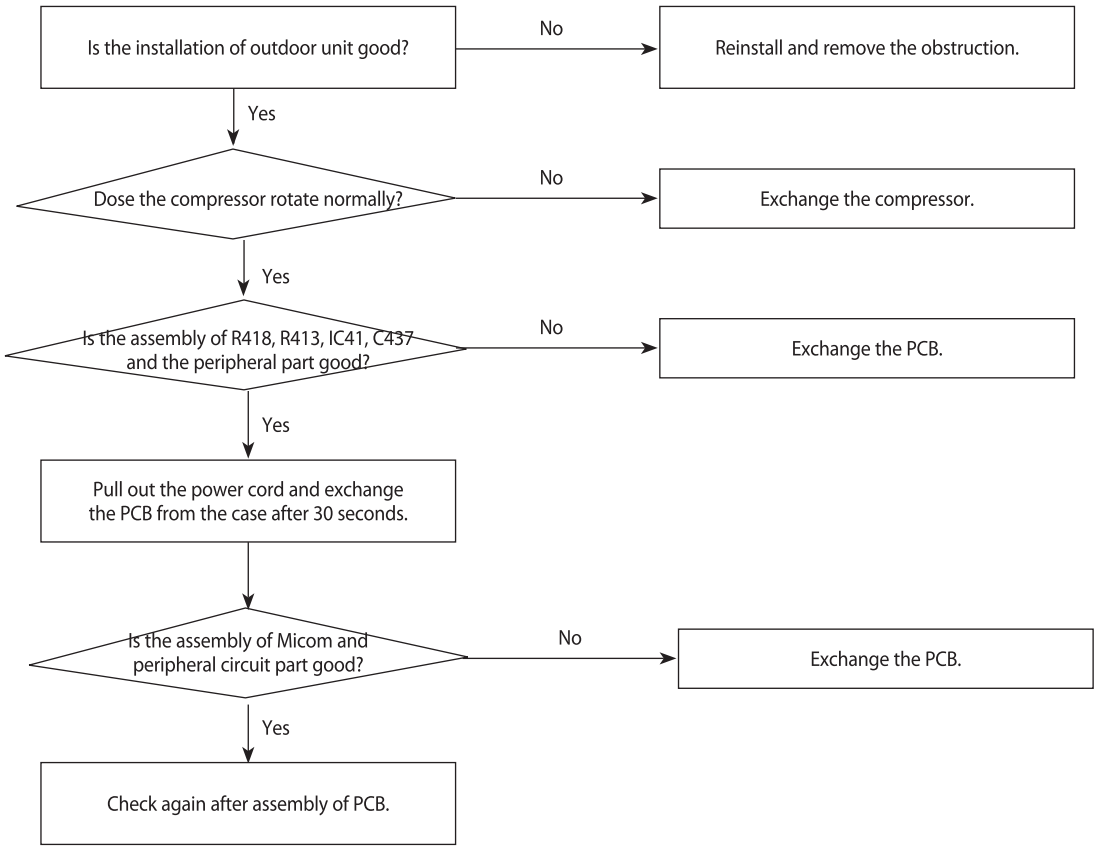
2. Troubleshooting procedure



4-3-11 Total current Sensor error↔When E468 is diplayed

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

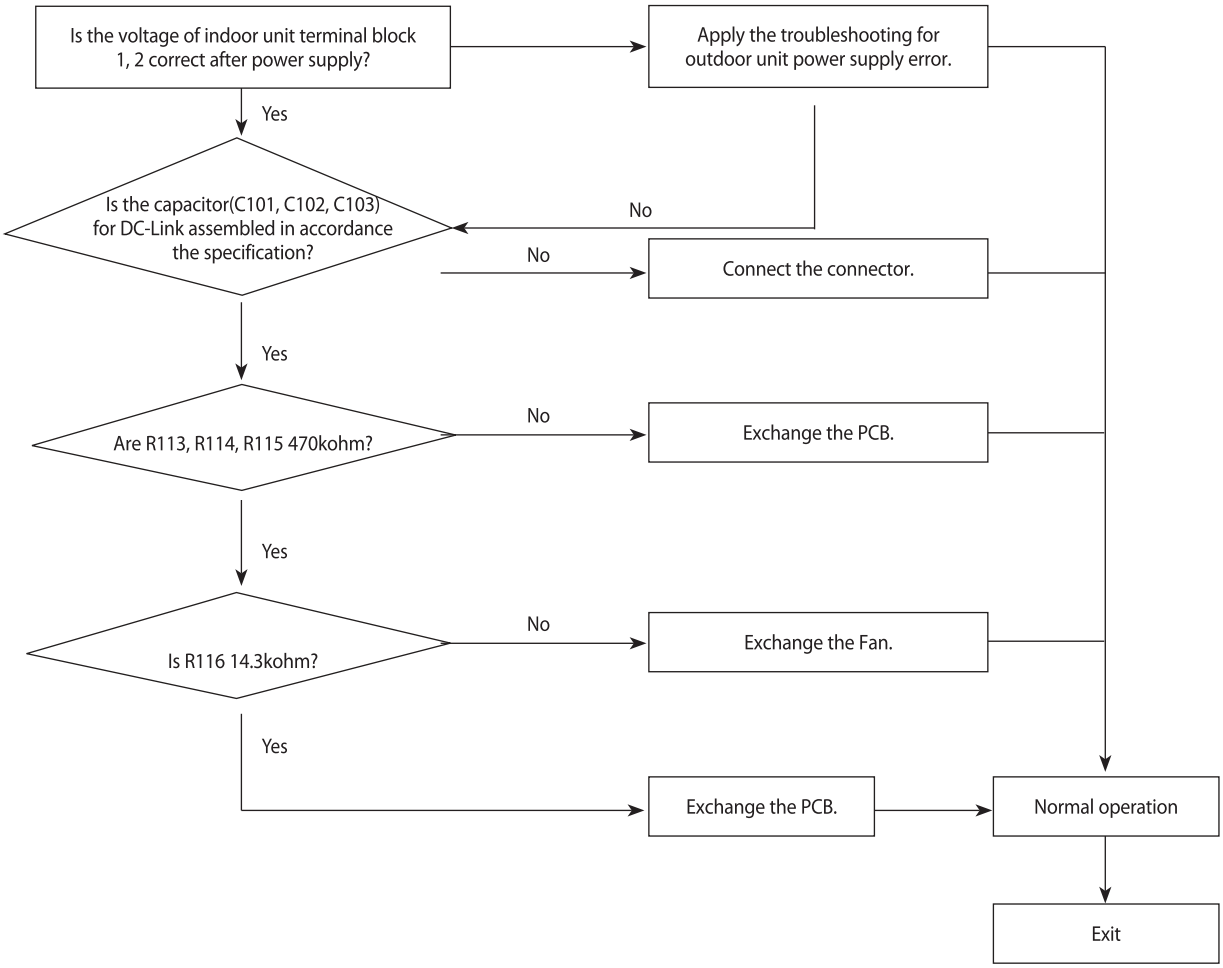
2. Troubleshooting procedure



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

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

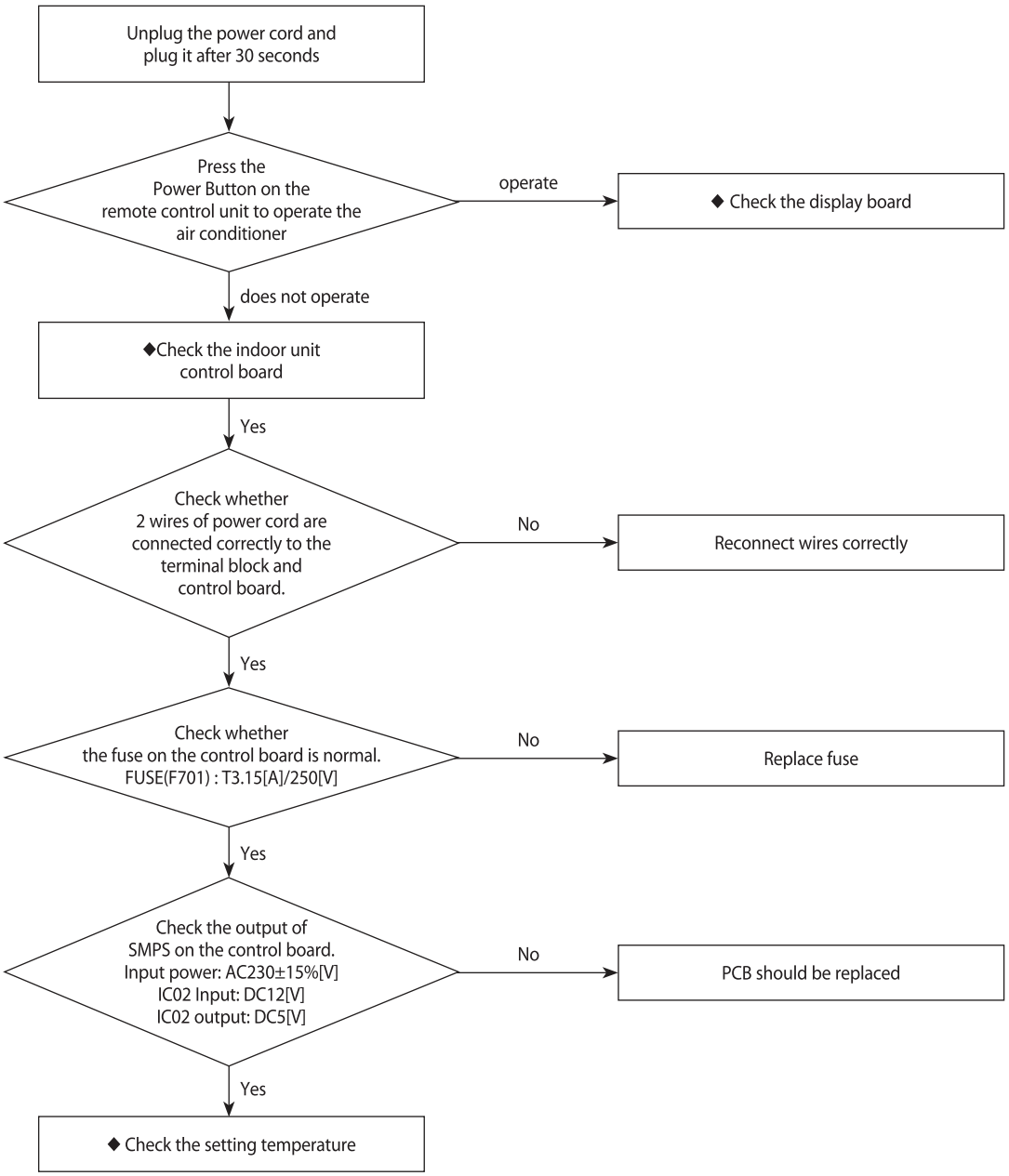
2. Troubleshooting procedure



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

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

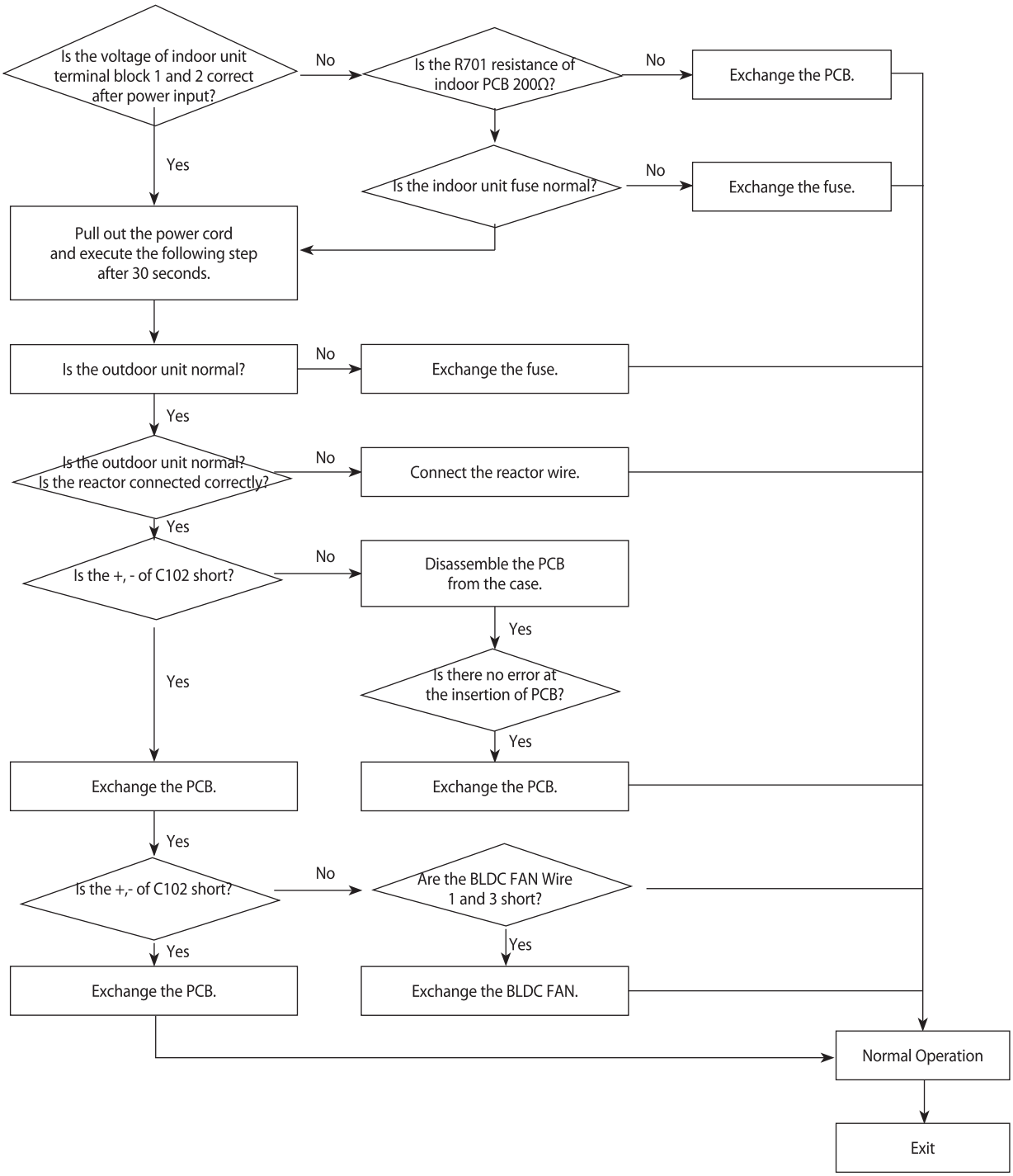
2. Troubleshooting procedure



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

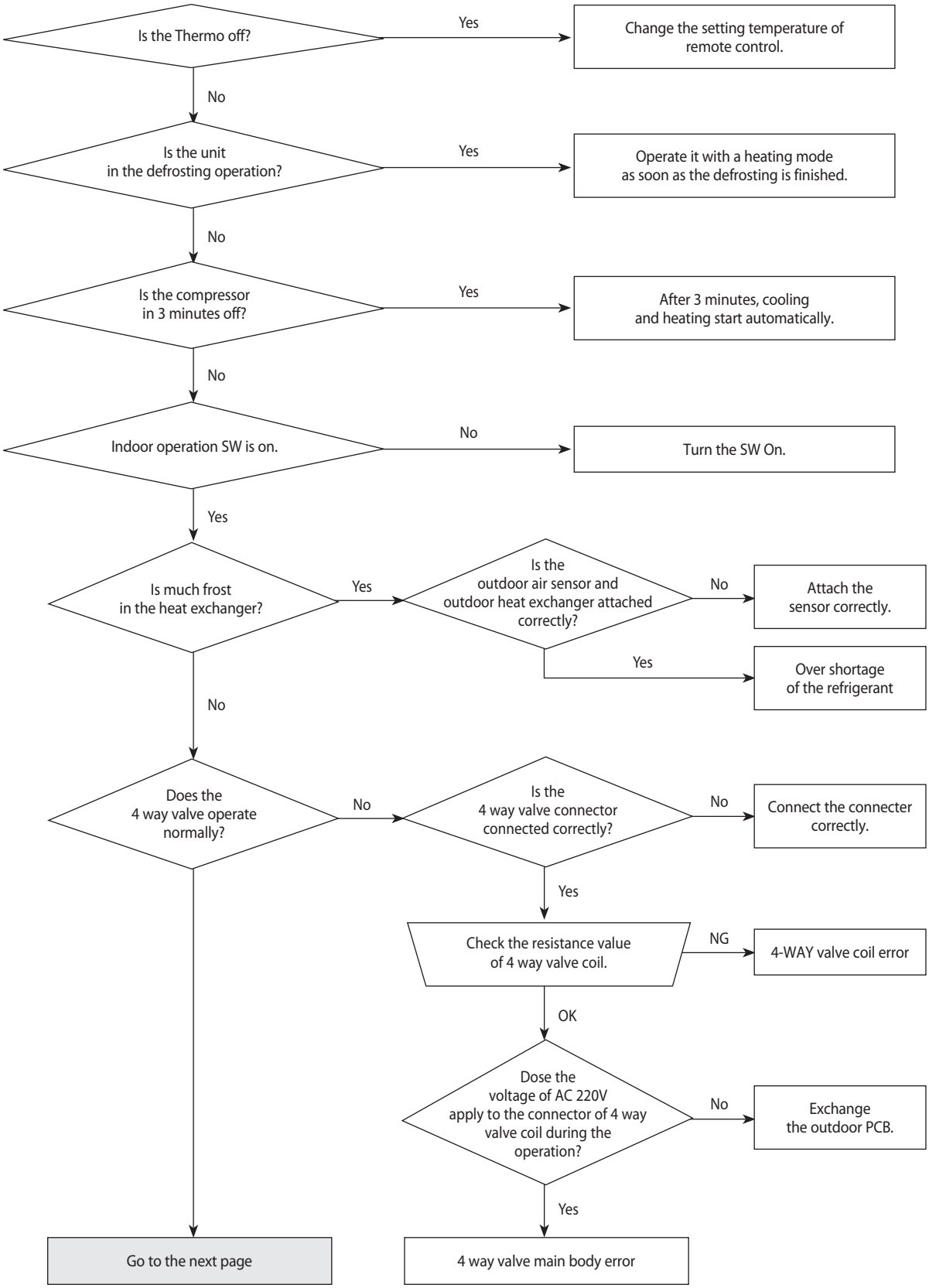
1. Checklist :
   1) Are the input power voltage and the power connection correct?
   2) Is there no Fuse short in the indoor unit and outdoor unit?
   3) Is the cable connected correctly between the indoor unit and outdoor unit in order.
   4) Is the wire connected correctly to the terminal block of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

2. Troubleshooting procedure

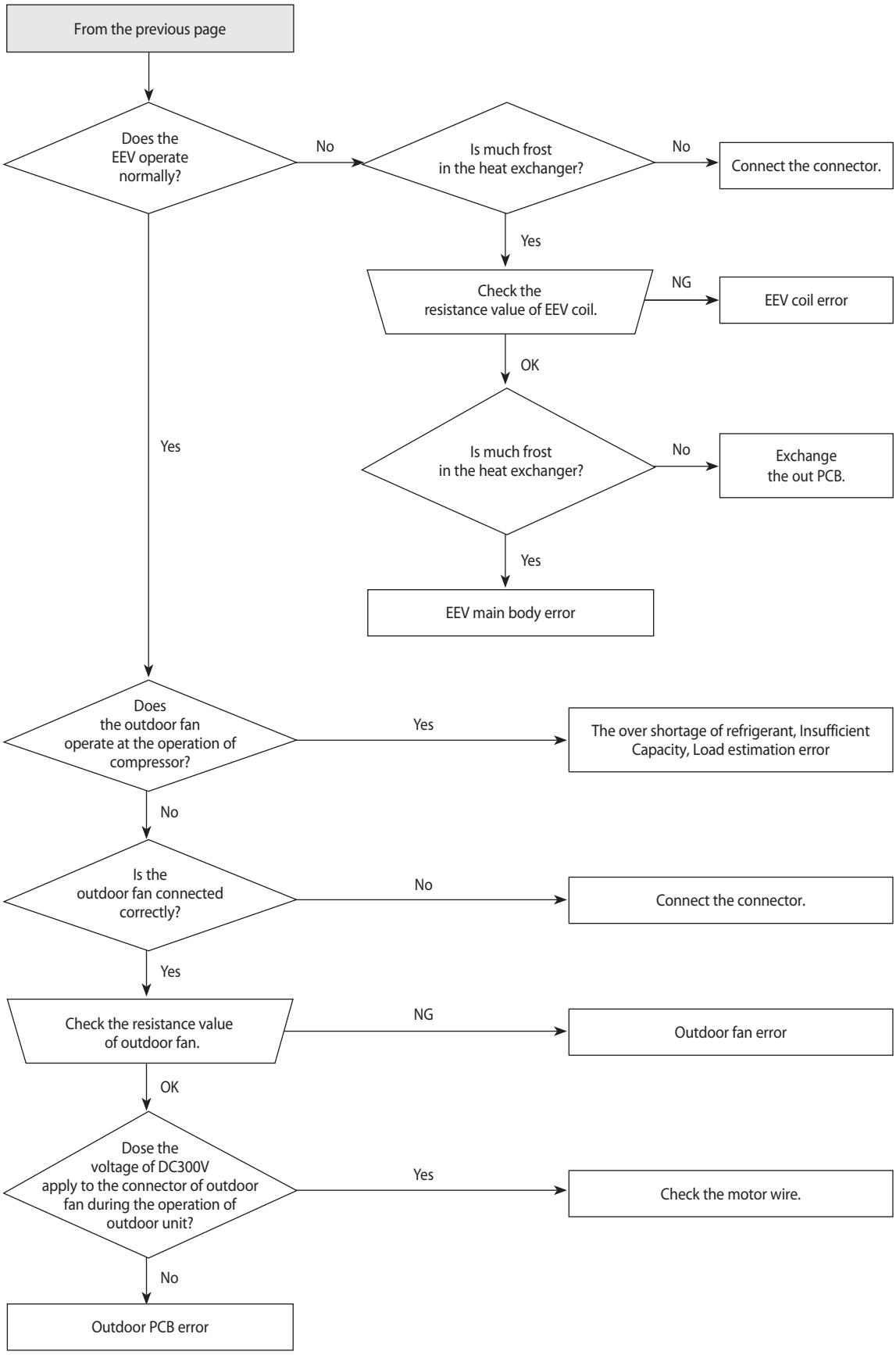


4-3-15 In case of heating at the cooling mode or cooling at the heating mode (Not displayed)

1. Troubleshooting procedure



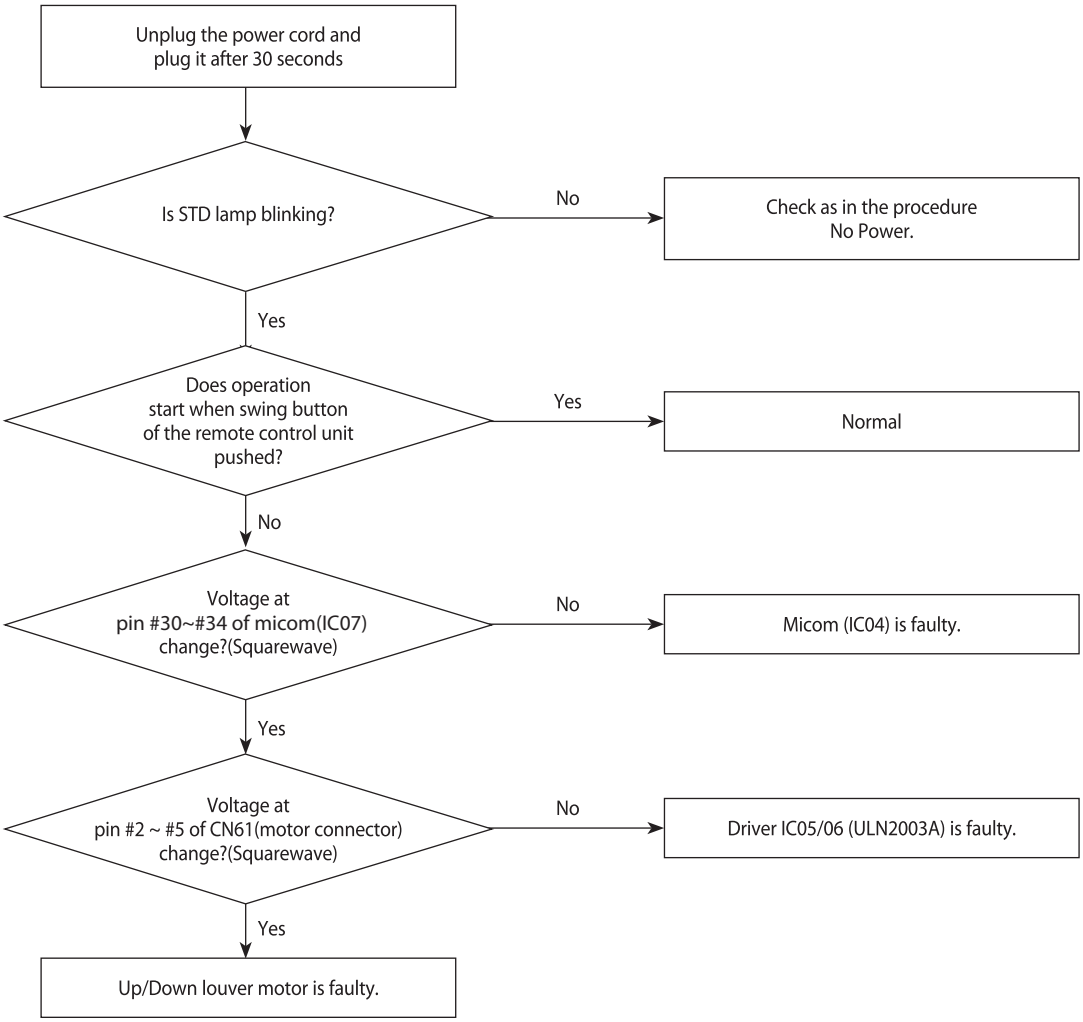
In case of heating at the cooling mode or cooling at the heating mode(cont.)



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

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

2. Troubleshooting procedure



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

1. Check if the connector was normally assembled.

2. Put the set in operation and check the voltage of No. 15(+) and No. 16(-) of the main PCB CN91 while operating the remote control. When the voltage descends below 3V, the assembly module PCB is normal and the main PCB is poor. Then replace the main PCB.

3. Replace the assembly display PCB because the module PCB is poor if the voltage between No. 15~16 of CN91 maintains 5V after the remote control starts operation.

4-3-18 The others

1. AC Line Zero Cross Signal OUT
   Check the assembly condition of peripheral part of PC2321 and Q2321 on the PCB.

2. Capacity miss match
   – Check again the indoor unit option code.

4-4 PCB Inspection Method

4-4-1 Pre-inspection Notices

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

4-4-2 Inspection Procedure

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

4-4-3 Indoor Detailed Inspection Procedure

No	Procedure	Inspection Method	Cause
1	Plug out and pull the PCB out of the electronic box. Check the PCB fuse.	1) Is the fuse disconnected?	• Over current • Indoor Fan Motor Short • AC Part Pattern Short of the MAIN PCB
2	Supply power. If the operating lamp twinkles at this time, the above 1)~3) have no relation.	Checking the power voltage.	
		1) Is the BD4201 input voltage AC200V~AC240V?	• Power Cord is fault, Fuse open. Wrong Power Cable Wiring, AC Part is faulty.
		2) Is the voltage between both terminals of the C104 on the 2nd side of the transformer DC12V ±0.5V?	• Switching Trans or Power Circuit is faulty
		3) Is the voltage between both terminals of OUT and GND of IC4202(KA78L05) DC5V ±0.5V?	• Power Circuit is faulty, Load Short
3	Press the ON/OFF button.	Checking the power voltage.	
		1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN72)?	• Relay(RY71) Coil Disconnection, IC05 is faulty
		2) Check the voltage of both terminals of terminal block 1 and N(1) after 3 minute operation.: AC220V	• Relay(RY71) Contact is faulty
4	Press the ON/OFF button. 1. FAN Speed [High] 2. Continuous Operation	1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN72)?	• Fan Motor of the indoor is faulty
		2) The fan motor of the indoor unit doesn't run.	• Fan Motor Connector(CN72) is faulty
		3) The power voltage between terminal #3 and #5 of the connector(CN72) is 0V.	• ASS'Y Main PCB is faulty • Connection is faulty

4-4-4 Outdoor Detailed Inspection Procedure

No	Procedure	Inspection Method	Cause
1	Wait 30 seconds over after disconnecting the power cable Check the outdoor PCB.	1) Is C101 discharged? 2) Is the resistance of both terminals of C101 opened? 3) Is the fuse of EMI PCB normal? 4) Is the reactor wire connected?	• Over Current • Inner short of PCB • BLDC FAN Motor Error
2	Check the Outdoor unit PCB.	1)Is PTC 40 ohm(indoor PCB)? 2)Does RY74 operate normally(indoor PCB)? (IC05:0V,1:5V) 3) Is the fuse(F701) normal? 4) Is the Sub PCB assembled normally?	• Outdoor PCB Error • SUB Relay(RY74) Error • IC05 Error • Indoor PCB Error
3	Check the LED lighting after power supply.	1) Normal: Red: Light On, Green: Flickering, Yellow: Light Off? 2) Is the voltage of C101 250V over? 3) Is the input of IC19 8V, and the output 5V? 4) Recheck after disassembling BLDC FAN Wire.	• Inner short of outdoor PCB • Wrong assembly of outdoor PCB • BLDC FAN Error
4	Check the condition of indoor & outdoor connection cable.	1) Is the green LED light on once per second? 2) Is the indoor & outdoor connection able connected in order? 3) Is the grounding wire connected to the both of indoor & outdoor unit? 4) Is the voltage of terminal block N(1), 225V?	• Wrong connection of Indoor/Outdoor wiring • Wrong assembly of outdoor communication circuit
5	Check the Comp Wire.	1) Is it connected red, blue, and yellow in order in counterclockwise. 2) Are the valve and its installation condition good? 3) Is the installation condition of outdoor unit?	• Wrong assembly • Installation condition is bad.
6	Check the BLDC Fan.	1) Is CN01 1, 3 over 250V? 2) Is CN01 3, 5 within 1V~5V? 3) Is the voltage of CN01 6 changed? 4) Is the resistance of BLDC Motor 1, 3 opened after power off?	• Outdoor PCB Error • BLDC Motor Error

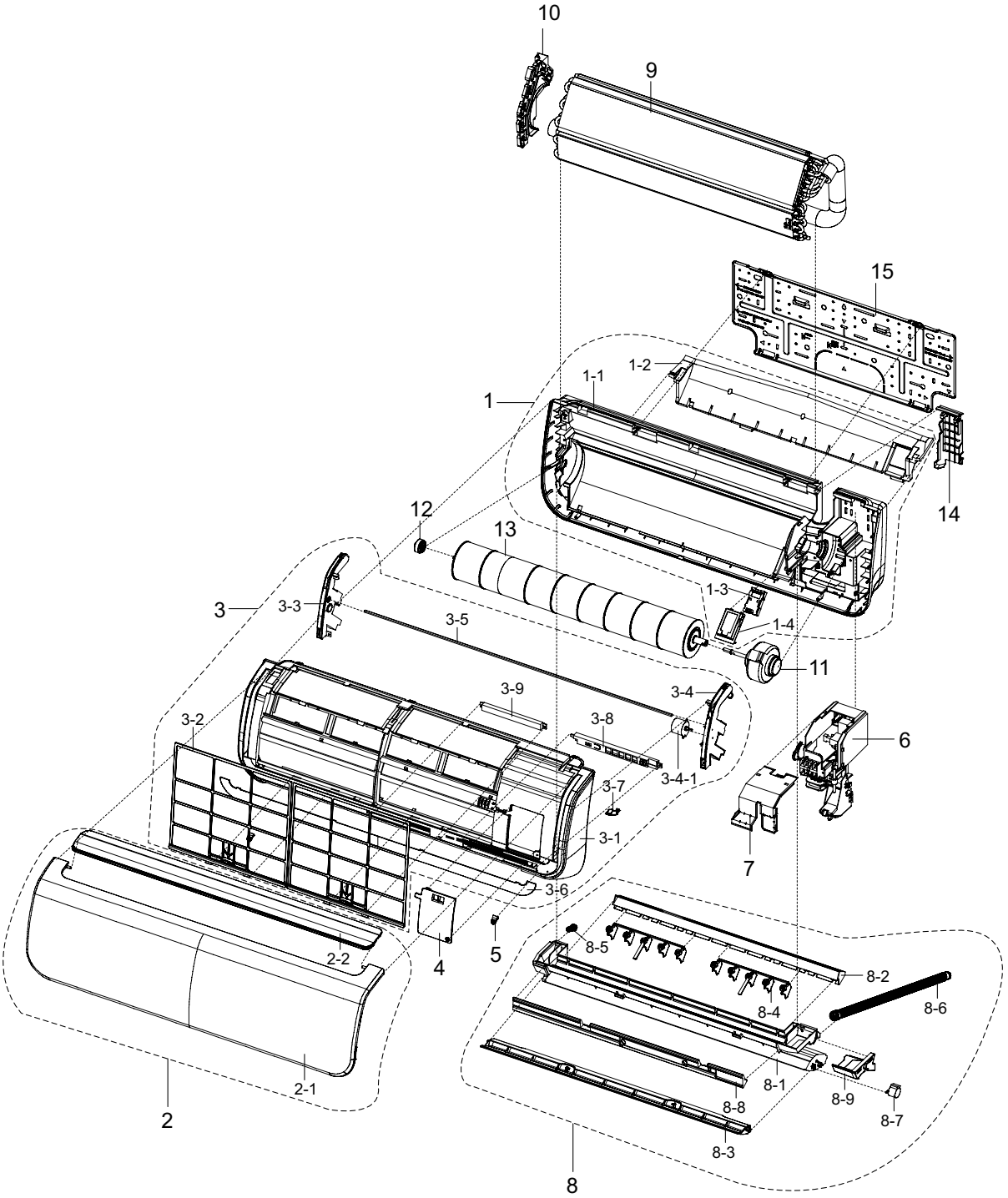
4-5 Main Part Inspection Method

<table>
<tr><th>Part</th><th colspan="2">Breakdown Inspection Method</th></tr>
<tr><td rowspan="3">Room Temperature Sensor</td><td colspan="2">Measure resistance with a tester</td></tr>
<tr><td>Normal</td><td>At the normal temperature 37kΩ~ 8.3kΩ(-7˚C~+30˚C) *Refer to Table 12-3-4.</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω . . . Open or Short</td></tr>
<tr><td rowspan="3">Room Fan Motor</td><td colspan="2">Measure the resistance between terminals of the connector (CN72) with a tester.</td></tr>
<tr><td>Normal</td><td>At the normal temperature (10˚C ~ 30˚C)
<table>
<tr><th>Compare terminal</th><th>Resistance</th><th>Remark</th></tr>
<tr><td>Yellow, Blue</td><td>404.4Ω ± 10%</td><td>Main</td></tr>
<tr><td>Yellow, Red</td><td>340Ω ± 10%</td><td>Sub</td></tr>
</table></td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω . . . Open or Short</td></tr>
<tr><td rowspan="3">Stepping Motor</td><td colspan="2">Measure the resistance between the red wire and each terminal wire with a tester.</td></tr>
<tr><td>Normal</td><td>About 300Ω at the normal temperature (20˚C ~ 30˚C)</td></tr>
<tr><td>Abnormal</td><td>∞, 0Ω . . . Open or Short</td></tr>
</table>

MEMO

5. Exploded Views and Parts List

5-1 Indoor Unit



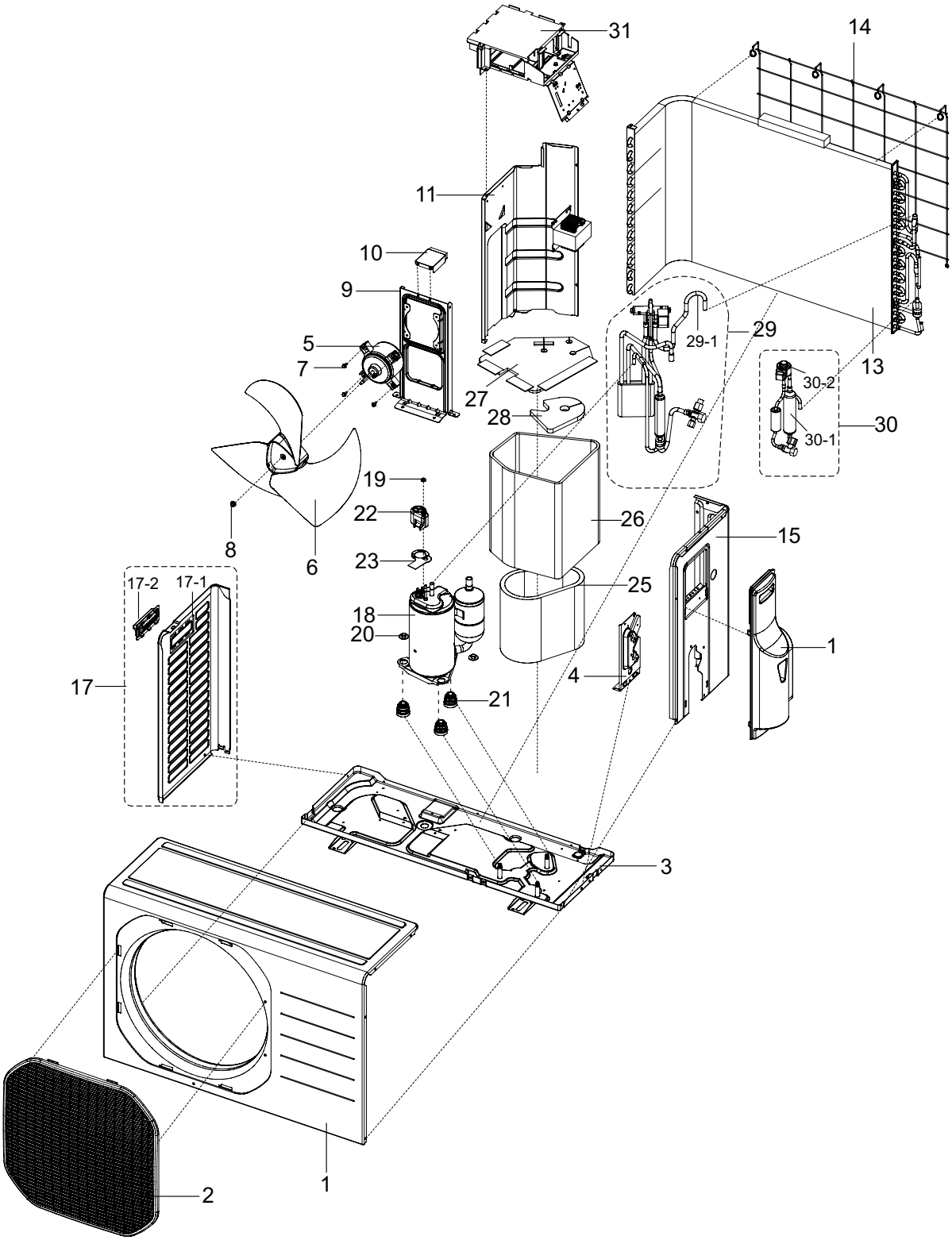
■ Parts List

No.	Code No.	Description	Specification	Q'TY	SA/SNA
				AQV09AWBN	
1	DB94-01555A	ASSY-BODY BACK	ASSY	1	SA
1-1	DB61-03295A	BODY BACK	HIPS	1	SA
1-2	DB62-05141A	SEAL-INSUL BODY REAR	EPS(30)	1	SA
1-3	DB63-01812A	COVER-MPI	HIPS	1	SA
1-4	DB93-04230B	ASSY-COMPACT MPI	ASSY	1	SA
2	DB92-01124G	ASSY GRILLE	ASSY	1	SA
2-1	DB64-01872C	GRILLE-AIR INLET	ABS	1	SA
2-2	DB64-01867D	GRILLE-DOOR	ABS	1	SA
3	DB92-01125A	ASSY PANEL FRONT	ASSY	1	SA
3-1	DB64-01866A	PANEL FRONT	HIPS	1	SA
3-2	DB63-01826A	FILTER-PRE	PP	2	SA
3-3	DB92-01122A	ASSY-RACK GRILLE LF	ASSY	1	SA
3-4	DB92-01123A	ASSY-RACK GRILLE RH	ASSY	1	SA
3-4-1	DB31-00368B	MOTOR STEP	DC12V,3500gf.cm	1	SA
3-5	DB66-01256A	SHAFT-PINION	STS304	1	SNA
3-6	DB64-01873A	WINDOW-DISPLAY	PMMA	1	SNA
3-7	DB64-01876A	BUTTON-POWER	PMMA	1	SNA
3-8	DB93-05779A	ASSY DISPLAY	ASSY	1	SNA
3-9	DB93-05778A	ASSY DISPLAY-MPI	ASSY	1	SNA
4	DB63-01825C	COVER-TERMINAL	HIPS(V0)	1	SA
5	DB67-00849A	CAP-SCREW	HIPS	2	SA
6	DB93-08377A	ASSY CONTROL IN	ASSY	1	SA
7	DB63-01850A	COVER-PBA	SGCC-M	1	SA
8	DB94-01557A	ASSY TRAY DRAIN	ASSY	1	SA
8-1	DB63-01849A	TRAY DRAIN	ABS	1	SA
8-2	DB63-01837A	TRAY-STABILIZER	ABS	1	SA
8-3	DB61-03332A	BLADE-H	ABS	1	SA
8-4	DB61-01636A	BLADE-V	PP	2	SA
8-5	DB73-00180A	RUBBER-CAP DRAIN	GUM-EPM	1	SNA
8-6	DB94-00458B	ASSY DRAIN-HOSE	ASSY	1	SA
8-7	DB31-00371A	MOTOR STEP	DC12V, 600gf.cm	1	SA
8-8	DB62-05155A	SEAL-INSUL TRAY FR	EPS(30)	1	SNA
8-9	DB69-00839A	CUSHION-TRAY RH	EPS(30)	1	SNA
9	DB96-08235A	ASSY EVAP-TOTAL	ASSY	1	SA
10	DB61-03333A	HOLDER-EVAP	HIPS	1	SA
11	DB31-00474A	MOTOR FAN	0.3A,50/60Hz,35W,220/240V,1350rpm	1	SA
12	DB94-00455B	ASSY BEARING-RUBBER	ASSY	1	SA
13	DB94-01556A	ASSY-CROSS FAN	ASSY	1	SA
14	DB61-03296A	HOLDER-PIPE	HIPS	1	SA
15	DB70-00819A	PLATE-HANGER	SGCC-M	1	SA

■ Parts List

No.	Code No.	Description	Specification	Q'TY	SA/SNA
				AQV12AWBN	
1	DB94-01555A	ASSY-BODY BACK	ASSY	1	SA
1-1	DB61-03295A	BODY BACK	HIPS	1	SNA
1-2	DB62-05141A	SEAL-INSUL BODY REAR	EPS(30)	1	SNA
1-3	DB63-01812A	COVER-MPI	HIPS	1	SA
1-4	DB93-04230B	ASSY-COMPACT MPI	ASSY	1	SA
2	DB92-01124G	ASSY GRILLE	ASSY	1	SA
2-1	DB64-01872C	GRILLE-AIR INLET	ABS	1	SA
2-2	DB64-01867D	GRILLE-DOOR	ABS	1	SA
3	DB92-01125A	ASSY PANEL FRONT	ASSY	1	SA
3-1	DB64-01866A	PANEL FRONT	HIPS	1	SNA
3-2	DB63-01826A	FILTER-PRE	PP	2	SA
3-3	DB92-01122A	ASSY-RACK GRILLE LF	ASSY	1	SA
3-4	DB92-01123A	ASSY-RACK GRILLE RH	ASSY	1	SA
3-4-1	DB31-00368B	MOTOR STEP	DC12V,3500gf.cm	1	SNA
3-5	DB66-01256A	SHAFT-PINION	STS304	1	SNA
3-6	DB64-01873A	WINDOW-DISPLAY	PMMA	1	SNA
3-7	DB64-01876A	BUTTON-POWER	PMMA	1	SNA
3-8	DB93-05779A	ASSY DISPLAY	ASSY	1	SNA
3-9	DB93-05778A	ASSY DISPLAY-MPI	ASSY	1	SNA
4	DB63-01825C	COVER-TERMINAL	HIPS(V0)	1	SA
5	DB67-00849A	CAP-SCREW	HIPS	2	SA
6	DB93-08377A	ASSY CONTROL IN	ASSY	1	SA
7	DB63-01850A	COVER-PBA	SGCC-M	1	SA
8	DB94-01557A	ASSY TRAY DRAIN	ASSY	1	SA
8-1	DB63-01849A	TRAY DRAIN	ABS	1	SNA
8-2	DB63-01837A	TRAY-STABILIZER	ABS	1	SA
8-3	DB61-03332A	BLADE-H	ABS	1	SA
8-4	DB61-01636A	BLADE-V	PP	2	SA
8-5	DB73-00180A	RUBBER-CAP DRAIN	GUM-EPM	1	SNA
8-6	DB94-00458B	ASSY DRAIN-HOSE	ASSY	1	SA
8-7	DB31-00371A	MOTOR STEP	DC12V, 600gf.cm	1	SA
8-8	DB62-05155A	SEAL-INSUL TRAY FR	EPS(30)	1	SNA
8-9	DB69-00839A	CUSHION-TRAY RH	EPS(30)	1	SNA
9	DB96-08235A	ASSY EVAP-TOTAL	ASSY	1	SA
10	DB61-03333A	HOLDER-EVAP	HIPS	1	SA
11	DB31-00474A	MOTOR FAN	0.3A,50/60Hz,35W,220/240V,1350rpm	1	SA
12	DB94-00455B	ASSY BEARING-RUBBER	ASSY	1	SA
13	DB94-01556A	ASSY-CROSS FAN	ASSY	1	SA
14	DB61-03296A	HOLDER-PIPE	HIPS	1	SA
15	DB70-00819A	PLATE-HANGER	SGCC-M	1	SA

5-2 Outdoor Unit

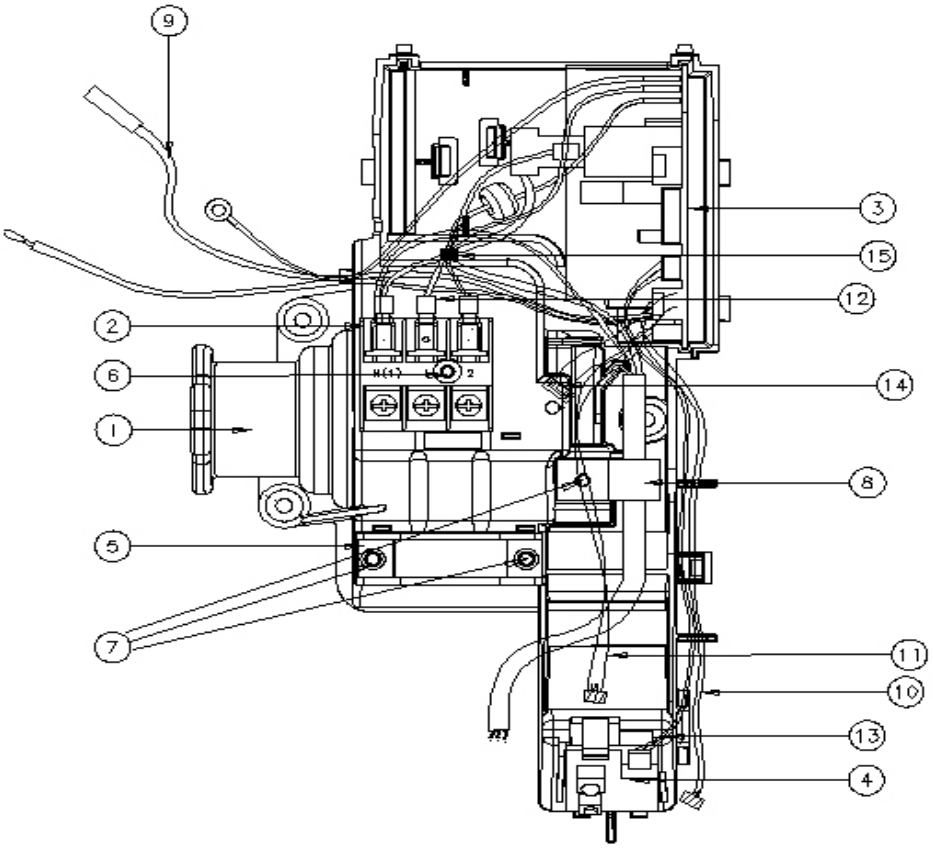


■ Parts List

No.	Code No.	Description	Specification	Q'TY	SA/SNA
				AQV09AWBX	
1	DB90-01711Q	ASSY CABI FRONT	ASSY	1	SA
2	DB94-02118A	GUARD FAN	PP	1	SA
3	DB90-01681F	ASSY BASE OUT	ASSY	1	SA
4	DB61-02068B	BRACKET-VALVE	PSECC-P,T1.6	1	SA
5	DB31-00431A	MOTOR FAN-BLDC	BLDC,8P,25W,710RPM,E CLASS	1	SA
6	DB67-00397A	FAN-PROPELLER	AS+GF20%,Φ400	1	SA
7	DB60-00150A	SCREW-HEX	M4,L10	4	SA
8	DB60-30004A	SCREW-MACHINE	M6,ZPC(WHT)	1	SA
9	DB61-01644A	BRACKET MOTOR	SGCC-M	1	SA
10	DB97-02225G	ASSY-SUPPORT PLATE B/M	ASSY	1	SA
11	DB94-01655B	ASSY-PARTITION	ASSY	1	SA
12	DB27-00041A	COIL CHOKE-REACTOR	5mH,10%,-,120mOHM,10A	1	SA
13	DB96-08373A	ASSY COND	ASSY	1	SA
14	DB64-02118A	SCREEN-COND BAR	HSWR	1	SA
15	DB90-02876C	ASSY CABINET-SIDE RH	ASSY	1	SA
16	DB90-03818F	A SSY-COVER VALVE	ASSY	1	SA
17	DB90-01713E	ASSY-CABI SIDE LF	ASSY	1	SA
17-1	DB64-00982A	CABINET-SIDE LF	SECC-P	1	SA
17-2	DB64-00992A	HANDLE-LF	PP	1	SA
18	G4C090LUDER	COMPRESSOR	ROTARY	1	SA
19	6021-001142	NUT-HEXAGON FLANGE	M5,ZPC(YEL)	1	SA
20	DB60-30028A	SCREW-HEX	M8,ZPC(WHT)	3	SA
21	DB99-01032A	GROMMET ISOLATOR	44A,NR35	3	SA
22	DB63-02310A	COVER TERMINAL	NORYL	1	SA
23	DB63-00817A	GASKET	EPDM RUBBER	1	SA
24	DB63-01958A	FELT-COMP BOTTOM	FELT+PVC	1	SA
25	DB63-01647A	FELT-COMP SIDE	FELT+PVC	1	SA
26	DB63-01934A	FELT-COMP SIDE OUT	FELT+PVC	1	SA
27	DB63-02034A	FELT-COMP UPPER	FELT+PVC	1	SA
28	DB63-01710B	FELT-COMP UPPER	FELT+PVC	1	SA
29	DB96-08389B	ASSY-VALVE 4WAY	ASSY	1	SA
29-1	DB33-00002C	SOLENOID-ASSY	ASSY	1	SA
30	DB96-08390A	ASSY-VALVE EEV	ASSY	1	SA
30-1	DB62-03916A	VALVE-EXPANSION BODY	FUJIKOKI,⊠1.4	1	SNA
30-2	DB62-03964A	VALVE EXPAN-COIL	FUJIKOKI,⊠1.4	1	SNA
31	DB93-08395C	ASSY CONTROL OUT	ASSY	1	SA

■ Parts List

No.	Code No.	Description	Specification	Q'TY AQV12AWBX	SA/SNA
1	DB90-01711Q	ASSY CABI FRONT	ASSY	1	SA
2	DB94-02118A	GUARD FAN	PP	1	SA
3	DB90-01681F	ASSY BASE OUT	ASSY	1	SA
4	DB61-02068B	BRACKET-VALVE	PSECC-P,T1.6	1	SA
5	DB31-00431A	MOTOR FAN-BLDC	BLDC,8P,25W,710RPM,E CLASS	1	SA
6	DB67-00397A	FAN-PROPELLER	AS+GF20%,Φ400	1	SA
7	DB60-00150A	SCREW-HEX	M4,L10	4	SA
8	DB60-30004A	SCREW-MACHINE	M6,ZPC(WHT)	1	SA
9	DB61-01644A	BRACKET MOTOR	SGCC-M	1	SA
10	DB97-02225G	ASSY-SUPPORT PLATE B/M	ASSY	1	SA
11	DB94-01655B	ASSY-PARTITION	ASSY	1	SA
12	DB27-00041A	COIL CHOKE-REACTOR	5mH,10%,-,120mOHM,10A	1	SA
13	DB96-08373A	ASSY COND	ASSY	1	SA
14	DB64-02118A	SCREEN-COND BAR	HSWR	1	SA
15	DB90-02876C	ASSY CABINET-SIDE RH	ASSY	1	SA
16	DB90-03818A	ASSY-COVER VALVE	ASSY	1	SA
17	DB90-01713E	ASSY-CABI SIDE LF	ASSY	1	SA
17-1	DB64-00982A	CABINET-SIDE LF	SECC-P	1	SA
17-2	DB64-00992A	HANDLE-LF	PP	1	SA
18	G4C090LUDER	COMPRESSOR	ROTARY	1	SA
19	6021-001142	NUT-HEXAGON FLANGE	M5,ZPC(YEL)	1	SA
20	DB60-30028A	SCREW-HEX	M8,ZPC(WHT)	3	SA
21	DB99-01032A	GROMMET ISOLATOR	44A,NR35	3	SA
22	DB63-02310A	COVER TERMINAL	NORYL	1	SA
23	DB63-00817A	GASKET	EPDM RUBBER	1	SA
24	DB63-01958A	FELT-COMP BOTTOM	FELT+PVC	1	SA
25	DB63-01647A	FELT-COMP SIDE	FELT+PVC	1	SA
26	DB63-01934A	FELT-COMP SIDE OUT	FELT+PVC	1	SA
27	DB63-02034A	FELT-COMP UPPER	FELT+PVC	1	SA
28	DB63-01710B	FELT-COMP UPPER	FELT+PVC	1	SA
29	DB96-08389B	ASSY-VALVE 4WAY	ASSY	1	SA
29-1	DB33-00002C	SOLENOID-ASSY	ASSY	1	SA
30	DB96-08390A	ASSY-VALVE EEV	ASSY	1	SA
30-1	DB62-03916A	VALVE-EXPANSION BODY	FUJIKOKI,⊠1.4	1	SNA
30-2	DB62-03964A	VALVE EXPAN-COIL	FUJIKOKI,⊠1.4	1	SNA
31	DB93-08395D	ASSY CONTROL OUT	ASSY	1	SA



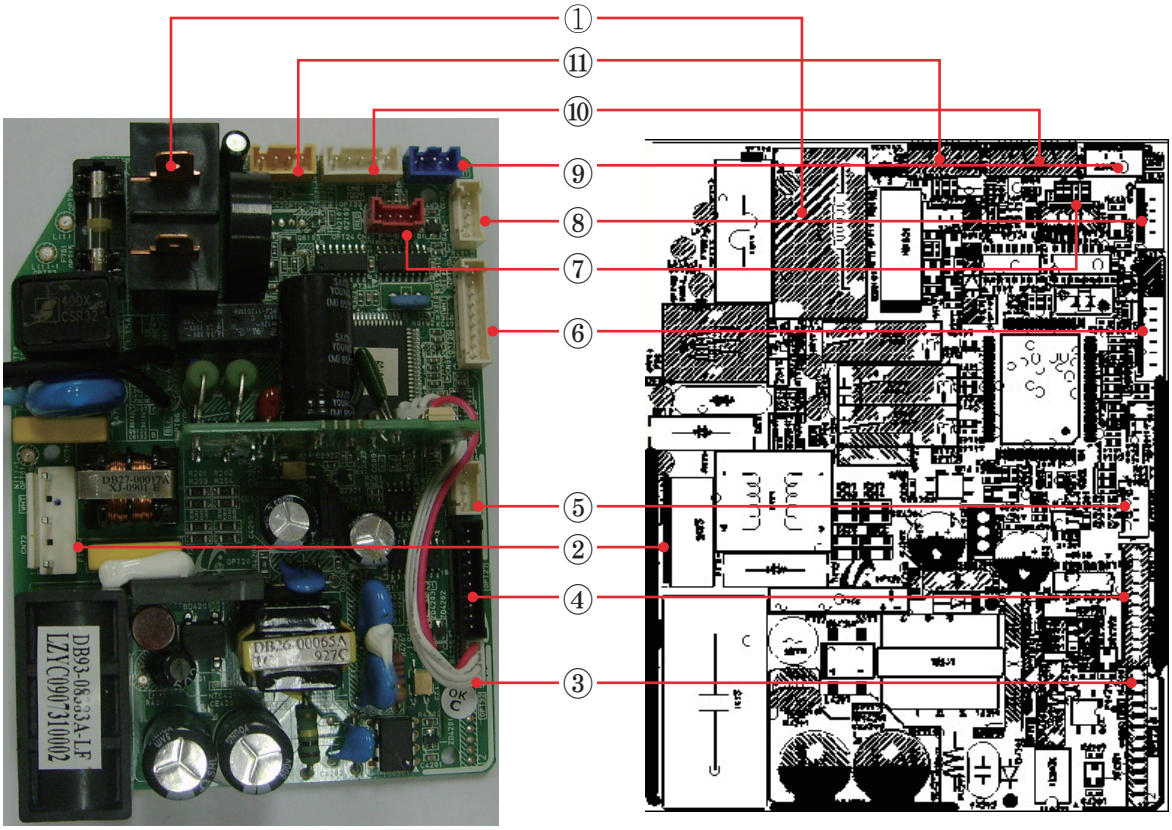
DB93-08377A PARTLIST					
NO	CODE NO.	DESC_SPEC	PARA1	PARA2	Q'TY
1	DB61-03343C	CASE CONTROL IN	MONTBLANC1	ABS	1
2	DB65-00181B	TERMINAL BLOCK[N(1),1,2]	9K/12K INV		1
3	DB93-08383A	ASSY-PCB IN	9K/12K INV		1
4	DB93-08404A	ASSY MODULE PCB			1
5	DB61-01097A	HOLDER - WIRE CLAMP	SGCC-M	T1.2	1
6	DB91-00309A	SCREW	PH M3*L22		1
7	DB97-02418A	SCREW	TH M4*L10		3
8	DB91-00434A	ASSY-POWER CORD	ASSY POWER CORD	3WIRE	1
9	DB95-01990C	ASSY THERMISTOR	4P		1
10	DB93-04484A	ASSY C/W AUTOGRILL	5P		1
11	DB93-04688A	ASSY C/W LOUVER	5P		1
12	DB93-08572A	ASSY C/W - T/B(1)	1P		1
13	DB93-05729A	ASSY C/W MODULE	4P	280mm	1
14	DB93-05657A	ASSY C/W MIAN TO DISPLAY	9P		1

6. PCB Diagram and Parts List

6-1. Block Diagram

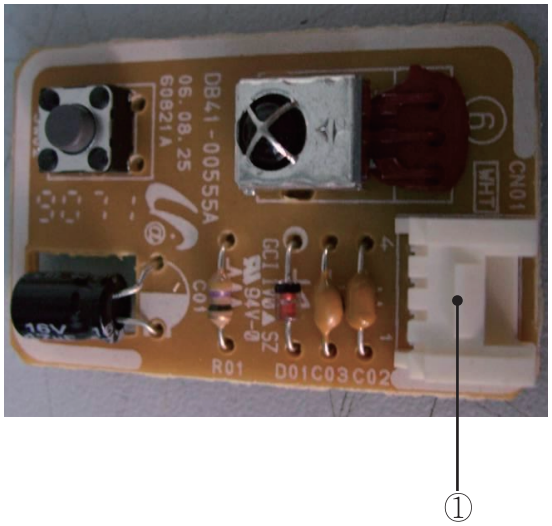
6-1-1. Indoor MAIN PCB

■ AQV09A✳A/AQV12A✳A



①RY71(L -terminal) Power Input	②CN72-FAN MOTOR #1:모터기동Capacitor연결 #3:AC 위상제어 신호 #5:Power	③CN22-COMMUNICATION #1:DC5V #2:TxD #3:RxD #4:GND	④KCN46-DOWNLOAD #1:RxD #2:TxD #3:GND #4:GND #5:Null #6:Flash Mode2 #7:Flash Mode1 #8:Flash Mode0 #9:GND #10:DC5V
⑤CN43-TEMPERATURE SENSOR #1:Room temperature sensing #2:GND #3:Pipe temperature sensing #4:GND	⑥CN91-DISPLAY #1:STB signal #2:CLK signal #3:LED driving signal #4:LED driving signal #5:DC5V #6:Null #7:Remocon signal input #8:DC12V #9:MPI Lamp driving signal	⑦CN45-KEY/REMOCON #1:GND #2:DV5C #3:Remocon signal input #4:Switch key signal input	⑧CN44-FAN MOTOR FEEDBACK #1:DC5V #2:GND #3:Feedback signal input
⑨CN63-BLADE MOTOR #1:DC12V #2:Motor driving signal output_1 #3:Motor driving signal output_2 #4:Motor driving signal output_3 #5:Motor driving signal output_4	⑩CN61-GRILL MOTOR #1:DC12V #2:Motor driving signal output_1 #3:Motor driving signal output_2 #4:Motor driving signal output_3 #5:Motor driving signal output_4	⑪CN6601-MPI FEEDBACK #1:MPI driving signal output (-) #2:MPI driving signal output (+) #3:DV12V #4:MPI feedback signal input	

6-1-2.Indoor MODULE PCB:DB93-08404A



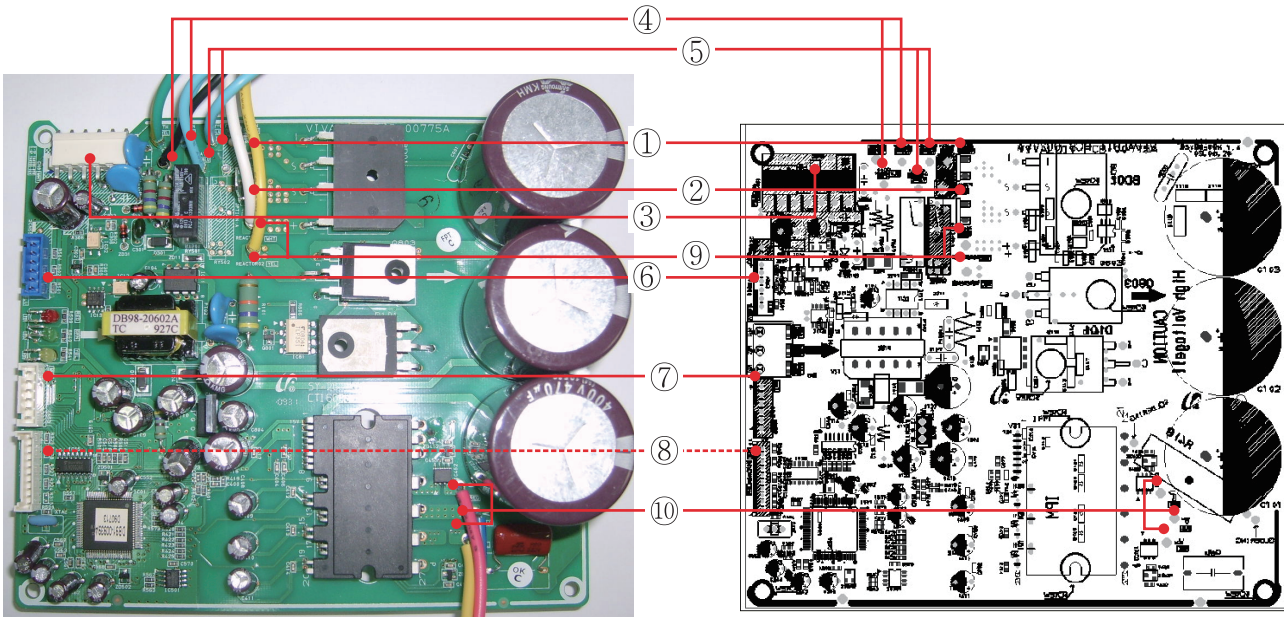
① CN01-KEY/REMOCON
#1:GND
#2:DV5C
#3:Remocon signal output
#4:Switch key signal output

6-1-3.Indoor DISPLAY PCB:DB93-08355A

① MPI DISPLAY CONNECTION	② DISPLAY CONNECTION
#1:MPI Lamp driving signal #2:Null #3:GND	#1:STB signal #2:CLK signal #3:LED driving signal #4:LED driving signal #5:Null #6:LED driving signal #7:LED driving signal #8:LED driving signal #9:VCC #10:LED driving signal #11:LED driving signal #12:Null

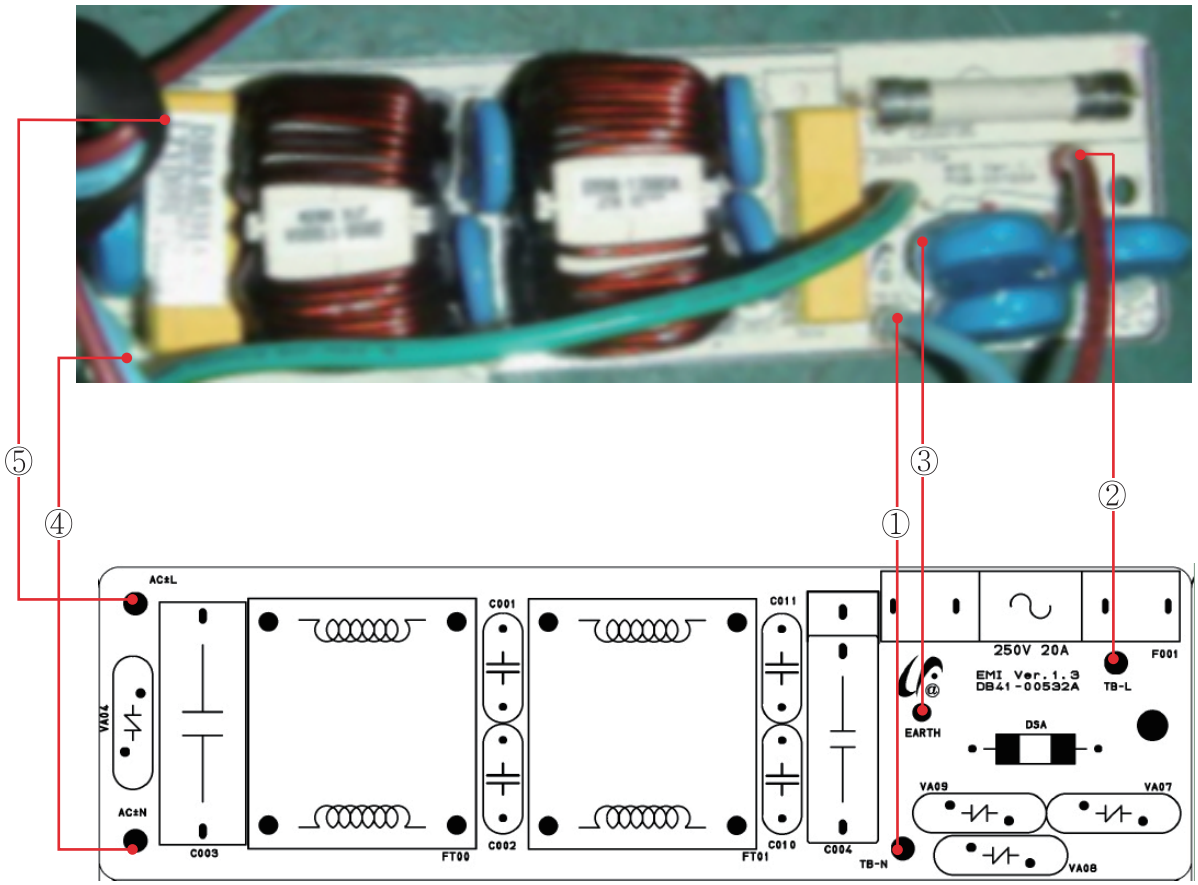
6-1-4. Outdoor MAIN PCB

■ **AQV09AWB:DB93-08388C**
■ **AQV12AWB:DB93-08388D**



①Power N Wire	②Power L Wire	③CN01-BLCD FAN MOTOR #1: DC310V #2: Null #3: Motor Driving Signal #4:15V #5: Motor Driving Signal #6: Feedback Signal #7:Reverse Signal	④Communication AC Wire #Sky-blue #Black
⑤ 4Way-valve Wire	⑥ CN54-DIS/OUTDOOR/ COND Temperature Sensor #1:Outdoor temperature sensing #2:GND #3:Discharge tempera-ture sensing #4:GND #5:Cond. temperature sensing #6:GND	⑦CN63-EEV Connector #1:EEV driving signal #2:EEV driving signal #3:EEV driving signal #4:EEV driving signal #5:EEV driving signal #6:DC12V	⑧CN30-DOWMLOAD 미사용
⑨Reactor Connector Wire	⑩Compressor Wire		

6-1-5.Outdoor EMI PCB:DB93-08391A



①, ④ Power N Wire	②, ⑤Power L Wire	③Earth Wire

6-2. Electrical Parts List

■ MAIN PCB :DB93-08383A

Parts Code	Parts Description	Spec.	Quantity	Service
0402-000012	DIODE-RECTIFIER	UF4007,1000V,1A,DO-41,TP	1	SNA
0402-000137	DIODE-RECTIFIER	1N4007,1000V,1A,DO-41,TP	1	SNA
0402-001194	DIODE-RECTIFIER	UG2D,200V,2A,DO-15,TP	1	SNA
0402-001298	DIODE-BRIDGE	DF06S,600V,1A,SMD-4,TP	1	SNA
0403-000252	DIODE-ZENER	BZX84C3V6,3.4-3.8V,350MW,SOT-23,TP	1	SNA
0403-000258	DIODE-ZENER	BZX84C5V6,5.2-6V,225mW,SOT-23,TP	1	SNA
0403-001285	DIODE-ZENER	BZX84-C11,10.4-11.6V,350mW,SOT-23,TP	1	SNA
0501-000534	TR-SMALL SIGNAL	2SC2412K,NPN,200mW,SOT-23,TP,180-300	1	SNA
0501-002296	TR-SMALL SIGNAL	MMST2907A,PNP,200MW,SMT3,TP,100-300	1	SNA
0504-000127	TR-DIGITAL	FJV3102RMTF,NPN,200MW,10K/10K,SOT-23,TP	1	SNA
0504-001064	TR-DIGITAL	DTC114EKA,NPN,200mW,10K/10K,SOT-23,TP	1	SNA
0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	1	SNA
0604-001002	PHOTO-COUPLER	TR,100-600%,200mW,SOP-4,TP	1	SNA
0604-001148	PHOTO-COUPLER	TR,50-600%,200mW,SMD-4,TP	1	SNA
1103-001175	IC-EEPROM	93LC56,128x16,SOP,8P,5x4mm,2.5/6.0V,-40to+85C	1	SNA
1203-000274	IC-POSI.FIXED REG.	7805,TO-220,3P,-,PLASTIC,4.8/5	1	SNA
1203-002545	IC-PWM CONTROLLER	266,DIP,8P,300MIL,PLASTIC,-0.3/700V,-,-40TO+150C,560MA,-,ST	1	SNA
1203-003334	IC-RESET	S-801,SOT-23,5P,2.9x1.6mm,PLASTIC,3.716/4.284V,256mW,-,2.5mA,-,TP	1	SNA
1404-001498	THERMISTOR-PTC	40ohm,25%,290Vac,7A,TR	1	SNA
1405-000160	VARISTOR	680V,4500A,17.5x6.5mm,TP	1	SNA
2002-001104	R-COMPOSITION	12Mohm,5%,1/2W,AA,TP,3.4x9mm	1	SNA
2002-001104	R-COMPOSITION	12Mohm,5%,1/2W,AA,TP,3.4x9mm	1	SNA
2003-000448	R-METAL OXIDE(S)	100Kohm,5%,2W,AA,TP,4x12mm	1	SNA
2007-000070	R-CHIP	0ohm,5%,1/10W,TP,1608	1	SNA
2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	1	SNA
2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	1	SNA
2007-000077	R-CHIP	470ohm,5%,1/10W,TP,1608	1	SNA
2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	SNA
2007-000080	R-CHIP	2Kohm,5%,1/10W,TP,1608	1	SNA
2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	SNA
2007-000087	R-CHIP	6.8Kohm,5%,1/10W,TP,1608	1	SNA
2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	1	SNA
2007-000097	R-CHIP	47Kohm,5%,1/10W,TP,1608	1	SNA
2007-000109	R-CHIP	1Mohm,5%,1/10W,TP,1608	1	SNA
2007-000116	R-CHIP	120ohm,5%,1/10W,TP,1608	1	SNA
2007-000119	R-CHIP	560ohm,5%,1/10W,TP,1608	1	SNA
2007-000124	R-CHIP	2.2Kohm,5%,1/10W,TP,1608	1	SNA
2007-000312	R-CHIP	10ohm,5%,1/4W,TP,3216	1	SNA
2007-000944	R-CHIP	47Kohm,5%,1/4W,TP,3216	1	SNA

Parts Code	Parts Description	Spec.	Quantity	Service
2007-001068	R-CHIP	6.8Kohm,1%,1/10W,TP,1608	1	SNA
2201-000983	C-CERAMIC,DISC	1NF,10%,2KV,Y5P,TP,9X5MM,7.5	1	SNA
2201-000987	C-CERAMIC,DISC	2.2NF,20%,400V,Y5U,BK,12.5X6MM,10	1	SNA
2201-002193	C-CERAMIC,DISC	.082nF,K(10%),3000V,SL,TP,8 X 4,5mm	1	SNA
2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	SNA
2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,1608	1	SNA
2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	1	SNA
2301-001220	C-FILM,LEAD-PPF	100nF,10%,275V,BK,18x6x12,15	1	SNA
2301-001915	C-FILM,LEAD	1200nF,+10-5%,450V,BK,37x18x30mm	1	SNA
2401-000038	C-AL	470uF,20%,25V,GP,TP,10x12.5mm,	1	SNA
2401-000151	C-AL	1000uF,20%,25V,GP,TP,10x20,5	1	SNA
2401-002094	C-AL	47uF,20%,25V,GP,TP,5x11,2.5	1	SNA
2401-004330	C-AL	22µF,20%,500V,-,TP,12.5X25,7.5mm	1	SNA
2702-001118	INDUCTOR-RADIAL	5000uH,10%,8.0x11.0mm	1	SNA
2802-001179	RESONATOR-CERAMIC	4MHZ,0.5%,BK,8X3X5.5MM	1	SNA
3002-001129	BUZZER-PIEZO	85dB,2KHz,BK	1	SNA
3501-001154	RELAY-MINIATURE	12Vdc,200mW,3000mA,1FormA,10mS,10mS	1	SA
3501-001268	RELAY-POWER	12V,0.9W,25000mA,1FormA,20ms,10ms	1	SA
3502-000115	SSR	12Vdc,-,2A,1mS,1mS	1	SA
3601-000263	FUSE-CARTRIDGE	250V,3.15A,TIME-LAG,GLASS,5x20mm	1	SNA
3601-001209	FUSE-RADIAL LEAD	250V,1A,TIME-LAG,-,8.5x8mm	1	SNA
3711-000262	HEADER-BOARD TO CABLE	TWALL,3P,1R,7.92MM,STRAIGHT,SN,WHT	1	SNA
3711-000879	HEADER-BOARD TO CABLE	BOX,3P,1R,2.5mm,STRAIGHT,SN,BLU	1	SNA
3711-000941	HEADER-BOARD TO CABLE	BOX,4P,1R,2.5mm,STRAIGHT,SN,YEL	1	SNA
3711-000999	HEADER-BOARD TO CABLE	BOX,5P,1R,2.5mm,STRAIGHT,SN,WHT	1	SNA
3711-004379	HEADER-BOARD TO CABLE	BOX,4P,1R,2mm,STRAIGHT,SN,WHT	1	SNA
3711-004484	HEADER-BOARD TO CABLE	BOX,5P,1R,2mm,STRAIGHT,SN,WHT	1	SNA
3711-004712	HEADER-BOARD TO CABLE	BOX,9P,1R,2mm,STRAIGHT,SN,WHT	1	SNA
3711-005405	HEADER-BOARD TO CABLE	BOX,4P,1R,2mm,STRAIGHT,SN,RED	1	SNA
3711-005716	HEADER-BOARD TO CABLE	BOX,10P,1R,2mm,STRAIGHT,SN,BLK	1	SNA
DB26-00065A	TRANS SWITCHING	EI1916-09N,9W,PREMIUM,-,160V/280V,PL-3 EI1916,-,EI1916,50/60Hz,UL,1.65mH± 10%,-,-,750mA,DC12V,INDIA IMPROVE	1	SNA
DB27-00017A	COIL CHOKE	USAV-07153,UU1116,15.0mH,-25℃~+85℃,-,1.3ohm,-,15mH,105,20*18mm,13,0.6,BK,-25℃	1	SNA
DB41-00855A	PCB MAIN-IN	Vivaldi AC,CEM-3,2,T1.6,600	1	SA
DB61-00924A	HOLDER-FUSE	-,FH-51B,-,-,-,-,SSEC	1	SNA
DB67-00942A	CAP	VIVALDI-P/J,SHP2,-,-,-,GREEN,SSEC	1	SNA
DB91-00974A	ASSY-MIC	10K Montblanc-PJT Inverter Single,STM-09A7-OA, MB90F823,80QFP, ROM 128K bytes	1	SNA
DB09-00338A	IC MICOM	MB90F823,-,80 P,5 V,24 MHz,Flash Memory,-,24,16,QFP,QFP,14 * 20 mm,16,-40 ~ 85	1	SNA
DB93-04256B	ASSY PCB SUB	Montblanc1-INV,AC SUB PBA	1	SA
0402-001213	DIODE-RECTIFIER	MRA4005,600V,1A,SMA,TP	1	SNA

Parts Code	Parts Description	Spec.	Quantity	Service
0403-001492	DIODE-ZENER	1N4756A,5%,1000MW,DO-41,TP	1	SNA
0504-001064	TR-DIGITAL	DTC114EKA,NPN,200mW,10K/10K,SOT-23,TP	1	SNA
0504-001064	TR-DIGITAL	DTC114EKA,NPN,200mW,10K/10K,SOT-23,TP	1	SNA
0604-001172	PHOTO-COUPLER	TR,100-300,200mW,SOP,TP	1	SNA
2003-000656	R-METAL OXIDE(S)	33Kohm,5%,3W,AA,TP,6x16mm	1	SNA
2003-000685	R-METAL OXIDE(S)	4.7Kohm,5%,2W,AA,TP,4x12mm	1	SNA
2007-000030	R-CHIP	560ohm,5%,1/8W,TP,2012	1	SNA
2007-000077	R-CHIP	470ohm,5%,1/10W,TP,1608	1	SNA
2007-000078	R-CHIP	1Kohm,5%,1/10W,TP,1608	1	SNA
2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	1	SNA
2007-000282	R-CHIP	100Kohm,5%,1/8W,TP,2012	1	SNA
2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	1	SNA
2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,1608	1	SNA
2203-000444	C-CER,CHIP	1nF,10%,50V,X7R,TP,2012	1	SNA
2203-001562	C-CER,CHIP	10nF,+80-20%,50V,Y5V,TP,2012	1	SNA
2301-000141	C-FILM,LEAD-PEF	10nF,10%,630V,TP,16x11x7.5mm,5	1	SNA
2301-001945	C-FILM,LEAD	4.7nF,5%,630V,TP,8.5x5x13mm	1	SNA
2401-000058	C-AL	220uF,20%,100V,GP,TP,12.5x25,5	1	SNA
3711-006040	HEADER-BOARD TO BOARD	NOWALL,10P,2R,2.54mm,ANGLE,AU,BLK	1	SNA
DB41-00677A	PCB SUB-AC COMM	FORTE,CEM-3,2,1.0,T1.6,50*33mm,-,9,-,-,COMM AC	1	SNA
DB93-04350B	ASSY CONNECTOR WIRE-PCB	AQV12FA,12K_In	1	SNA
DB93-04814C	ASSY CONNECTOR WIRE	Neo Forte,XSA	1	SNA
DB93-05695D	ASSY CONNECTOR WIRE-WIRE N 1 TO TB	Neo Forte,XSA	1	SNA
DB93-07011A	ASSY CONNECTOR WIRE	Neo Forte,XSA	1	SNA

■ SUB PCB : DB93-04256B

LOCATION No.	CODE NO.	Description	Specification	Q'ty	SA/SNA
D701	0402-001213	DIODE-RECTIFIER	MRA4005,600V/1A	1	SNA
D702	0402-001213	DIODE-RECTIFIER	MRA4005,600V/1A	1	SNA
D703	0402-001213	DIODE-RECTIFIER	MRA4005,600V/1A	1	SNA
ZD71	0403-001492	DIODE-ZENER	1N4756,47V,1W	1	SNA
PC31	0604-001172	PHOTO-COUPLER	TLP181-GRH-TPL,100-300%	1	SNA
PC32	0604-001172	PHOTO-COUPLER	TLP181-GRH-TPL,100-300%	1	SNA
R703	2003-002007	R-METAL OXIDE(S)	4.7K-J,2W	1	SNA
R704	2003-002007	R-METAL OXIDE(S)	4.7K-J,2W	1	SNA
R701	2003-000656	R-METAL OXIDE(S)	33K-J,3W	1	SNA
R702	2003-000656	R-METAL OXIDE(S)	33K-J,3W	1	SNA
CN11	3711-006040	HEADER-BOARD TO BOARD	25430WR-10A00,BLK	1	SNA
C302	2203-000257	C-CER,CHIP	10nF,10%,50V,1608	1	SNA
C303	2203-000257	C-CER,CHIP	10nF,10%,50V,1608	1	SNA
Q301	0504-001064	TR-DIGITAL	DTC114EKA,200mW	1	SNA
Q401	0504-001064	TR-DIGITAL	DTC114EKA,200mW	1	SNA
R302	2007-000077	R-CHIP	470-J,1/10W,1608	1	SNA
R301	2007-000078	R-CHIP	1K-J,1/10W,1608	1	SNA
R303	2007-000084	R-CHIP	4.7K-J,1/10W,1608	1	SNA
R707	2007-000030	R-CHIP	560-J,1/10W,1608	1	SNA
R706	2007-000282	R-CHIP	100K-J,1/10W,1608	1	SNA
C301	2203-000440	C-CER,CHIP	1nF,10%,50V,1608	1	SNA
C705	2203-001562	C-CER,CHIP	10nF,+80-20%	1	SNA
C706	2203-000444	C-CER,CHIP	1nF,10%,50V,2012	1	SNA
C703	2301-000256	C-FILM,LEAD-PEF	4.7nF,10%,100V	1	SNA
C704	2301-000256	C-FILM,LEAD-PEF	4.7nF,10%,100V	1	SNA
C701	2401-000058	C-AL	220uF,20%,100V,GP,TP,12.5x25,5,SHL,100V	1	SNA
C702	2306-000124	C-FILM,LEAD-PEF	10nF-J,630V	1	SNA
CN12	DB93-04350B	CONNECT WIRE	4P	1	SNA
PCB	DB41-00527A	PCB SUB-INDDOR AC	CEM3	1	SNA

■ Module PCB:DB93-08404A

LOCATION No.	CODE NO.	Description	Specification	Q'ty	SA/SNA
D01	0401-000005	DIODE-SWITCHING	1N4148,75V,150mA,DO-35,TP	1	SNA
RM01	0609-001204	Module Remocon	HORIZONTAL,6.5mm,TR	1	SNA
R01	2001-000793	R-CARBON	47OHM,5%,1/8W,AA,TP,1.8X3.2MM	1	SNA
C02	2202-000173	C-CERAMIC,MLC-AXIAL	1nF,10%,50V,Y5P,-,1.9x3.5mm,-	1	SNA
C03	2202-000780	C-CERAMIC,MLC-AXIAL	100nF,+80-20%,50V,Y5V,-,3.5x19mm,-	1	SNA
C01	2401-003107	C-AL	47uF,20%,16V,GP,TP,5x7,5	1	SNA
SW01	3404-001220	SWITCH-TACT	12V,50mA,160gf,6.1x6.1x5.0mm,SPST	1	SNA
CN01	3711-004067	HEADER-BOARD TO CABLE	BOX,4P,1R,2mm,ANGLE,SN,NTR	1	SNA
PCB	DB41-00555A	PCB-MODULE	VIVACH ,FR-1,-,Revision 1,1.6T,25*40,-,-,-,SSEC	1	SNA

■ OUTDOOR PCB : AQV09A*B:DB93-08388C AQV12A*B:DB93-08388D

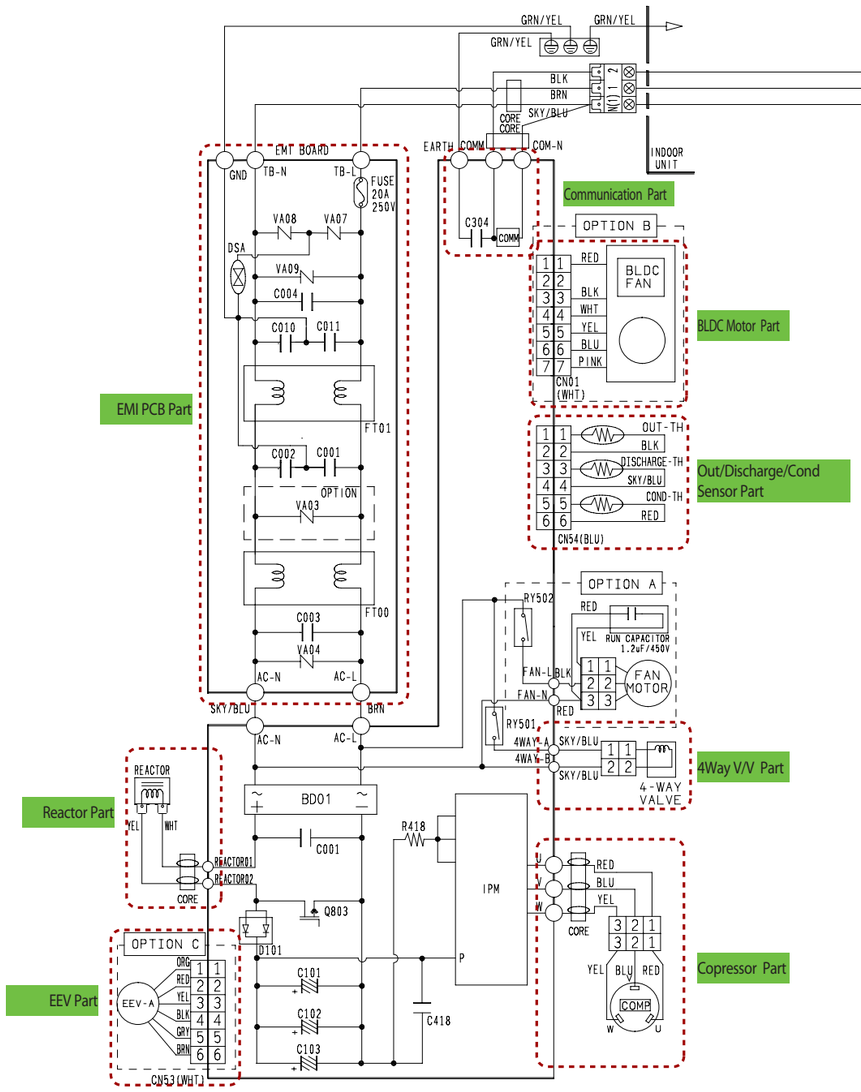
Parts Code	Parts Description	Spec.	Quantity	Service
0401-000133	DIODE-SWITCHING	RLS4148,75V,150mA,LL-34,TP	4	SNA
0402-001427	DIODE-RECTIFIER	ES1D,200V,1A,DO-214AC,TP	4	SNA
0402-001429	DIODE-RECTIFIER	US1J,600V,1A,DO-214AC,TP	2	SNA
0403-000258	DIODE-ZENER	BZX84C5V6,5.2-6V,225mW,SOT-23,TP	4	SNA
0403-000537	DIODE-ZENER	1N4749A,5%,1000mW,DO-41,TP	4	SNA
0403-001499	DIODE-ZENER	MMSZ5252B,22.8/25.2V,500mW,SOD-123,TP	1	SNA
0407-000123	DIODE-SWITCHING	DAN202K,80V,100mA,SOT-23,TP	1	SNA
0504-000127	TR-DIGITAL	FJV3102RMTF,NPN,200MW,10K/10K,SOT-23,TP	4	SNA
0506-000175	TR-ARRAY	2003,NPN,7,1W,SOP-16,ST,1000	2	SNA
0508-001132	TR-IGBT	-,600V,40A,2.6V,1200UJ,160W,TO-3P	1	SNA
0604-001172	PHOTO-COUPLER	TR,100-300,200mW,SOP,TP	3	SNA
1202-000104	IC-VOLTAGE COMP.	393,SOP,8P,150MIL,DUAL,36V,CMOS,PLASTIC,18V,780mW,0to+70C,18V,5mV,250nA,50NA,30	1	SNA
1203-000274	IC-POSI.FIXED REG.	7805,TO-220,3P,-,PLASTIC,4.8/5	1	SNA
1203-002948	IC-POSI.ADJUST REG.	TL431ACD,SOP,8P,4.9X3.9MM,PLASTIC,36V,1.5W,0TO+70C,150MA,2.44/2.55V,TP	1	SNA
2003-000685	R-METAL OXIDE(S)	4.7Kohm,5%,2W,AA,TP,4x12mm	2	SNA
2003-000699	R-METAL OXIDE(S)	470ohm,5%,1W,AA,TP,3.3x9mm	1	SNA
2003-000855	R-METAL OXIDE(S)	47Kohm,5%,3W,AA,TP,6x16mm	1	SNA
2006-001013	R-CEMENT	0.02ohm,5%,7W,CA,BK,35x9.5x9.5mm	1	SNA
2007-000070	R-CHIP	0ohm,5%,1/10W,TP,1608	1	SNA
2007-000074	R-CHIP	100ohm,5%,1/10W,TP,1608	7	SNA
2007-000076	R-CHIP	330ohm,5%,1/10W,TP,1608	4	SNA
2007-000077	R-CHIP	470ohm,5%,1/10W,TP,1608	4	SNA
2007-000080	R-CHIP	2Kohm,5%,1/10W,TP,1608	2	SNA
2007-000082	R-CHIP	3.3Kohm,5%,1/10W,TP,1608	2	SNA
2007-000084	R-CHIP	4.7Kohm,5%,1/10W,TP,1608	6	SNA
2007-000087	R-CHIP	6.8Kohm,5%,1/10W,TP,1608	1	SNA
2007-000090	R-CHIP	10Kohm,5%,1/10W,TP,1608	13	SNA
2007-000094	R-CHIP	22Kohm,5%,1/10W,TP,1608	2	SNA
2007-000109	R-CHIP	1Mohm,5%,1/10W,TP,1608	1	SNA
2007-000119	R-CHIP	560ohm,5%,1/10W,TP,1608	2	SNA
2007-000263	R-CHIP	1.82Kohm,1%,1/8W,TP,2012	2	SNA
2007-000300	R-CHIP	10Kohm,5%,1/8W,TP,2012	2	SNA
2007-000385	R-CHIP	14.3Kohm,1%,1/4W,TP,3216	1	SNA
2007-000493	R-CHIP	2.2Kohm,5%,1/8W,TP,2012	3	SNA
2007-000553	R-CHIP	20ohm,5%,1/4W,TP,3216	1	SNA
2007-000614	R-CHIP	24Kohm,1%,1/10W,TP,1608	1	SNA
2007-000924	R-CHIP	470Kohm,1%,1/4W,TP,3216	3	SNA
2007-000931	R-CHIP	470ohm,5%,1/8W,TP,2012	1	SNA
2007-000950	R-CHIP	47ohm,5%,1/4W,TP,3216	1	SNA
2007-000962	R-CHIP	5.1Kohm,1%,1/10W,TP,1608	1	SNA
2007-000962	R-CHIP	5.1Kohm,1%,1/10W,TP,1608	1	SNA
2007-001071	R-CHIP	6.8Kohm,5%,1/8W,TP,2012	1	SNA
2007-001118	R-CHIP	680ohm,5%,1/8W,TP,2012	1	SNA
2007-002667	R-CHIP	90.9Kohm,1%,1/4W,TP,3216	4	SNA

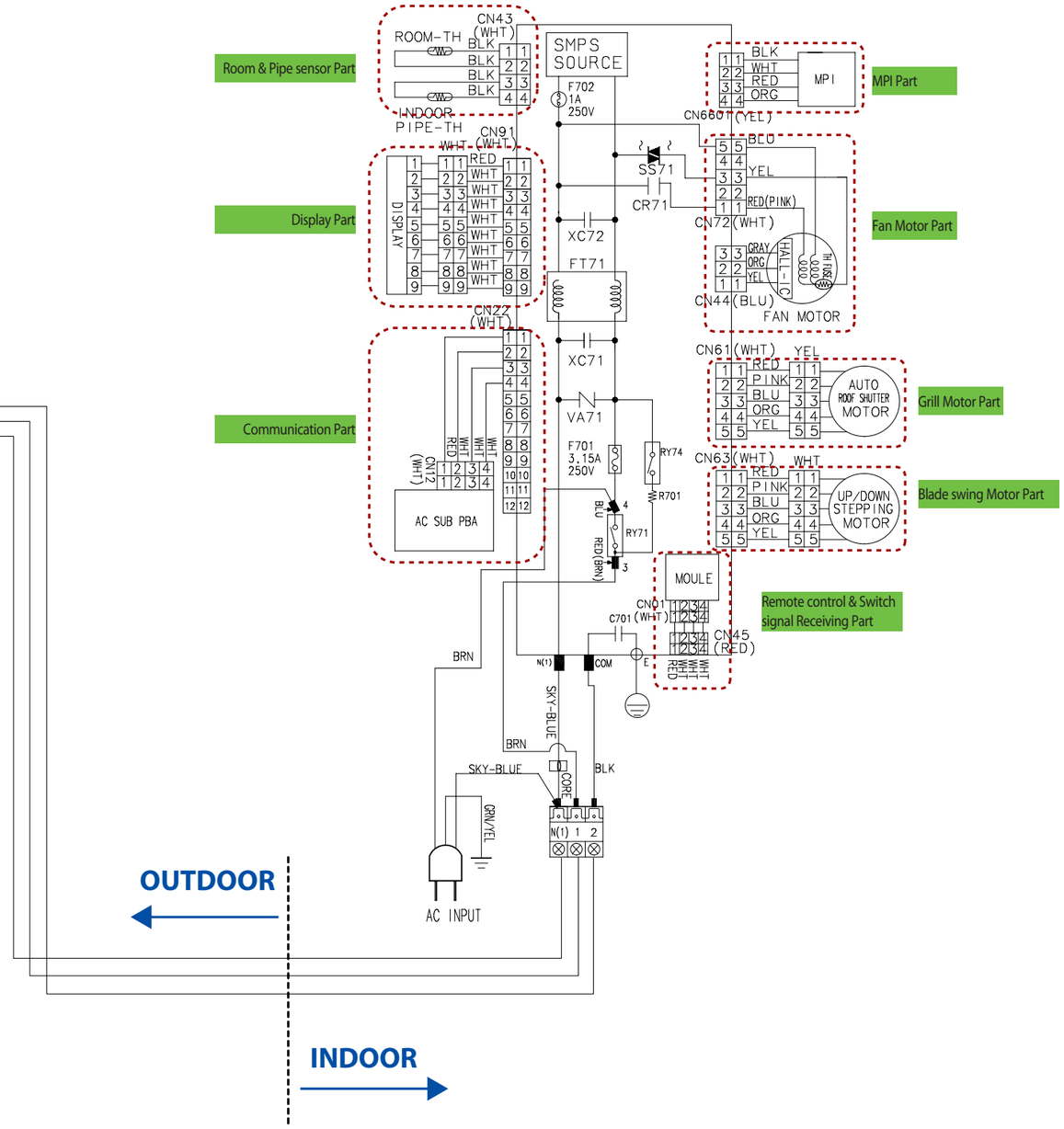
Parts Code	Parts Description	Spec.	Quantity	Service
2007-008023	R-CHIP	100Kohm,5%,1W,TP,6432	3	SNA
2201-000322	C-CERAMIC,DISC	2.2NF,10%,2KV,Y5P,TP,13X5MM,10	4	SNA
2203-000236	C-CER,CHIP	0.1nF,5%,50V,C0G,1608	4	SNA
2203-000257	C-CER,CHIP	10nF,10%,50V,X7R,TP,1608	12	SNA
2203-000440	C-CER,CHIP	1nF,10%,50V,X7R,1608	5	SNA
2203-002002	C-CER,CHIP	0.033nF,5%,50V,NP0,TP,1608	4	SNA
2203-002398	C-CER,CHIP	22nF,10%,50V,X7R,1608	1	SNA
2203-005249	C-CER,CHIP	100nF,10%,50V,X7R,TP,1608	34	SNA
2203-006104	C-CER,CHIP	1000nF,10%,50V,X7R,3225	1	SNA
2203-006348	C-CER,CHIP	1000nF,10%,25V,X5R,TP,1608	1	SNA
2301-000141	C-FILM,LEAD-PEF	10nF,10%,630V,TP,16x11x7.5mm,5	1	SNA
2301-001331	C-FILM,LEAD-PEF	10nF,5%,100V,TP,7.5x4x7mm,5	1	SNA
2306-000123	C-FILM,LEAD-PPF	100nF,5%,630V,BK,26x16.5x8.5mm	1	SNA
2401-000493	C-AL	10uF,20%,50V,LZ,TP,5x11mm,5mm	8	SNA
2401-000880	C-AL	220uF,20%,50V,WT,TP,10x16mm,5m	2	SNA
2401-002438	C-AL	47µF,20%,50V,WT,TP,6.3x11,5mm	3	SNA
2401-003541	C-AL	10uF,20% ,450V,WT,TP,12.5x20mm,5	1	SNA
2401-003585	C-AL	220uF,20%,35V,WT,TP,8x11.5mm,5	5	SNA
2401-003736	C-AL	22UF,20%,50V,WT,TP,5X11MM,2	1	SNA
2802-001198	RESONATOR-CERAMIC	10MHZ,0.5%,BK,8X3X5.5MM	1	SNA
3501-001154	RELAY-MINIATURE	12Vdc,200mW,3000mA,1FormA,10mS,10mS	1	SA
3711-001036	HEADER-BOARD TO CABLE	BOX,6P,1R,2.5mm,STRAIGHT,SN,BLU	1	SNA
3711-001038	HEADER-BOARD TO CABLE	BOX,6P,1R,2.5mm,STRAIGHT,SN,WHT	1	SNA
3711-004182	HEADER-BOARD TO CABLE	BOX,10P,1R,2MM,STRAIGHT,SN,NTR	1	SNA
3711-005654	HEADER-BOARD TO CABLE	1WALL,7P,1R,3.96mm,ANGLE,SN,WHT	1	SNA
3712-001139	CONNECTOR-TERMINAL	TAB,MALE,6.35x0.8mm	2	SNA
DB13-00003A	IC DRIVER GATE	-,SOT-23,-,-,1P,1P,0.2mm,2.93x1.3mm	1	SNA
DB32-00173A	SENSOR MAG-CT SENSOR	ACS712,5HP INVERTER,-,-40~150,-,-,30A,8V,Sinusoidal	2	SNA
DB41-00775A	PCB MAIN-OUTDOOR	Vivaldi-china(9K/12K),CEM-3,2,-,T1.6,160*140,-,1,-,-,INV	1	SNA
DB91-00939A	ASSY-MIC	10R Global outdoor Inverter micom,STM-0981-OA, MN103SFA7K,80P, ROM Size: 256K bytes	1	SNA
DB09-00517A	IC MICOM	MN103FA7K,80P,DC5V,10 MHz,QFP,32 Bit,32 Bit,QFP,QFP,14 * 14 mm,32 Bit,-40~+85	1	SNA
DB91-00980A	ASSY-EEPROM	Montblanc 12K,EUR,512byte	1	SNA
1103-001038	IC-EEPROM	93LC66,4KBIT,256X16BIT,SOP,8P,5X4MM,-,2.5/5.5V,-,-40TO+85C,1UA,TP	1	SNA
DB93-04348C	ASSY CONNECTOR WIRE	AQV12FA,Out_12k	1	SNA
DB93-08083A	ASSY CONNECTOR WIRE-4WAY	RAC INV	1	SNA
DB93-08085A	ASSY CONNECTOR WIRE	RAC INV,9K/12K	1	SNA
DB93-08372A	ASSY DISPLAY-YELLOW	Forte/Vivace/Mont/Vivaldi,LED, YELLOW	1	SNA
DB93-08373A	ASSY DISPLAY-RED	Forte/Vivace/Mont/Vivaldi,LED, RED	1	SNA
DB93-08374A	ASSY DISPLAY-GREEN	Forte/Vivace/Mont/Vivaldi,LED, GREEN	1	SNA
DB93-08437A	ASSY CONNECTOR WIRE-EARTH	CRYSTAL2,EARTH	1	SNA
DB93-08528A	ASSY CONNECTOR WIRE-REACTOR	9K/12K INV,UL1015#16	1	SA
DB95-01768A	ASSY-IPM	FSBF15CH60BT,15A/600V	1	SNA
DB98-16586A	ASSY-DIODE	600V,GS1B2560,600V 25A	1	SNA
DB98-16591A	ASSY-DIODE RECTIFIER	-,	1	SNA
DB98-20602A	ASSY-PULSE TRANS	KFR-35GW/GPI,INVERTER	1	SNA
DB98-20665A	ASSY-RESISTOR	KFR-35(25)GW/GPI,1.8k F 1608	1	SNA
DB98-20678A	ASSY-PHOTOCOUPLER	KFR-35(25)GW/GPI,TLP351	1	SNA
DB98-20679A	ASSY-FPS	KFR-35(25)GW/GPI,FSDH321	1	SNA
DB98-21655A	ASSY-CAP	KFR-35(25)GW,KMH400VS470	3	SNA

■ EMI PCB : DB93-08391A

Parts Code	Parts Description	Spec.	Quantity	Service
1405-000154	VARISTOR	460Vdc,2500A,17.5x7.5mm,TP	4	SNA
2201-000540	C-CERAMIC,DISC	4.7NF,20%,2KV,Y5U,BK,12X5MM,10	4	SNA
2301-001285	C-FILM,LEAD-PPF	680NF,10%,275V,BK,31X11X21MM,27.5	1	SNA
2301-001325	C-FILM,LEAD-PPF	330nF,10%,275V,TP,26x8.5x18mm,22.5	1	SNA
3601-001538	FUSE-AXIAL LEAD	250V,15A,TIME-LAG,CERAMIC,6.35x31.8mm	1	SA
4715-001093	SURGE ABSORBER	3600V,20%,2000A,-,AXIAL	1	SNA
6042-000107	EYELET	ID1.2,OD2.0,L12.9,NI PLT,C2600	2	SNA
6042-001009	EYELET	ID1.8,OD2.2,L3,-,BRASS	8	SNA
6042-001012	EYELET	ID3,OD5,L4.3,YEL,Cu	5	SNA
DB39-00514F	CBF LEAD WIRE-EARTH	-,KFR-35(25)GW/GPI,-,200,-,-,-,GRN/YEL,-,-,-	1	SNA
DB39-00961T	CBF LEAD WIRE	-,SH12BWH,-,120,10A,230V/50Hz,-,BRW,-,-,INVERTER	1	SNA
DB39-00961U	CBF LEAD WIRE	-,SH12BWH,-,120,10A,230V/50Hz,-,BLU,-,-,INVERTER	1	SNA
DB41-00722A	PCB SUB-EMI	Forte 9K/12K(XSA),CEM-1,1,V1.0,T1.6,200*160,Q,5,EMI,-,-	1	SNA
DB67-00942A	CAP	VIVALDI-P/J,SHP2,-,-,-,GREEN,SSEC	4	SNA
DB93-08573A	ASSY CONNECTOR WIRE	INV,OUTDOOR,UL1015#16	1	SA
DB98-17990A	ASSY-EMI FILTER	SH12BWH,LS615044	2	SNA

7. Wiring Diagram

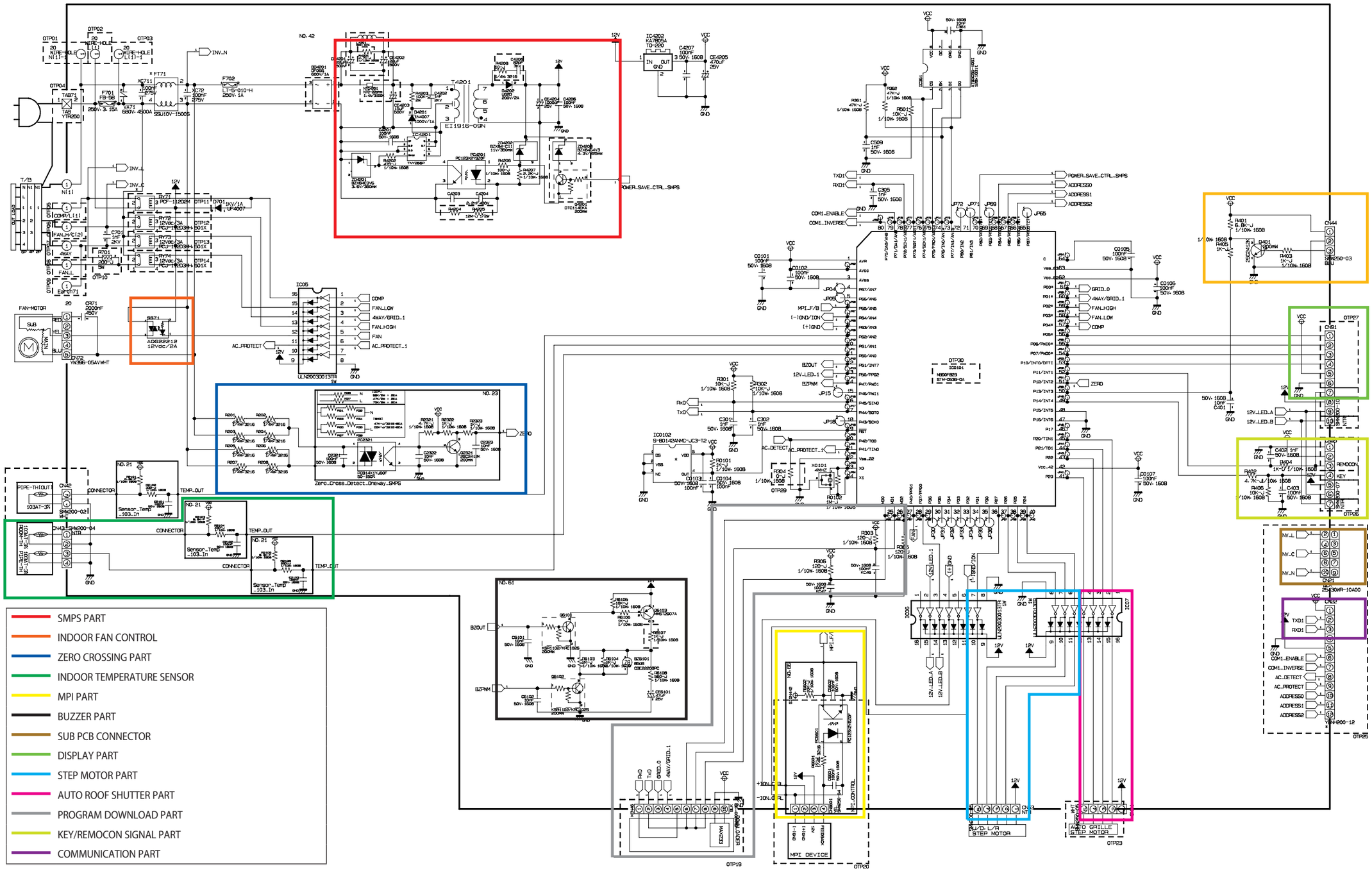




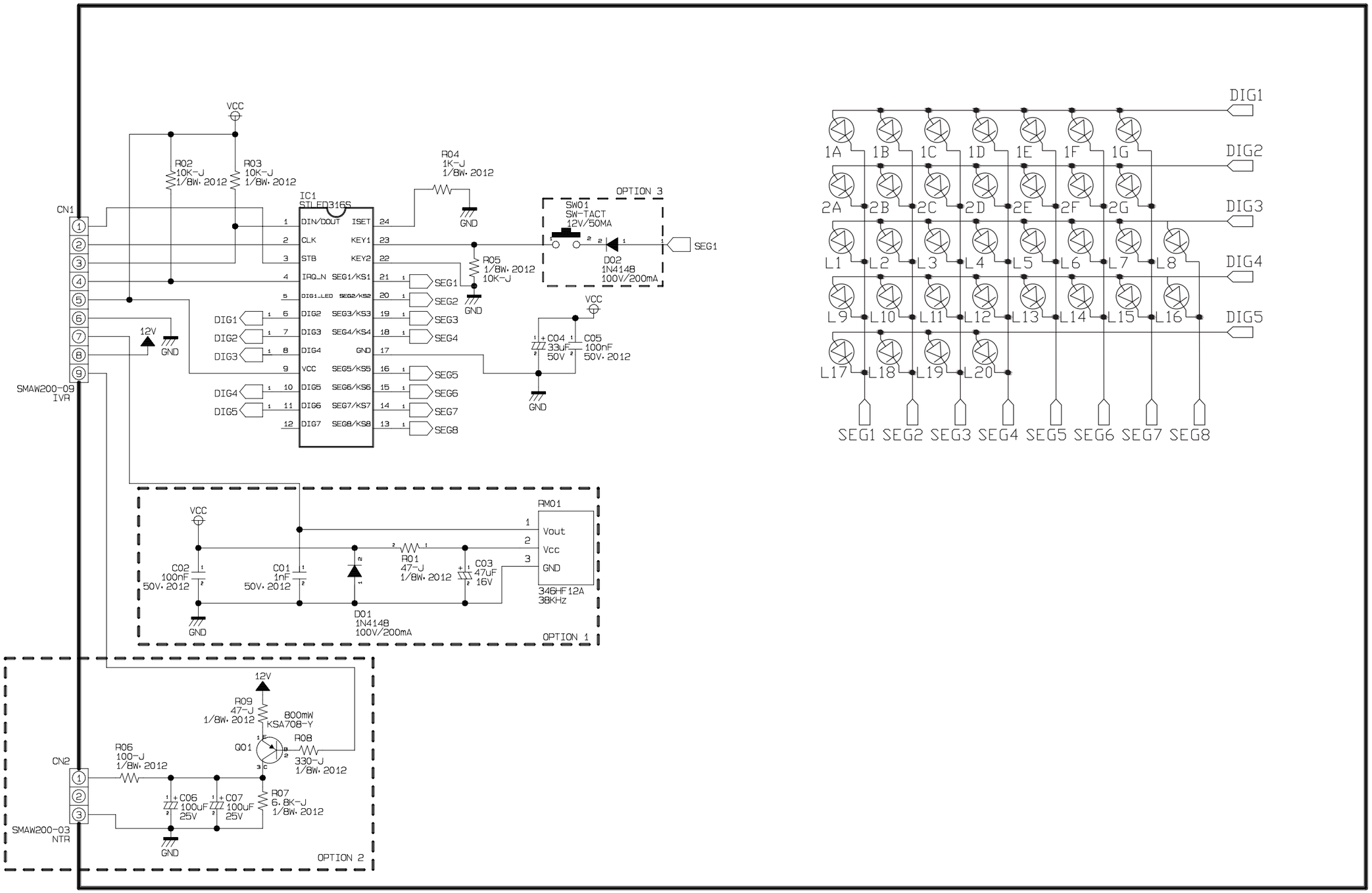
8.Schematic Diagram

8-1.PCB Circuit Description

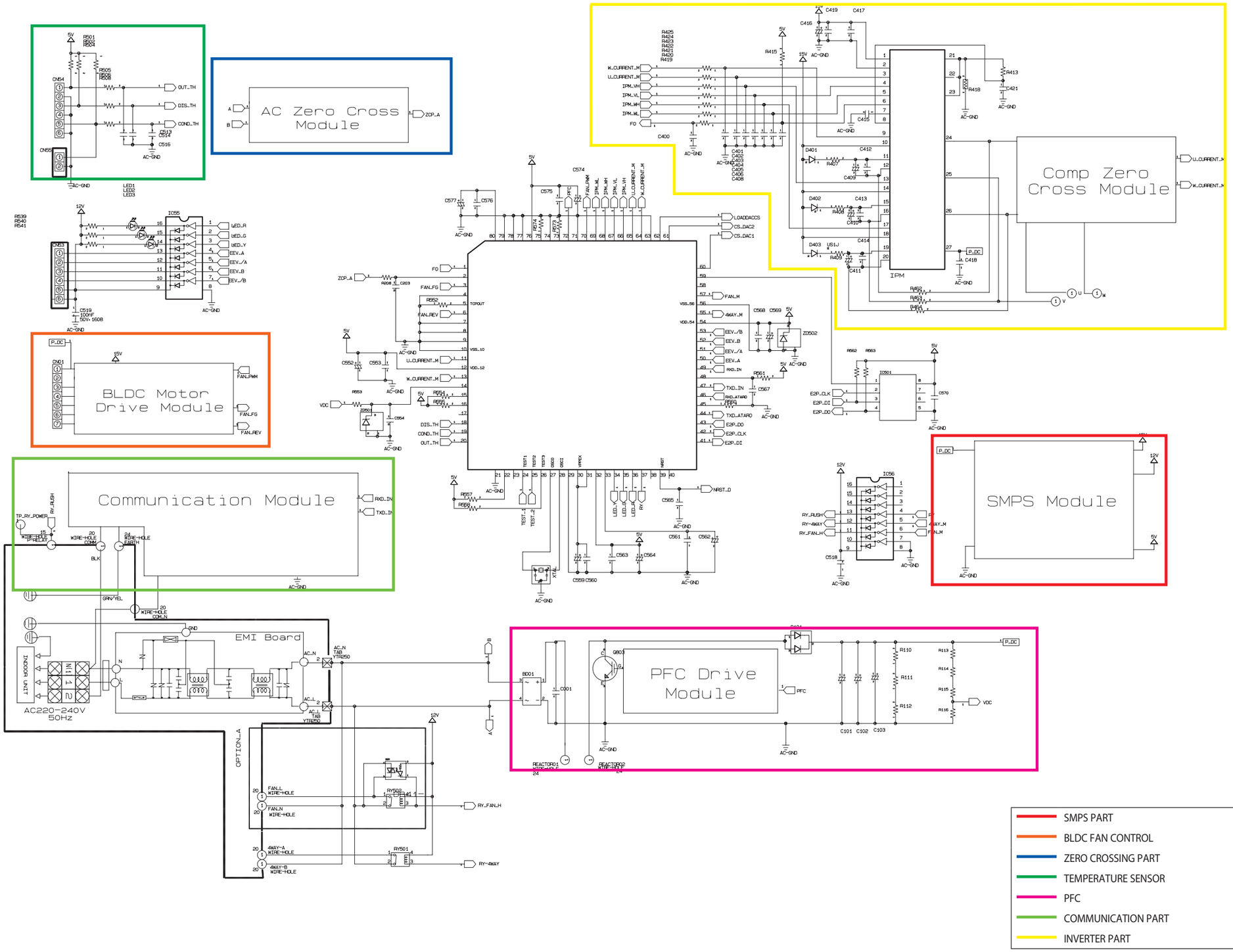
8-1-1.Indoor Unit



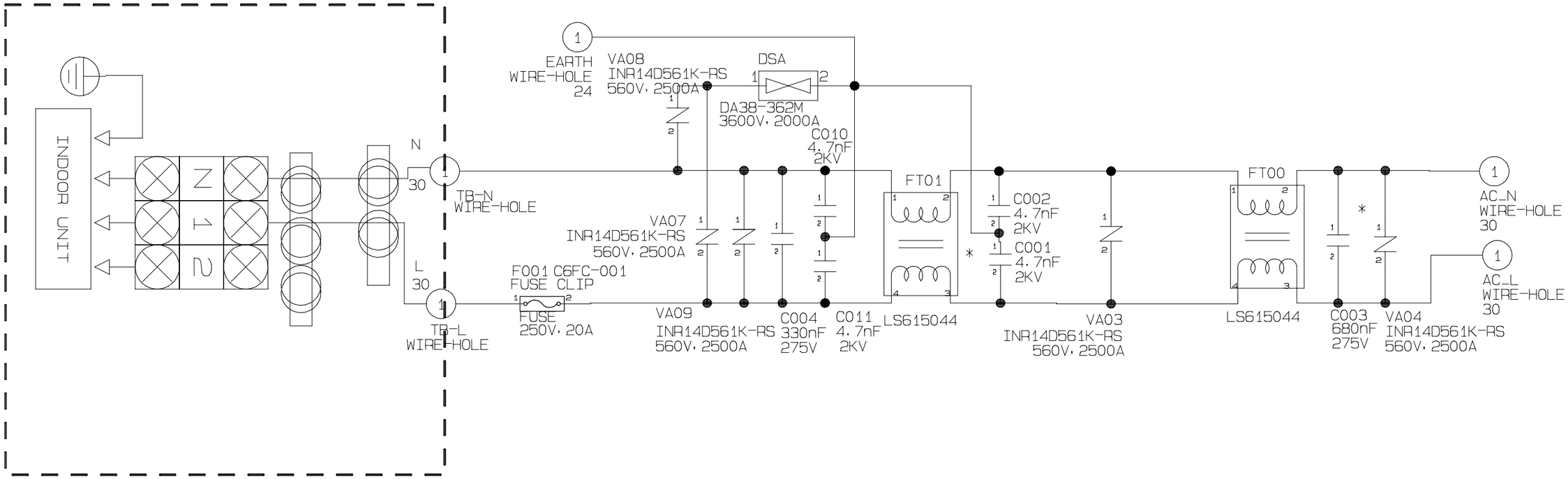
8-1-2.Display


VCC
R02
10K-J
1/8W. 2012
R03
10K-J
1/8W. 2012
R04
1K-J
1/8W. 2012
GND
IC1
STLED316S
CN1
SMAW200-09
IVR
DIN/DOUT
CLK
STB
IRQ_N
DIG1_LED
DIG2
DIG3
DIG4
VCC
DIG5
DIG6
DIG7
ISET
KEY1
KEY2
SEG1/KS1
SEG2/KS2
SEG3/KS3
SEG4/KS4
GND
SEG5/KS5
SEG6/KS6
SEG7/KS7
SEG8/KS8
SEG1
SEG2
SEG3
SEG4
SEG5
SEG6
SEG7
SEG8
OPTION 3
SW01
SW-TACT
12V/50MA
D02
1N4148
100V/200mA
R05
1/8W. 2012
10K-J
12V
C04
33uF
50V
C05
100nF
50V. 2012
DIG1
DIG2
DIG3
DIG4
DIG5
1A 1B 1C 1D 1E 1F 1G
2A 2B 2C 2D 2E 2F 2G
L1 L2 L3 L4 L5 L6 L7 L8
L9 L10 L11 L12 L13 L14 L15 L16
L17 L18 L19 L20
SEG1 SEG2 SEG3 SEG4 SEG5 SEG6 SEG7 SEG8
RM01
Vout
Vcc
GND
346HF12A
38KHz
C02
100nF
50V. 2012
C01
1nF
50V. 2012
R01
47-J
1/8W. 2012
C03
47uF
16V
D01
1N4148
100V/200mA
OPTION 1
CN2
SMAW200-03
NTR
R09
47-J
1/8W. 2012
800mW
KSA708-Y
Q01
R08
330-J
1/8W. 2012
R06
100-J
1/8W. 2012
C06
100uF
25V
C07
100uF
25V
R07
6.8K-J
1/8W. 2012
OPTION 2

8-2.Outdoor Unit

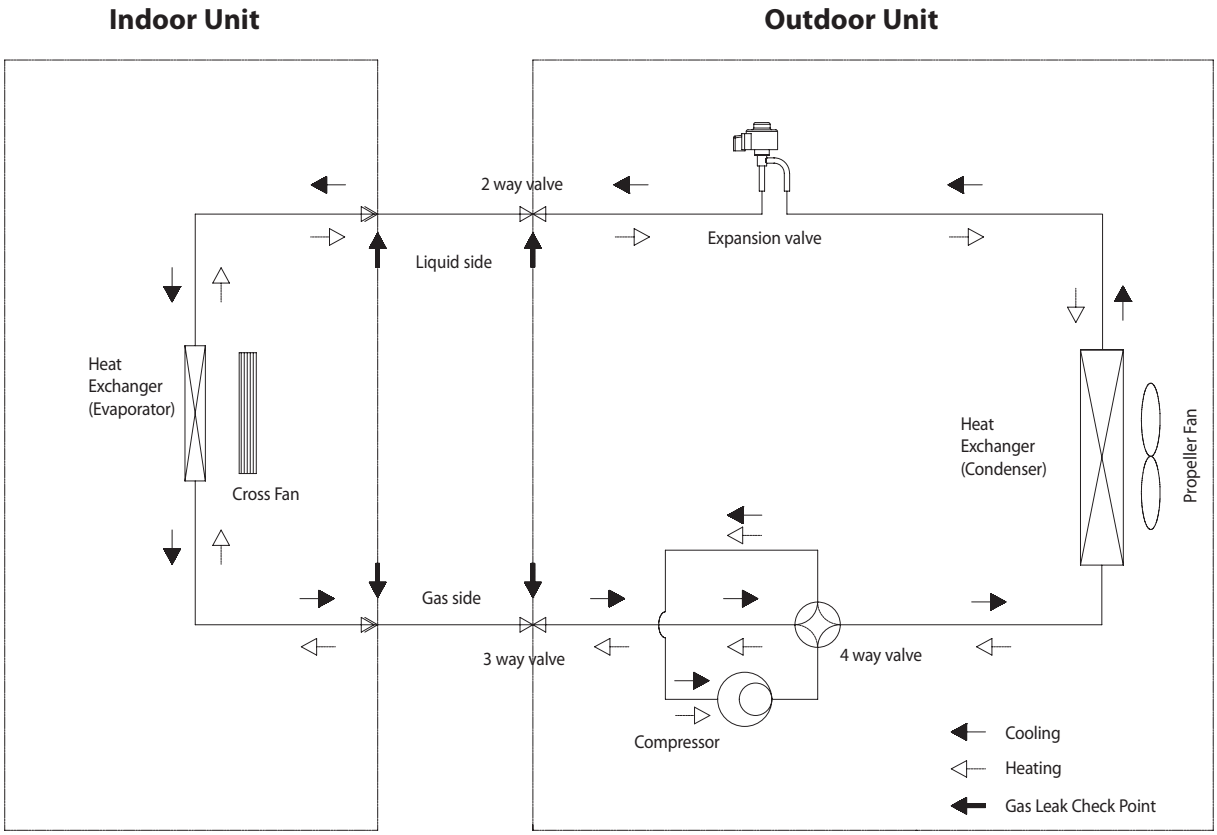


8-2-1.EMI


INDOOR UNIT
N
1
2
N
30
L
30
TB-N
WIRE-HOLE
TB-L
WIRE-HOLE
EARTH
WIRE-HOLE
24
VA08
INR14D561K-RS
560V, 2500A
DSA
DA38-362M
3600V, 2000A
C010
4.7nF
2KV
VA07
INR14D561K-RS
560V, 2500A
F001 C6FC-001
FUSE CLIP
FUSE
250V, 20A
VA09
INR14D561K-RS
560V, 2500A
C004
330nF
275V
C011
4.7nF
2KV
FT01
LS615044
C002
4.7nF
2KV
C001
4.7nF
2KV
VA03
INR14D561K-RS
560V, 2500A
FT00
LS615044
C003
680nF
275V
VA04
INR14D561K-RS
560V, 2500A
AC_N
WIRE-HOLE
30
AC_L
WIRE-HOLE
30

9. Reference Sheet

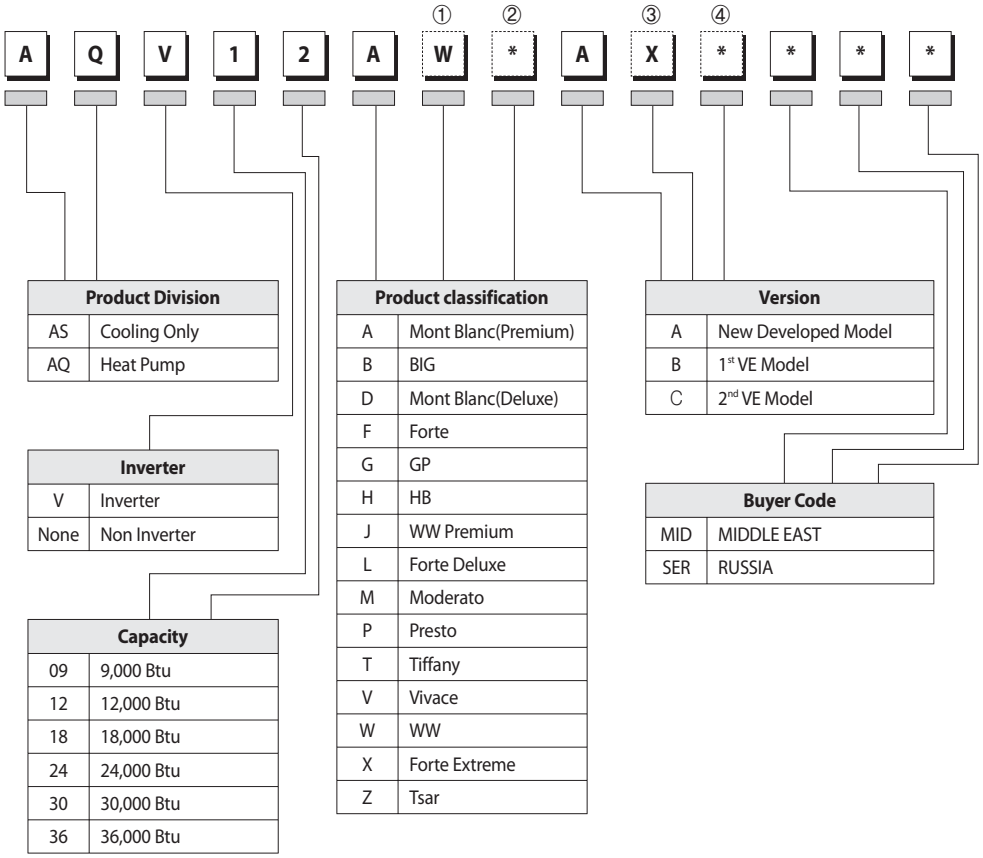
9-1 Refrigerating Cycle Diagram



9-2 Index for Model Name

✻ Project model code for overseas from 2008(For RAC Export Models)

Model Code



① : Use the " ① " digit for Grille Color deviation.
: Don't use the digit for Basic White model.
ex) Silver : S, Black : B, White : W, etc.

② : Use the " ② " digit for Electric Source deviation.
: Only for "XAP", "XAX", "GEM" Buyer.

③ : Use the " ③ " digit for classification between indoor and outdoor.
Indoor ➡ "N" & Outdoor ➡ "X".

④ : Use the " ④ " digit for KD models.
"CKD" ➡ "1" & "SKD" ➡ "2".

9-3 Distribution chart of the Pressure

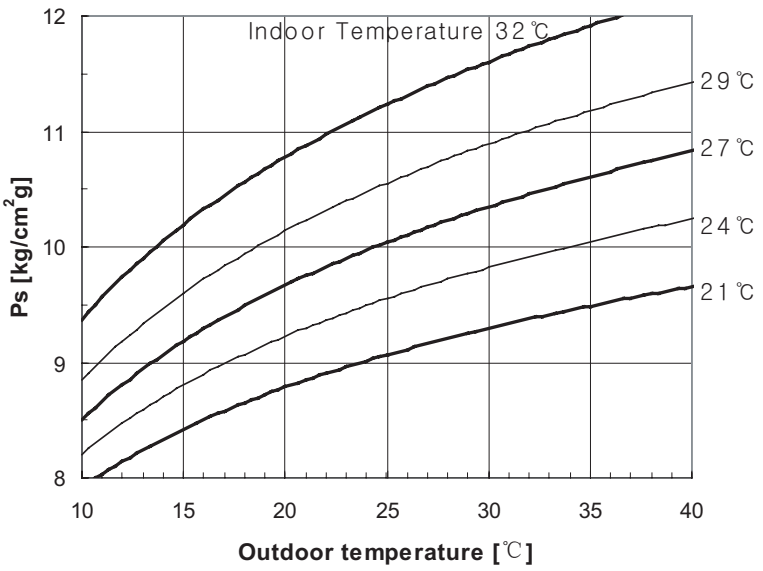
Note :

1. Please measure the refrigerant pressure after the air conditioner operates on the testing mode during more than 10 minutes.
2. There may be a much torelanc at the range not presented in this graph.

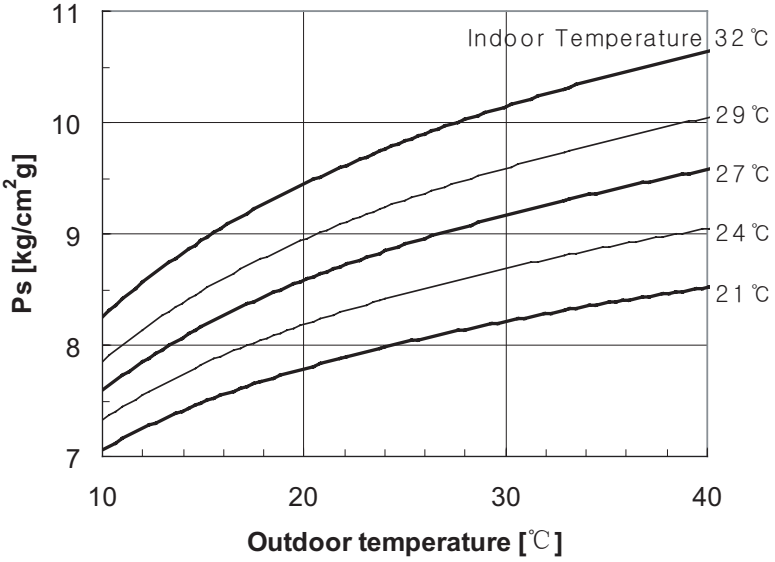
(Unit ; kg/cm^{2}g)

AQV09A*A				AQV12A*A			
	DB21/WB15	DB27/WB19	DB32/WB23		DB21/WB15	DB27/WB19	DB32/WB23
10℃	7.97	8.49	9.40	10℃	7.13	7.62	8.33
21℃	8.74	9.75	10.78	21℃	7.68	8.56	9.33
35℃	9.49	10.69	12.00	35℃	8.44	9.51	10.56
43℃	9.80	10.88	12.31	43℃	8.62	9.62	10.74

AQV09A*A



AQV12A*A



GSPN(Global Service Partner Network)

Area	Web Site
North America	http://service.samsungportal.com
Latin America	http://latin.samsungportal.com
CIS	http://cis.samsungportal.com
Europe	http://europe.samsungportal.com
China	http://china.samsungportal.com
Asia	http://asia.samsungportal.com
Mideast & Africa	http://mea.samsungportal.com

Code No.