SAMSUNG

FLOOR STAND TYPE AIR CONDITIONER

Model Code :	Indoor Unit :	Outdoor Unit :
	AF28FVSDA✳✳N	AF28FVSDA✳✳X
	AF28FVZDA✳✳N	AF28FVZDA✳✳X
	KFR-72L/EM✳1	KFR-72W/EM✳1
	KFR-50L/EM✳1	KFR-50W/EM✳1
	AF28FSSDA✳✳N	AF28FSSDA✳✳X
	AF28FSZDA✳✳N	AF28FSZDA✳✳X
	AF27FSSDA✳✳N	AF27FSSDA✳✳X
	AF24FSSDA✳✳N	AF24FSSDA✳✳X

SERVICE Manual

AIR CONDITIONER

CONTENTS

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.

1-4 Others

- **Never store or load the air conditioner upside down or sideways to prevent the damage to the compressor.**
- **Young children or infirm persons should be always supervised when they use the air conditioner.**
- **Max current is measured according to IEC standard for safety.**
- **Current is measured according to ISO standard for energy efficiency.**
- **When installing, make sure there is no leakage. When recovering the refrigerant, ground the compressor first before removing the connection pipe. If the refrigerant pipe is not properly connected and the compressor works with the service valve open, the pipe inhales the air and it makes the pressure inside of the refrigerant cycle abnormally high. It may cause explosion and injury.**
- **Pump Down Procedure (When removing the product)**
  - Turn on the air conditioner and select Cool mode to run the compressor for 3 minutes.
  - Release the valve caps on High and Low pressure side.
  - Use L wrench to close the valve on the high pressure side.
  - Approximately 2 minutes after, close the valve on the low pressure side.
  - Stop operation of the air conditioner.
  - Disconnect the pipes.

2. Product Specifications

2-1 The Feature of Product

2-1-1 Features

■ **Samsung Air Solution delivers cool and refreshing at once!**

● **Cool air :** The air solution provides an airflow direction control function for supplying airflow directly on hot days and indirectly on cool days to make the indoors cooler and more pleasant.

● **Refreshing air :** Its pleasantly subtropical function automatically changes between cooling, dehumidification and air cleaning depending on indoor air and makes the air more refreshing.

■ **4 seasons of effective cleaning**

● **Purity mode:**

- Only purity mode may save energy by being operated independently.
- When the air conditioner is operated, a four-season cleaning filter and Virus Doctor make the environment healthy and clean with a bacteria-free and active oxygen neutralizing function that removes various harmful substances from the air.

Clean/High Fan-Based	Marking standards		
Model	Purifying ability	Deodorizing efficiency	Energy consumption (W)
AF28FVSDA✳✳N	48.8m²	50% ↑	100 + 10% ↓
AF28FVZDA✳✳N	48.8m²	50% ↑	100 + 10% ↓
AF28FSSDA✳✳N	48.8m²	50% ↑	100 + 10% ↓
AF28FSZDA✳✳N	48.8m²	50% ↑	100 + 10% ↓
AF27FSSDA✳✳N	48.8m²	50% ↑	100 + 10% ↓
AF24FSSDA✳✳N	48.8m²	50% ↑	100 + 10% ↓
5-stage purifying system: fine-grade free filter / four-season cleaning filter / antibacterial heat exchanger / antibacterial fan / Virus Doctor			

■ **Smart sensor**

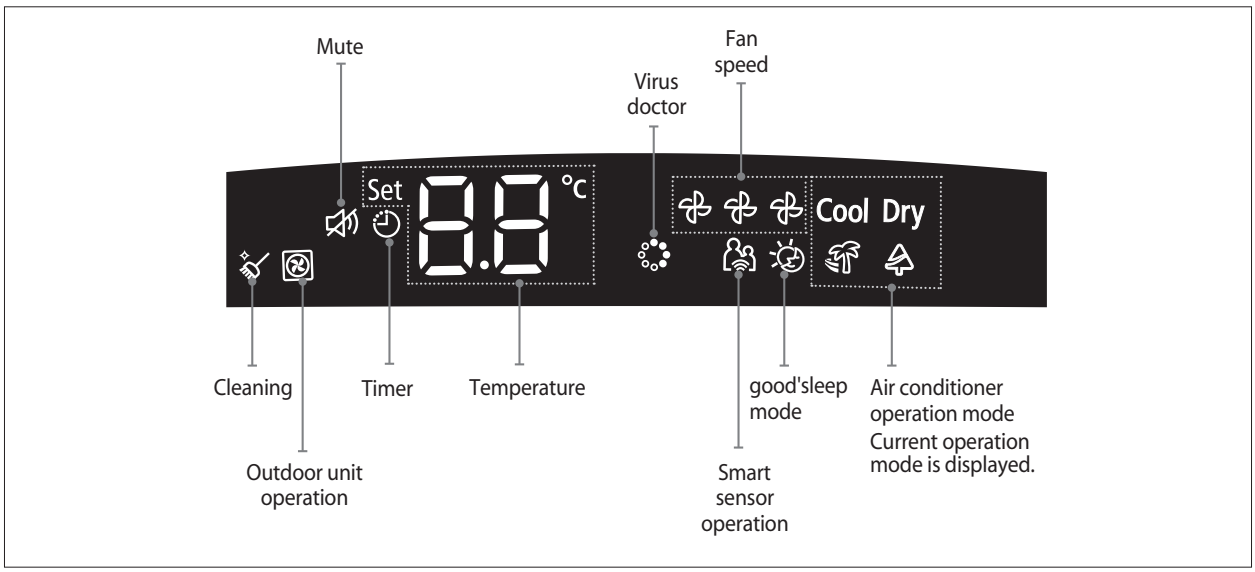
● A camera on the top of the indoor unit detects movement and if there is no movement over a certain period of time, the air conditioner automatically adjusts the indoor temperature, keeps the energy saving mode depending on indoor temperature and activities or automatically turns itself off.

■ **Available funtions by model**

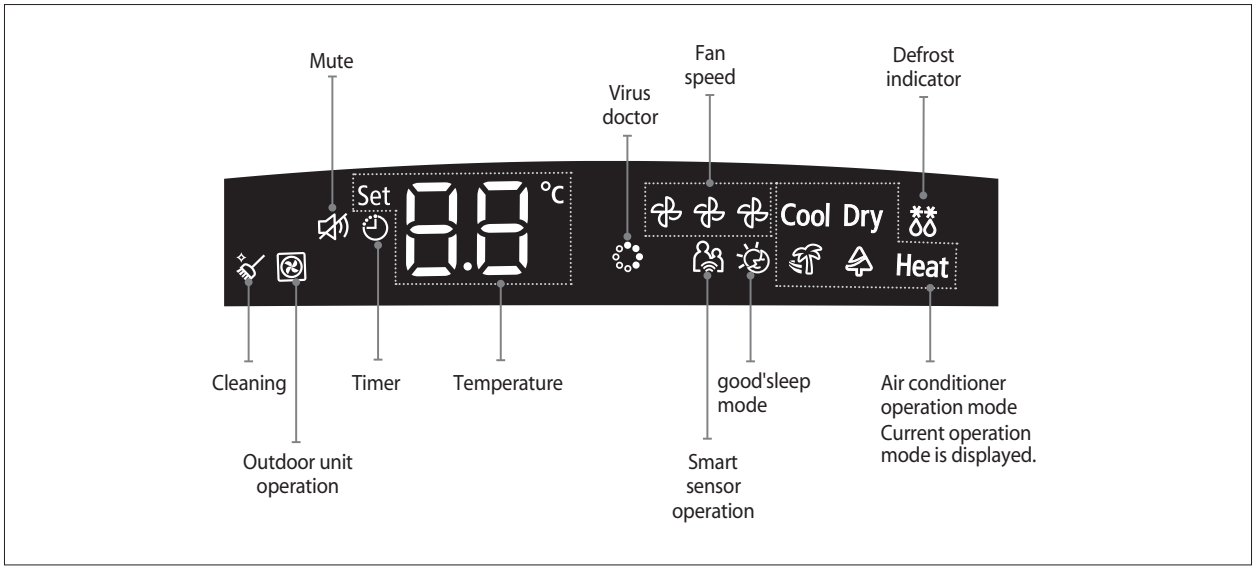
INDOOR	Color	Mode	Smart Sensor	Zero Filter	Virus Doctor	Full HD Filter	Lighting	Power Input
AF28FVSDADFN	Twilight Deep Bronze	Cooling Only	●	●	●	●	●	Outdoor
AF28FVZDAWKN	Twilight White	Cooling Only	X	●	●	●	●	Outdoor
KFR-72L/EMB1	Twilight Deep Bronze	Heat Pump	X	●	●	●	●	Outdoor
KFR-72L/EMA1	Twilight White	Heat Pump	X	●	●	●	●	Outdoor
KFR-50L/EMA1	Twilight White	Heat Pump	X	●	●	●	●	Outdoor
AF28FSSDADFN	Twilight Deep Bronze	Heat Pump	●	●	●	●	●	Outdoor
AF✳✳FSSDAWKN	Twilight White	Heat Pump	●	●	●	●	●	Outdoor
AF28FSZDAWKN	Twilight White	Heat Pump	X	●	●	●	●	Outdoor
AF28FVSDAWKN	Twilight White	Cooling Only	●	●	●	●	●	Outdoor
The SELECT button of the remote controller is available depending on models. Click the SELECT button of the remote controller whose product is not purchased and then the display part of the remote controller displays the state but the air conditioner does not work.								

2-1-2 Display features

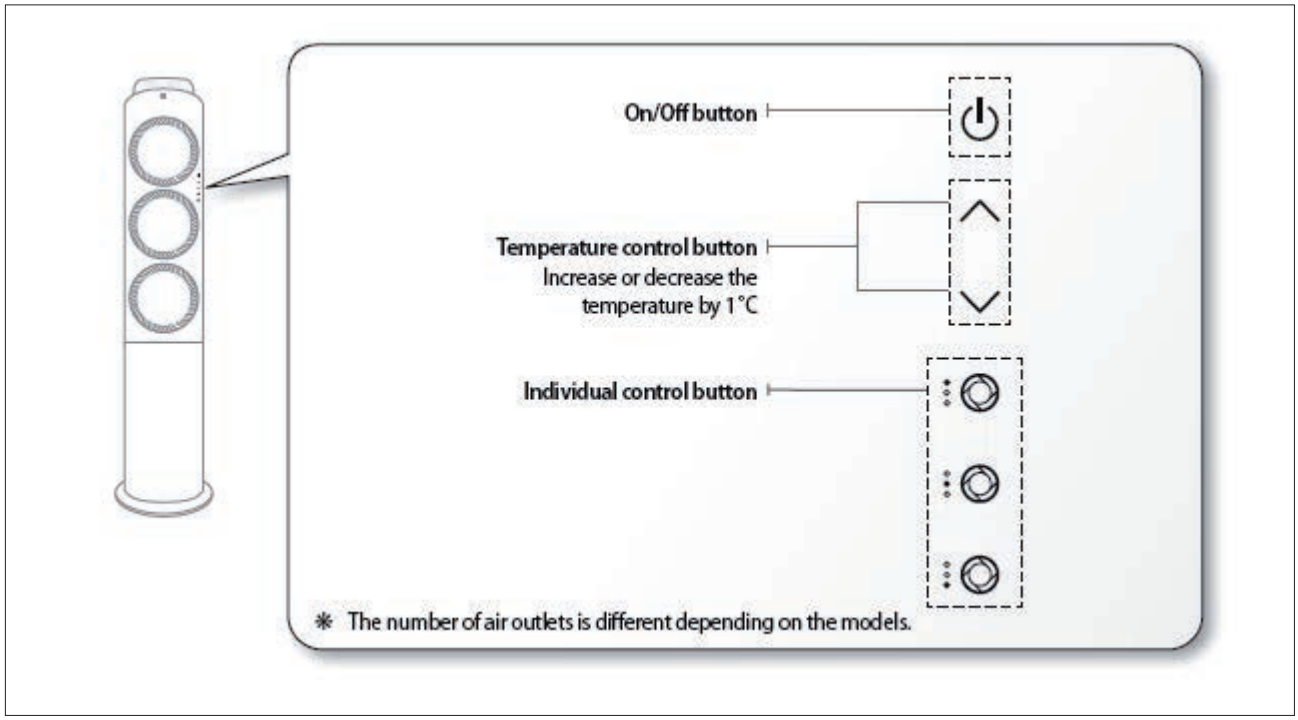
■ Cooling Only



■ Heat pump



2-1-3. Buttons on control part



2-1-4 Panel Design Specification

Image	Description	Code No.	Color	Model Name
	ASSY PANEL OUTLET	DB92-02699A	TWILIGHT DEEP BRONZE	AF28FVSDADFN KFR-72L/EMB1 AF28FSSDADFN
	ASSY PANLE INLET	DB92-02701A		
	ASSY PANEL OUTLET	DB92-02699B	TWILIGHT WHITE	AF28FVZDAWKN KFR-72L/EMA1 KFR-50L/EMA1 AF28FSSDAWKN AF28FSZDAWKN AF27FSSDAWKN AF24FSSDAWKN AF28FVSDAWKN
	ASSY PANLE INLET	DB92-02701B		

2-2 Product Specifications

ITEM			Model Name (Indoor Unit)	AF28FVSDADFN	AF28FVZDAWKN	KFR-72L/EMB1	KFR-72L/EMA1	KFR-50L/EMA1
			Model Name (Outdoor Unit)	AF28FVSDADFX	AF28FVZDAWKX	KFR-72W/EMB1	KFR-72W/EMA1	KFR-50W/EMA1
IMAGE	DESIGN	Indoor Unit						
		Outdoor Unit						
		Remote Controller						
Differences in features				SMART SENSOR (O)		SMART SENSOR (X)	SMART SENSOR (X)	SMART SENSOR (X)
COLOR				TWILIGHT DEEP BRONZE		TWILIGHT WHITE	TWILIGHT DEEP BRONZE	TWILIGHT WHITE
Operation mode	Cooling/Heating Inverter			Cooling Inverter		Cooling Inverter	Cooling/Heating Inverter	Cooling/Heating Inverter
Cooling	Capacity (Btu/h)	Regular		(T1)28,000	(T3)24,000	(T1)28,000	(T3)24,000	7200	7200	5000
		Mid						3600	3600	2500
		Minimum						2100	2100	1500
	Power consumption (W)	Regular		(T1)2,600	(T3)3,100	(T1)2,600	(T3)3,100	2100	2100	1300
		Mid						720	720	470
		Minimum						480	480	310
	Operation current (A)	Regular		(T1)12.7	(T3)14.8	(T1)12.7	(T3)14.8	10	10	6.5
		Mid						3.7	3.7	2.4
		Minimum						2.7	2.7	1.6
Energy consumption efficiency		CSPF						Class 1	Class 1	Class 1

Product Specifications

ITEM	Model Name (Indoor Unit)		AF28FVSDADFN	AF28FVZDAWKN	KFR-72L/EMB1	KFR-72L/EMA1	KFR-50L/EMA1	
	Model Name (Outdoor Unit)		AF28FVSDADFX	AF28FVZDAWKX	KFR-72W/EMB1	KFR-72W/EMA1	KFR-50W/EMA1	
Heating	Capacity (W)	Regular			8400	8400	6200	
		Mid			4200	4200	3000	
		Minimum			1900	1900	1200	
	Power consumption (W)	Regular			3000	3000	1900	
		Mid			1000	1000	660	
		Minimum			460	460	300	
	Operation current (A)	Regular			14	14	9.5	
		Mid			5.5	5.5	3.4	
		Minimum			2.5	2.5	1.5	
Noise	Indoor Unit	Turbo(dB)	52	52	51	51	49	
	Outdoor Unit	Strong(dB)	61	61	61	61	60	
R.P.M count (rpm±20)	Indoor Unit (Family)	Speed	1170/1090/990	1170/1090/990	1120/1040/940	1120/1040/940	970/870/770	1010/910/810
		Turbo	1120/1040/940	1120/1040/940	1090/990/890	1090/990/890	900/800/700	940/840/740
		Strong	1040/940/840	1040/940/840	990/890/790	990/890/790	830/730/630	870/770/670
		Weak	960/860/760	960/860/760	910/810/710	910/810/710	760/660/560	800/700/600
	Outdoor Unit (Solo)	Speed	(1170)/1070/970	(1170)/1070/970	-/1040/940	-/1040/940	870/770	910/810
		Turbo	(1060)/960/860	(1060)/960/860	-/960/860	-/960/860	800/700	840/740
		Strong	(990)/890/790	(990)/890/790	-/890/790	-/890/790	730/630	770/670
		Weak	(850)/750/650	(850)/750/650	-/720/620	-/720/620	660/630	700/600
	Outdoor Unit	Strong	950	950	920	920	950	
		Weak	250	250	250	250	920	
Dimension	Indoor Unit	NET(mm)	360X1948X269	360X1948X269	360X1948X269	360X1948X269	360X1948X269	
	Outdoor Unit		880×798×310	880×798×310	880×798×310	880×798×310	880×638×310	
	Indoor Unit	GROSS(mm)	469X2016X469	469X2016X469	469X2016X469	469X2016X469	469X2016X469	
	Outdoor Unit		1023x888x413	1023x888x413	1038x861x406	1038x861x406	1023x730x413	
Weight	Indoor Unit	NET(kg)	31	31	31	31	31	
	Outdoor Unit		53.5	53.5	58	58	45	
	Indoor Unit	GROSS(kg)	35.5	35.5	40	40	35.5	
	Outdoor Unit		61.5	61.5	67	67	48	
Harness specifications (main)	Indoor Unit Motor		DAI30618ZLA-A	DAI30618ZLA-A	DAI30618ZLA-A	DAI30618ZLA-A	DAI30618ZLA-A	
	Compressor		UG8T266FXAEWSG	UG8T266FXAEWSG	G8T260FUAEW	G8T260FUAEW	UG4T150FUDEQ	
	Outdoor Unit Motor		FMFC531SSJA	FMFC531SSJA	FMBC531SSK	FMBC531SSK	FMD6531SSAA	
Air cleaning	Dust Filter		4Season Filter	4Season Filter	4Season Filter	4Season Filter	4Season Filter	
	Specialized Filter		Virus Doctor, Full HD Filter	Virus Doctor, Full HD Filter	Virus Doctor, Full HD Filter	Virus Doctor, Full HD Filter	Virus Doctor, Full HD Filter	
Pipe	High-pressure side		1/4"	1/4"	1/4"	1/4"	1/4"	
	Low-pressure side		5/8"	5/8"	5/8"	5/8"	5/8"	
Exterior	DISPLAY		LED MOUDULE & SOFTTOUCH	LED MOUDULE & SOFTTOUCH	LED MOUDULE & SOFTTOUCH	LED MOUDULE & SOFTTOUCH	LED MOUDULE & SOFTTOUCH	
Regular refrigerant	R-410A	Regular(g)	1400g	1400g	2100g	2100g	1350g	
Additional refrigerant quantity (over 5m long pipes)		g/m	30g/m	30g/m	30g/m	20g/m	20g/m	
Regular pipe length			5m	5m	5m	5m	5m	
Maximum allowable pipe length			20m	20m	20m	20m	20m	
Indoor/outdoor unit maximum allowable head			10m	10m	10m	10m	10m	

ITEM			AF28FSSDADFN		AF28FSSDAWKN		AF28FSZDAWKN	
	Model Name (Outdoor Unit)		AF28FSSDADFX		AF28FSSDAWKX		AF28FSZDAWKX	
IMAGE	DESIGN	Indoor Unit						
		Outdoor Unit						
		Remote Controller						
Differences in features			SMART SENSOR (O)		SMART SENSOR (O)		SMART SENSOR (X)	
COLOR			TWILIGHT DEEP BRONZE		TWILIGHT WHITE		TWILIGHT WHITE	
Operation mode	Cooling/Heating Inverter		Cooling/Heating Inverter		Cooling/Heating Inverter		Cooling/Heating Inverter	
Cooling	Capacity (Btu/h)	Regular	(T1)28,000	(T3)24,000	(T1)28,000 * (T1)8.2 kW	(T3)24,000	(T1)28,000	(T3)24,000
		Mid						
		Minimum						
	Power consumption (W)	Regular	(T1)2,600	(T3)3,200	(T1)2,600	(T3)3,200	(T1)2,600	(T3)3,200
		Mid						
		Minimum						
	Operation current (A)	Regular	(T1)12.2	(T3)15.0	(T1)12.2	(T3)15.0	(T1)12.2	(T3)15.0
		Mid						
		Minimum						
Energy consumption efficiency		CSPF						

ITEM	Model Name (Indoor Unit)		AF28FSSDADFN	AF28FSSDAWKN	AF28FSZDAWKN
	Model Name (Outdoor Unit)		AF28FSSDADFX	AF28FSSDAWKX	AF28FSZDAWKX
Heating	Capacity (W)	Regular	(H1)8,200	(H1)8,200	(H1)8,200
		Mid			
		Minimum			
	Power consumption (W)	Regular	(H1)2,700	(H1)2,700	(H1)2,700
		Mid			
		Minimum			
	Operation current (A)	Regular	(H1)12.5	(H1)12.5	(H1)12.5
		Mid			
		Minimum			
Noise	Indoor Unit	Turbo(dB)	52	52 (Except Turkey) 62 (For Turkey)	52
	Outdoor Unit	Strong(dB)	61	61 (Except Turkey) 69 (For Turkey)	61
R.P.M count (rpm±20)	Indoor Unit (Family)	Speed	1170/1090/990	1170/1090/990	1170/1090/990
		Turbo	1120/1040/940	1120/1040/940	1120/1040/940
		Strong	1040/940/840	1040/940/840	1040/940/840
		Weak	960/860/760	960/860/760	960/860/760
	Outdoor Unit (Solo)	Speed	(1170)/1070/970	(1170)/1070/970	(1170)/1070/970
		Turbo	(1060)/960/860	(1060)/960/860	(1060)/960/860
		Strong	(990)/890/790	(990)/890/790	(990)/890/790
		Weak	(850)/750/650	(850)/750/650	(850)/750/650
	Outdoor Unit	Strong	940	940	940
		Weak	250	250	250
Dimension	Indoor Unit	NET(mm)	360X1948X269	360X1948X269	360X1948X269
	Outdoor Unit		880X950X320	880X950X320	880X950X320
	Indoor Unit	GROSS(mm)	469X2016X469	469X2016X469	469X2016X469
	Outdoor Unit		1023X1059X420	1023X1059X420	1023X1059X420
Weight	Indoor Unit	NET(kg)	31	31	31
	Outdoor Unit		62.5	62.5	62.5
	Indoor Unit	GROSS(kg)	35.5	35.5	35.5
	Outdoor Unit		70.0	70.0	70.0
Harness specifications (main)	Indoor Unit Motor		DAI30618ZLA-A	DAI30618ZLA-A	DAI30618ZLA-A
	Compressor		UG8T265FUAEWSG	UG8T265FUAEWSG	UG8T265FUAEWSG
	Outdoor Unit Motor		FMFC531SSHA	FMFC531SSHA	FMFC531SSHA
Air cleaning	Dust Filter		4Season Filter	4Season Filter	4Season Filter
	Specialized Filter		Virus Doctor, Full HD Filter	Virus Doctor, Full HD Filter	Virus Doctor, Full HD Filter
Pipe	High-pressure side		1/4"	1/4"	1/4"
	Low-pressure side		5/8"	5/8"	5/8"
Exterior	DISPLAY		LED MOUDULE & SOFTTOUCH	LED MOUDULE & SOFTTOUCH	LED MOUDULE & SOFTTOUCH
Regular refrigerant	R-410A	Regular(g)	2,000g	2,000g	2,000g
Additional refrigerant quantity (over 5m long pipes)		g/m	30g/m	30g/m	30g/m
Regular pipe length			5m	5m	5m
Maximum allowable pipe length			20m	20m	20m
Indoor/outdoor unit maximum allowable head			10m	10m	10m

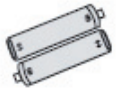
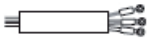
ITEM	Model Name (Indoor Unit)		AF28FVSDAWKN	AF27FSSDAWKN	AF24FSSDAWKN
	Model Name (Outdoor Unit)		AF28FVSDAWKX	AF27FSSDAWKX	AF24FSSDAWKX
IMAGE	DESIGN	Indoor Unit			
		Outdoor Unit			
		Remote Controller			
Differences in features			SMART SENSOR (O)	SMART SENSOR (O)	SMART SENSOR (O)
COLOR			TWILIGHT WHITE	TWILIGHT WHITE	TWILIGHT WHITE
Operation mode	Cooling/Heating Inverter		Cooling Inverter	Cooling/Heating Inverter	Cooling/Heating Inverter
Cooling	Capacity (W)	Regular	(T1)8300	(T1)7900 for CIS (T1)7610 for Chile	(T1)7200
	Power consumption (W)	Regular	(T1)2625.3	(T1)2400	(T1)2000
	Operation current (A)	Regular	(T1)12.1	(T1)11.6	(T1)8.9

※ T1,T3,H1 : CLAMATES CLASS

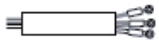
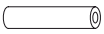
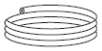
ITEM	Model Name (Indoor Unit)		AF28FVSDAWKN	AF27FSSDAWKN	AF24FSSDAWKN
	Model Name (Outdoor Unit)		AF28FVSDAWKX	AF27FSSDAWKX	AF24FSSDAWKX
Heating	Capacity (W)	Regular		(H1)7900 for CIS (H1)6170 for Chile	(H1)8200
	Power consumption (W)	Regular		(H1)2650 for CIS (H1)1600 for Chile	(H1)2700
	Operation current (A)	Regular		(H1)12.1 for CIS (H1)7.6 for Chile	(H1)12.5
Noise	Indoor Unit	Turbo(dB)	52	52	62
	Outdoor Unit	Strong(dB)	61	61	69
R.P.M count (rpm±20)	Indoor Unit (Family)	Speed	1170/1090/990	1170/1090/990	1170/1090/990
		Turbo	1120/1040/940	1120/1040/940	1120/1040/940
		Strong	1040/940/840	1040/940/840	1040/940/840
		Weak	960/860/760	960/860/760	960/860/760
	Outdoor Unit (Solo)	Speed	(1170)/1070/970	(1170)/1070/970	(1170)/1070/970
		Turbo	(1060)/960/860	(1060)/960/860	(1060)/960/860
		Strong	(990)/890/790	(990)/890/790	(990)/890/790
		Weak	(850)/750/650	(850)/750/650	(850)/750/650
	Outdoor Unit	Strong	950	940	940
		Weak	250	250	250
Dimension	Indoor Unit	NET (mm)	360X1948X269	360X1948X269	360X1948X269
	Outdoor Unit		880X798X310	880X950X320	880X950X320
	Indoor Unit	GROSS (mm)	469X2016X469	469X2016X469	469X2016X469
	Outdoor Unit		1023X888X413	1023X1059X420	1023X1059X420
Weight	Indoor Unit	NET kg)	31	31	31
	Outdoor Unit		53.5	62.5	62.5
	Indoor Unit	GROSS(kg)	35.5	35.5	35.5
	Outdoor Unit		61.5	70.0	70.0
Harness specifications (main)	Indoor Unit Motor		DAI30618ZLA-A	DAI30618ZLA-A	DAI30618ZLD
	Compressor		UG8T266FXAEWSG	UG8T265FUAEWSG	UG8T265FUAEWSG
	Outdoor Unit Motor		FMFC531SSJA	FMFC531SSHA	FMFC531SSHA
Air cleaning	Dust Filter		4Season Filter	4Season Filter	4Season Filter
	Specialized Filter		Virus Doctor, Full HD Filter	Virus Doctor, Full HD Filter	Virus Doctor, Full HD Filter
Pipe	High-pressure side		1/4"	1/4"	1/4"
	Low-pressure side		5/8"	5/8"	5/8"
Exterior	DISPLAY		LED MOUDULE & SOFTTOUCH	LED MOUDULE & SOFTTOUCH	LED MOUDULE & SOFTTOUCH
Regular refrigerant	R-410A	Regular(g)	1,400g	2,000g	2,000g
Additional refrigerant quantity (over 5m long pipes)		g/m	30g/m	30g/m	30g/m
Regular pipe length			5m	5m	5m
Maximum allowable pipe length			20m	20m	20m
Indoor/outdoor unit maximum allowable head			10m	10m	10m

2-3 Specifications of optional items

2-3-1 Accessories

Item	Description	Code No.	Q'ty	Remark
	SCREW	6002-000234	9	Indoor Unit
	Batteries for remote control (AAA, 1.5V)	DB47-90024A	2	
	Remote controller holder	DB61-04993A	1	
	Fixing bracket for Indoor Unit	DB61-05004A	1	
	Cleaning fabric	DB97-13942C (AF28F**DA**N)	1	
		DB97-13942B (KFR-**L/EM*1)		
	User & Installation manual	DB68-03794A (AF28FV*DA**N) Except SE ASIA	1	
		DB68-03798A (KFR-**L/EM*1)		
		DB68-03892A (AF28FS*DA**N) Except IRAN (AF27FSSDAWKNCH) For Chile		
		DB68-03857A (AF28FSSDAWKNHC) For IRAN		
		DB68-03955A (AF28FVSDAWKNST) For SE ASIA		
		DB68-04033A (AF27FSSDAWKNER)		
		DB68-04035A,DB68-04036A (AF24FSSDAWKNEU)		
		DB68-04516A (AF28FSSDAWKNTK)		
	Remote control	DB93-11489Z (AF**F**DA**N)	1	
		DB93-11489Y (KFR-**L/EM*1)		
	Main power cable (2.5 ㎟) (8.5m)	DB39-00767A	1	Outdoor Unit
	Indoor/Outdoor unit communication cable (2 lines) (RED/RED 8.5m)	DB93-11275A	1	
	CONNECTOR WIRE POWER	DB93-12331A	1	

Accessories (cont.)

Item	Description	Code No.	Q'ty	Remark
	SLEEVE	DB61-05577A	2	ACCESORY BOX
	Service tube	DB93-13444A	2	
	CABLE-TIE	DB65-10088C	8	
	Piping tape-Color : IVORY (80mm X 15m)	DB69-01194B	2	
	Insulation Tape(5m)	DB72-30029A	1	
	INSULATION TUBE	DB72-60033B	1	
	INSTALL PUTTY	DB80-00013A	1	
	BUSHING-PIPE	DB81-00422A	1	
	SLEEVE	DB81-01327A	6	
	Service tube	DB81-01328A	6	
	ASSY HOSE DRAIN	DB94-01351F	1	
	ASSY-PIPE (1/4"",Φ6.6,L8000)	DB96-04578U	1	
	ASSY-PIPE (5/8"",Φ16.25,L7900)	DB96-04578W	1	

2-3-2 Filter Specifications

- Dust Filter

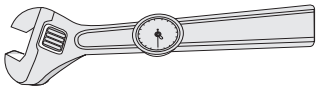
Item	Descriptions	Code No.	Remark
	Dust Filter1	DB63-03415A/B	This is a basic installation at the time of purchase and may be cleaned with water.
	Dust Filter3	DB63-03425A/B	

■ 4 season filter

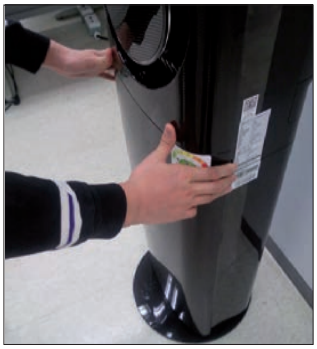
Item	Descriptions	Code No.	Remark
	4 season filter	DB91-01473C/D/E/F	This is a basic installation at the time of purchase and may be cleaned with water.

3. Disassembly and Reassembly

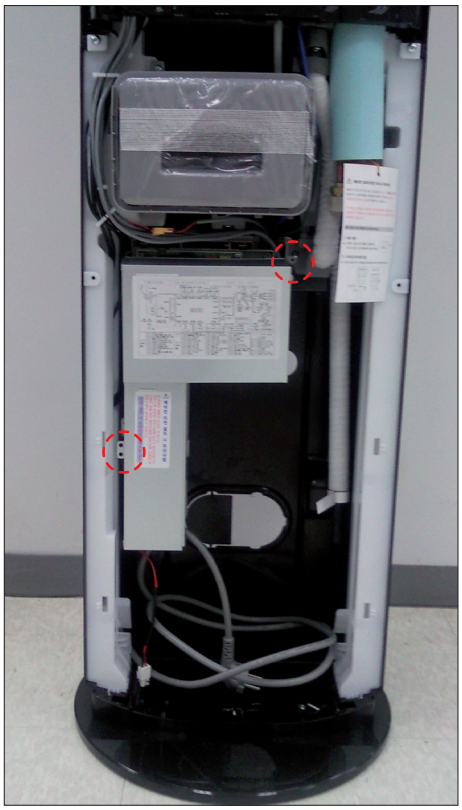
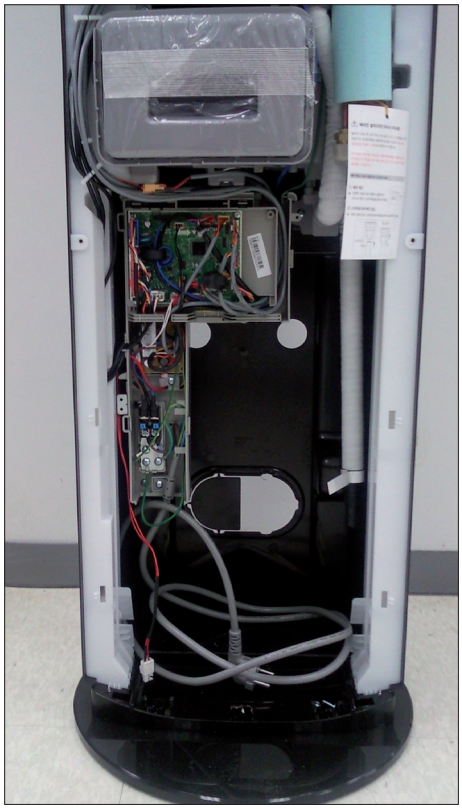
■ Necessary Tools

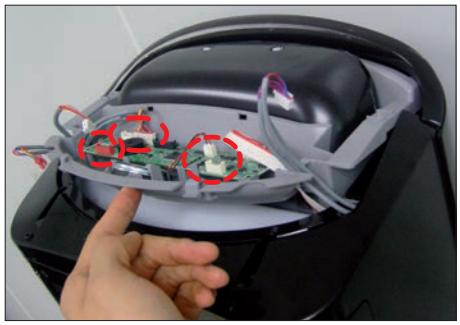
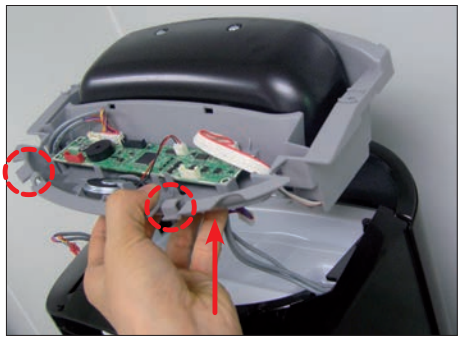
Item	Remarks
+Screw Driver	
-Screw Driver	
Long-Nose Pliers	
Monkey Spanner	
Spanner torque wrench	

3-1 Indoor unit

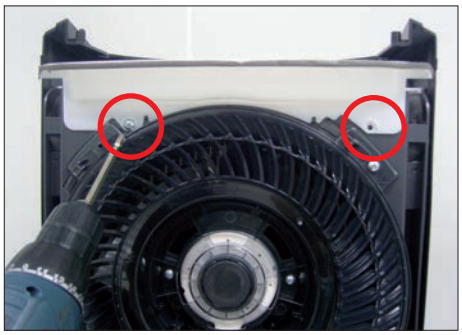
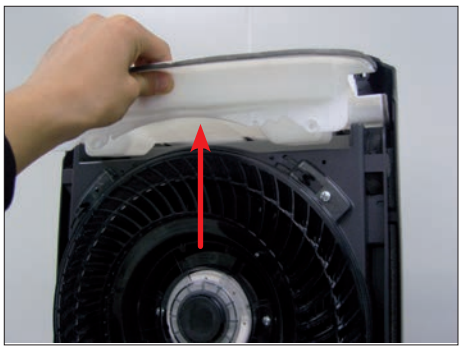
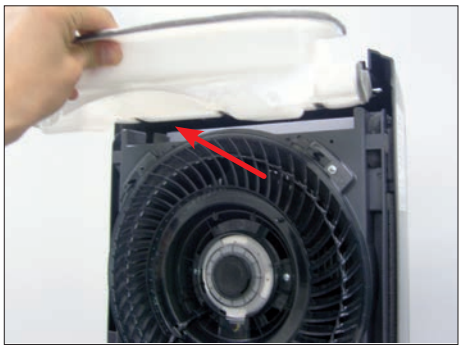
No	Parts	Procedure	Remark
1	Front	⚠ **Please make sure the power is switched off.** 1) After switching off the Indoor unit operation, shut off the main power.	
2	Ass'y Panel Inlet	1) Pull out the upper part of the Ass'y Panel Inlet to detach.	  

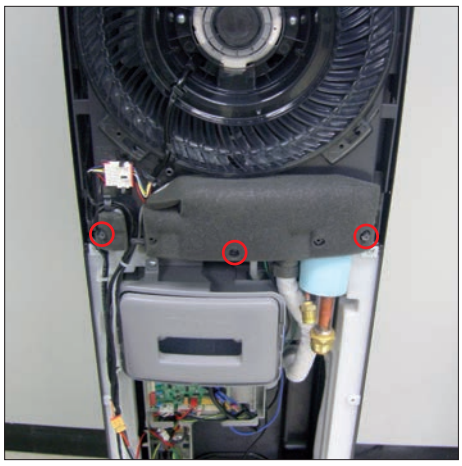
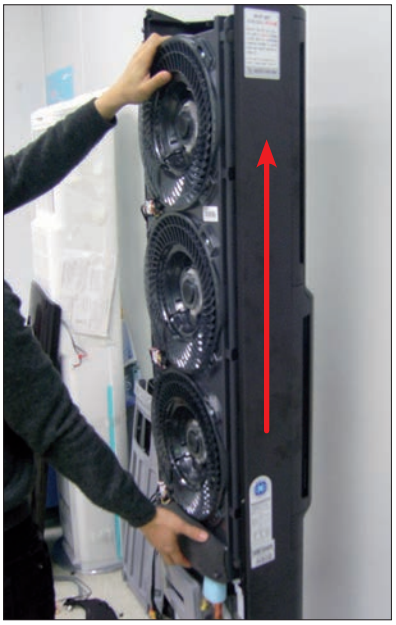
No	Parts	Procedure	Remark
		2) Unscrew four fastening screws on the left and right of the Ass'y Support Inlet.	
		3) Push the Ass'y Support Inlet down to disassembly it.	  

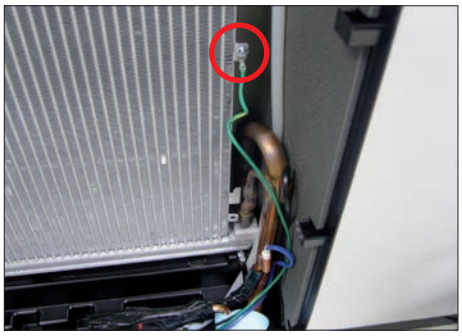
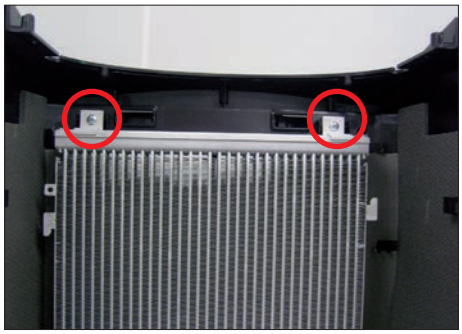
No	Parts	Procedure	Remark
3	Ass'y Cover Main PCB	1) Unscrew three fastening screws on the Cover Main PCB and then lift it up slightly and pull forward to detach.	
		2) Detach the entire housing connected to the Ass'y Case Main PCB.	

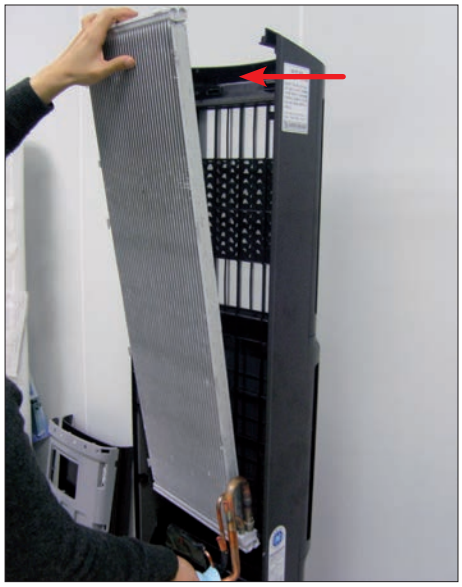
No	Parts	Procedure	Remark
4	Ass'y Cover Top	1) Unscrew the four fastening screws on the top of the Ass'y Cover Top.	 
		2) Lift the cover ceiling up by gripping its left side.	
		3) Disassemble three connectors. Press both hooks at the top of the Ass'y Cover, detach and then pull it up.	 

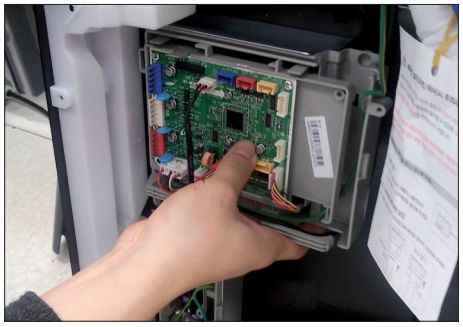
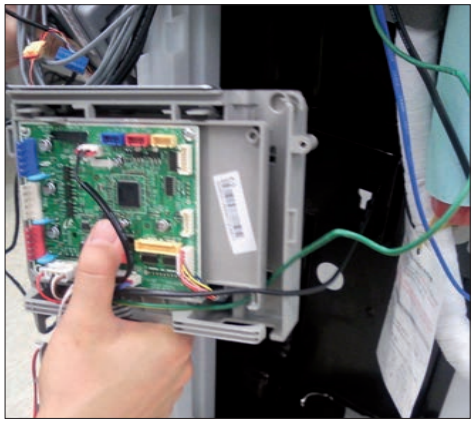
No	Parts	Procedure	Remark
5	ASS'Y PANEL OUTLET	1) Lift up the Ass'y Panel Outlet while hooks are detached and then pull it forward.	 

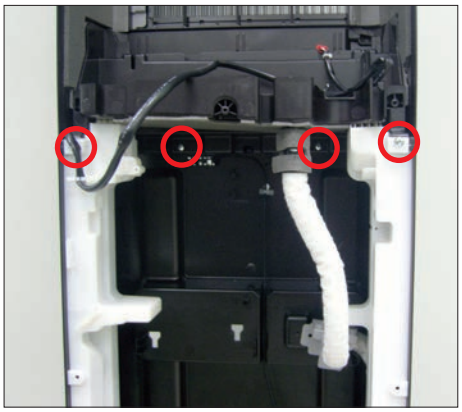
No	Parts	Procedure	Remark
6	Ass'y Cover Duct	1) Unscrew two fastening screws on the top of the Ass'y Cover Duct, lift it up and then pull it forward to detach.	  

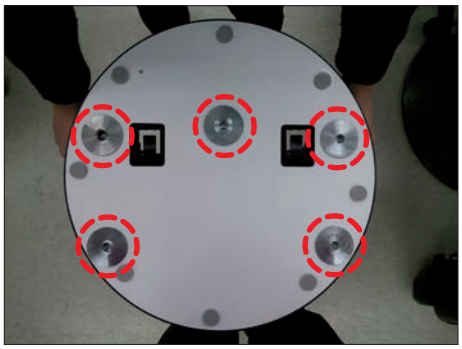
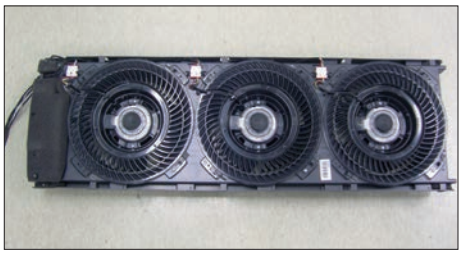
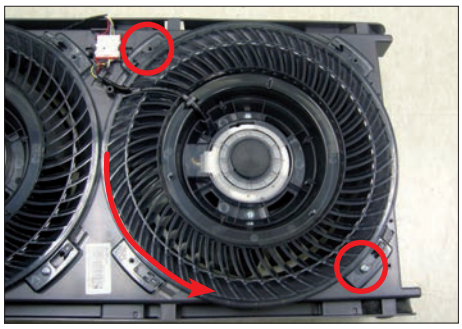
No	Parts	Procedure	Remark
7		2) Unscrew three fastening screws on the bottom of the Ass'y Duct Fan.	
		3) Lift the Ass'y Duct Fan up and pull it forward while the hooks are detached.	 

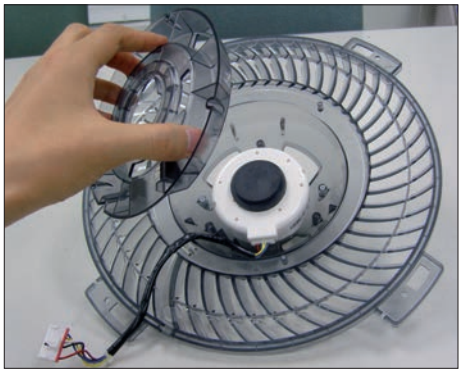
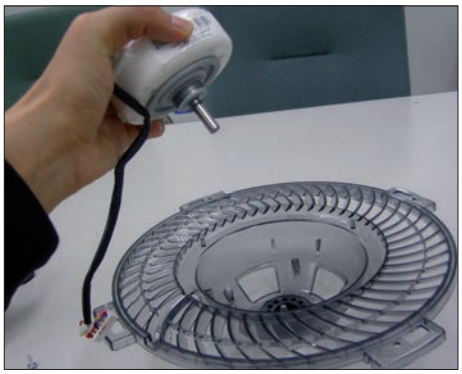
No	Parts	Procedure	Remark
9	Ass'y EVAP UNIT-AL	1) Unscrew one fastening screw to detach the Ass'y Connector Wire-Earth.	
		2) Detach the temperature sensor.	
		3) Unscrew two screws of the ASS'Y EVAP and pull it forward to detach.	

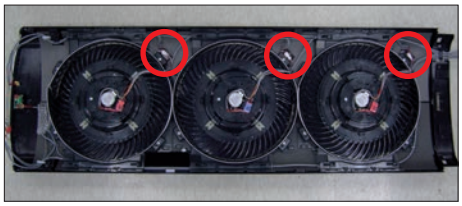
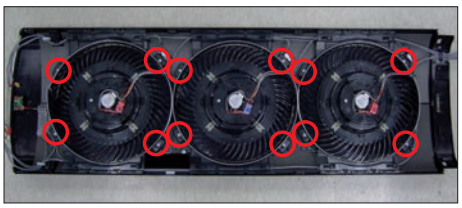
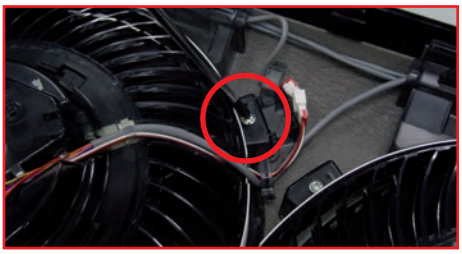
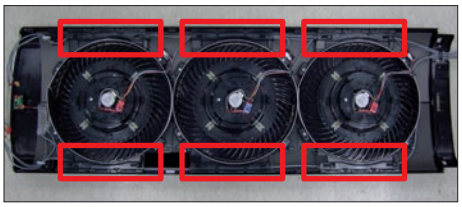
No	Parts	Procedure	Remark
			 

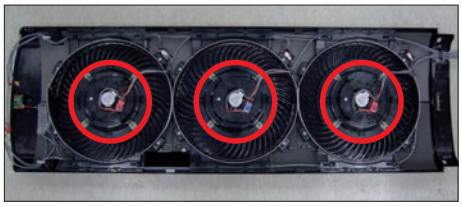
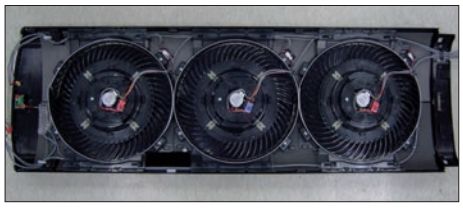
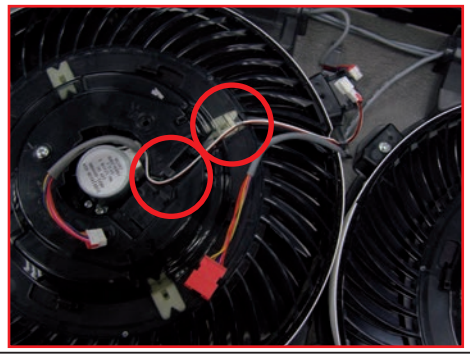
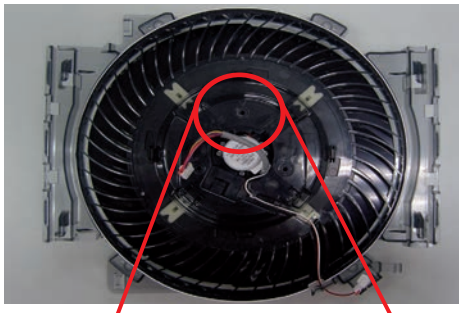
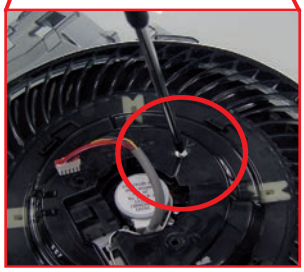
No	Parts	Procedure	Remark
10	Ass'y Case Main PCB	1) Unscrew one screw on the bottom of the Ass'y Case Main PCB and pull it to detach	   

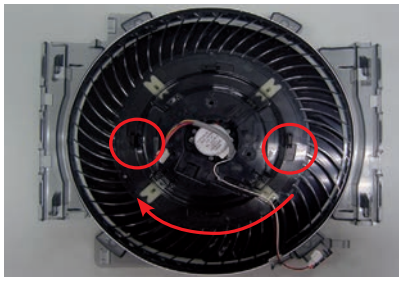
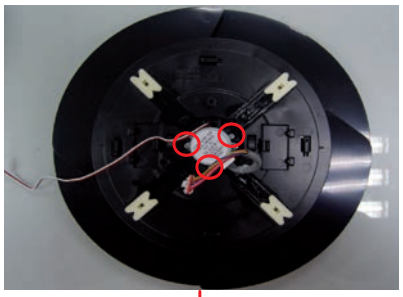
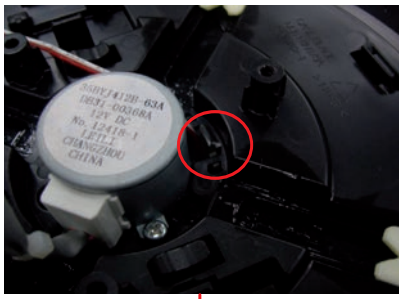
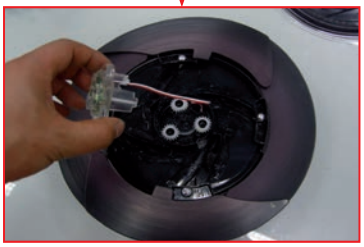
No	Parts	Procedure	Remark
11	Ass'y CABI Body-Up	1) Unscrew four fastening screws at the ASSY CABI BODY-UP and the ASSY CABI BODY-LOW.	
		2) Push the ASS'Y CABI BODY-UP toward the rear surface to detach.	 

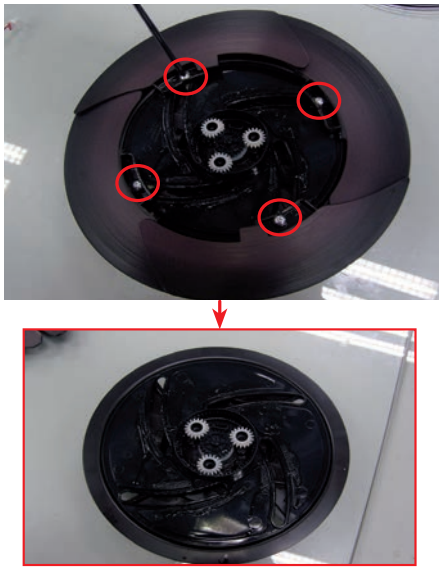
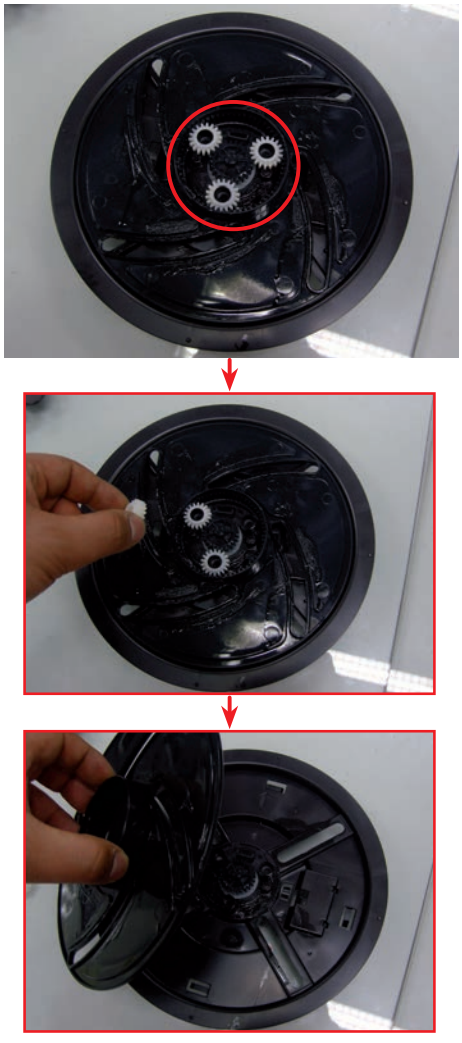
No	Parts	Procedure	Remark
12	Ass'y CABI Body-Low	1) Unscrew five fastening screws of the ASS'Y CABI BODY-LOW and the FRAME-LOW to detach.	
13	Ass'y Frame-Grille	1) Unscrew two fastening screws of the Ass'y Duct Fan and the Ass'y Frame Grille and detach the housing connected with the Motor Fan and the Ass'y Connector Wire Motor.	
		2) Press the hooks on the Ass'y Frame-Grille and then turn counterclockwise to detach.	
		3) Unscrew the fastening screw of the Ass'y Fan-Mixed Flow to detach.	 

No	Parts	Procedure	Remark
		4) Unscrew two fastening screws of the Ass'y Frame-Grille to detach the Ass'y Cover Motor.	
		5) Raise the Motor Fan up to detach.	 

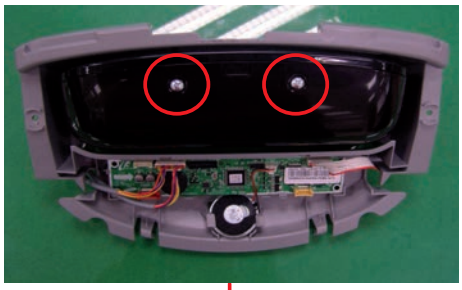
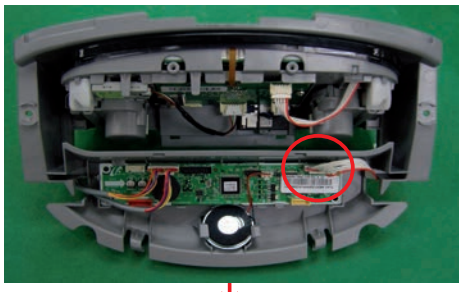
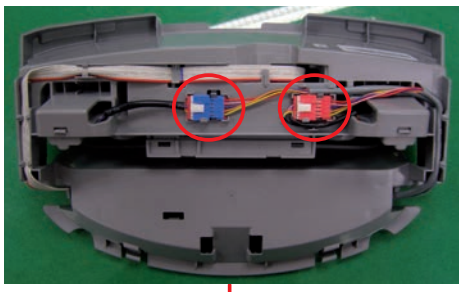
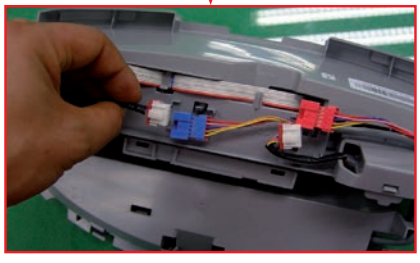
No	Parts	Procedure	Remark
14	Ass'y Panel Grille	1) Detach the lighting connector on the rear of the Ass'y Panel Outlet.	 
		2) Unscrew twelve fastening screws on the rear of the Ass'y Panel Outlet.	 
		3) Detach the Ass'y Panel Outlet and Ass'y Panel Grille hook assembly parts.	 

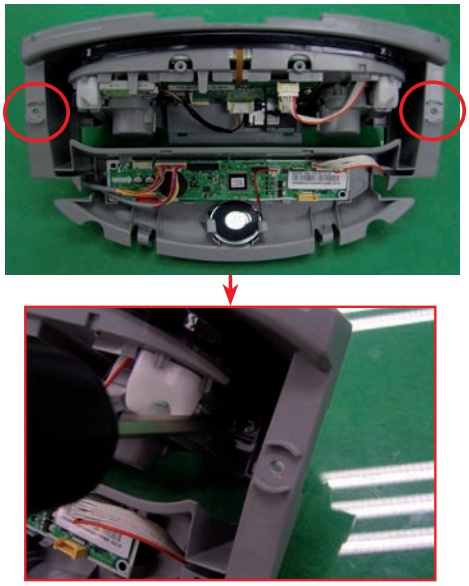
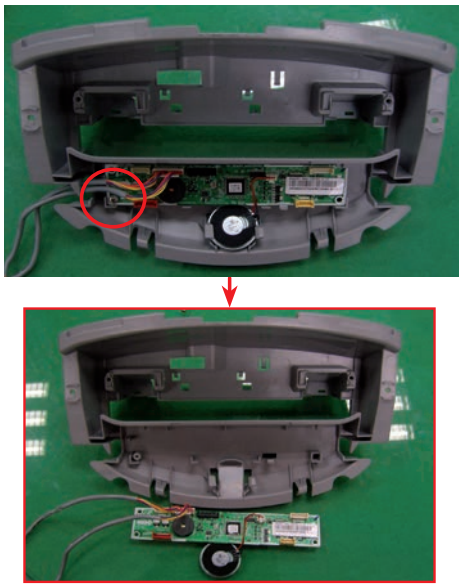
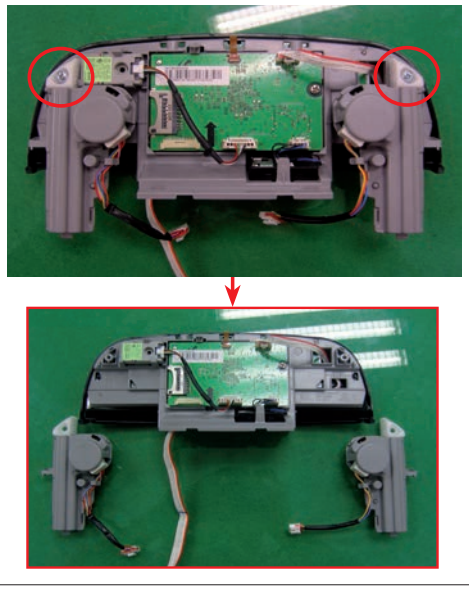
No	Parts	Procedure	Remark
		4) Detach the motor wire connector and disconnect the wire from the bearings.	   
		5) Unscrew one fastening screw on the rear surface of the Ass'y Panel Grille to detach.	 

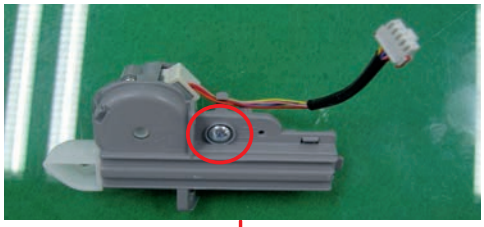
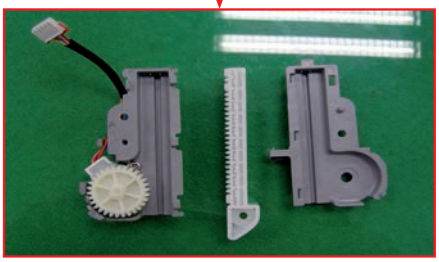
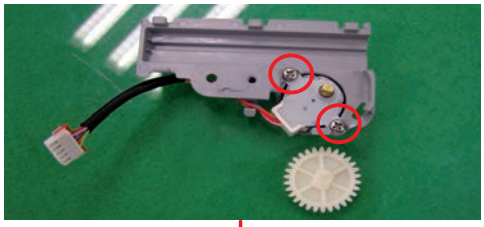
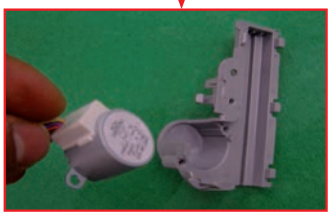
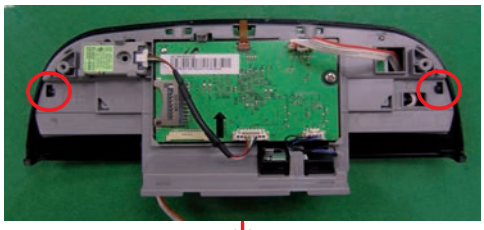
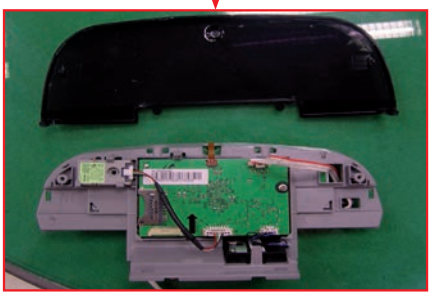
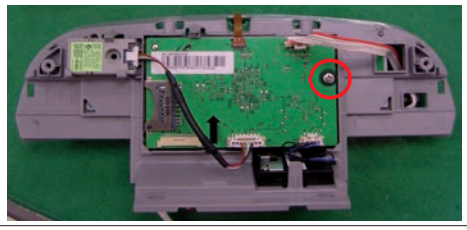
No	Parts	Procedure	Remark
		6) While the hooks on the left and the right are slightly lifted, turn clockwise and detach the panel frame.	 
		7) Unscrew three fastening screws and then detach the cover blade.	 
		8) Unhook the transparent molded material visible on the rear surface and detach the Ass'y Holder (lighting).	 

No	Parts	Procedure	Remark
		9) Unscrew four fastening screws of the assembled blade and then detach it.	
		10) Detach Gear Pinion B and the Guide Blade.	

No	Parts	Procedure	Remark
		11) Unscrew two fastening screws of the motor and then detach it.	 

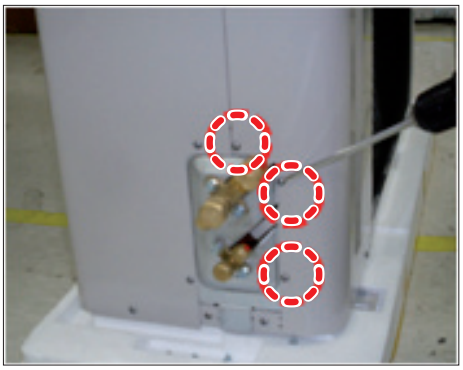
No	Parts	Procedure	Remark
15	Ass'y Cover Top	1) Unscrew two fastening screws of the Cover Display and detach it	 
		2) Detach the display connector from the Main PCB.	 
		3) Detach the motor connector at the lower part of the Ass'y Cover Top.	 

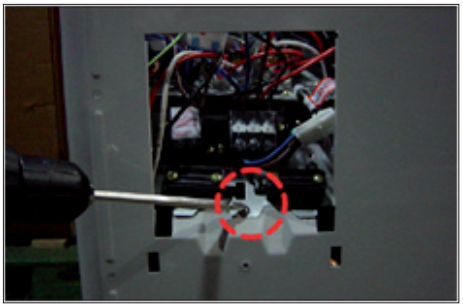
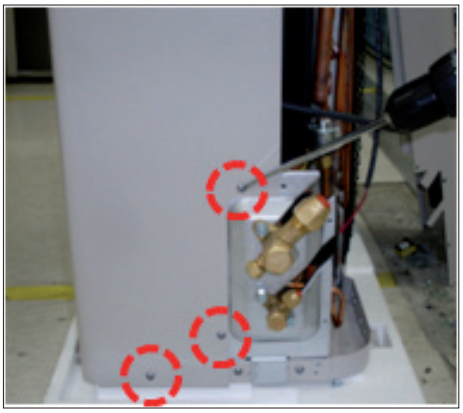
No	Parts	Procedure	Remark
		4) Unscrew two fastening screws on the left and right.	
		5) Unscrew one fastening screw from the PCB and then detach the Ass'y PCB at the cover top.	
		6) Unscrew two fastening screws from the Ass'y Gear Rack and detach it.	

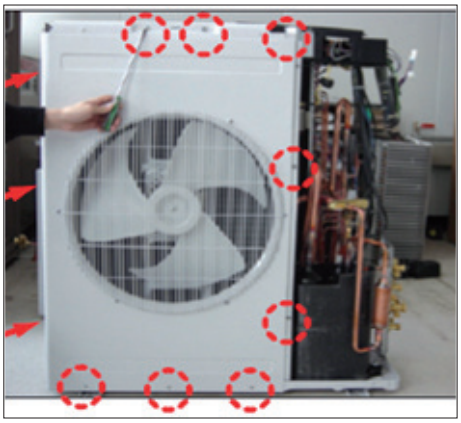
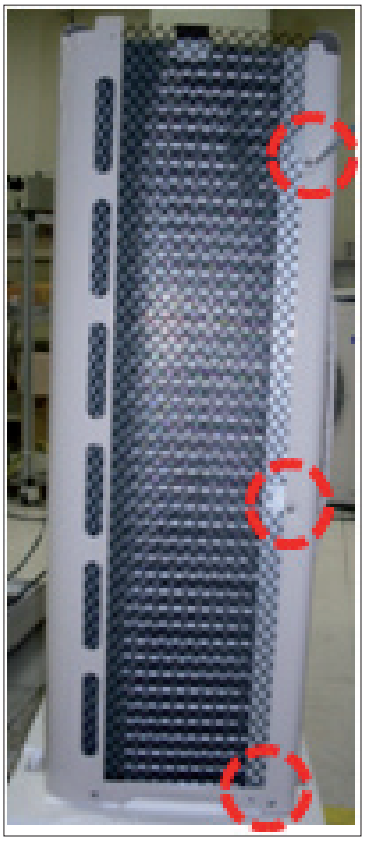
No	Parts	Procedure	Remark
		7) Unscrew one fastening screw from the Ass'y Gear Rack and detach the cover rack and the support rack.	 
		8) Detach the gear pinion from the motor and unscrew two fastening screws to detach the motor.	 
		9) Unhook the left and right of the Panel Display and detach it.	 
		10) Unscrew one fastening screw from the Ass'y PCB Network and then detach it.	

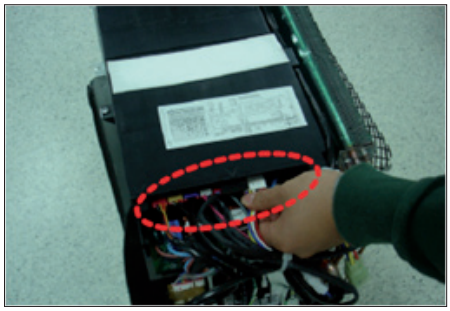
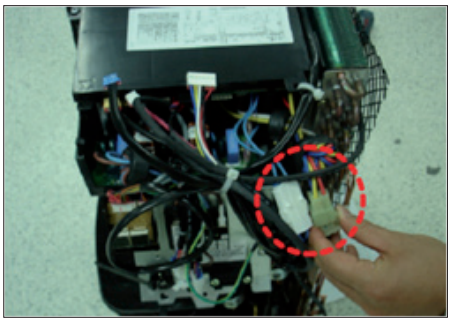
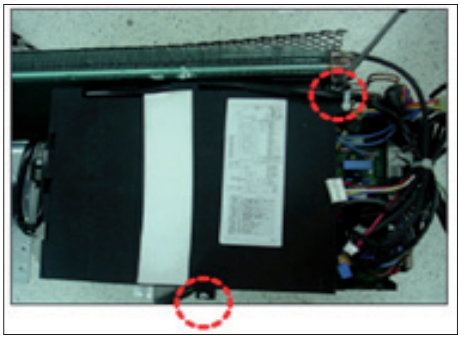
3-2 Outdoor Unit

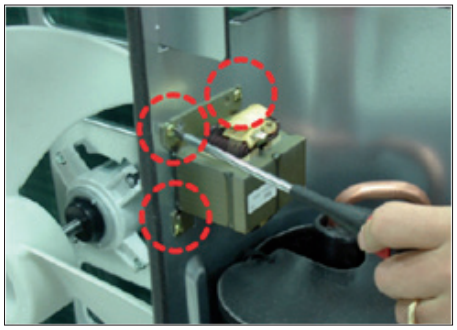
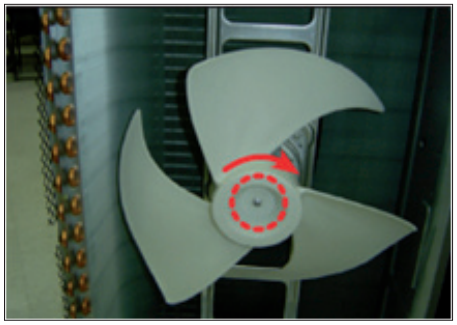
No	Parts	Procedure	Remark
1	Outdoor Unit	1) After switching off the Indoor unit operation, shut off the Main Power.	
2	Ass'y Cabinet Top	1) Unscrew the 9 fastening screws of the Ass'y-Cabinet Top to detach. (Use +screw driver)	   
3	Ass'y Cover-Control	1) Unscrew the fastening screw of the Ass'y Cover-Control to detach. (Use +screw driver)	

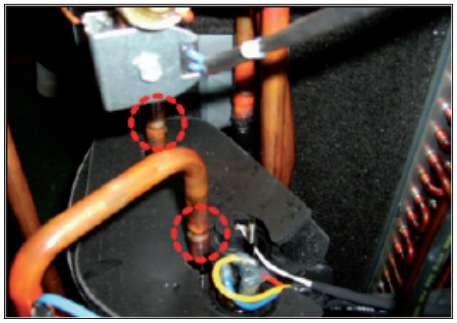
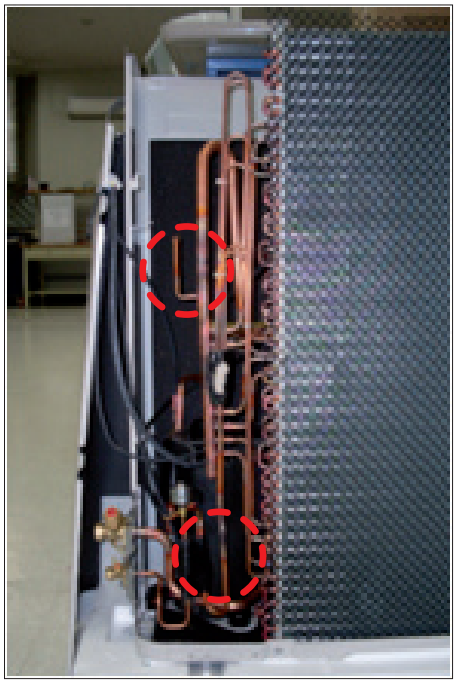
No	Parts	Procedure	Remark
4	ASS'Y CABINET BACK RH	1) Unscrew the 6 fastening screws of the Ass'y Cabinet Back RH to detach. (Use +Screw Driver)	 

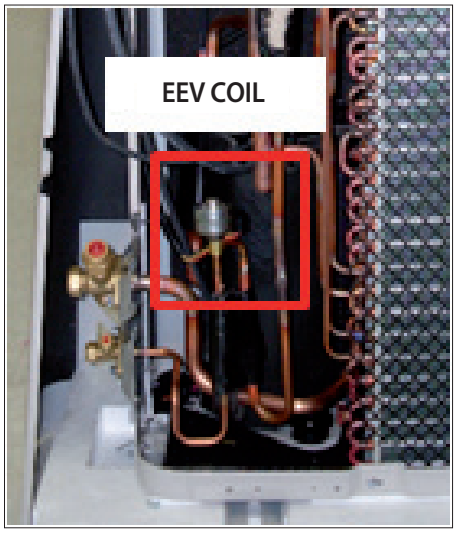
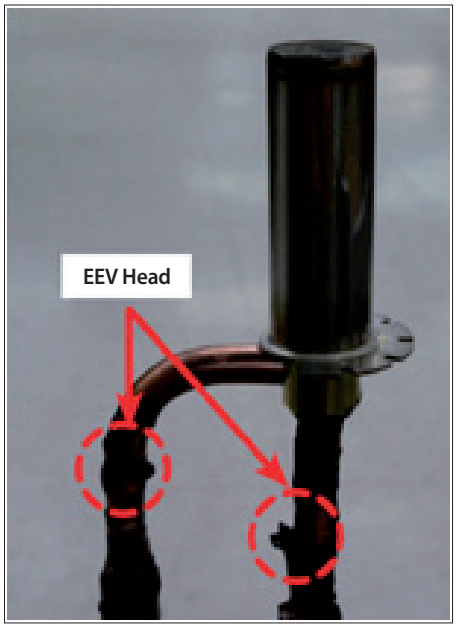
No	Parts	Procedure	Remark
5	Ass'y Cabinet Front RH	1) Unscrew the fastening screw of the case control out to detach. (Use +Screw Driver)	
			
		2) Unscrew the 5 fastening screws of the Ass'y Cabinet Front RH to detach. (Use +Screw Driver)	

No	Parts	Procedure	Remark
6	Ass'y Cabinet Front LF	1) Unscrew the 11 fastening screws of the Ass'y Cabinet Front LF . (Use +Screw Driver)	 

No	Parts	Procedure	Remark
7	Cabinet Back LF	1)) Unscrew the 2 fastening screw of the Cabinet Back LF to detach. (Use +screw driver)	
8	Ass'y Control Out	1) Detach the 4 housings connected to the Ass'y Control Out.	
		2) Detach the cables of the Comp and the Solenoid Coil, Reactor . ⚠ **When detaching the BLDC motor connector from the PBA, please do so 30 seconds after removing the power cord. Do not detach or insert the Motor connector while power is being supplied to the PBA.**	
		3) Unscrew the 2 fastening screws of the Ass'y Control Out to detach. (Use +Screw Driver)	

No	Parts	Procedure	Remark
9	Reactor	1) Unscrew the 3 fastening screws of the Reactor to detach. (Use +Screw Driver)	
10	Fan Propeller	1) Unscrew the fastening nut of the Fan Propeller to detach. (Use Monkey Spanner)	
11	Motor	1) Unscrew the 4 fastening screws of the Motor to detach. (Use +Screw Driver)	
12	Bracket Motor	1) Unscrew the 3 fastening screws of the Bracket Motor to detach. (Use +Screw Driver)	

No	Parts	Procedure	Remark
13	Cover Terminal	1) Unscrew the fastening screw of the Cover-Terminal, and then detach the Wire-Comp from the Comp. (Use Monkey Spanner)	
14	Major Repair	⚠ **Before major repairs, please detach after removing the refrigerant inside.** 1) Detach the suction pipe and the discharge pipe. ⚠ **Please detach during major repairs (welding points when detaching compressor).** 2) Detach the ass'y cond in/out pipe Please detach during major repairs (welding points when detaching compressor).	 

No	Parts	Procedure	Remark
15	EEV welding point	⚠ 2 welding points for each EEV 1. Detach the EEV Coil before beginning work. 2. Wrap the EEV head with a wet towel to prevent it from heating up.	 

4. Troubleshooting

4-1 PBA Options Set-up Method

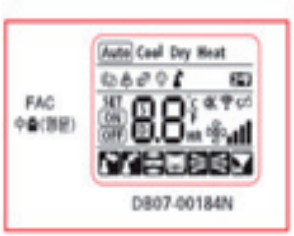
Option code → 20 00 33 08 23

Step 1 **Prepare for options set-up**

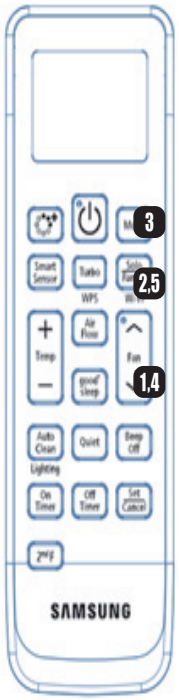
First, remove batteries from remote controller.

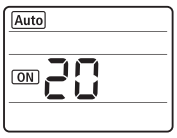
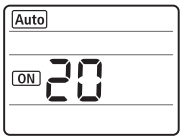
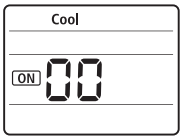
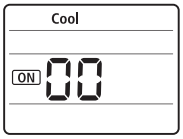
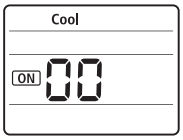
Second, insert batteries while simultaneously holding down temperature button.

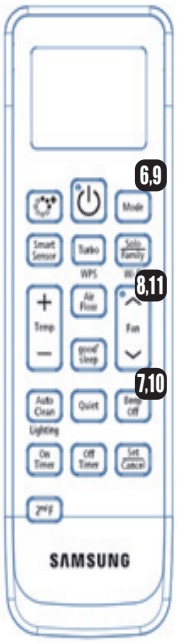
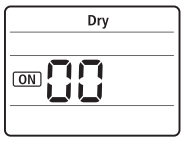
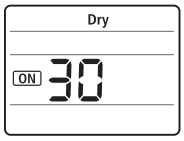
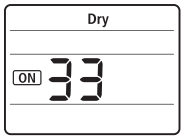
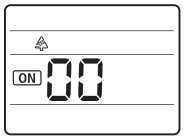
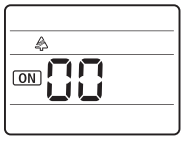
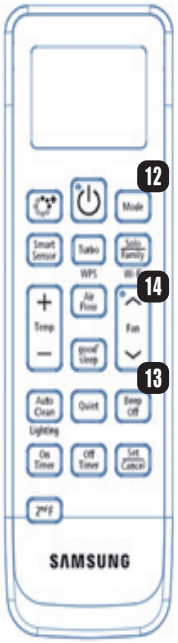
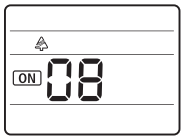
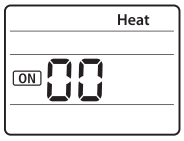
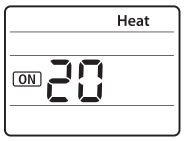
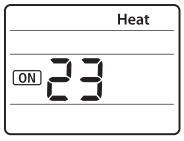
Third, check to see if  is displayed.



Step 2 **After preparing for options set-up, select options in the following order.**

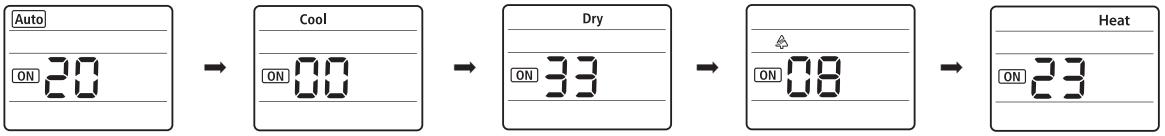


Set-up method	Display
1 SEG1 option set-up. Press the button to set it as 2. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	
2 SEG2 option set-up. Press the button to set it as 0. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	
3 Set it to Cool by pressing the Mode button.	
4 SEG3 option set-up. Press the button to set it as 0. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	
5 SEG4 option set-up. Press the button to set it as 0. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	

Set-up method		Display
	6 Set it to Dry by pressing the Mode button.	
	7 SEG5 option set-up. Press the Fan button to set it as 3. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	
	8 SEG6 option set-up. Press the Fan button to set it as 3. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	
	9 Set it to Fan by pressing the Mode button.	
	10 SEG7 option set-up. Press the Fan button to set it as 0. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	
	11 SEG8 option set-up. Press the Fan button to set it as 8. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	
	12 Set it to Heat by pressing the Mode button.	
	13 SEG9 option set-up. Press the Fan button to set it as 2. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	
	14 SEG10 option set-up. Press the Fan button to set it as 3. Each time the button is pressed 0 → 1 → 2 → 3 → ⋯ 9 → A → b → C → d → E → F will be repeatedly selected.	

Step 3 **Once set-up is complete, check to see if set-up state is correct.**

Press the Mode button to check if options have been set-up correctly for each mode.



Step 4 **Press the On/Off button.**

Check that operation lamp on the Indoor unit is blinking while making a ringing sound.
The product has now completed the options set-up.

Step 5 **Remove batteries and re-insert them into remote controller. Press the On/Off button on the remote controller to activate the product.**

■ **Error Mode**

1. If the power lamp on the Indoor unit is blinking, pull the power plug out from the socket, plug it back in, and then press the On/Off switch to turn the product on.
2. After setting up the options code, if the product is not operating properly or if the power lamp is blinking, check to see if the correct options code for the product model has been set-up.

■ Option Code by Product Specifications

Model Code	Color	Mode	Option Code
AF28FVSDADFN	Twilight Deep Bronze	Cooling Only	20-22-B2-B8-25
AF28FVZDAWKN	Twilight White	Cooling Only	20-22-B0-B8-25
KFR-72L/EMB1	Twilight Deep Bronze	Heat Pump	22-30-B0-B8-23
KFR-72L/EMA1	Twilight White	Heat Pump	22-30-B0-B8-23
KFR-50L/EMA1	Twilight White	Heat Pump	22-30-B0-B8-18
AF28FSSDADFN	Twilight Deep Bronze	Heat Pump	20-32-B2-B8-25
AF28FSSDAWKN	Twilight White	Heat Pump	20-32-B2-B8-25
AF28FSZDAWKN	Twilight White	Heat Pump	20-32-B0-B8-25
AF28FVSDAWKN	Twilight White	Cooling Only	20-22-B0-B8-25
AF27FSSDAWKN	Twilight White	Heat Pump	20-32-B0-B8-25
AF24FSSDAWKN	Twilight White	Heat Pump	20-32-B0-B8-25

4-2 Error Indicator

4-2-1 Indoor Unit

Error display	Error type
	Communications error between Indoor unit and Outdoor unit
	Communications error between Main-Panel in Indoor unit
	Communications error between spatial sensor module and Indoor unit
	Indoor temperature sensor error
	Indoor EVA In sensor error
	Indoor EVA Out sensor error
	Internal fan 1 error
	Internal fan 2 error
	Mixed operation error
	Options error
	Internal fan 3 error
	K1 Feedback error
	Indoor Terminal Block Fuse error

4-2-2 Outdoor unit

Error indicator	LED			Error type
	Yellow	Green	Red	
E128	○	◎	●	Indoor unit pipe entrance temperature sensor is detached
E129	○	◎	●	Indoor unit pipe exit temperature sensor is detached
E201	○	◎	●	Indoor unit Tracking Error
E202	◎	●	●	Indoor unit normal operation communications error
E203	○	○	●	Outdoor unit PBA communications error
E221	◎	○	◎	External Out temperature sensor error
E237	◎	●	◎	External Cond temperature sensor error
E246	○	◎	●	Self-diagnosis – external Cond temperature sensor is detached
E251	◎	◎	○	External Discharge temperature sensor error
E261	○	◎	●	Self-diagnosis – external Discharge temperature sensor is detached
E320	○	◎	●	External OLP temperature sensor error
E401	○	◎	●	Internal defrost protection control
E404	○	◎	●	Internal overload protection control
E416	◎	○	●	External Discharge protection control
E419	○	◎	●	Self-diagnosis – open EEV
E440	●	◎	○	Prohibit cooling maneuver
E441	●	◎	○	Prohibit heating maneuver
E458	●	○	○	Problematic Outdoor unit FAN Motor error
E461	○	◎	○	Problematic compressor maneuver operation error
E462	●	◎	●	Electric current protection control
E463	○	◎	●	Outdoor unit OLP protection control
E464	○	○	◎	Compressor electric current overload error
E465	◎	●	○	Compressor abnormal error
E466	○	●	◎	Problematic external controller internal voltage error
E467	●	○	●	Compressor wire connection error
E468	◎	◎	●	Problematic compressor electric current sensor error
E469	●	◎	◎	Problematic external controller internal voltage sensor error
E470	●	◎	●	EEPROM error
E472	●	●	◎	Problematic Outdoor unit power frequency error
E474	○	◎	◎	Problematic radiator temperature sensor error
E483	○	●	◎	AC overvoltage protection
E485	◎	◎	●	Problematic external controller incoming current sensor error
E500	◎	●	●	Radiator overheating error
E554	●	●	○	Refrigerant leakage error
Normal operation	○	◎	●	

● : On, ○ : Off, ◎ : Blinking

4-3 Items to Verify Before Diagnosis

Error Indicator	Cause	Measures	Product's state of operation at the time of malfunction (state of main component)			Method of Diagnosis
			Indoor Fan	Outdoor Fan	Comp.	
E101	Errors for all Indoor unit communications	• Inspect communication cables and circuits of Indoor unit and Outdoor unit	Operation Off	Operation Off	Operation Off	Page 4-10
E103	Communications error between Indoor unit main Panel PBA	• Check connecting wire, check Main PBA/Panel PBA	Operation Off	Operation Off	Operation Off	Page 4-11
E105	Camera / network communications error	• Check connecting wire • Check Panel PBA, spatial sensor SUB PBA	Normal operation	Normal operation	Normal operation	Page 4-12
E121	Indoor unittemperature sensor SHORT/OPEN	• Check temperature sensor wire • Check Main PBA	Normal operation	Normal operation	Normal operation	Page 4-13
E122	Indoor unitpipe IN temperature sensor error SHORT/OPEN	• Check temperature sensor wire • Check Main PBA	Operation Off	Operation Off	Operation Off	Page 4-14
E123	Indoor unitpipe OUT temperature sensor error SHORT/OPEN	• Check temperature sensor wire • Check Main PBA	Operation Off	Operation Off	Operation Off	Page 4-14
E128	(Self-diagnosis) Detached EVA entrance sensor error	• Check temperature sensor wire • Check Main PBA	Operation Off	Operation Off	Operation Off	Page 4-19
E129	(Self-diagnosis) Detached EVA exit sensor error	• Check temperature sensor wire • Check Main PBA	Operation Off	Operation Off	Operation Off	Page 4-19
E154	Problematic indoor unit upper fan motor	• Check connecting WIRE • Check FAN MOTOR • Check Main PBA ※ Because the FAN MOTOR is a BLDC MOTOR, it may malfunction if the CONNECTOR is detached or inserted while being supplied with power. Please take measures 1~3 minutes after switching the power OFF.	Normal operation	Normal operation	Normal operation	Page 4-15~16
E155	Problematic indoor unit middle fan motor					
E176	Problematic indoor unit lower fan motor					
E161	Most Indoor units will result in a mixed operation error when cooling / heating simultaneously	• Match the latter operation mode of the Indoor unit with the first operation mode	Operation Off	Normal operation	Normal operation	Page 4-17
E163	Did not enter options set-up	• Enter options • Entering KEY not allowed	Operation Off	Operation Off	Operation Off	Page 4-2~4-4
E187	K1 Feedback error	• Please refer to Measures According to Symptoms	Normal operation	Normal operation	Normal operation	Page 4-18

Error Display (cont.)

Error Indicator	Cause	Measures	Product's state of operation at the time of malfunction (state of main component)			Method of Diagnosis
			Indoor Fan	Outdoor Fan	Comp.	
	Terminal Block Fuse Open Fuse wire is not connected	• Check Fuse wire • Check Terminal Block	Operation Off	Operation Off	Operation Off	Page 4-19
	When Indoor unit is not responding to communications	• Inspect communications cables and circuits of Indoor unit and Outdoor unit	Operation Off	Operation Off	Operation Off	Page 4-10
	When Indoor unit is not responding to communications	• Inspect communications cables and circuits of Indoor unit and Outdoor unit	Operation Off	Operation Off	Operation Off	Page 4-10
	Problematic Indoor unitcommunications of Outdoor unitPBA	• Check Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-20
	Outdoor unittemperature sensor error SHORT/OPEN	• Check temperature sensor Wire • Check Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-21
	Outdoor unit pipe temperature sensor error SHORT/OPEN	• Check temperature sensor wire • Check Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-22
	Outdoor unitpipe temperature sensor error while running self-diagnosis	• Check temperature sensor wire • Check Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-23
	Temperature delivery sensor error SHORT/OPEN	• Check temperature sensor wire • Check Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-24
	Temperature delivery sensor error while running self-diagnosis	• Check temperature sensor wire • Check Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-23
	Compressor temperature sensor error SHORT/OPEN	• Check temperature sensor wire • Check Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-25
	When Outdoor unitOutdoor unit freezes	• SET installation condition, inspect refrigerant levels	Operation Off	Operation Off	Operation Off	Page 4-26
	When Outdoor unit gets overloaded	• SET installation condition, inspect refrigerant levels	Operation Off	Operation Off	Operation Off	Page 4-26
	When Outdoor unit temperature delivery gets overloaded	• SET installation condition, inspect refrigerant levels	Operation Off	Operation Off	Operation Off	Page 4-26
	Problematic EEV-A while running self-diagnosis	• Inspect pipes and SET condition	Operation Off	Operation Off	Operation Off	Page 4-26
	When outside temperature is above/ below operation range allowed for heating	• Inspect outside air temperature and SET installation condition. Check temperature sensor WIRE	Operation Off	Operation Off	Operation Off	Page 4-27

Error Display (cont.)

Error Indicator	Cause	Measures	Product's state of operation at the time of malfunction (state of main component)			Method of Diagnosis
			Indoor Fan	Outdoor Fan	Comp.	
	When outside temperature is above/ below operation range allowed for cooling	• Inspect outside air temperature and SET installation state	Operation Off	Operation Off	Operation Off	Page 4-27
	Problematic Outdoor unitFAN MOTOR	• Check connecting WIRE • Check FAN MOTOR • Check Outdoor unit PBA S Because the FAN MOTOR is a BLDC MOTOR, it may malfunction if the CONNECTOR is detached or inserted while being supplied with power. Please take measures 1~3 minutes after switching the power OFF.	Operation Off	Operation Off	Operation Off	Page 4-28
	Problematic compressor maneuver operation	• Inspect Outdoor unit PBA / Inspect compressor condition / Inspect SET installation condition	Operation Off	Operation Off	Operation Off	Page 4-29
	Problematic Outdoor unit incoming electric current	• Inspect compressor condition / Inspect SET installation condition	Operation Off	Operation Off	Operation Off	Page 4-30
	Compressor temperature overload	• Inspect compressor condition / Inspect SET installation condition / Check temperature sensor WIRE	Operation Off	Operation Off	Operation Off	Page 4-26
	Problematic compressor incoming electric current	• Inspect compressor condition / Inspect SET installation condition	Operation Off	Operation Off	Operation Off	Page 4-29
	Problematic compressor operation	• Inspect compressor condition / Inspect SET installation condition	Operation Off	Operation Off	Operation Off	Page 4-29
	Problematic Outdoor unit controller internal voltage	• Inspect Outdoor unit PBA / Inspect power line connection	Operation Off	Operation Off	Operation Off	Page 4-30
	Problematic compressor operation	• Inspect compressor condition / Inspect SET installation condition / Inspect Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-31
	Problematic compressor electric current sensor	• Inspect Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-29
	Problematic Outdoor unit controller internal voltage sensor	• Inspect Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-30
	EEPROM error	• EEPROM loading	Operation Off	Operation Off	Operation Off	Page 4-32
	Problematic Outdoor unit power frequency	• Inspect Outdoor unit PBA / Inspect power line connection	Operation Off	Operation Off	Operation Off	Page 4-30

Error Display (cont.)

Error Indicator	Cause	Measures	Product's state of operation at the time of malfunction (state of main component)			Method of Diagnosis
			Indoor Fan	Outdoor Fan	Comp.	
E474	Faulty radiator temperature sensor	• Replace Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-30
E483	AC overvoltage protection	• Check input voltage	Operation Off	Operation Off	Operation Off	Page 4-30
E485	Problematic incoming electric current sensor	• Replace Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-30
E500	Radiator overheating error	• Tighten screws • Replace Outdoor unit PBA	Operation Off	Operation Off	Operation Off	Page 4-33
E554	Refrigerant leakage error	• Inspect pipes	Operation Off	Operation Off	Operation Off	Page 4-34

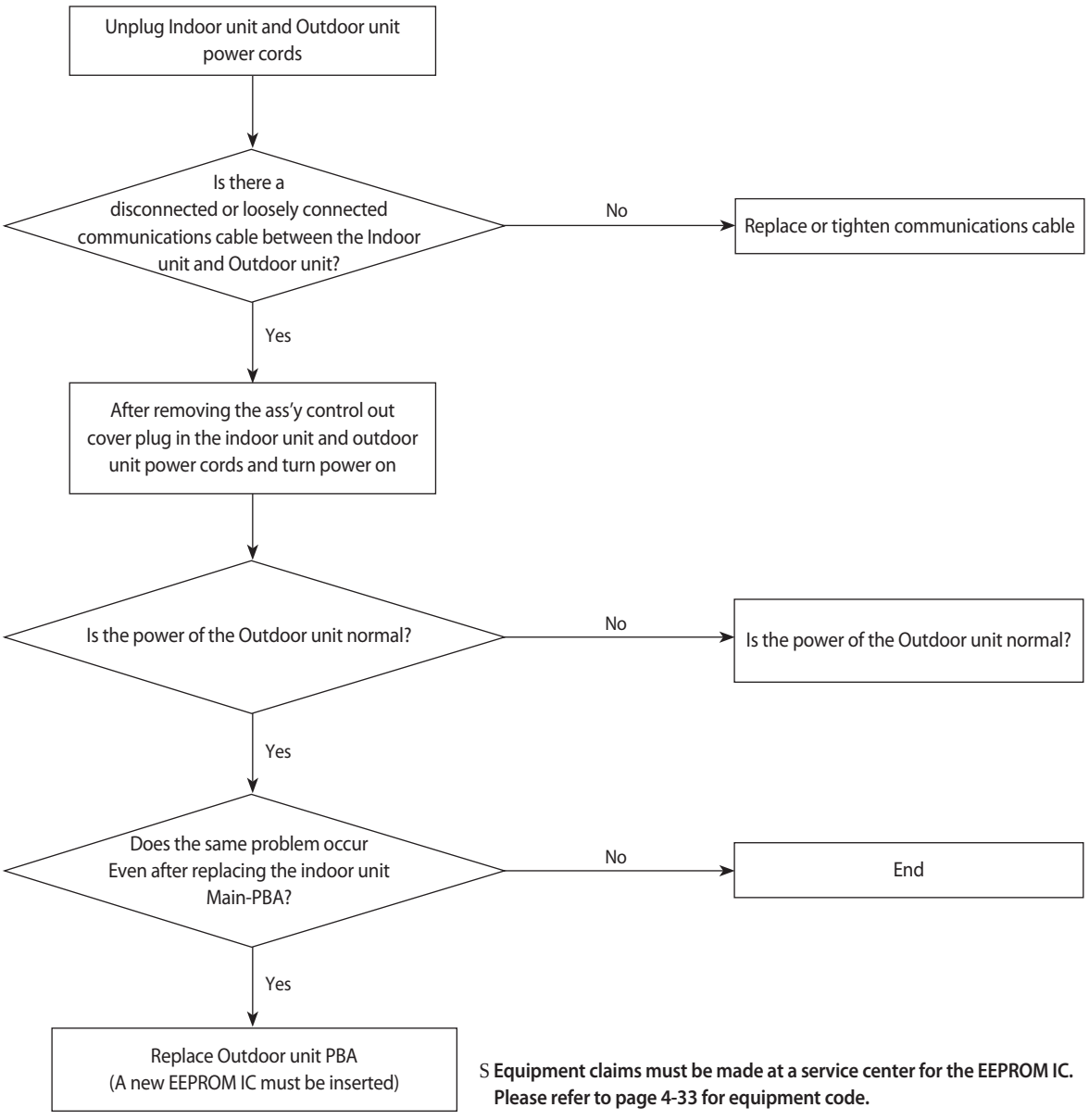
4-4 Troubleshooting by symptoms

4-4-1 Indoor unit · Outdoor unit communications error

Indoor unit display	E101 (Indoor unit · Outdoor unit communications error) E201 (Indoor unit tracking error) E202 (Indoor unit normal operation communications error)
Outdoor unit display	O(YEL) ◎(GRN) ●(RED) - when E201 ◎(YEL) ●(GRN) ●(RED) - when E202

1. Cause of malfunction
   1) When communications between Indoor unit and Outdoor unit stop for 3 minutes
   2) Disconnected or loosely connected communications cable between Indoor unit and Outdoor unit
   3) Problematic power for Outdoor unit or faulty Outdoor unit PBA
   4) Problematic Faulty Main PBA of Indoor unit

2. Check procedure

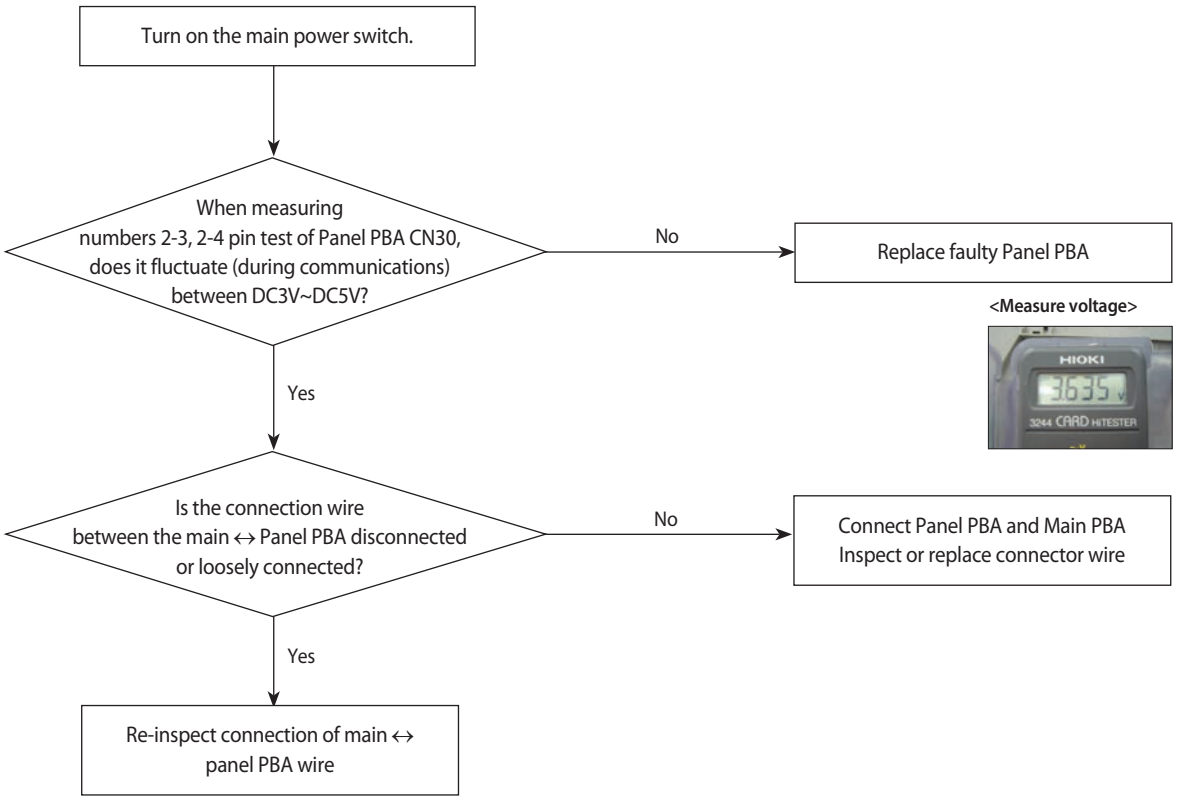


S **Equipment claims must be made at a service center for the EEPROM IC.**
Please refer to page 4-33 for equipment code.

4-4-2 When error code "E 103" between main ↔ panel is indicated on the indoor temperature display area

1. Cause of malfunction
   1) Disconnected or loosely connected main ↔ panel connection wire
   2) Faulty indoor unit Main PBA
   3) Faulty Panel PBA

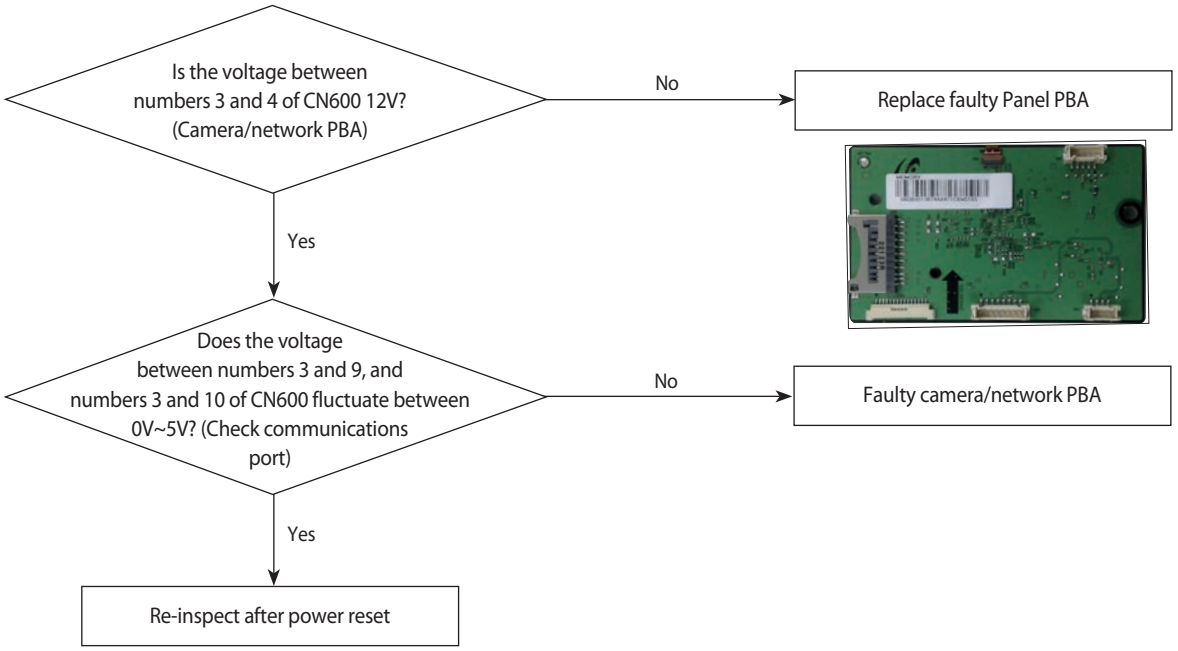
2. Check procedure



4-4-3 When camera/network error code is "E105" indicated on the indoor temperature display area

1. Cause of malfunction
   1) Faulty indoor camera/network PBA itself
   2) Faulty WIRE between indoor camera/network and Panel PBA

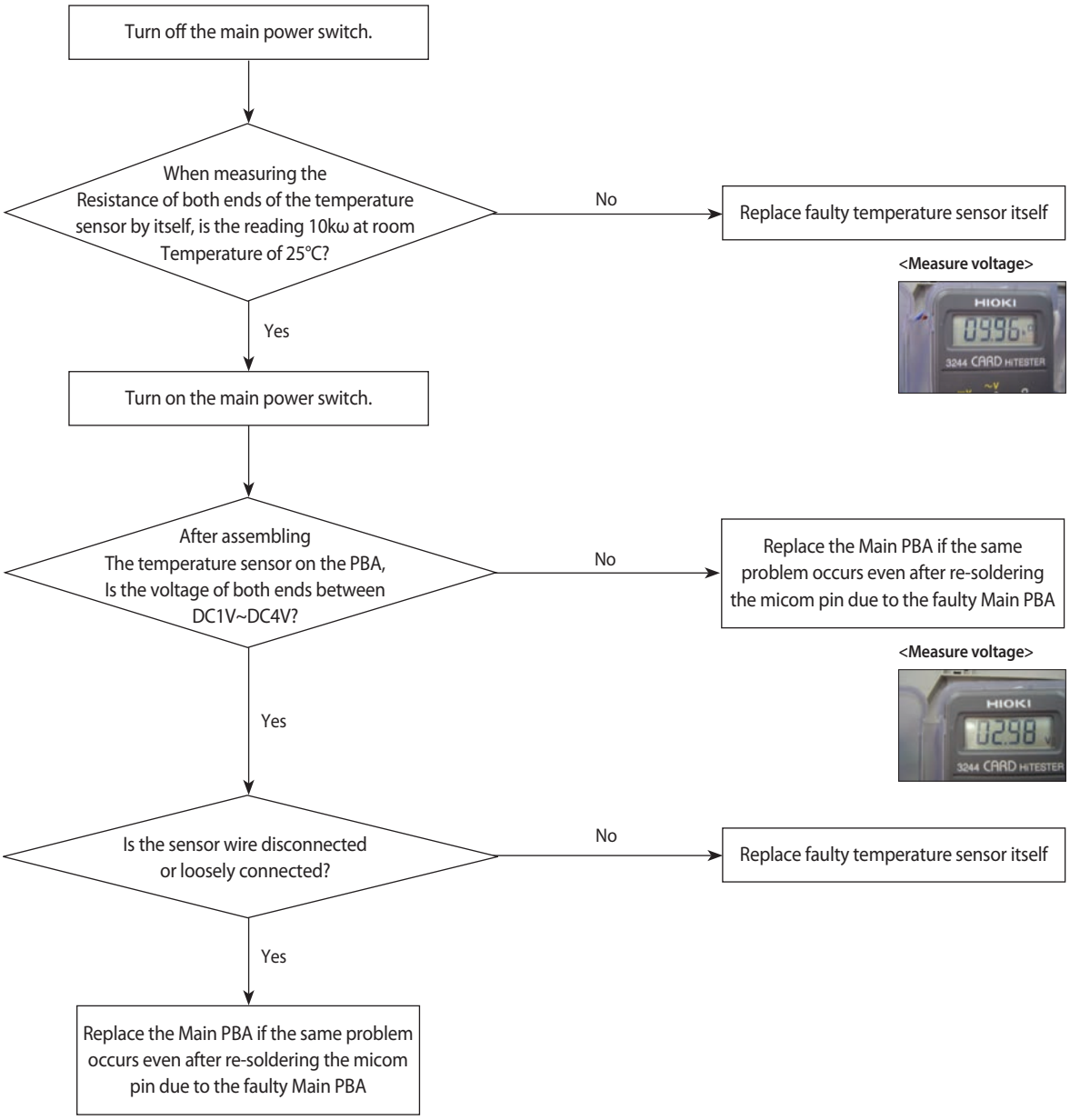
2. Check procedure



4-4-4 When indoor temperature sensor error code is "E121" indicated on the indoor temperature display area

1. Cause of malfunction
   1) Disconnected or loosely connected indoor temperature sensor
   2) Cold soldering joint of indoor Main PBA MICOM
   3) Faulty sensor itself (penetration of moisture into sensor)

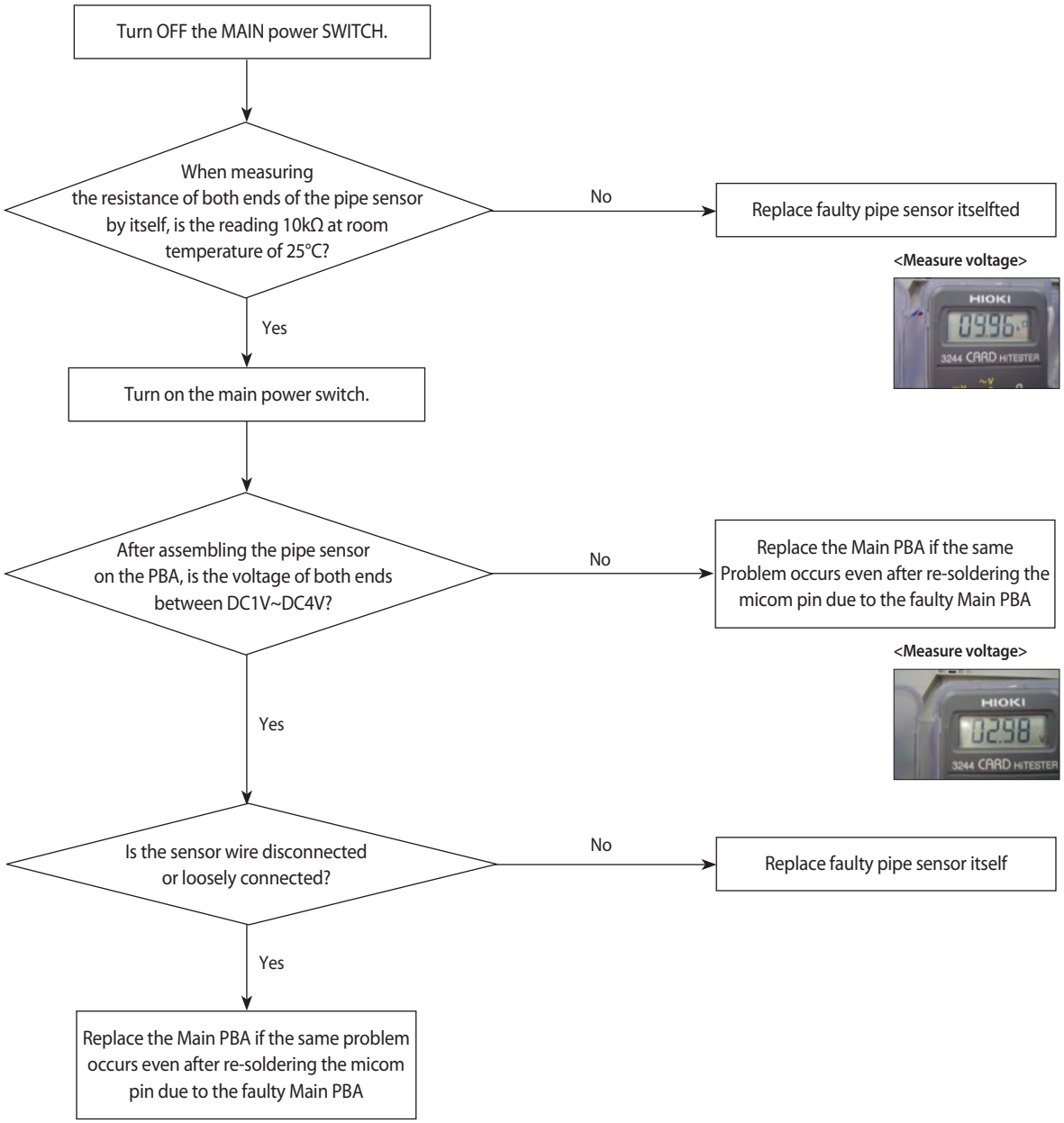
2. Check procedure



4-4-5 When indoor pipe sensor error code is "E122, E123" indicated on the indoor temperature display area

1. Cause of malfunction
   1) Disconnected or loosely connected indoor pipe sensor
   2) Cold soldering joint of indoor Main PBA MICOM
   3) Faulty sensor itself (penetration of moisture into sensor)

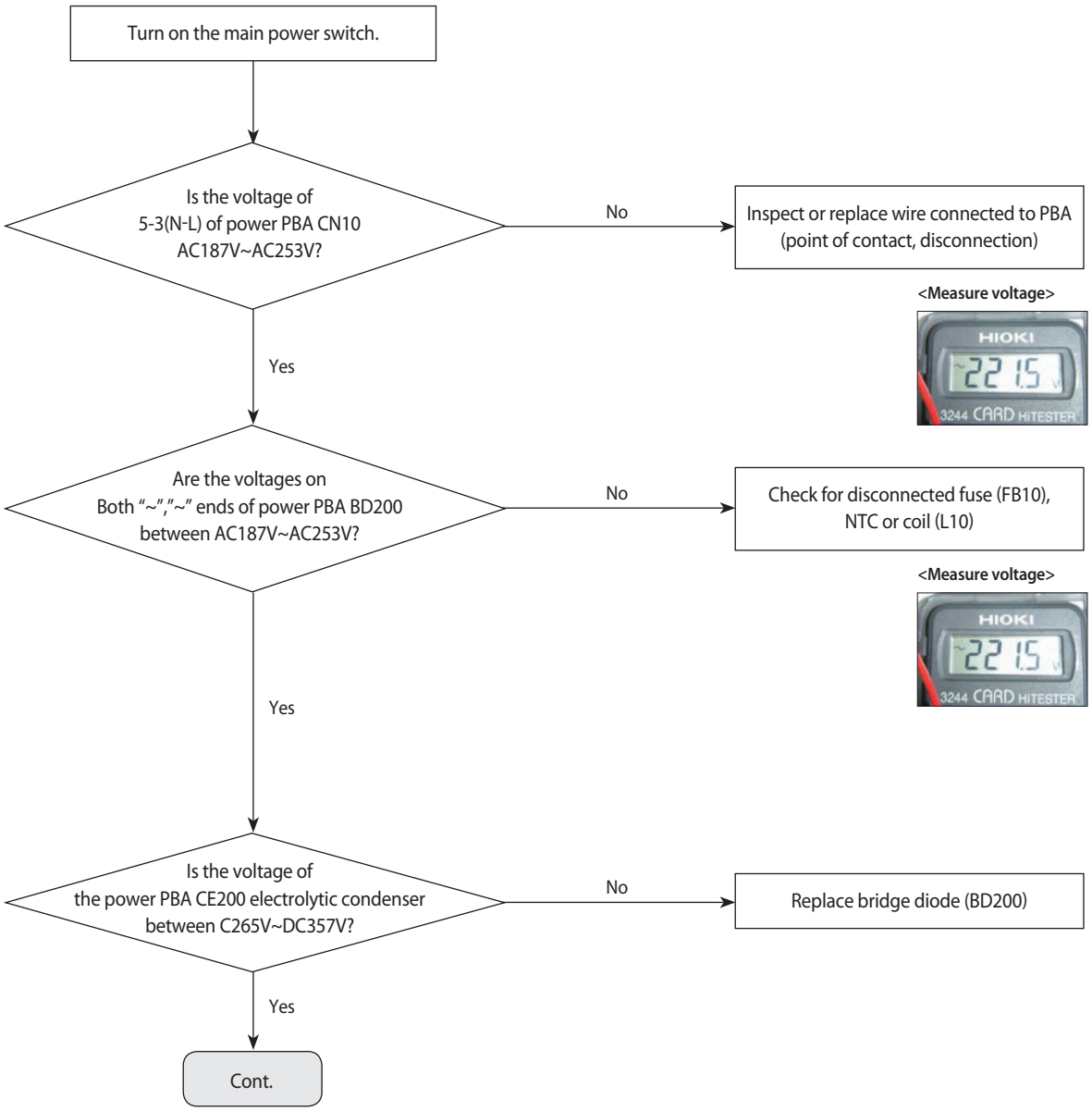
2. Check procedure



4-4-6 When Indoor fan motor error code(top) "E154"/(middle)"E155"/bottom"E176"is Indicated onthe Indoor temperature display area.

1. Cause of malfunction
   1) Faulty internal circuit of internal fan motor (bldc motor)
   2) Faulty motor wire or Main PBA
   3) Faulty motor due to disconnected internal fan motor connector while being supplied with power

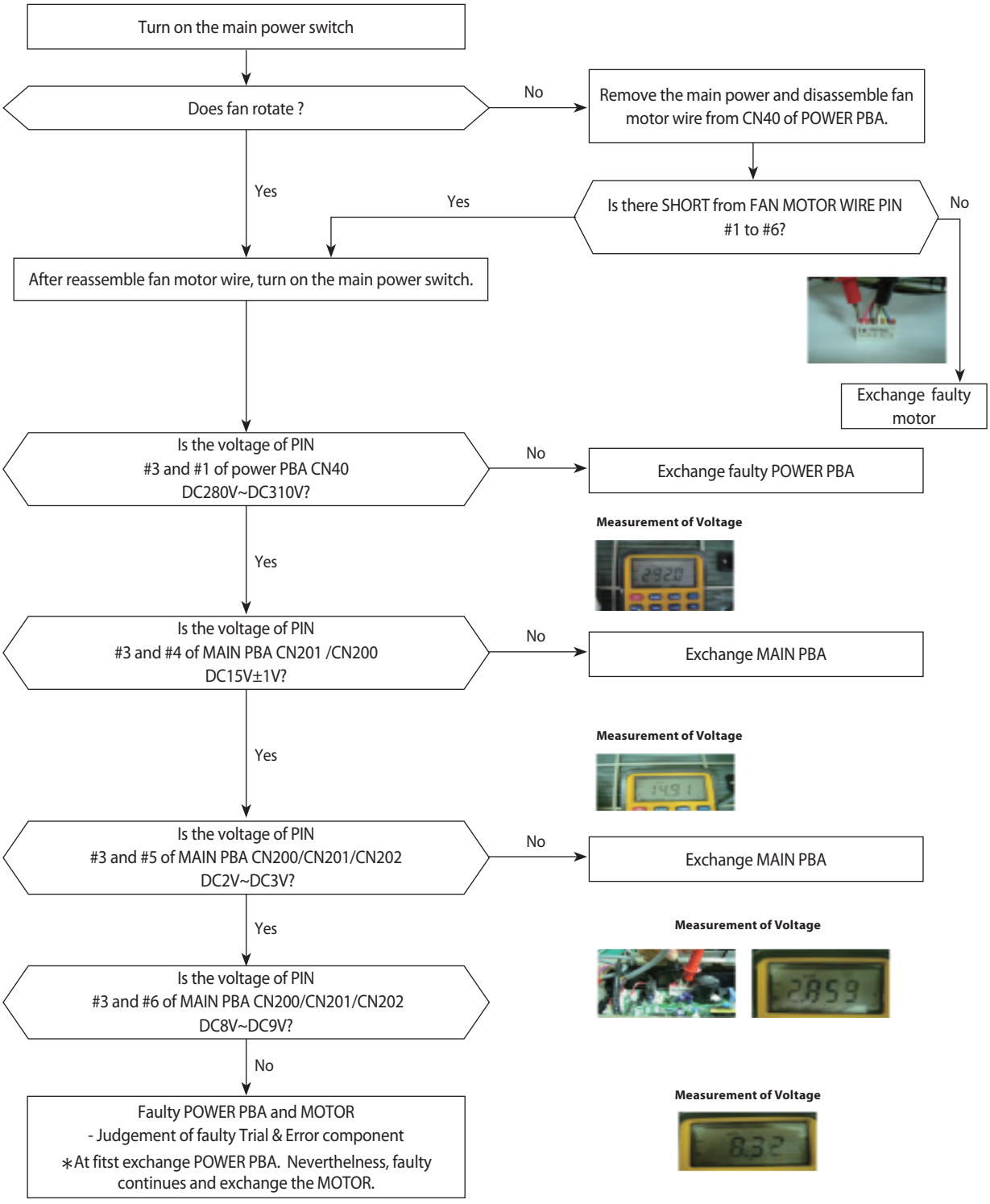
2. Check procedure



When indoor fan motor error code (top) "E154"/ (middle) "E155"/(bottom) "E176" is indicated on the indoor temperature display area (cont.)

1. Cause of malfunction
   1) Faulty internal circuit of internal fan motor
   2) Faulty motor wire or Main PBA
   3) Faulty motor due to disconnected internal fan motor connector while being supplied with power

2. Check procedure



4-4-7 When mixed operation error code is "E161" indicated on the indoor temperature display area

1. Cause of malfunction
   1) When the operation mode of the problematic Indoor unit does not match that of an Indoor unit already in operation
   2) When the indoor period operation mode of multi-products do not match each other

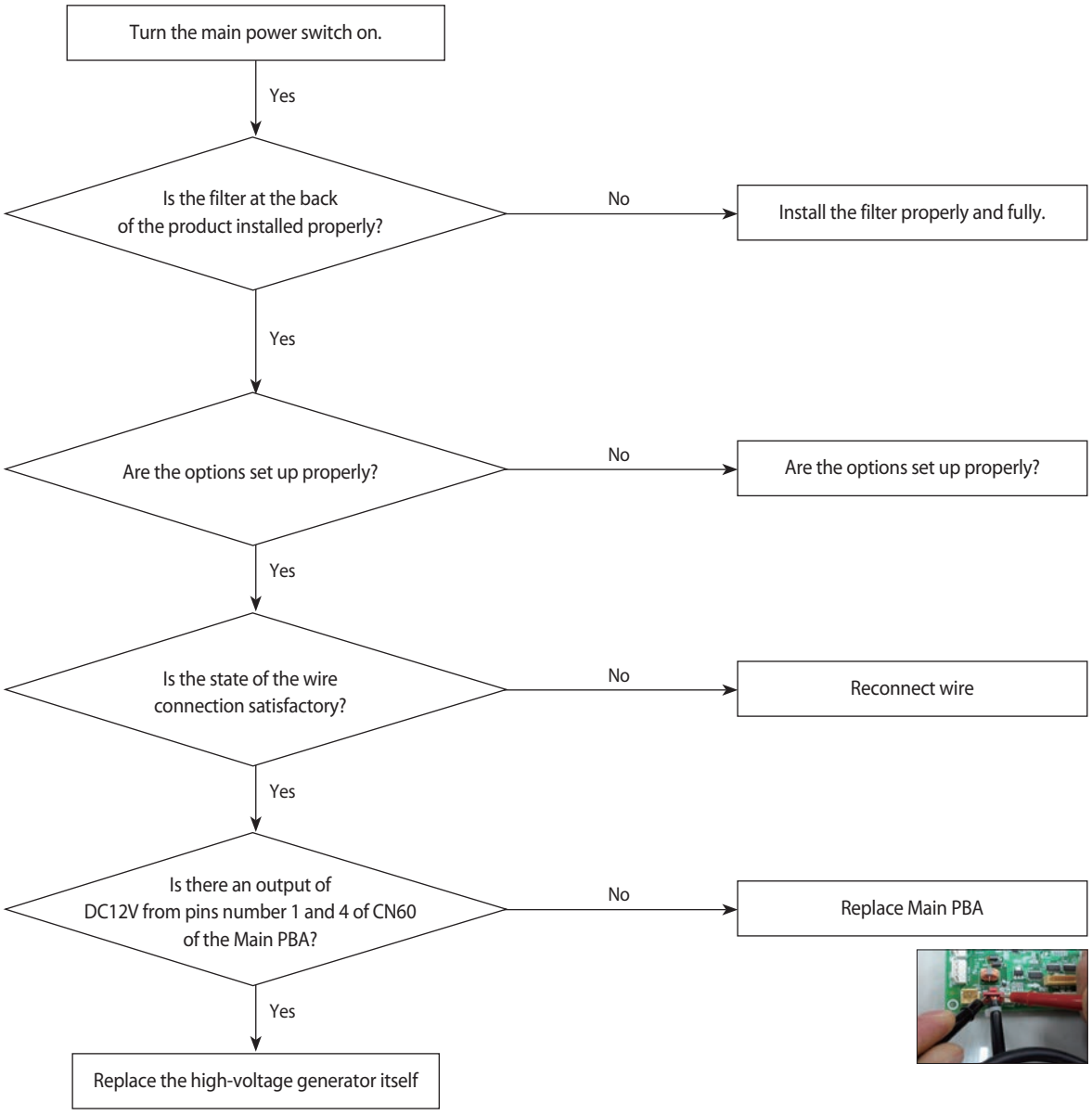
2. Check procedure
   1) Inspect the operation modes of each Indoor unit.
   2) Match the Indoor unit operation modes to one another.

4-4-8 When zero filter feedback error code is "E187" indicated

1. Cause of malfunction
   1) Filter is not installed properly
   2) Faulty options
   3) Faulty Main PBA
   4) Faulty high-voltage generator itself

   S **this error code does not ordinarily appear and can only be seen in history mode**
   History mode checking method (timer off + ok/cancel on remote controller)

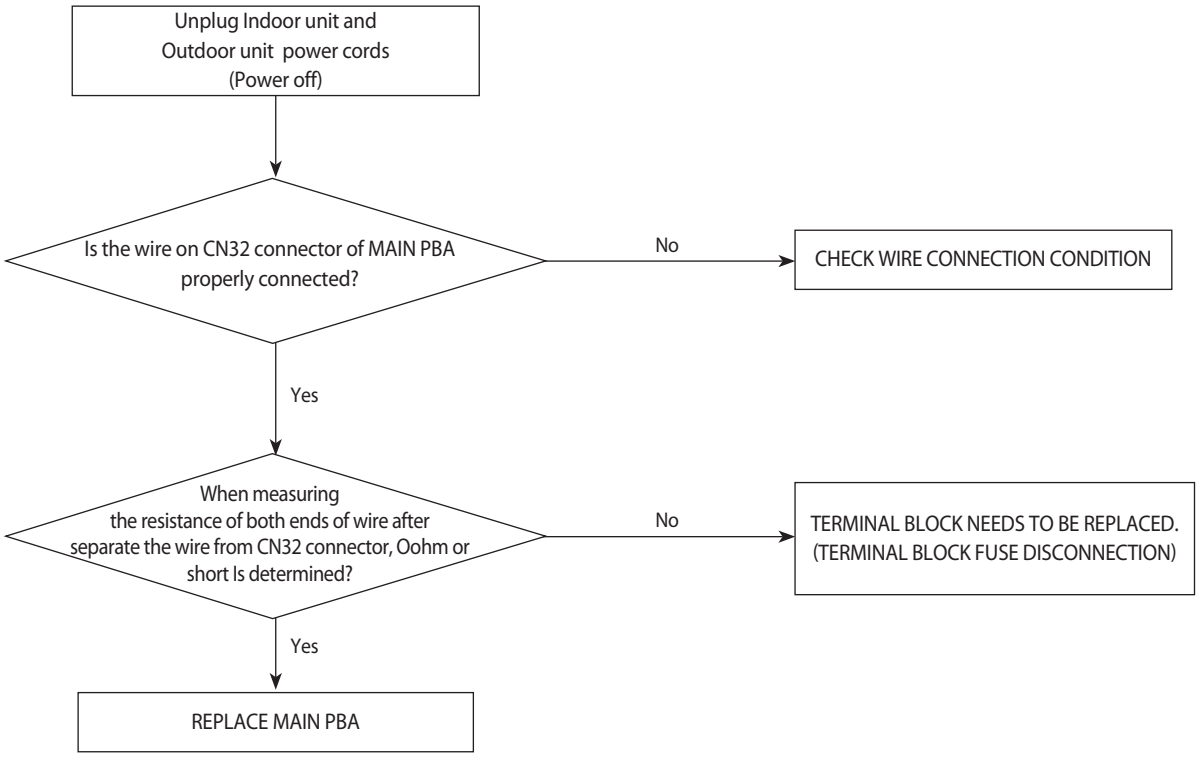
2. Check procedure



4-4-9 When Indoor unit Terminal Block Fuse Error "E 1 98" Indicated on the Indoor Temperature display area

1. Cause of malfunction
   1) Disconnection or loose connection of ERMINAL BLOCK FUSE
   2) Disconnection of TERMINAL BLOCK FUSE
   3) Faulty Main PBA

2. Check procedure



4-4-10 Self-diagnosis – detached indoor unit · Outdoor unit pipe temperature sensor error

Indoor unit display	E 1 28 (Detached Indoor unit pipe entrance temperature sensor error) E 1 29 (Detached Indoor unit pipe exit temperature sensor error)
Outdoor unit display	O(YEL) ◎(GRN) ●(RED)

1. Cause of malfunction
   1) Detached indoor unit pipe temperature sensor while running outdoor unit
   2) Detached indoor unit pipe entrance temperature sensor
   3) Detached indoor unit pipe exit temperature sensor

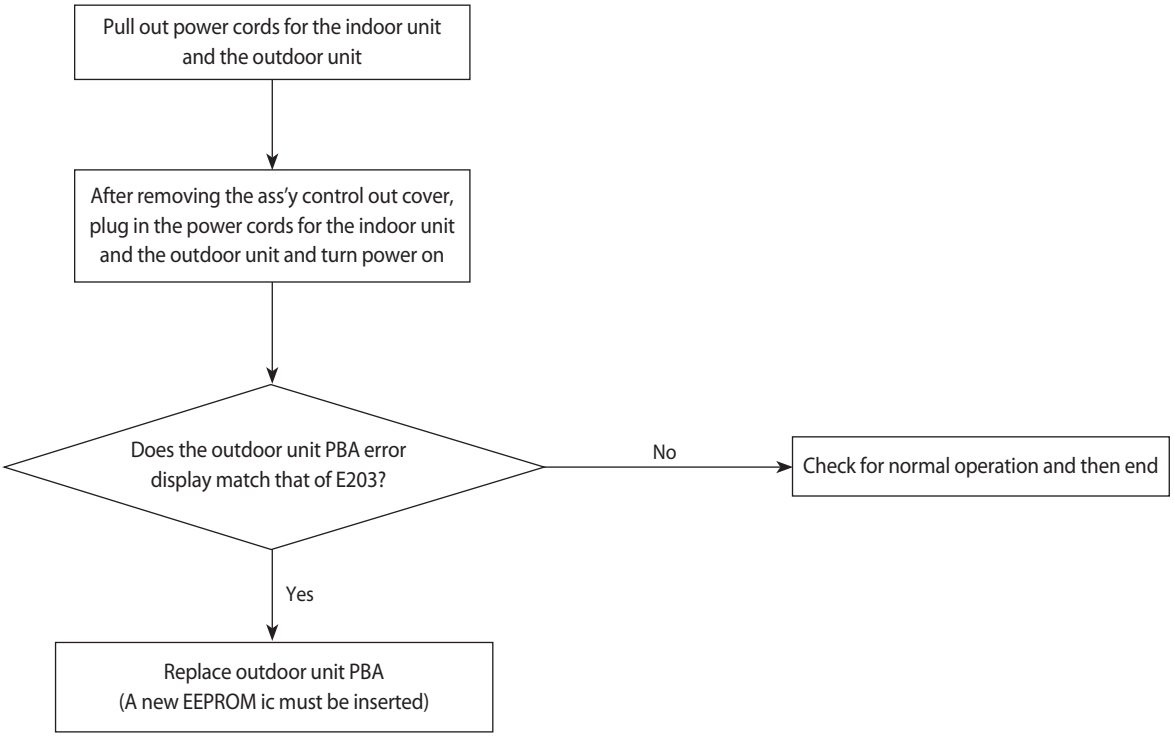
2. Check procedure
   1) Inspect indoor unit pipe entrance temperature sensor
   2) Inspect indoor unit pipe exit temperature sensor

4-4-11 Outdoor unit PBA communications error

Indoor unit display	E2 03
Outdoor unit display	O(YEL) O(GRN) ●(RED)

1. Cause of malfunction
   1) Faulty communication between micom of outdoor unit PBA
   2) Problematic outdoor unit PBA

2. Check procedure



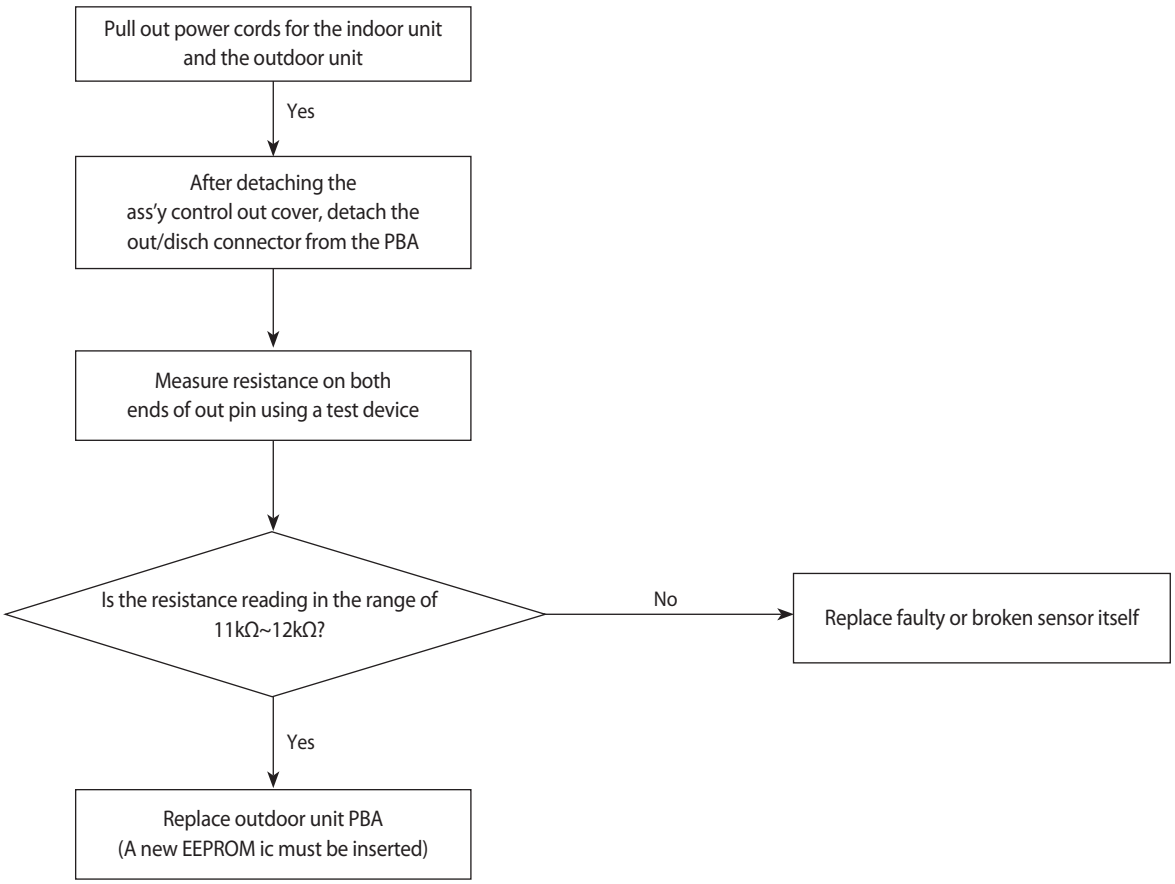
S **equipment claims must be made at a service center for the EEPROM ic.**
Please refer to page 4-33 for equipment code.

4-4-12 External OUT temperature sensor error

Indoor unit display	E2 21
Outdoor unit display	◎(YEL) O(GRN) ◎(RED)

1. Cause of malfunction
   1) Disconnection or loose connection of sensor wire
   2) Faulty sensor itself
   3) Problematic outdoor unit PBA

2. Check procedure



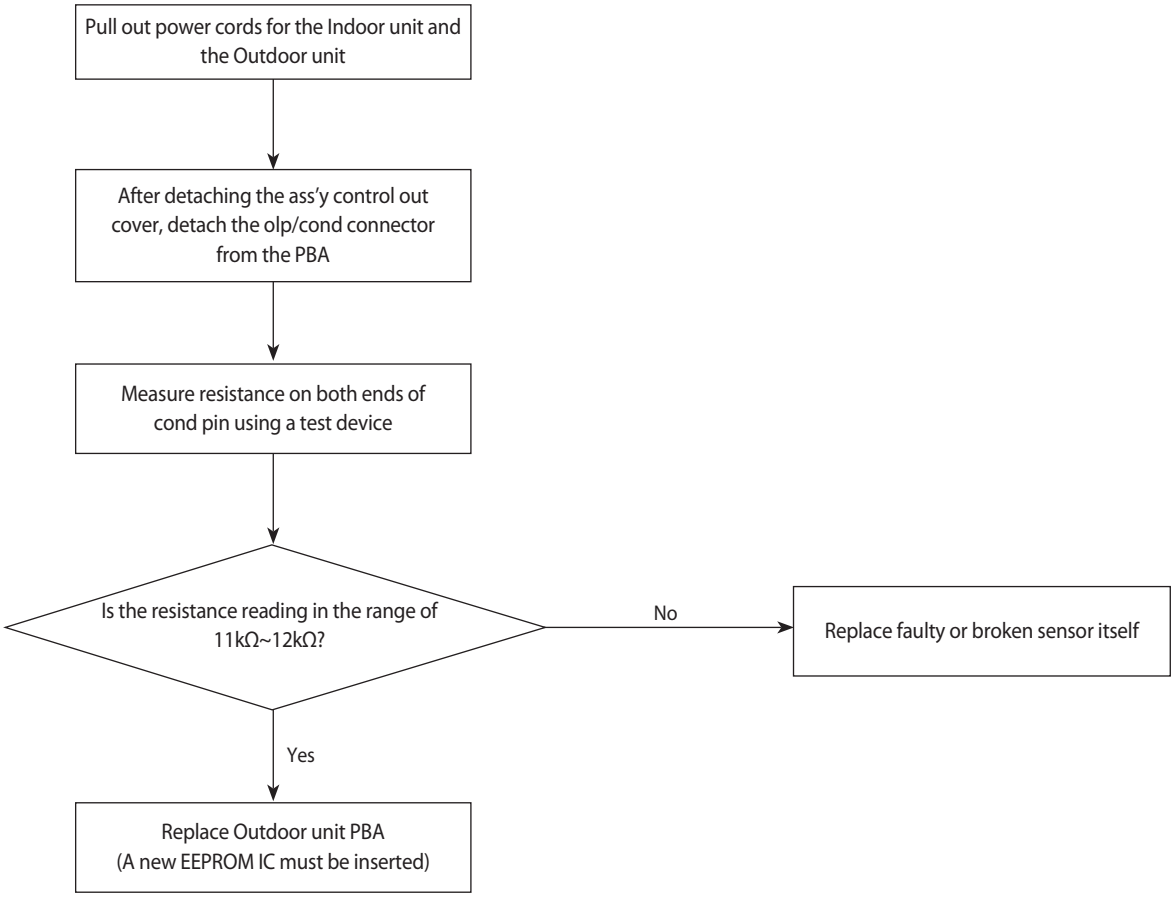
S **equipment claims must be made at a service center for the EEPROM ic.**
Please refer to page 4-33 for equipment code.

4-4-13 External COND temperature sensor error

Indoor unit display	E2 37
Outdoor unit display	◎(YEL) ●(GRN) ◎(RED)

1. Cause of malfunction
   1) Disconnection or loose connection of sensor wire
   2) Faulty sensor itself
   3) Problematic Outdoor unit PBA

2. Check procedure



S **Equipment claims must be made at a service center for the EEPROM IC.**
Please refer to page 4-33 for equipment code.

4-4-14 Detached external temperature sensor error

Indoor unit display	E2 46 (Detached external COND temperature sensor error) E2 61 (Detached external DISCHARGE temperature sensor error)
Outdoor unit display	○(YEL) ◎(GRN) ●(RED)

1. Cause of malfunction
   1) Sensor detached from sensor holder
   2) Sensor detached from outdoor unit PBA connector
   3) Faulty sensor itself
   4) Problematic outdoor unit PBA

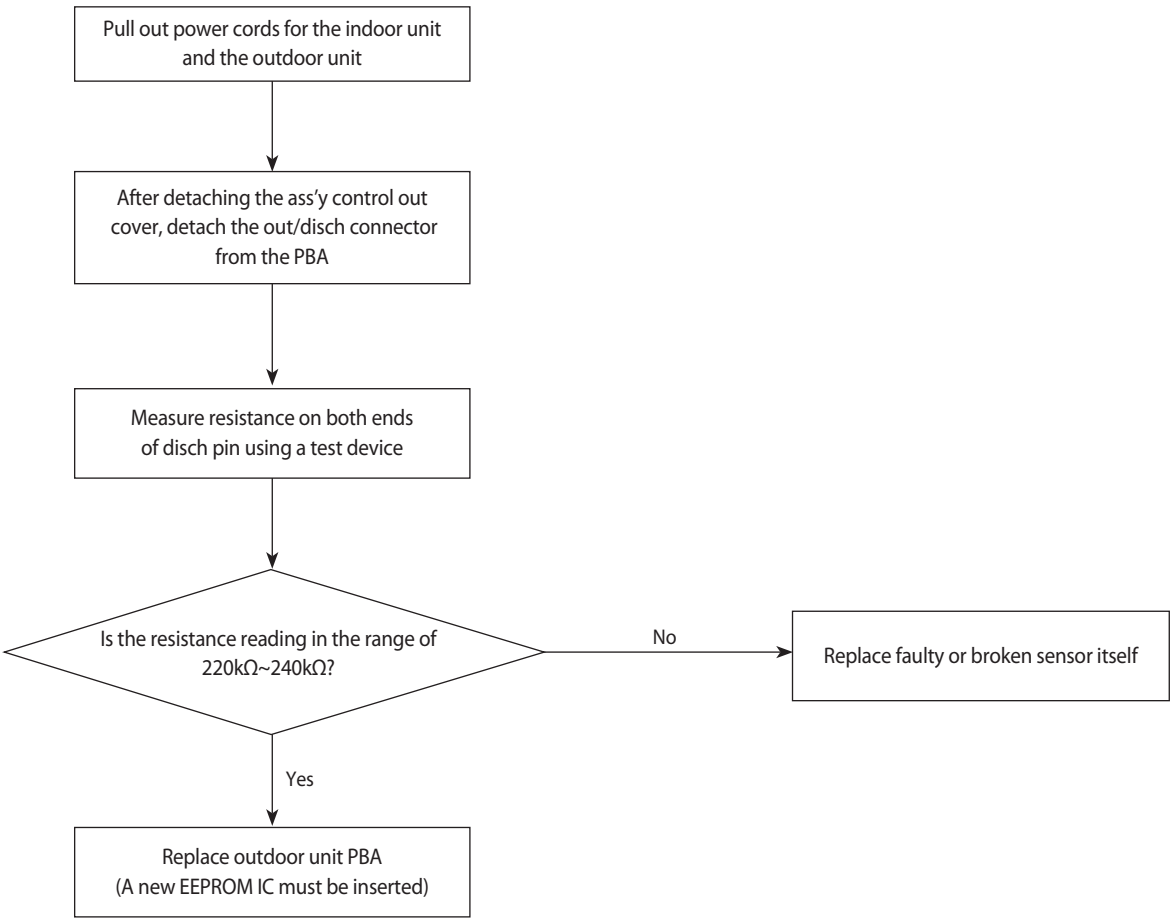
2. Check procedure
   1) Check to see if temperature sensor is attached properly to the sensor holder
   2) Check to see if temperature sensor is connected properly to the outdoor unit PBA connector

4-4-15 External DISCHARGE temperature sensor error

Indoor unit display	E2 51
Outdoor unit display	◎(YEL) ◎(GRN) O(RED)

1. Cause of malfunction
   1) Disconnection or loose connection of sensor wire
   2) Faulty sensor itself
   3) Problematic outdoor unit PBA

2. Check procedure



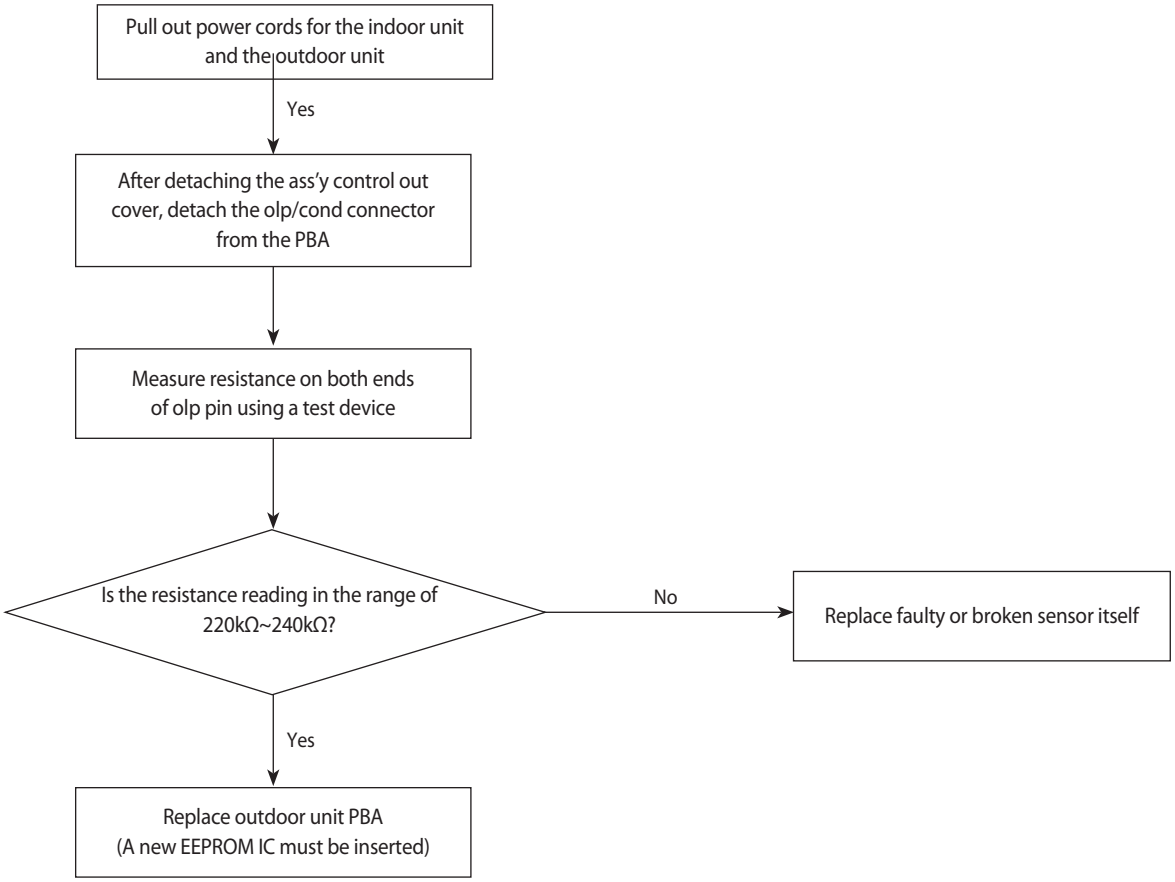
S **Equipment claims must be made at a service center for the EEPROM IC.**
Please refer to page 4-33 for equipment code.

4-4-16 External OLP temperature sensor error

Indoor unit display	E3 20
Outdoor unit display	O(YEL) ◎(GRN) ●(RED)

1. Cause of malfunction
   1) Disconnection or loose connection of sensor wire
   2) Faulty sensor itself
   3) Problematic outdoor unit PBA

2. Check procedure



S **Equipment claims must be made at a service center for the EEPROM IC.**
Please refer to page 4-33 for equipment code.

4-4-17 Indoor unit • Outdoor unit protection control detection related error

Indoor unit display	E4 01 (Internal defrosting protection control error) E4 04 (External overload protection control error) E4 16 (External DISCHARGE protection control error) E4 63 (External OLP protection control error)
Outdoor unit display	O(YEL) ◎(GRN) ●(RED) - when E401/E404/E463 ◎(YEL) O(GRN) ●(RED) - when E416

1. Cause of malfunction
   1) Abnormal refrigerant pressure
   2) Problematic pipes
   3) Problematic service valve

2. Check procedure
   1) Inspect refrigerant pressure
   2) Inspect Indoor unit and Outdoor unit pipes
   3) Inspect service valve

4-4-18 Self-diagnosis - EEV related error

Indoor unit display	E4 19 (Self-diagnosis - opened EEV error)
Outdoor unit display	O(YEL) ◎(GRN) ●(RED)

1. Cause of malfunction
   1) When EEV connector is assembled improperly
   2) Faulty EEV itself

2. Check procedure
   1) Check connection condition of the EEV connector to the outdoor unit PBA
   2) Check EEV itself

4-4-19 Prohibiting cooling and heating maneuvers error

Indoor unit display	E4 40 (Prohibiting heating maneuver error) E4 41 (Prohibiting cooling maneuver error)
Outdoor unit display	●(YEL) ◎(GRN) ○(RED)

1. Cause of malfunction
   1) Problematic temperature sensor
   2) Faulty sensor itself

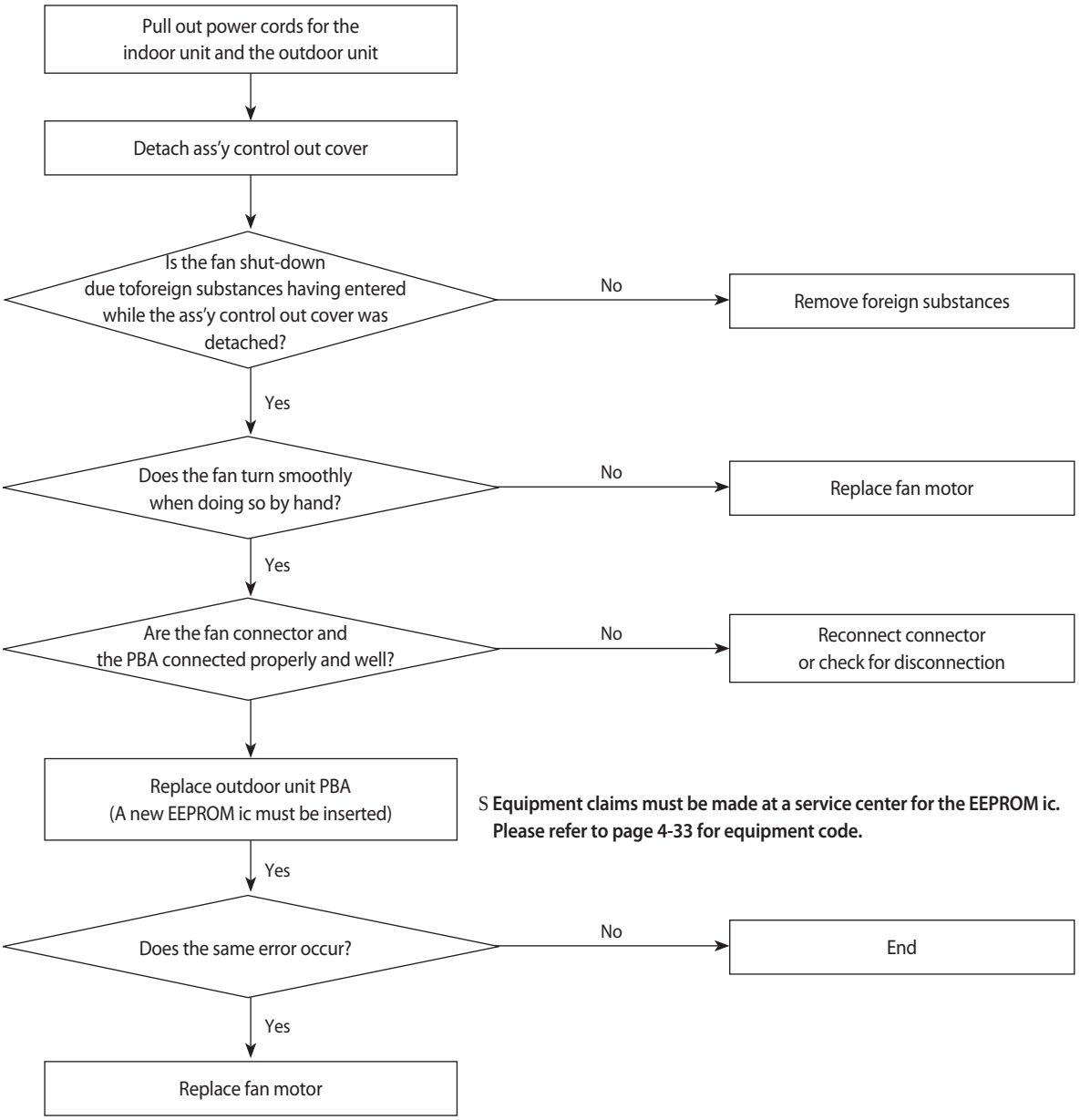
2. Check procedure
   1) Check connection condition of temperature sensor to the outdoor unit PBA
   2) Check outside temperature (Prohibiting cooling: under -5℃, prohibiting heating: over 30℃)

4-4-20 Problematic outdoor unit fan motor error

Indoor unit display	E4 58
Outdoor unit display	●(YEL) ○(GRN) ○(RED)

1. Cause of malfunction
   1) Unconnected fan motor connector or faulty connection
   2) Faulty fan motor itself
   3) Problematic outdoor unit PBA
   4) Motor in shut-down state due to foreign substances
   S **Caution: disconnecting the fan motor connector while power is being supplied or when sufficient time (3 minutes) has not passed since shutting off power may be the cause of damage**

2. Check procedure

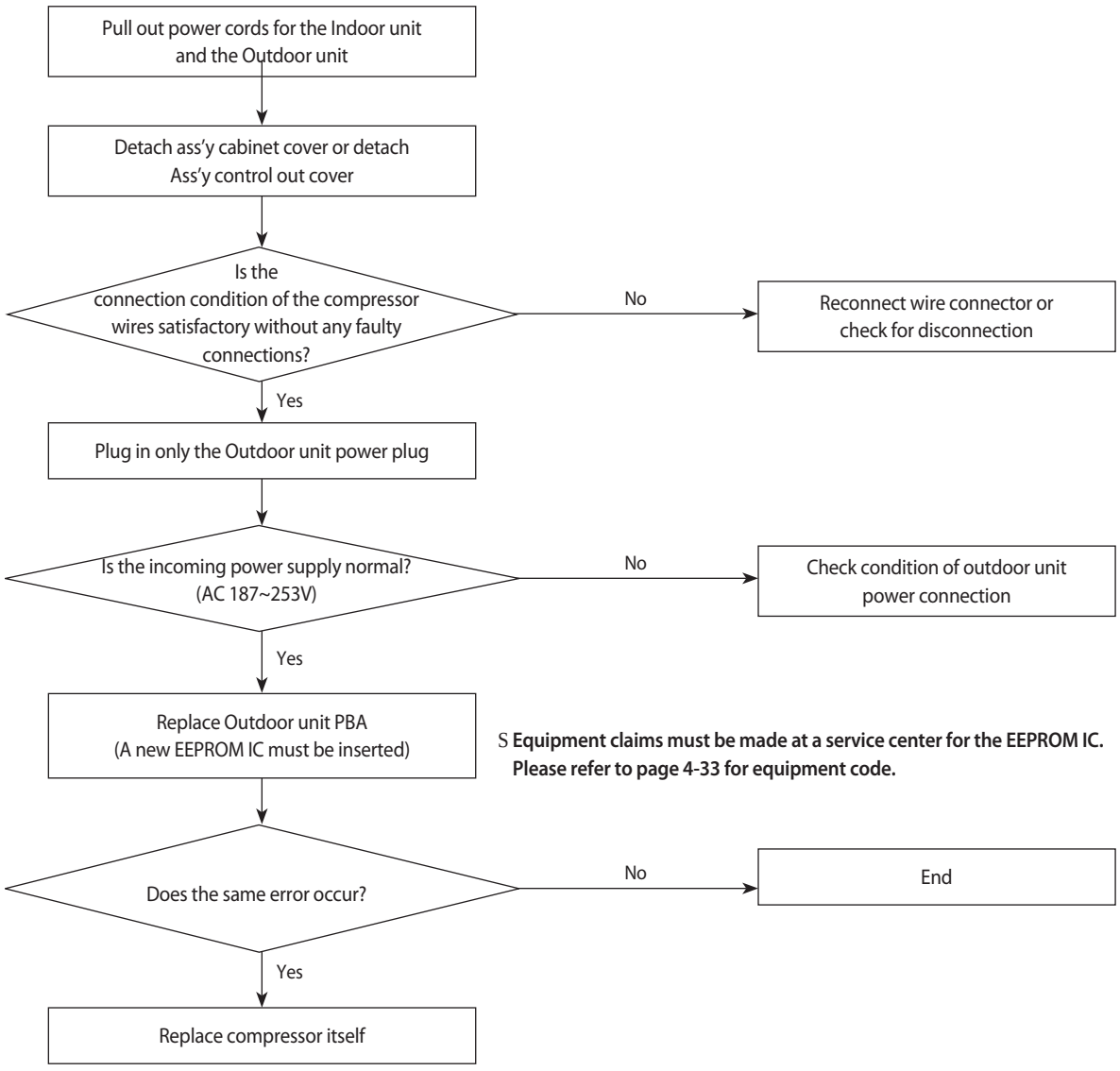


4-4-21 Outdoor unit compressor operation error

Indoor unit display	E461 (Problematic compressor maneuver operation error) E464 (Compressor electric current overload error) E465 (Problematic compressor operation error) E468 (Problematic compressor electric current sensor error)
Outdoor unit display	O(YEL) ◎(GRN) O(RED) - when E461 O(YEL) O(GRN) ◎(RED) - when E464 ◎(YEL) ●(GRN) O(RED) - when E465 ◎(YEL) ◎(GRN) ●(RED) - when E468

1. Cause of malfunction
   1) Unconnected or faulty connection of compressor wire
   2) Abnormal incoming power supply (outside of 187~253V)
   3) Problematic Outdoor unit PBA
   4) Faulty compressor itself

2. Check procedure



4-4-22 Problematic external PBA error

Indoor unit display	E4 62 (Electric current protection control error) E4 66 (Problematic external controller internal voltage error) E4 69 (Problematic external controller internal voltage sensor error) E4 72 (Problematic external controller internal voltage sensor error) E4 74 (Problematic radiator temperature sensor error) E4 83 (AC overvoltage protection error) E4 85 (Problematic external controller incoming current sensor error)
Outdoor unit display	●(YEL) ◎(GRN) ●(RED) - when E462 O(YEL) ●(GRN) ◎(RED) - when E466/E483 ●(YEL) ◎(GRN) ◎(RED) - when E469 ●(YEL) ●(GRN) ◎(RED) - when E472 O(YEL) ◎(GRN) ◎(RED) - when E474 ◎(YEL) ◎(GRN) ●(RED) - when E485

1. Cause of malfunction
   1) Abnormal incoming power supply (outside of 187~253V)
   2) Problematic outdoor unit PBA

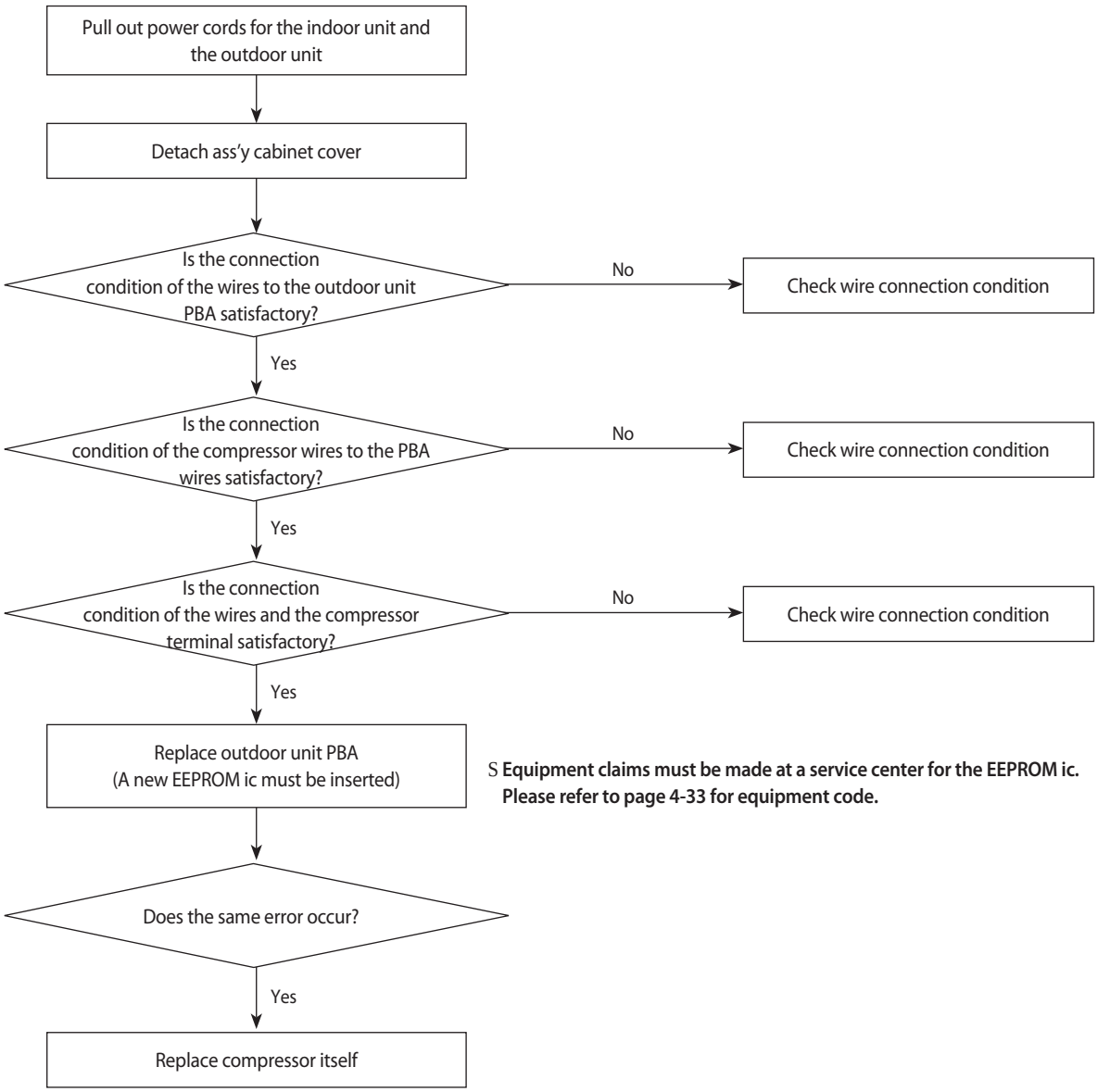
2. Check procedure
   1) Check to see if input voltage is normal
   2) Replace outdoor unit PBA

4-4-23 Unconnected compressor wire error

Indoor unit display	E4 67
Outdoor unit display	●(YEL) ○(GRN) ●(RED)

1. Cause of malfunction
   1) Faulty connection between compressor and outdoor unit PBA
   2) Faulty outdoor unit PBA
   3) Faulty compressor

2. Check procedure



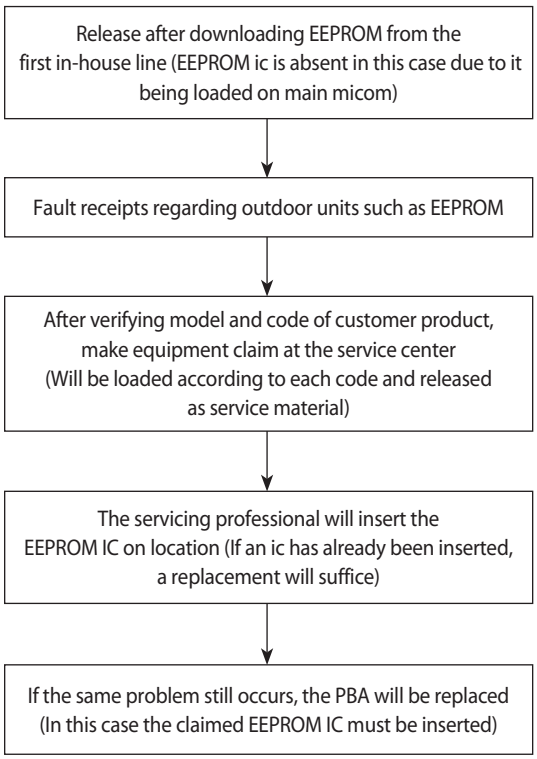
S **Equipment claims must be made at a service center for the EEPROM ic. Please refer to page 4-33 for equipment code.**

4-4-24 EEPROM error

Indoor unit display	E4 70
Outdoor unit display	●(YEL) ◎(GRN) ●(RED)

1. Cause of malfunction
   1) Problematic EEPROM version
   2) Problematic EEPROM IC
   3) Faulty outdoor unit PBA

2. Check procedure
   1) Replace EEPROM IC
   2) Replace outdoor unit PBA (a new EEPROM ic must be inserted)
   Equipment claims must be made at a service center for the EEPROM IC.



▶ Because the identical PBA is commonly used in several models, EEPROM data is not loaded onto new PBAs. Therefore, when replacing old PBAs with new ones, the claimed EEPROM ic must be used.

<EEPROM IC code per model>

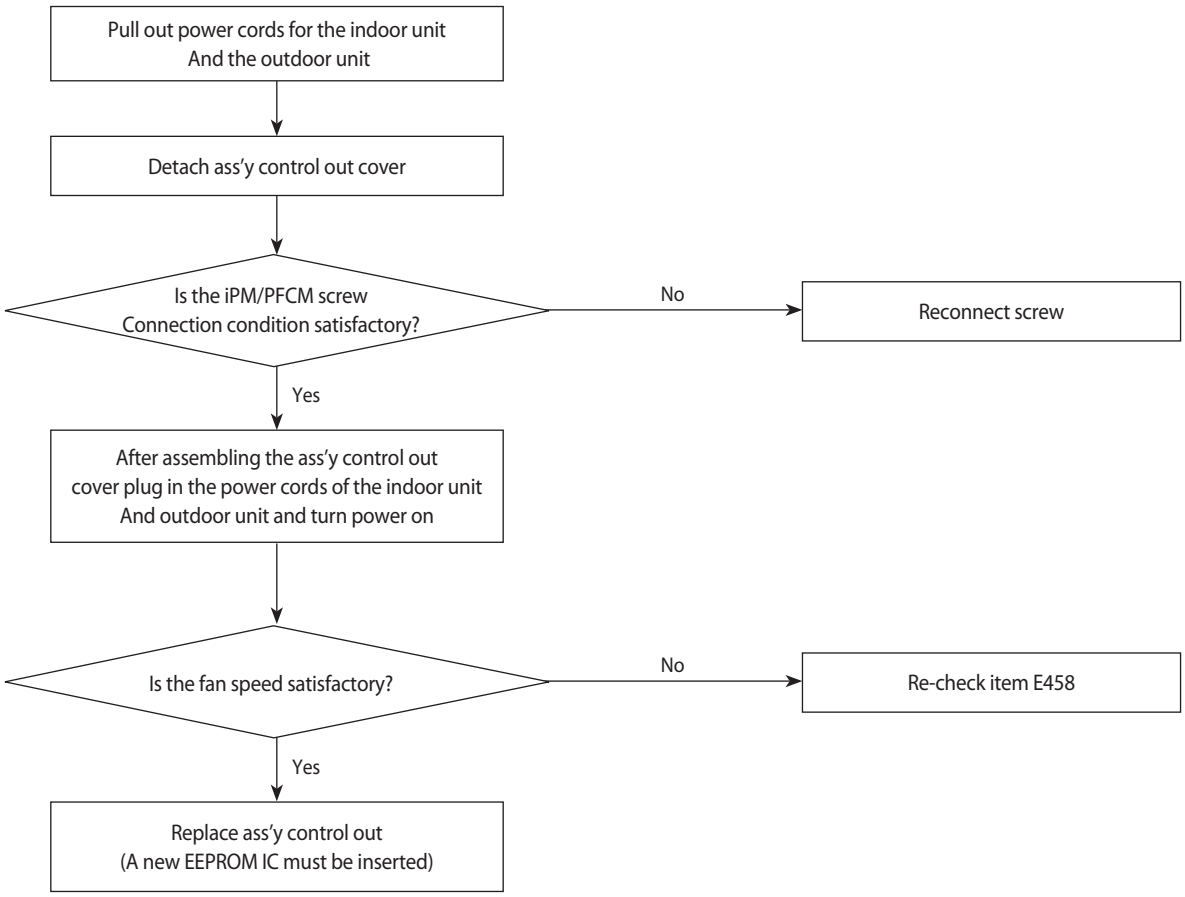
Outdoor unit model name	EEPROM IC code
AF28FV✳DA✳✳X	DB82-01569A
AF28FS✳DA✳✳X	DB82-01650A

4-4-25 Radiator overheating error

Indoor unit display	E5 00
Outdoor unit display	◎(YEL) ●(GRN) ●(RED)

1. Cause of malfunction
   1) Faulty IPM/PFCM screw connection condition
   2) Problematic fan speed
   3) Replace ass'y control out

2. Check procedure



S **Equipment claims must be made at a service center for the EEPROM ic.**
Please refer to page 4-33 for equipment code.

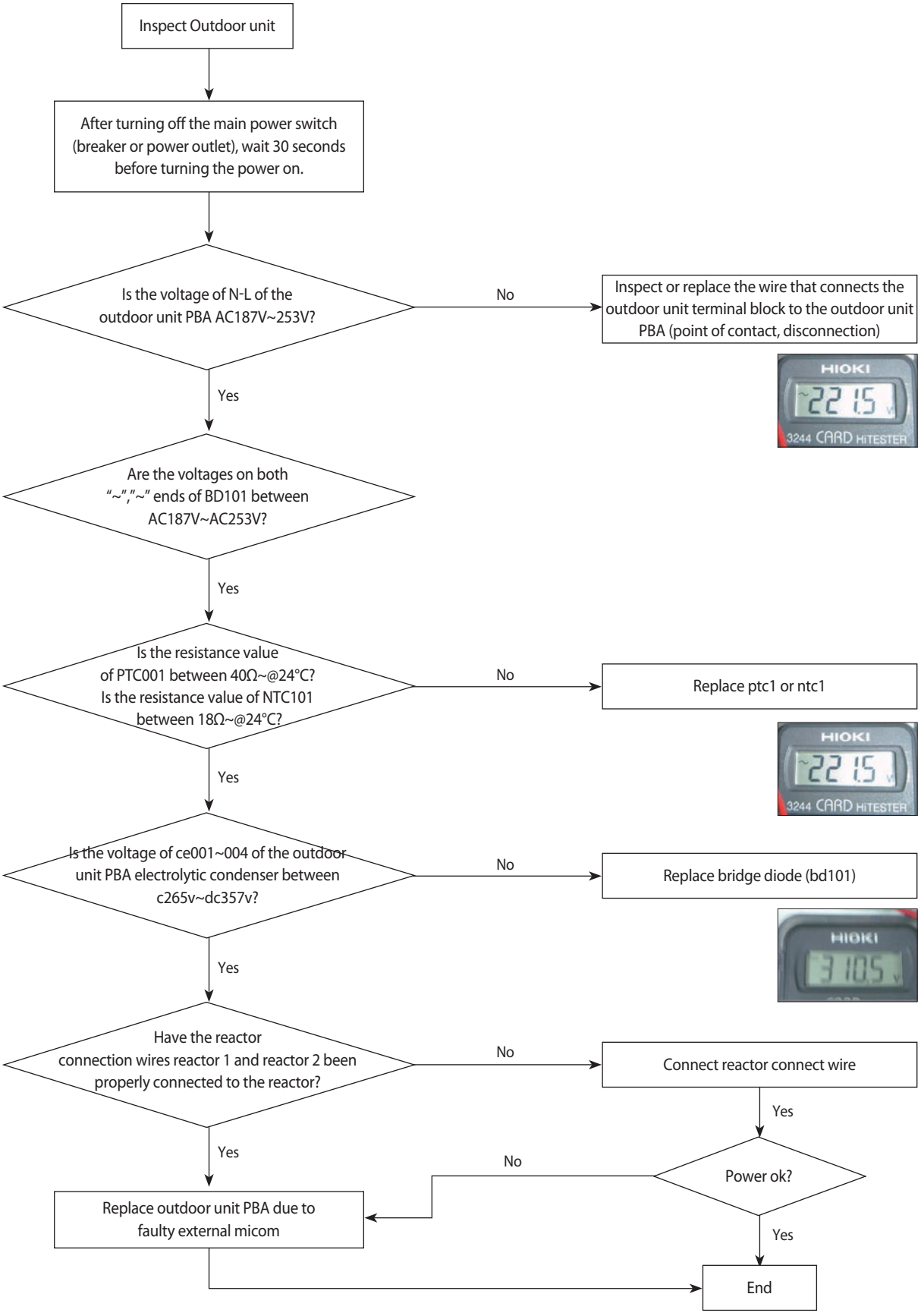
4-4-26 Refrigerant leakage error

Indoor unit display	E5 54
Outdoor unit display	●(YEL) ●(GRN) ○(RED)

1. Cause of malfunction
   1) Faulty tightness of service valve
   2) Faulty pipe

2. Check procedure
   1) Check tightness of service valve
   2) Check whether or not pipe is leaking
   3) Replace pipe

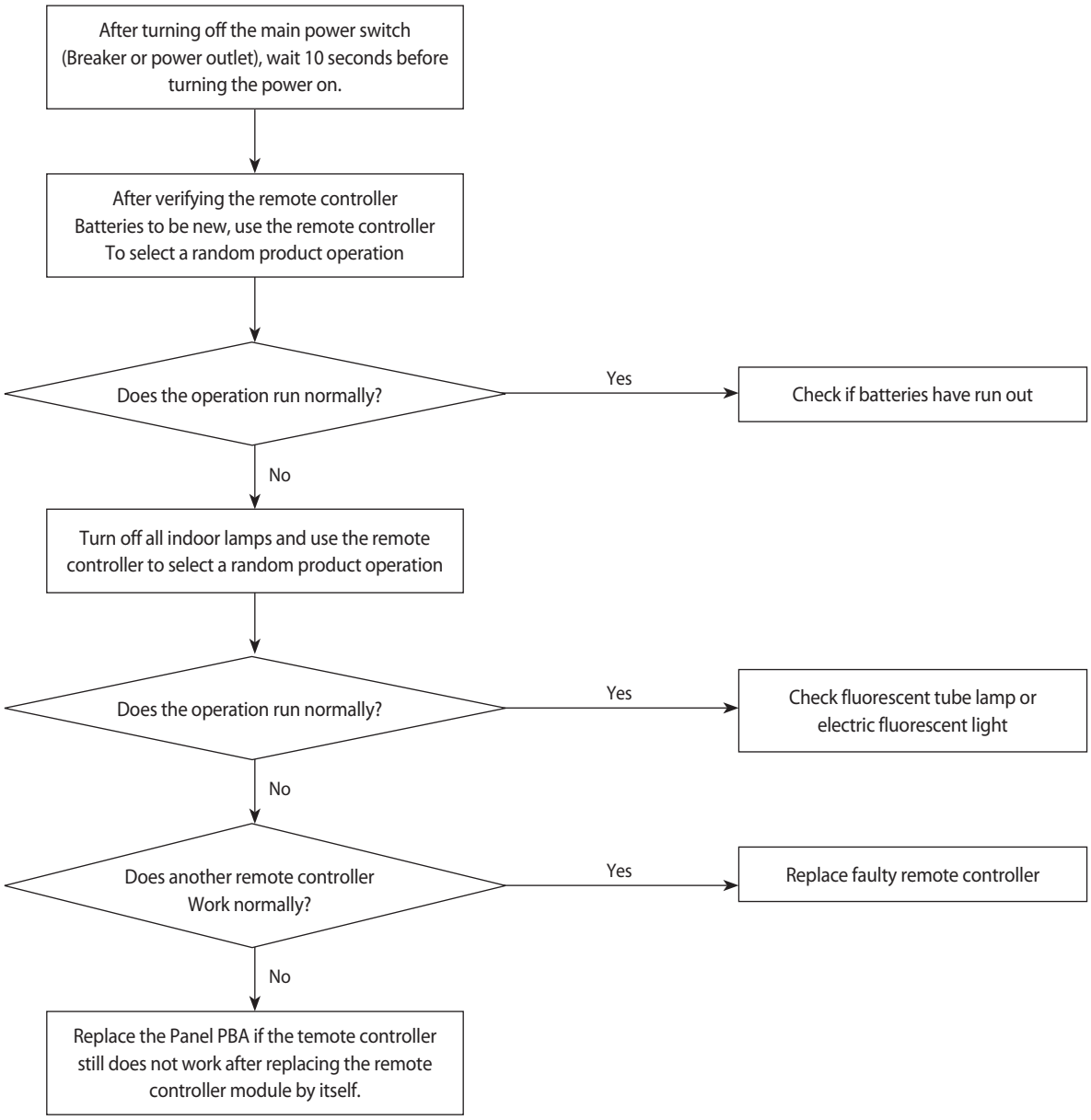
4-4-27 When Outdoor unit power does not turn on



4-4-28 When the remote controller stops working

1. Cause of malfunction
   1) Low battery voltage or faulty remote controller itself
   2) Faulty remote controller reception module of the Panel PBA
   3) Faulty connection (communication) between Panel PBA and Main PBA

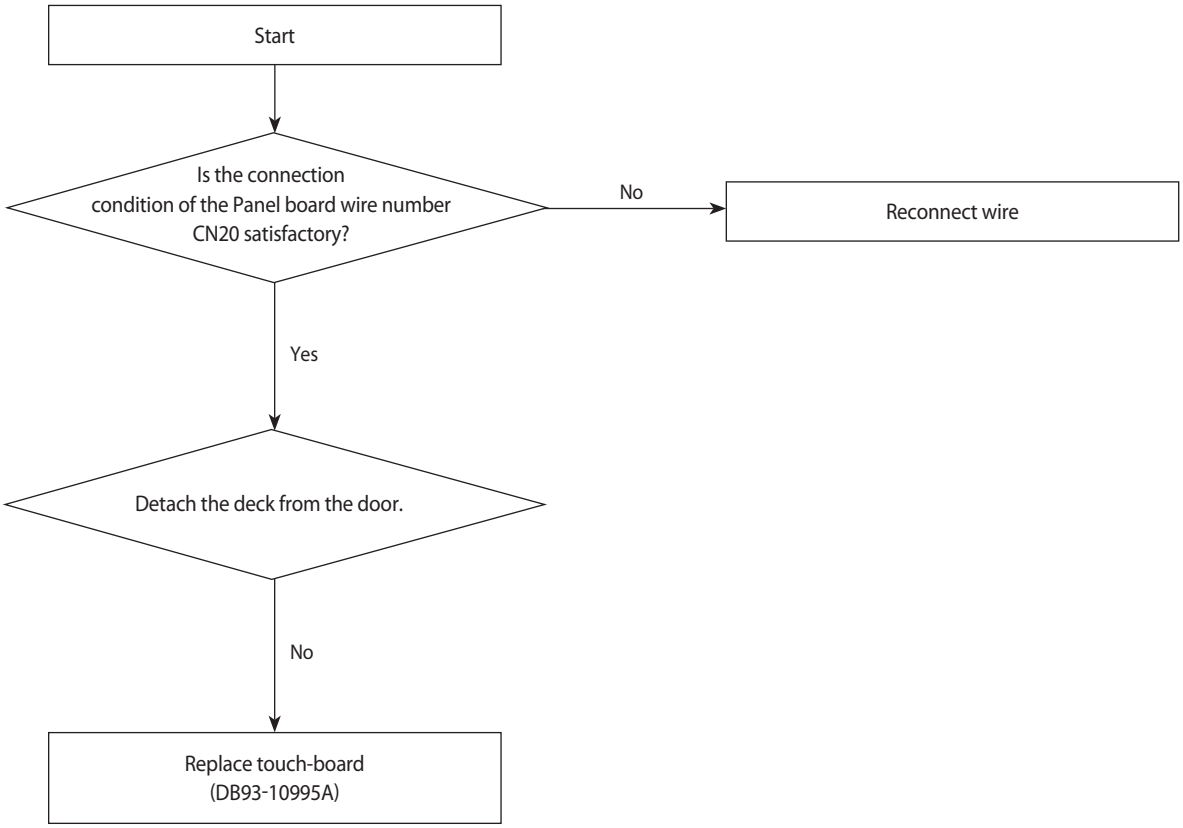
2. Check procedure



4-4-29 When the touch buttons stop working

1. Cause of malfunction
   1) Faulty connection or disconnection of Panel touch wire
   2) Faulty touch itself

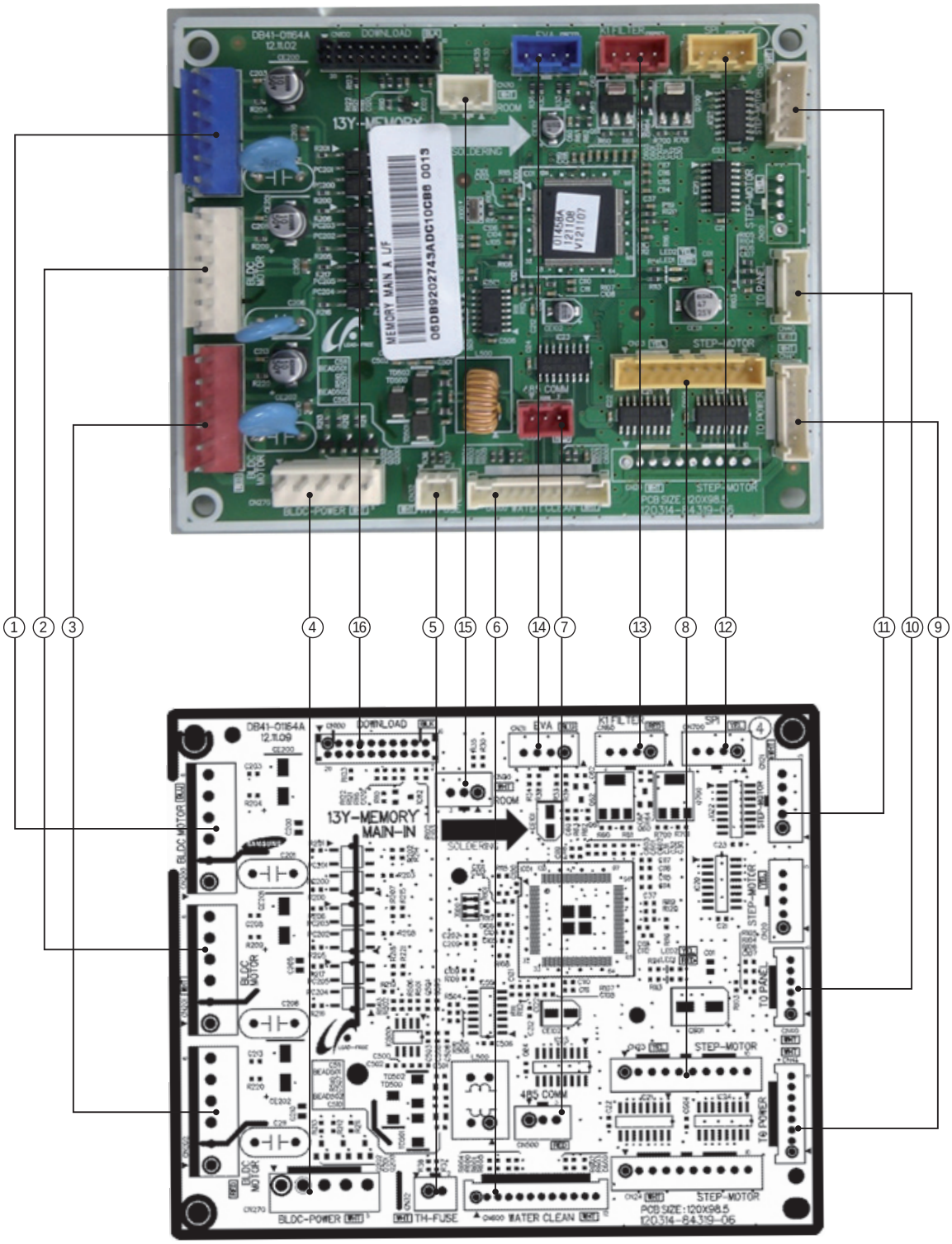
2. Check procedure



5. PCB Diagram

5-1 PCB Diagram

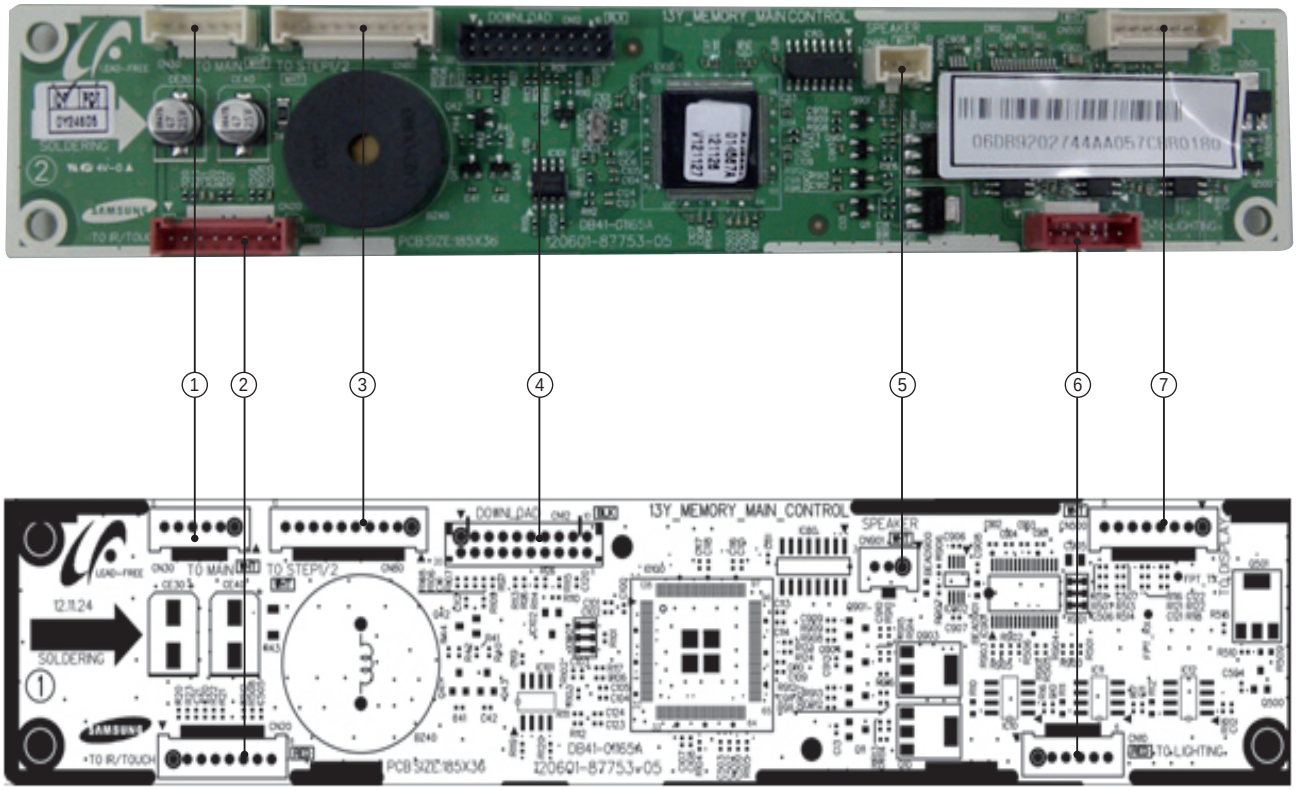
5-1-1 ASS'Y PCB MAIN (IN)



ASS'Y PCB MAIN IN (cont.)

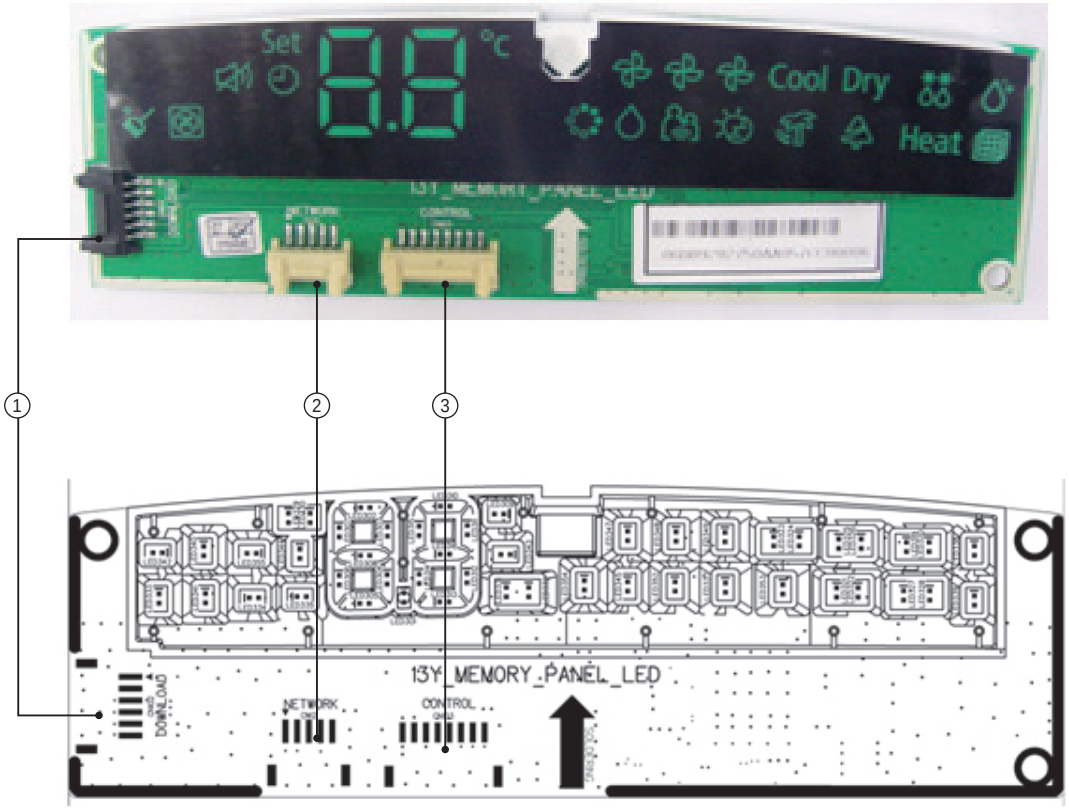
① CN200 – BLDC Motor(Top) #1 : DC 310V #2 : NULL #3 : AGND #4 : DC 15V #5 : CONTROL Signal #6 : FEED BACK Signal	② 2:CN201 – BLDC Motor(Middle) #1 : DC 310V #2 : NULL #3 : AGND #4 : DC 15V #5 : CONTROL Signal #6 : FEED BACK Signal	③ 3:CN202 – BLDC Motor(Bottom) #1 : DC 310V #2 : NULL #3 : AGND #4 : DC 15V #5 : CONTROL Signal #6 : FEED BACK Signal	④ 4:CN270 – BLDC Power #1 : DC310V #2 : NULL #3 : AGND #4 : DC15V	⑤ 5:CN32 – Terminal Block Fuse #1 : FUSE Signal #2 : GND
⑥ 6:CN600 – Sterilization washing #1 : DC 12V #2 : GND #3 : CURRENT1 #4 : CURRENT2 #5 : RADICAL1 #6 : RADICAL2 #7 : RADICAL3 #8 : RADICAL4 #9 : PUMP #10 : WATER LEVEL #11 : VOL_LEVEL #12 : DC 5V	⑦ 7:CN500 – Indoor/ Outdoor COMM #1 : F1 #2 : NULL #3 : F2	⑧ 8:CN23 – Blade Motor #1 : DC 12V #2 : MOTOR Operation signal #3 : MOTOR Operation signal #4 : MOTOR Operation signal #5 : MOTOR Operation signal #6 : DC 12V #7 : MOTOR Operation signal #8 : MOTOR Operation signal #9 : MOTOR Operation signal #10 : MOTOR Operation signal	⑨ 9:CN41 – POWER PBA Connection #1 : DC 12V #2 : GND #3 : DC 5V #4 : NULL #5 : NULL #6 : BLDC PS #7 : NULL #8 : NULL	⑩ 10:CN40 – POWER PBA Connection #1 : DC 12V #2 : GND #3 : PANEL Transmission signal #4 : PANEL Reception signal #5 : NULL #6 : DC 5V
⑪ CN21 – Blade Motor(Spare) #1 : DC 12V #2 : MOTOR Operation signal #3 : MOTOR Operation signal #4 : MOTOR Operation signal #5 : MOTOROperation signal	⑫ CN700 – Virus Doctor #1 : SPI Control signal 1 #2 : SPI Control signal 2 #3 : DC 12V #4 : NULL	⑬ 13:CN60 – Zero Filter #1 : GND #2 : K1 MODE #3 : K1 FEEDBACK #4 : DC 12V	⑭ CN31 – Indoor Pipe sensor #1 : Temperature sensing signal #2 : GND #3 :Temperature sensing signal #4 : GND	⑮ CN30 – Indoor Room Sensor #1 : Temperature sensing signal #2 : NULL #3 : GND
⑯ CN100 – Downloading #1: RXD_485 #2: TXD_485 #3: nTRST #4: TDO #5: TCK #6: TDI #7: TMS #8: TRACE_CLK #9: GND #10: VCC #11: VCC #12: MD0 #13: RESET #14: TRACE_3 #15: F_SCLK #16: F_SDAT #17: GND #18: TRACE_2 #19: TRACE_1 #20: TRACE_0				

5-1-2 ASS'Y PCB MAIN (CONTROL)



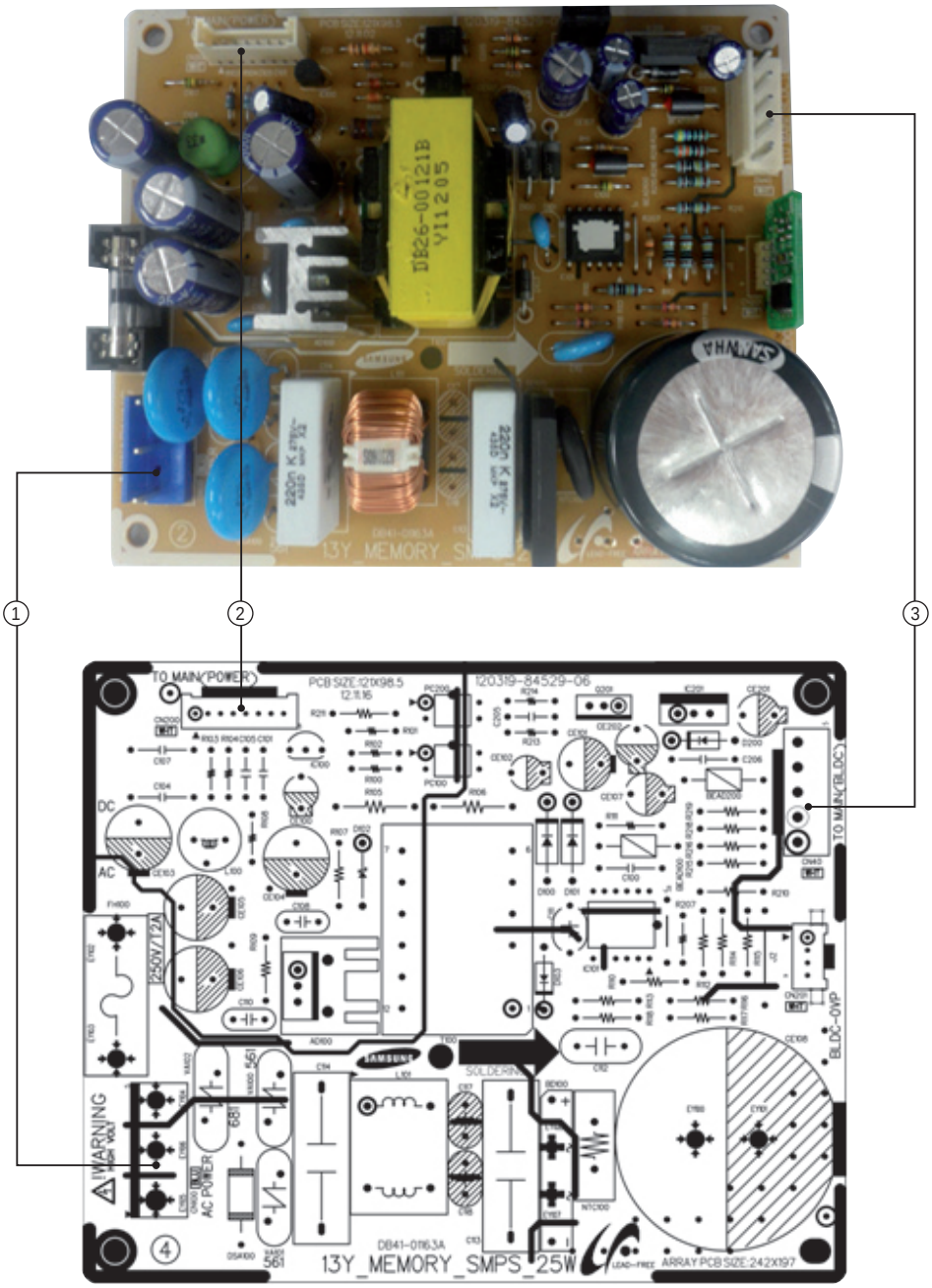
① CN30 – MAIN PBA Connection #1 : DC 12V #2 : GND #3 : PANEL Transmission signal #4 : PANEL Reception signal #5 : NULL #6 : DC 5V	② CN20 – Touch, Remote control #1 : VCC #2 : TOUCH_RX #3 : TOUCH_TX #4 : GND #5 : NC #6 : REMOCON #7: VCC #8: GND	③ CN80 – Step Motor-driven #1 : DC 12V #2 : MOTOR Operation signal #3 : MOTOR Operation signal #4 : MOTOR Operation signal #5 : MOTOR Operation signal #6 : DC 12V #7 : MOTOR Operation signal #8 : MOTOR Operation signal #9 : MOTOR Operation signal #10 : MOTOR Operation signal	④ CN12 – Downloading #1: RXD_485 #2: TXD_485 #3: nTRST #4: TDO #5: TCK #6: TDI #7: TMS #8: TRACE_CLK #9: GND #10: VCC #11: VCC #12: MD0 #13: RESET #14: TRACE_3 #15: F_SCLK #16: F_SDAT #17: GND #18: TRACE_2 #19: TRACE_1 #20: TRACE_0
⑤ CN901 – Speaker #1 : Speaker(+) #2 : NC #3 : Speaker(-)	⑥ CN10 – Lighting #1 : DC 12V #2 : PWM0 #3 : DC 12V #4 : PWM1 #5 : DC 12V #6 : PWM2	⑦ CN500 – Display PBA Connection #1 : DC 12V #2 : GND #3 : VCC #4 : DISP_TX #5 : DISP_RX #6 : GBL_RST #7 : CAMERA_TX #8 : CAMERA_RX	

5-1-3 ASS'Y PCB DISPLAY



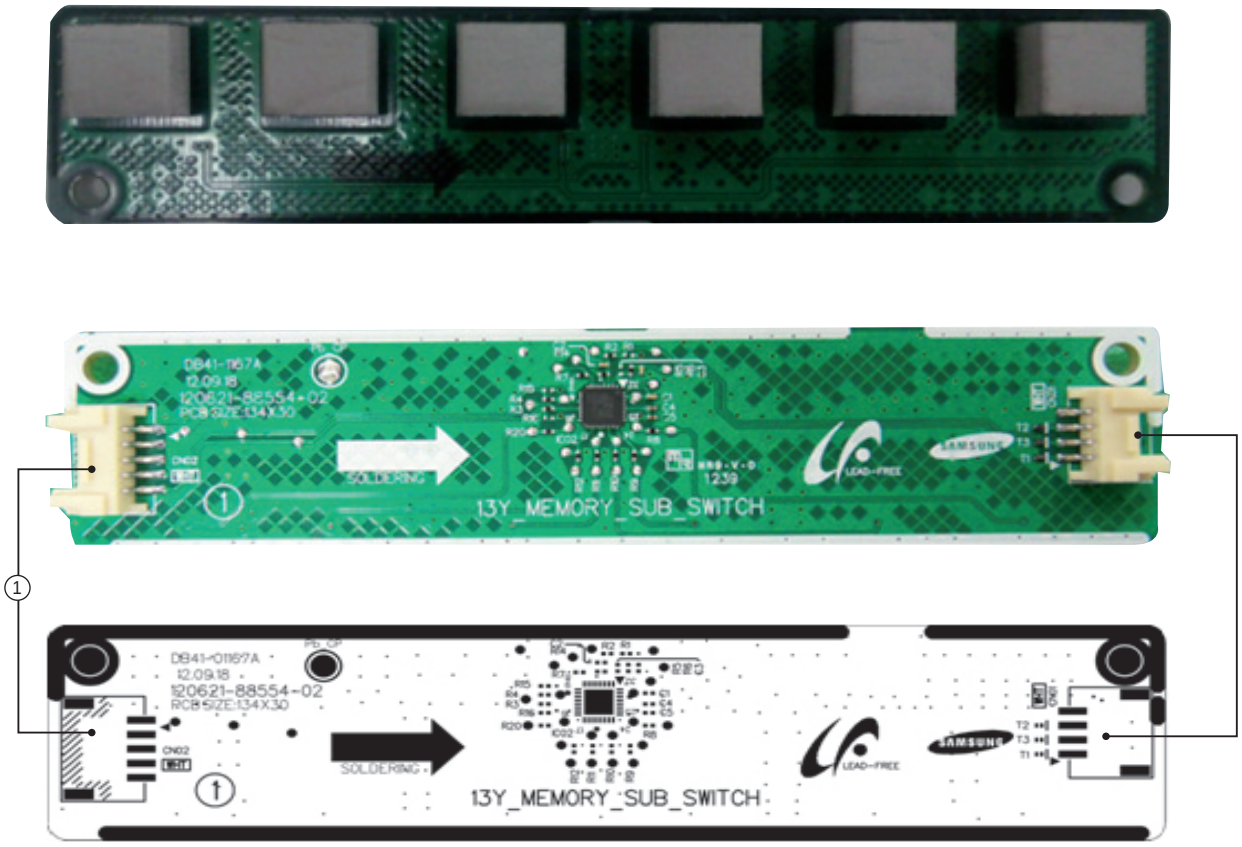
① CN102 – Downloading	② CN12 - Network PBA Connection	③ CN103 – Control PBA Connection
#1 : TEST #2 : VCC #3 : GND #4 : RESET #5 : P4.1 #6 : P4.0	#1 : CAMERA_RX #2 : CAMERA_TX #3 : DC 12V #4 : GND #5 : NC	#1 : DC 12V #2 : GND #3 : VCC #4 : DISP_RX #5 : DISP_TX #6 : GBL_RST #7 : CAMERA_RX #8 : CAMERA_TX

5-1-4 ASS'Y PCB POWER



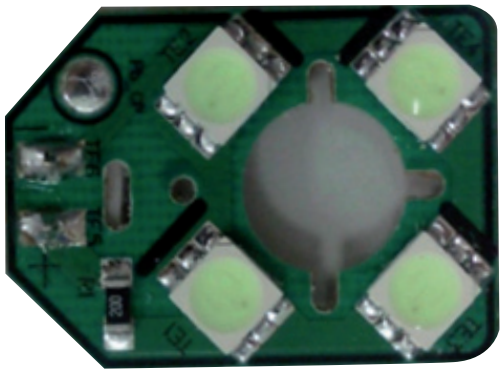
① CN100 - AC Power	② CN200 - MAIN PBA Connection	③ CN40 - BLDC Power
#1 : AC Power #2 : NC #3 : AC Power #4 : NC #5 : GND	#1 : DC 12V #2 : GND #3 : DC 5V #4 : NC #5 : GND #6 : BLDC PS #7 : GND #8 : NC	#1 : DC 310V #2 : NC #3 : GND #4 : DC 15V #5 : BLDC_OVP

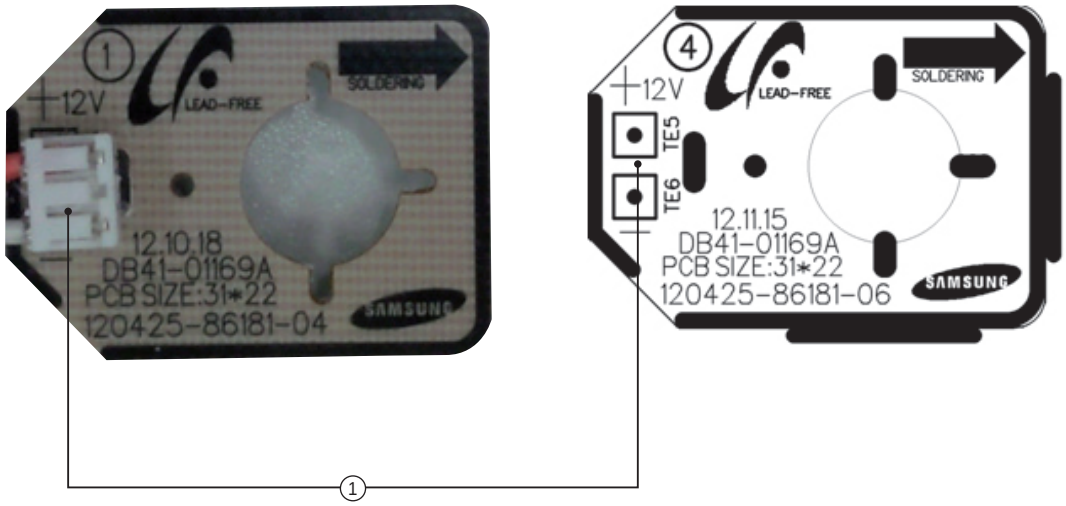
5-1-5 ASS'Y PCB SUB (TOUCH)



① CN02 – Downloading	② CN01 - CONTROL PBA Connection
#1. VCC #2. GND #3. Downloading #4. Downloading #5. Downloading	#1. VCC #2. TOUCH Transmission signal #3. TOUCH Reception signal #4. GND

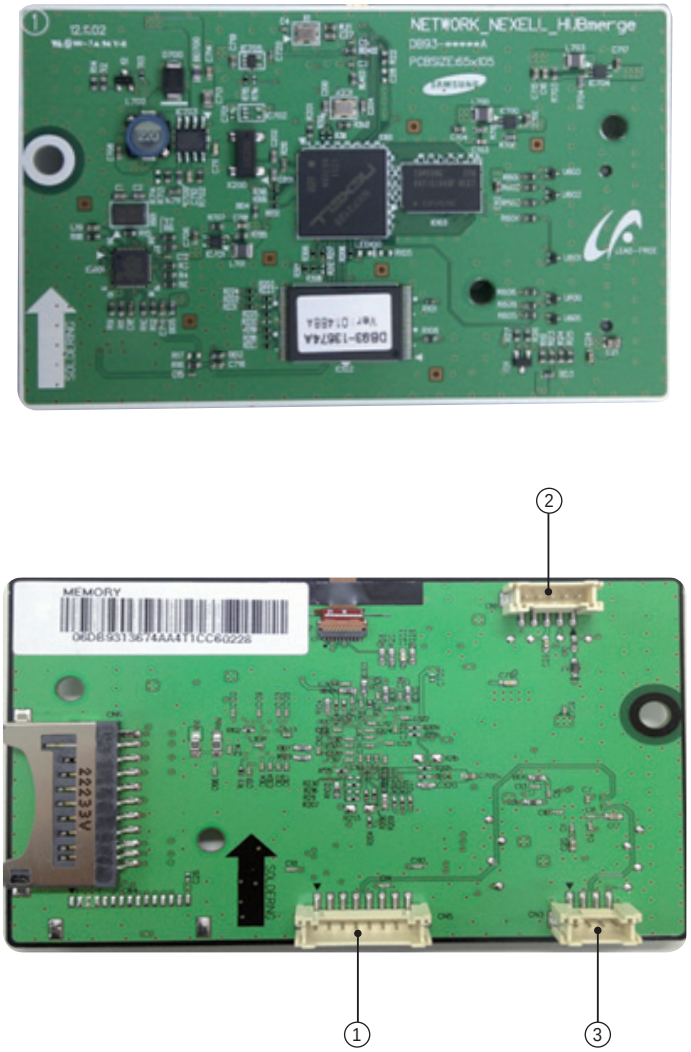
5-1-6 ASS'Y PCB SUB (LIGHT)





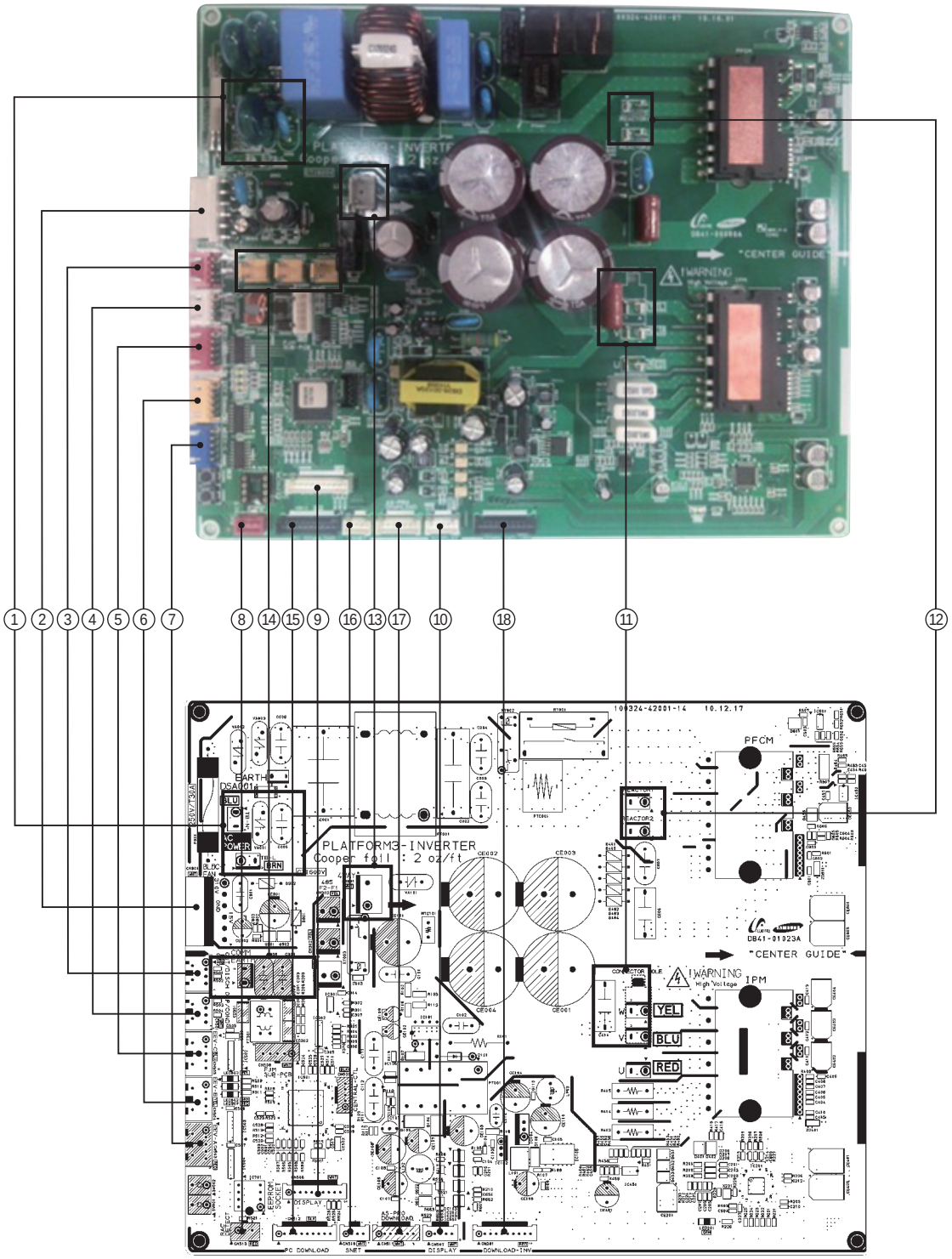
① CN01 – Lighting
#1. 12V #2. Lighting Control signal

5-1-7 ASS'Y PCB SUB-NETWORK



① CN5 - Bluetooth Module	② CN1 - DISPLAY PBA Connection	③ CN3 - Wireless LAN Module
#1. NC #2. NC #3. GND #4. USB D+ [Bluetooth Control] #5. USB D- [Bluetooth Control] #6. +5V #7. NC #8. NC	#1. MCU RXD [UART Transmission] #2. MCU TXD [UART Reception] #3. 12V #4. GND #5. NC	#1. GND #2. USB D- [Wireless LAN Control] #3. USB D+ [Wireless LAN Control] #4. +5V

5-1-9. ASS'Y PCB MAIN OUT



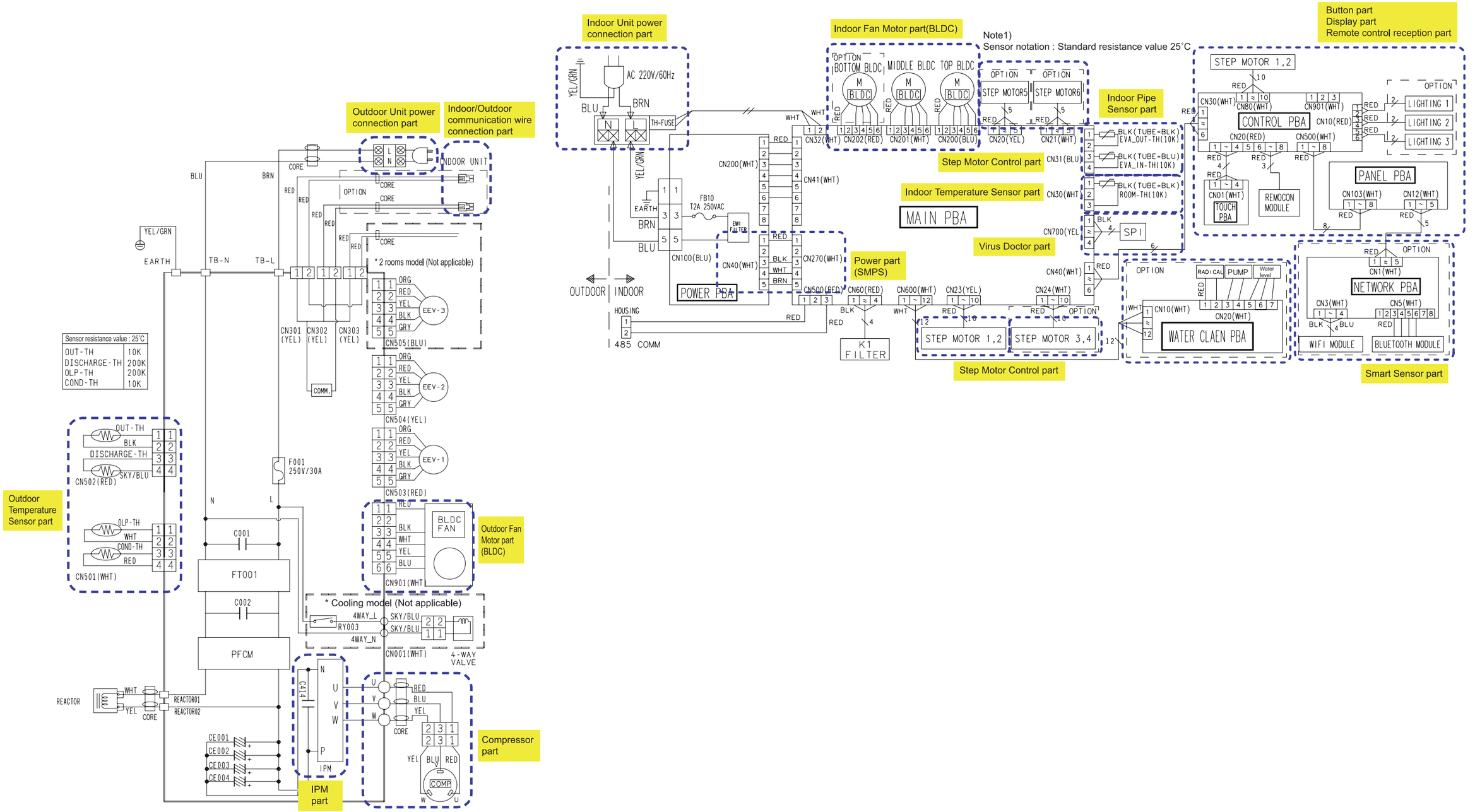
ASS'Y PCB MAIN OUT (cont.)

① AC POWER #TB-N : NEUTRAL #TB/-L : LIVE #EARTH : AGND	② CN901-BLDC MOTOR #1 : DC310V #2 : Not used #3 : AGND #4 : DC15V #5 : CONTROL Signal #6 : FEED BACK Signal	③ CN502-OUT/DISCHRAGE Temperature Sensor #1 : Temperature sensing signal #2 : GND #3 : Temperature sensing signal #4 : GND	④ CN501-OLP/COND Temperature Sensor #1 : Temperature sensing signal #2 : GND #3 : Temperature sensing signal #4 : GND	⑤ CN505-EEV_C #1~4 : EEV-C Control Signal #5 : DC12V
⑥ CN504-EEV_B #1~4 : EEV-B Control Signal #5 : DC12V	⑦ CN503-EEV_A #1~4 : EEV-A Control Signal #5 : DC12V	⑧ CN513-RAC DETECT #1 : DC5V #2 : RAC DETECT Signal #3 : GND	⑨ CN506-DISPLAY #1~7 : 7GEG Control Signal #8 : KEY 1 Signal #9 : KEY 2 Signal #10 : KEY 3 Signal	⑩ CN507-DISPLAY #1 : KEY Input Signal #2~4 : GRID Control Signal
⑪ COMP Connection #RED : V-phase #BLU : U-phase #YEL : W-phase	⑫ REACTOR Connection #REACTOR1 #REACTOR2	⑬ CN001-4WAY VALVE Connection #1 : 4WAY Control Signal #2 : Not used #3 : NEAUTRAL	⑭ CN301~303-485 COMM #1 : F1 #2 : F2	⑮ CN512-Downloading(PC)
⑯ CN510-S Net	⑰ CN511-Downloading (S-converter)	⑱ CN201-Downloading(INV)		

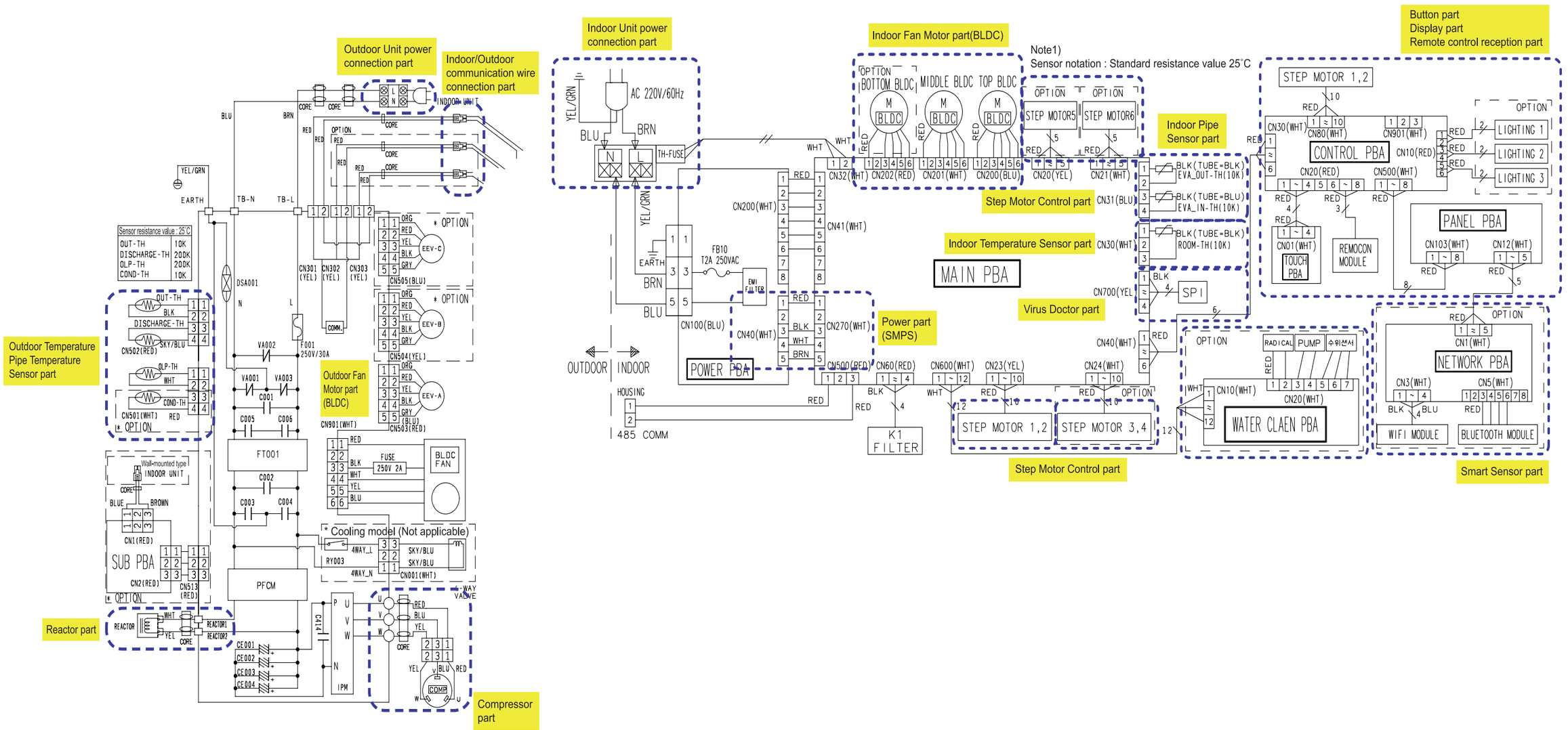
MEMO

6. Wiring Diagram

6-1 All Model Except KFR-50LW/EMA1

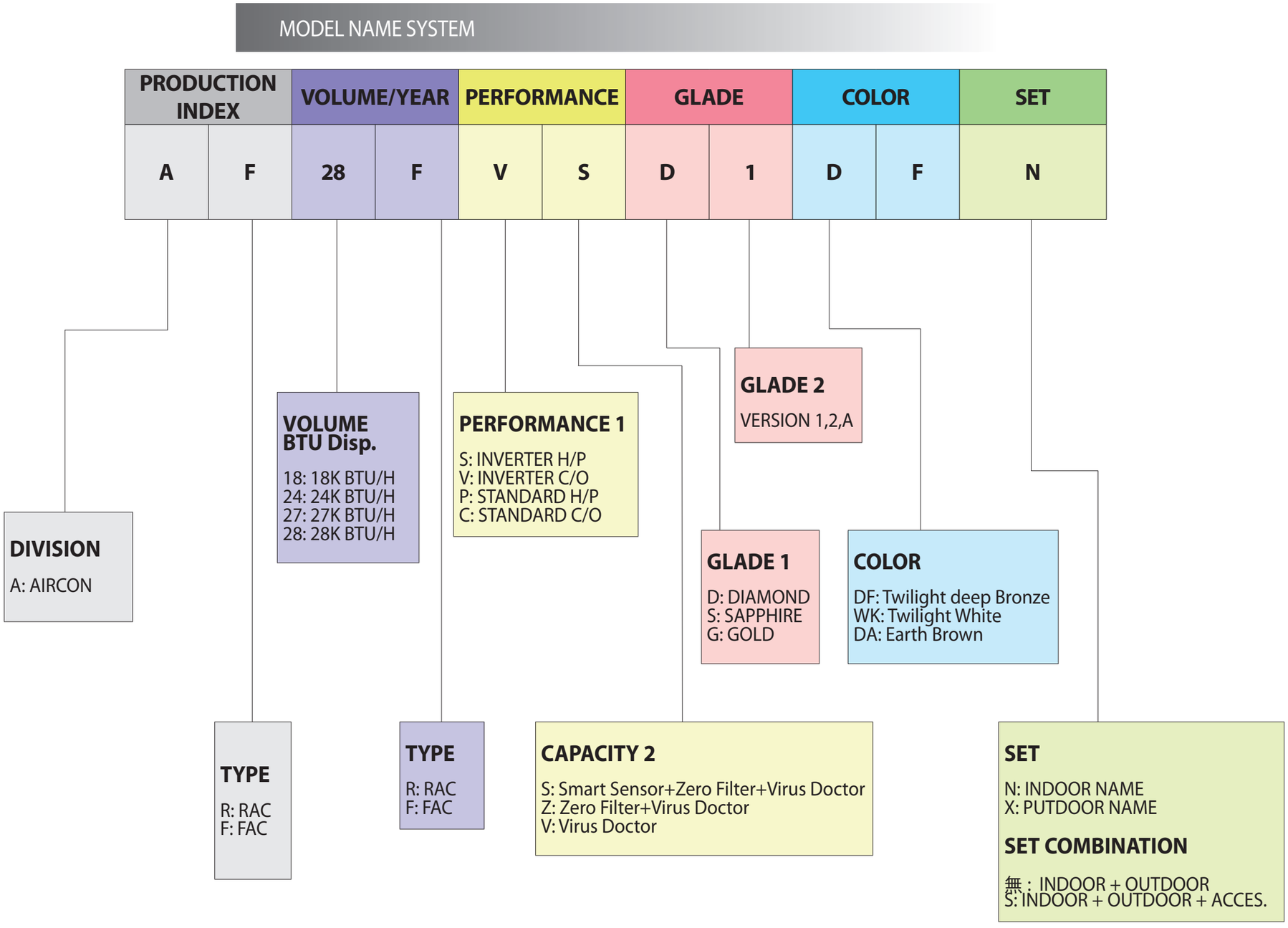


6-2 Only KFR-50LW/EMA1 Model

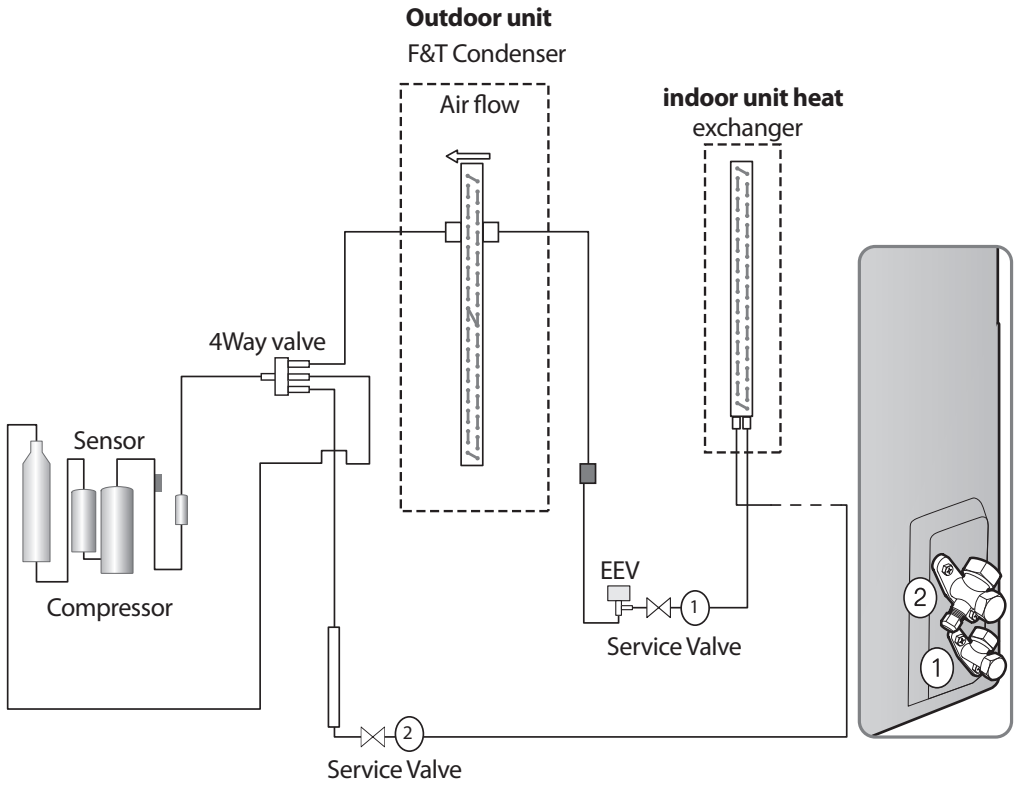


7. Reference Sheet

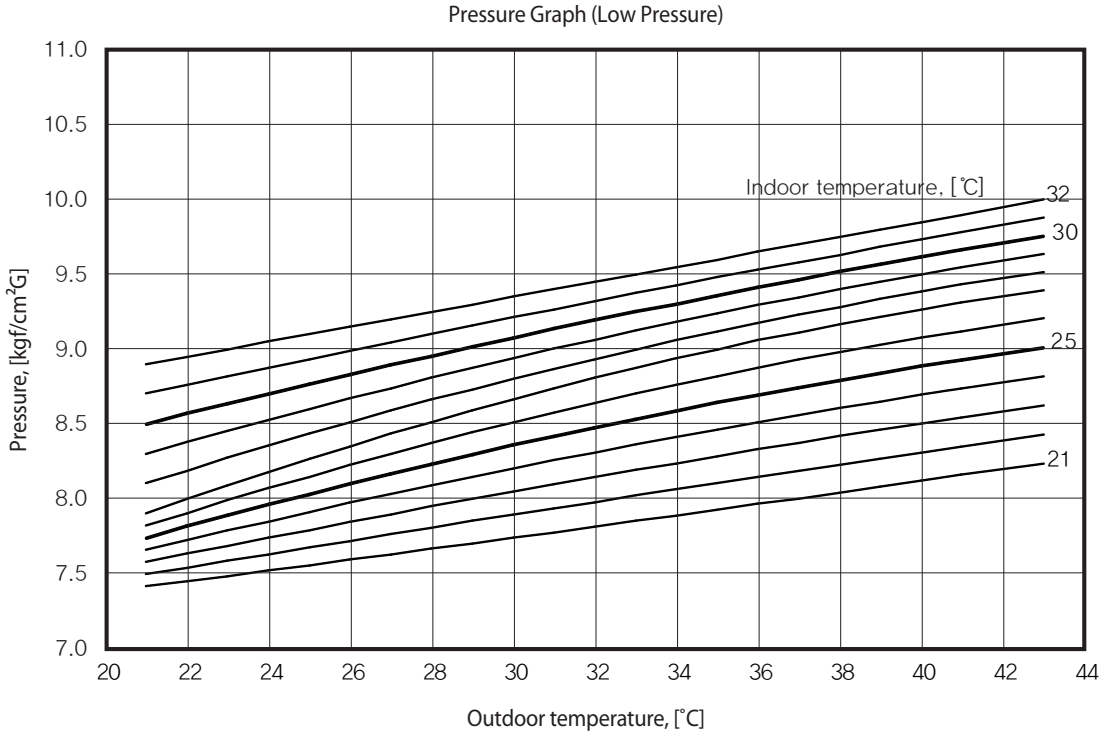
7-1 Index for Model Name



7-2 Refrigerating Cycle Diagram



7-3 Pressure Graph

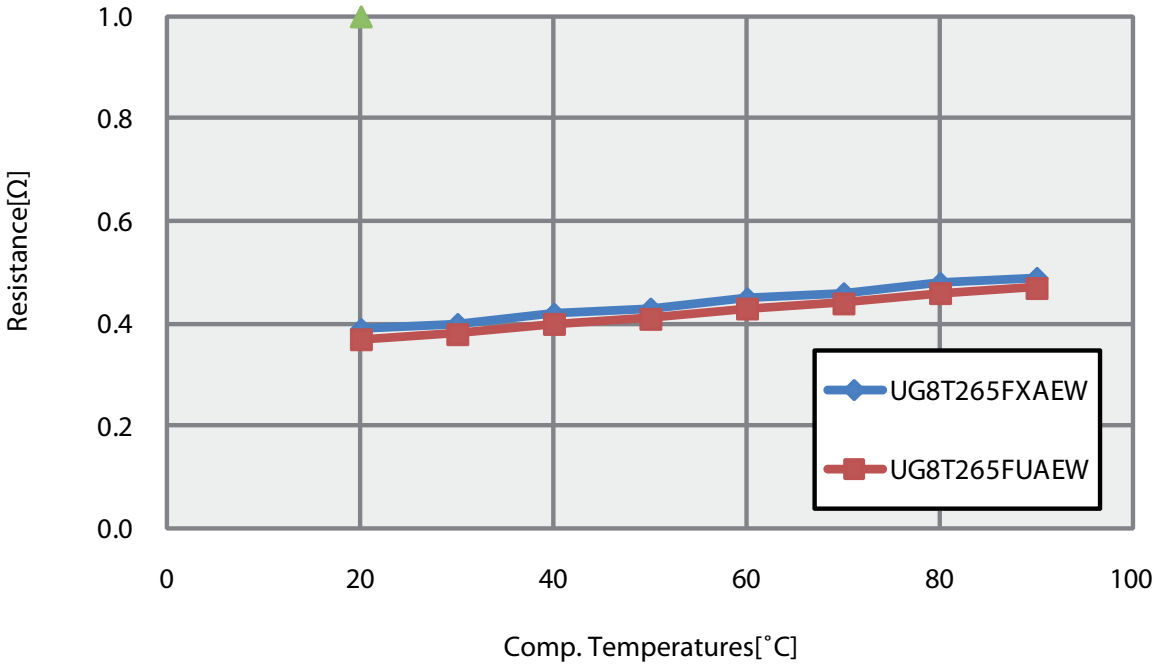


■ Pressure Table

Unit, [kgf/cm²G]

Indoor Temperature, [˚C] \ Outdoor Temperature, [˚C]	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	43
21	7.4	7.4	7.5	7.5	7.6	7.6	7.6	7.7	7.7	7.7	7.8	7.8	7.8	7.9	7.9	8.0	8.0	8.0	8.1	8.1	8.2	8.2
22	7.5	7.5	7.6	7.6	7.7	7.7	7.8	7.8	7.8	7.9	7.9	8.0	8.0	8.1	8.1	8.1	8.2	8.2	8.3	8.3	8.3	8.4
23	7.6	7.6	7.7	7.7	7.8	7.8	7.9	7.9	8.0	8.0	8.1	8.1	8.2	8.2	8.3	8.3	8.4	8.4	8.5	8.5	8.5	8.6
24	7.7	7.7	7.8	7.8	7.9	8.0	8.0	8.1	8.1	8.2	8.3	8.3	8.4	8.4	8.5	8.5	8.6	8.6	8.6	8.7	8.7	8.8
25	7.7	7.8	7.9	8.0	8.0	8.1	8.2	8.2	8.3	8.4	8.4	8.5	8.5	8.6	8.6	8.7	8.7	8.8	8.8	8.9	8.9	9.0
26	7.8	7.9	8.0	8.1	8.1	8.2	8.3	8.4	8.4	8.5	8.6	8.6	8.7	8.8	8.8	8.9	8.9	9.0	9.0	9.1	9.1	9.2
27	7.9	8.0	8.1	8.2	8.3	8.4	8.4	8.5	8.6	8.7	8.7	8.8	8.9	8.9	9.0	9.1	9.1	9.2	9.2	9.3	9.3	9.4
28	8.1	8.2	8.3	8.4	8.4	8.5	8.6	8.7	8.7	8.8	8.9	8.9	9.0	9.1	9.1	9.2	9.2	9.3	9.3	9.4	9.4	9.5
29	8.3	8.4	8.5	8.5	8.6	8.7	8.7	8.8	8.9	8.9	9.0	9.1	9.1	9.2	9.2	9.3	9.3	9.4	9.5	9.5	9.5	9.6
30	8.5	8.6	8.6	8.7	8.8	8.8	8.9	9.0	9.0	9.1	9.1	9.2	9.2	9.3	9.4	9.4	9.5	9.5	9.6	9.6	9.7	9.8
31	8.7	8.8	8.8	8.9	8.9	9.0	9.0	9.1	9.2	9.2	9.3	9.3	9.4	9.4	9.5	9.5	9.6	9.6	9.7	9.7	9.8	9.9
32	8.9	9.0	9.0	9.1	9.1	9.2	9.2	9.3	9.3	9.4	9.4	9.5	9.5	9.6	9.6	9.7	9.7	9.8	9.8	9.9	9.9	10.0

7-4 Resistance Graph



■ BLDC Compressor

Comp.Temp.	UG8T265FXAEW	UG8T265FUAEW
20	0.39	0.37
30	0.40	0.38
40	0.42	0.4
50	0.43	0.41
60	0.45	0.43
70	0.46	0.44
80	0.48	0.46
90	0.49	0.47

SAMSUNG

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