SPLIT-TYPE AIR CONDITIONER

INDOOR UNIT OUTDOOR UNIT

Basic : AQV18UGAN
AQV24UGAN

Model : AQV18EWAN
AQV24EWAN

Model Code : AQV18EWAN AQV18EWAX
AQV24EWAN AQV24EWAX

SERVICE Manual

AIR CONDITIONER

AQV18EWAN
AQV24EWAN

AQV18EWAX
AQV24EWAX

THE FEATURE OF PRODUCT

- **High Energy Efficiency BLDC Air Conditioner**
- **good'sleep Mode**
  good'sleep Mode can help you sleep quickly and soundly and wake up refreshed.
- **Silence Mode**
  When you use the "Silence Mode", you c n experience extremely quiet operation of your air conditioner.

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

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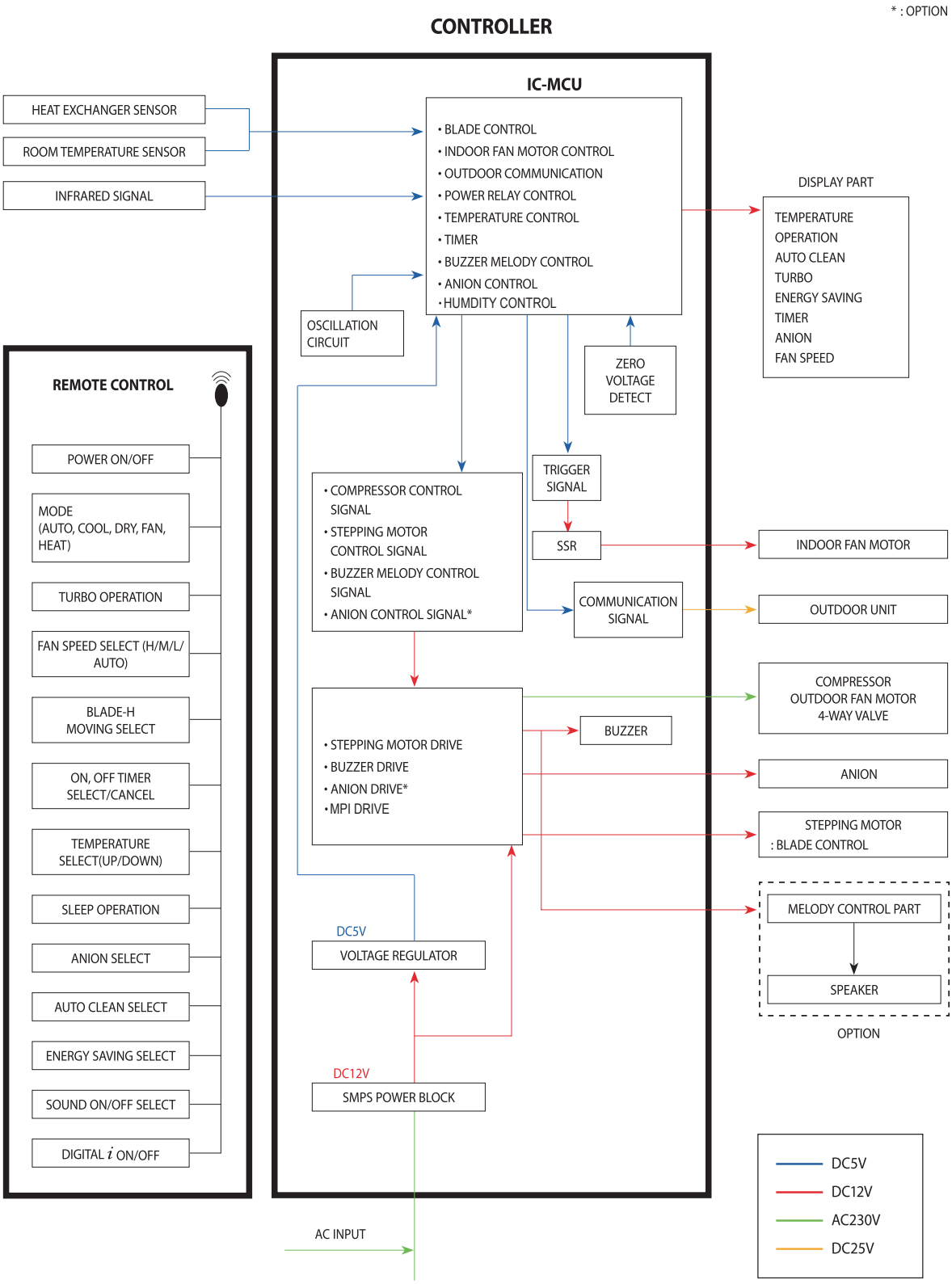
11. Block Diagram

11-1 Indoor Unit



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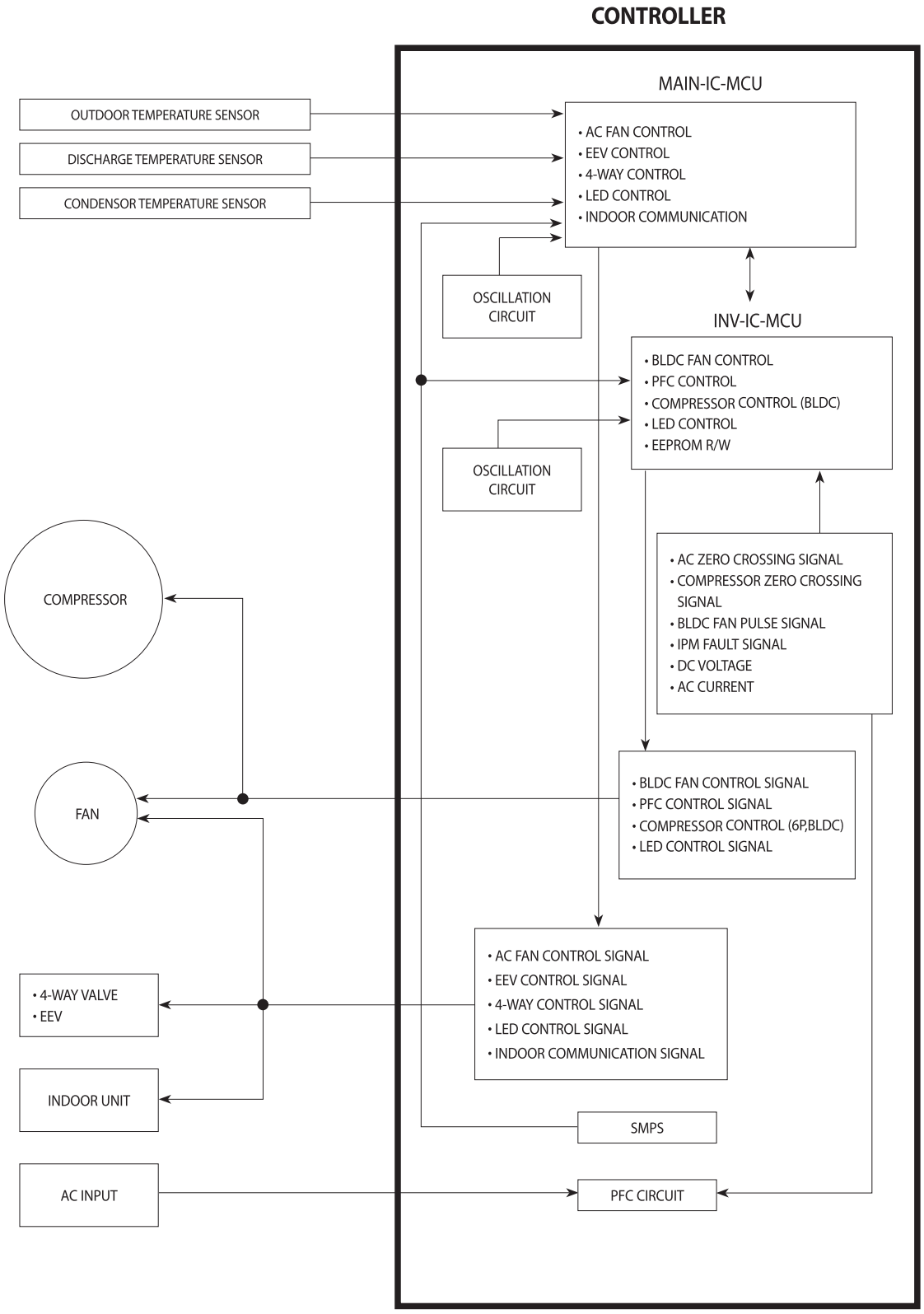

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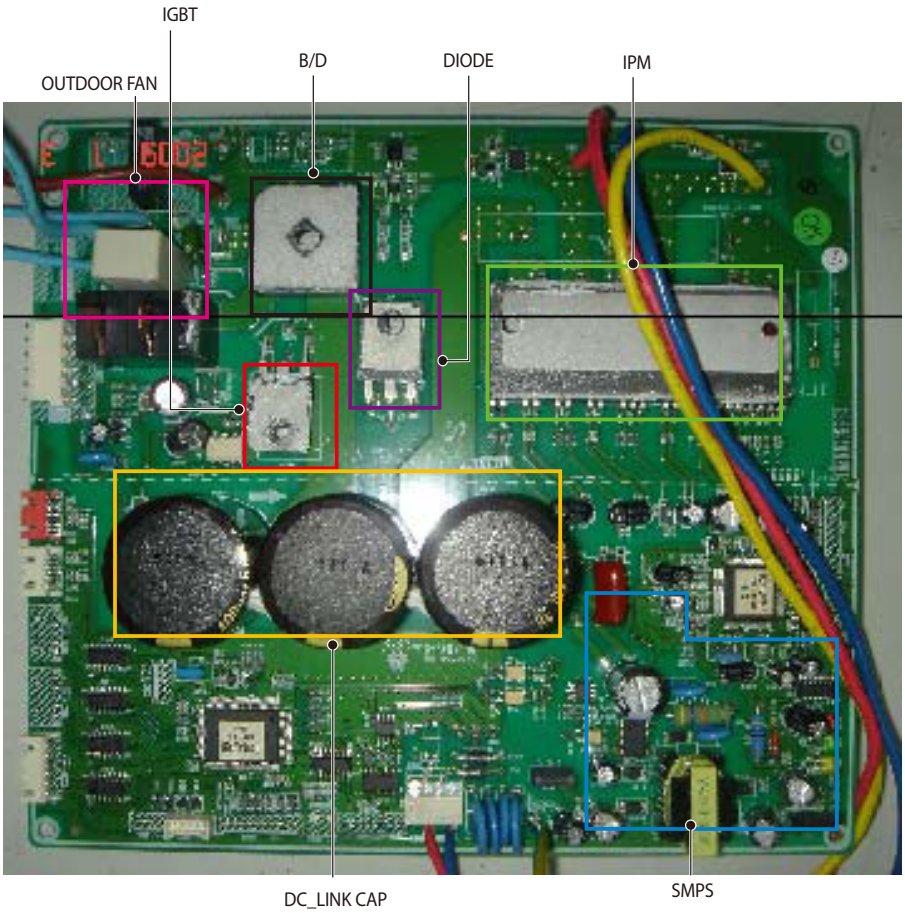

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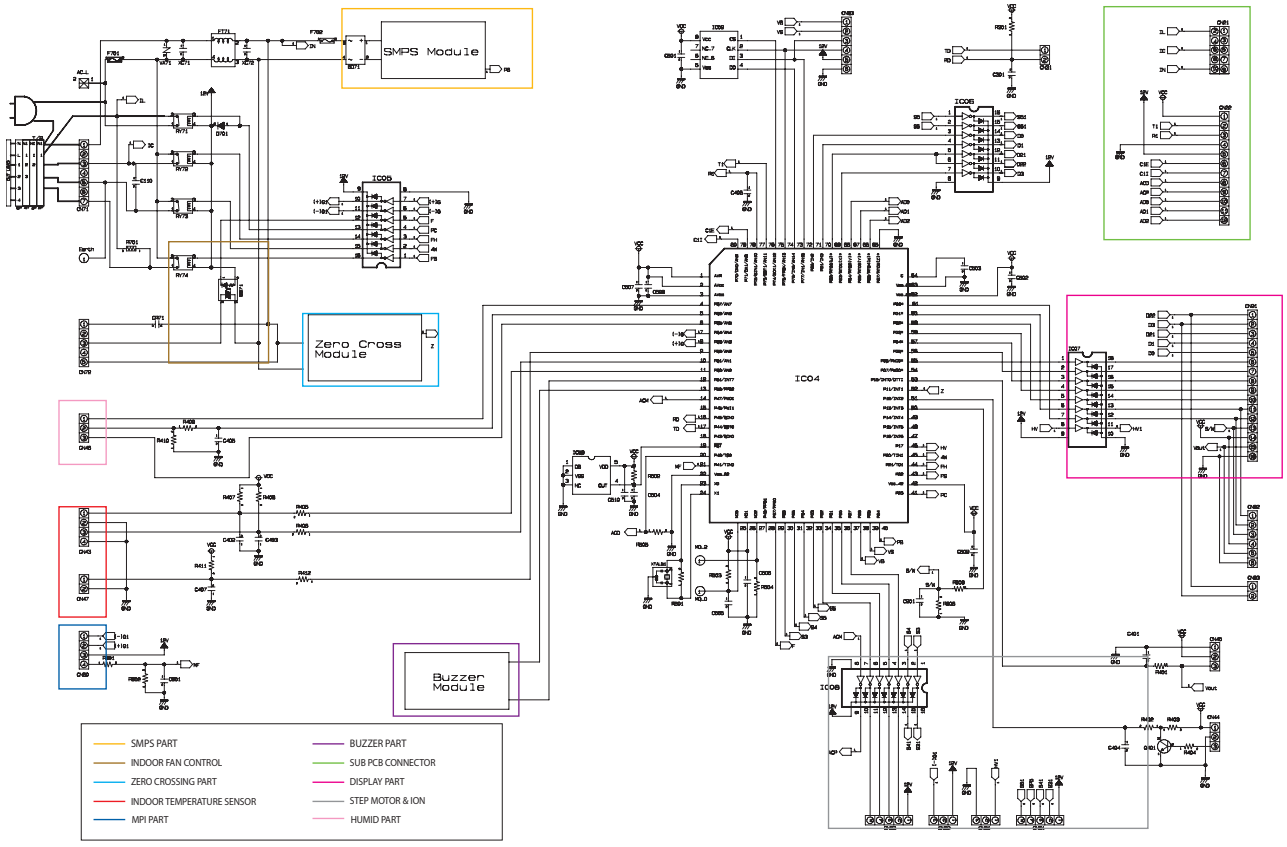
9. Circuit Descriptions

9-1 PCB Circuit Descriptions

9-1-1 Indoor Unit



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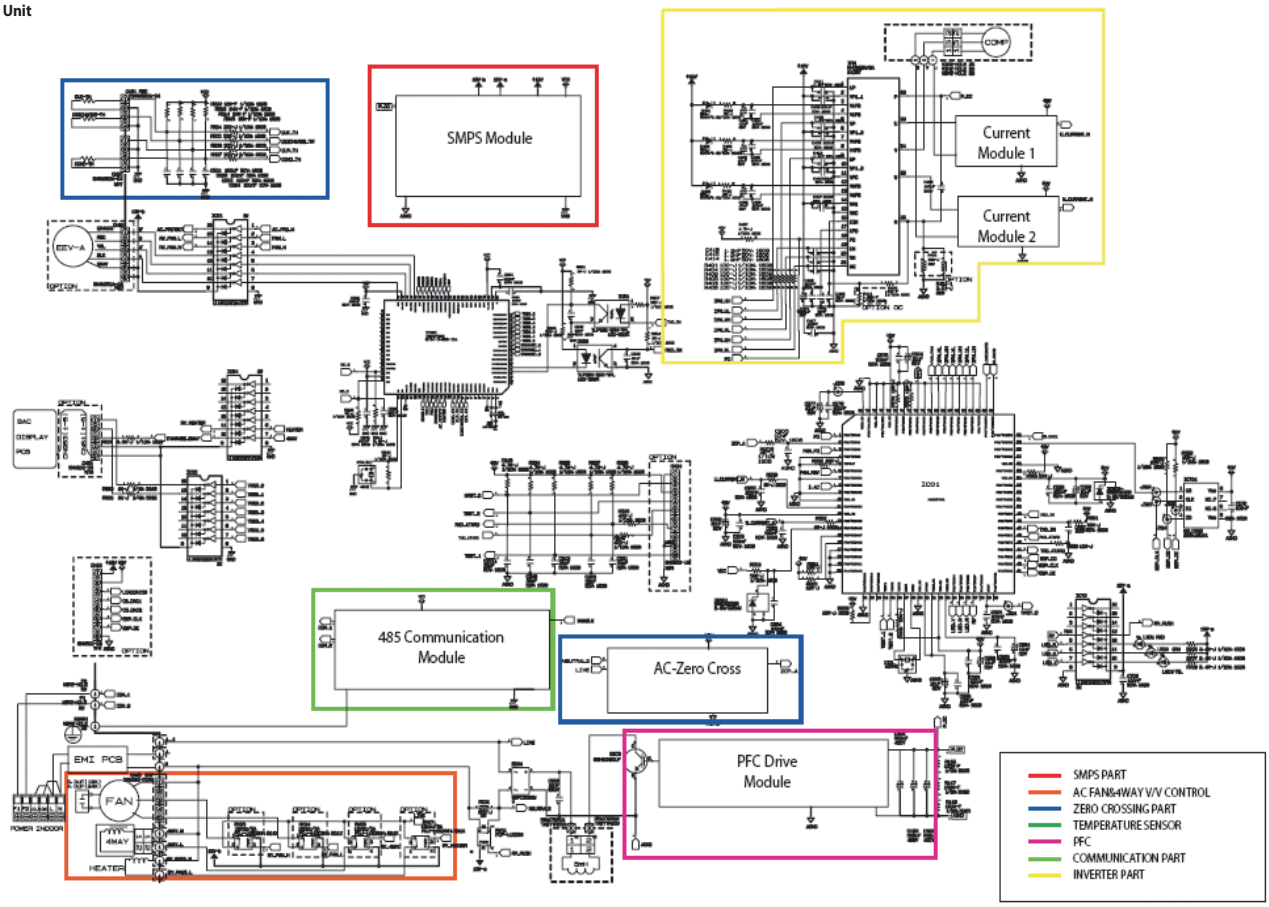
Circuit Descriptions

9-1-2 Outdoor Unit



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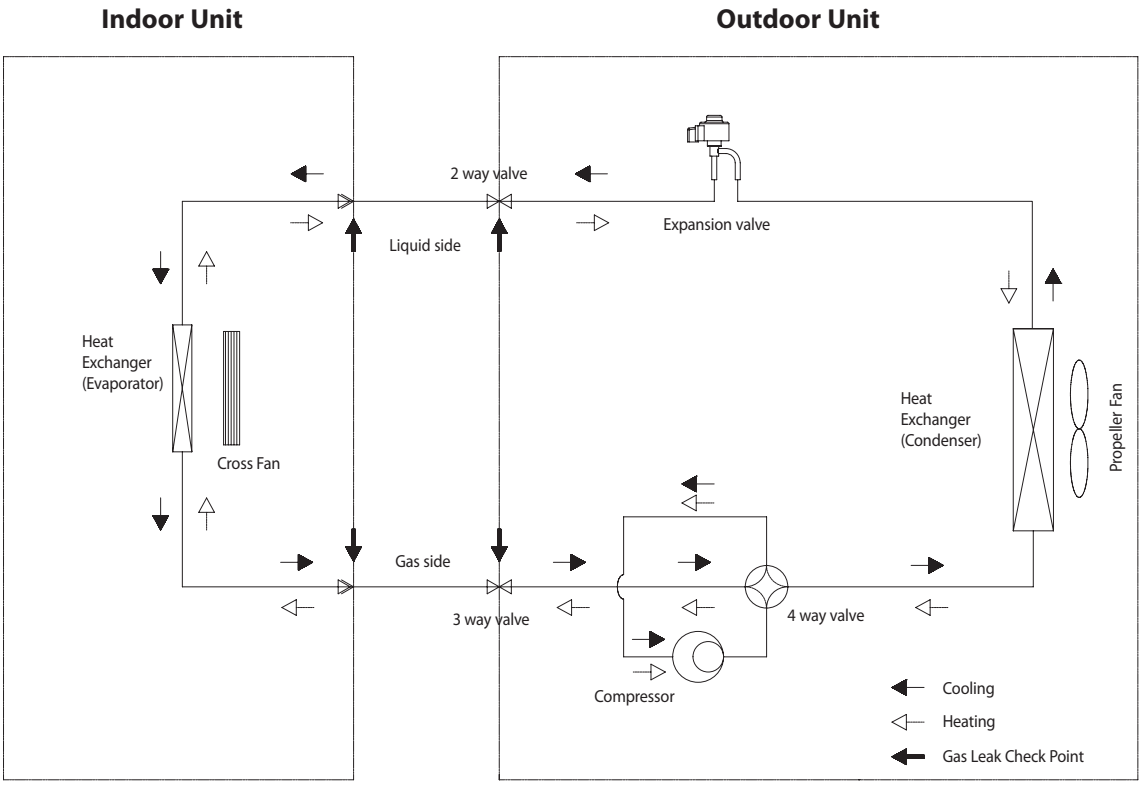
9-2 Refrigerating Cycle Diagram



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3. Disassembly and Reassembly

■ Necessary Tools

Item	Remark
+SCREW DRIVER	
MONKEY SPANNER	

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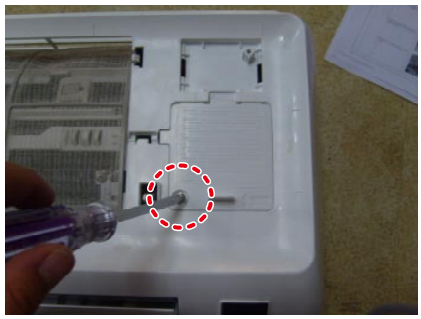
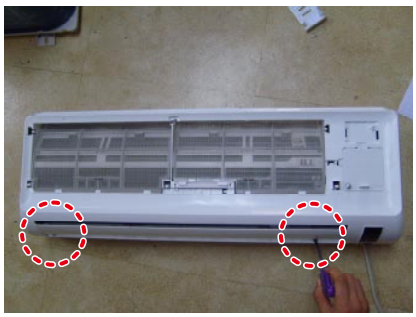
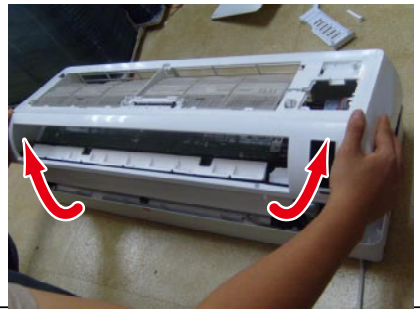
3-1 Indoor Unit

No	Parts	Procedure	Remark
1	PANEL-FRONT	1) Stop the driving of air conditioner and shut off main power supply. 2) Open the FRONT-GRILLE and pull out from the PANEL-FRONT.	
		3) Detach COVER-TERMINAL from the PANEL-FRONT.(use + Screw Driver)	
		4) Loosen connector wire(white) and detach the temperature sensor wire.	
		5) To detach the FRONT-PANEL the main frame, unfasten 2 screw at the bottom.(use + Screw Driver)	
		6) Take off the FRONT-PANEL,lifting up the bottom.	

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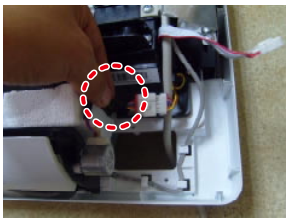
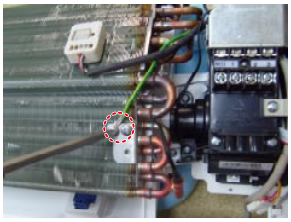
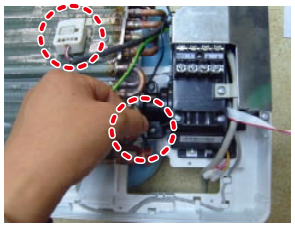
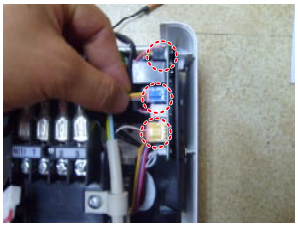
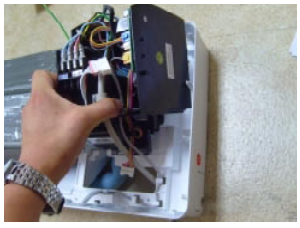
No	Parts	Procedure	Remark
2	TRAY DRAIN	1) Loosen stepping motor wire and detach the hook of main frame.	
		2) To detach TRAY-DRAIN from the main frame, pull the bottom of the TRAY-DRAIN towards you.	
3	CONTROL IN	1) Unfasten the earth screw.(use + Screw Driver)	
		2) Detach the temperature sensor and Humidity sensor.	
		3) Detach COVER-CONTROL from the CASE-CONTROL.	
		4) Loosen MPI connector wire(yellow), and MOTOR wires(white,blue).	
		5) Take off the CASE-CONTROL from the main frame.	

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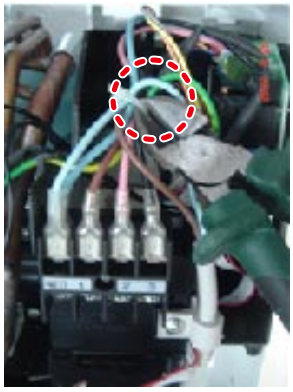
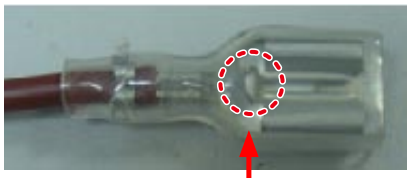
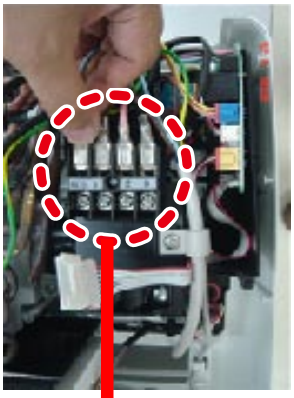
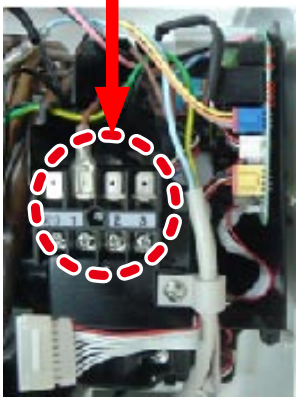
No	Parts	Procedure	Remark
4	PBA	1) Unfasten the screw.	
		2) Cut the cable tie.	
		3) Loosen the terminal block wires. (Total 4EA: #N(T)-2EA, #2-TEA, #3-TEA) ❊ Caution: The terminal is locking type. So, when you separate terminals, pull pressing the button.  Button	 

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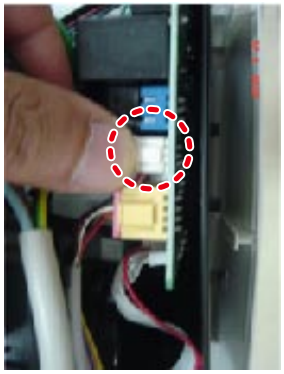
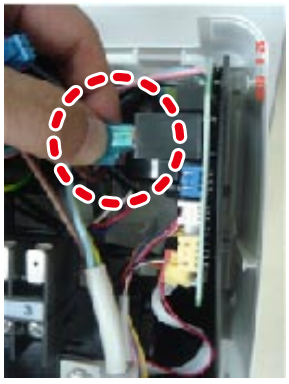
No	Parts	Procedure	Remark
4	PBA	4) Loosen the Motor Feedback connector(CN44). ❉ Caution: When you separate the connector, pull pressing the locking button.	
		5) Loosen the Humidity sensor connector(CN42). → Option connector. ❉ Caution: When you separate the connector, pull pressing the locking button.	
		6) Loosen the MPI connector(CN81). → Option connector. ❉ Caution: When you separate the connector, pull pressing the locking button.	
		7) Loosen the Relay #4 blue-connector(RY71). ❉ Caution: The terminal is locking type. So, when you separate terminals, pull pressing the button.  Button	

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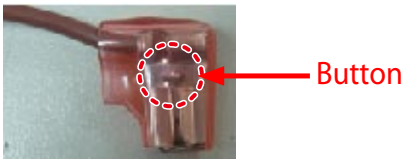
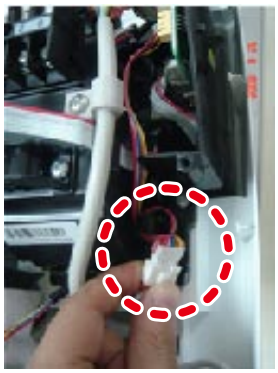
No	Parts	Procedure	Remark
4	PBA	8) Loosen the Relay #3 red-connector(RY71). ❉ Caution: The terminal is locking type. So, when you separate terminals, pull pressing the button.  	
		9) Loosen the Step motor connector. ❉ Caution: When you separate the connector, pull pressing the locking button.	
		10) Loosen the Thermistor wire connector(CN43). ❉ Caution: When you take off the PBA, don't touch the components. Please hold the PBA both side.	
		11) Loosen the Motor connector(CN71). ❉ Caution: When you separate the connector, pull pressing the locking button.	

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No	Parts	Procedure	Remark
4	PBA	12) Take off the main PBA from the ASS'Y Control in. ❊ Caution: When you take off the PBA, don't touch the components. Please hold the PBA both side.	

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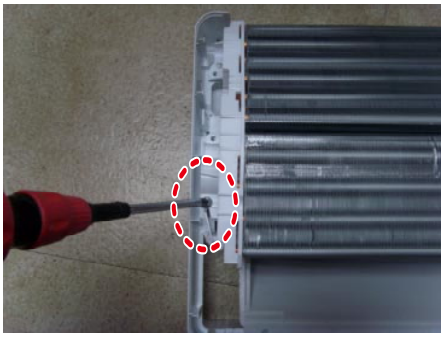
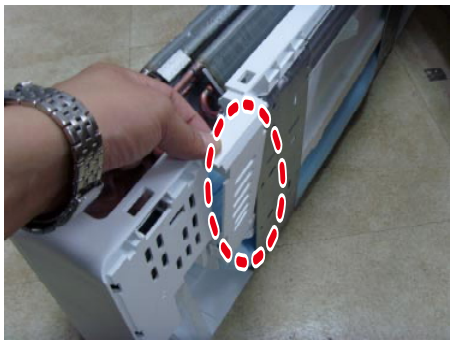
No	Parts	Procedure	Remark
5	EVAPORATOR	1) Unfasten the screw at the right side. (use + Screw Driver)	
		2) Unfasten the screw at the left side. (use + Screw Driver)	
		3) Detach the HOLDER PIPE.	
		4) Take off the EVAPORATOR from the main frame.	

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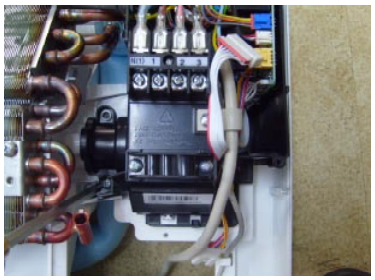
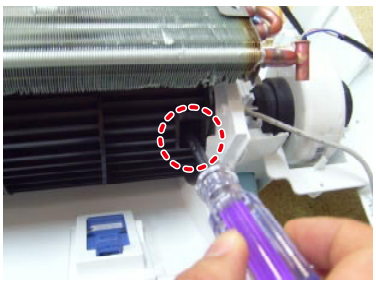
No	Parts	Procedure	Remark
6	FAN MOTOR & CROSS FAN	1) Unfasten the screw in the HOLDER-EVAP on the left side of evaporator.(use + Screw Driver)	
		2) unfasten the 3 points screws in the CASE-CONTROL, and then detach the CASE. (use + Screw Driver)	
		3) unfasten the screw a little.(use + Screw Driver)	
		4) Lift up the evaporator slightly and pull the CROSS-FAN to the left side.	

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No	Parts	Procedure	Remark
1	Common Work	1) Loosen 1 fixing screw(CCW) of the Cover-Control and detach the Cover Control.	
		2) Loosen fixing screws(CCW) and detach the Cabinet-Upper.	
		3) Loosen 1 screw(CCW) fixed to assemble Control Box with Cabinet-Side RH.	
		4) Loosen 6 fixing screws(CCW) and detach the Cabinet-Side RH.	

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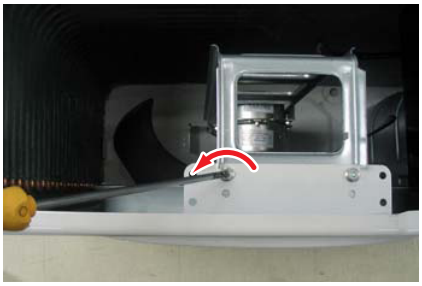
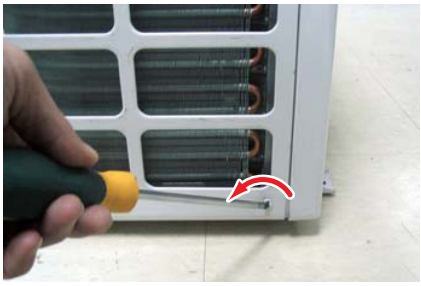
No	Parts	Procedure	Remark
		6) Loosen fixing screws(CCW) of the Cabinet Front.	
			
			
			
		5) Loosen 2 screws(CCW) fixed on the Guide Condenser.	

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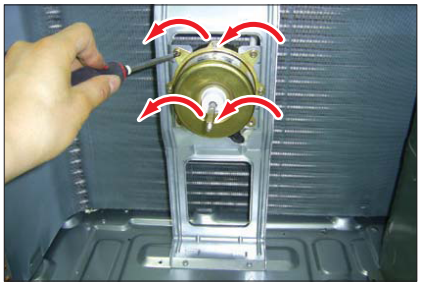
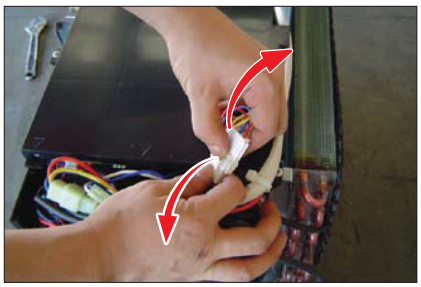
No	Parts	Procedure	Remark
2	Fan & Motor	1) Detach the Nut Flange like the picture on the right side. (Turn clockwise because the screw is left-handed.)	
		2) Detach the Fan Propeller. 3) Loosen 4 fixing screws(CCW) to detach the Motor.	
		4) Disconnect the wire between Ass'y Control Out and Motor.	
		5) Loosen 2 fixing screws(CCW) and detach the Bracket Motor.	

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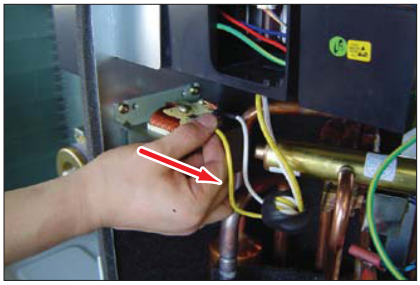
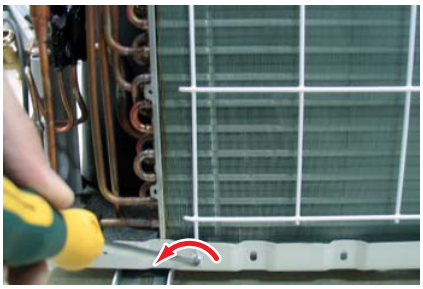
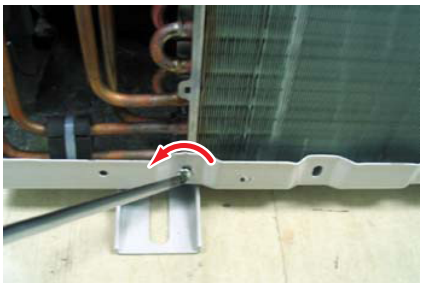
No	Parts	Procedure	Remark
3	Ass'y Control Out	1) Detach several connectors from the Ass'y Control Out. 2) Detach several connectors from the PCB of Ass'y Control Out. 3) Pull up the Ass'y Control Out.	
4	Heat Exchanger	1) Release the refrigerant at first 2) Loosen fixing screw(CCW) and detach the steel bar. 3) Disassemble the pipes in both inlet and outlet with welding torck. ⚠ Before you disassemble the pipes and Condenser, be sure that there should be no refrigerant remained in the unit.	
		1) Loosen fixing screw(CCW) and detach the Heat Exchanger	

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No	Parts	Procedure	Remark
5	Compressor	1) Disassemble the Felt Comp Sound. 2) Loosen the fixing nut(CCW) and detach the Compressor Lead Wire.	 
		3) Loosen the 3 bolts(CCW) at the bottom of Compressor like the picture on the right side.	

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INDOOR MAIN PCB(DB93-07499B)

LOCATION	CODE	DESC_SPEC	Q'TY
D701	0402-000012	DIODE-RECTIFIER;UF4007,1KV,1A,DO-41,TP	1
D4201	0402-000137	DIODE-RECTIFIER;1N4007,1KV,1A,DO-41,TP	1
D4202	0402-001194	DIODE-RECTIFIER;UG2D,200V,2A,-,TP	1
BD4201	0402-001298	DIODE-BRIDGE;DF06S,600V,1A,SMD-4,TP	1
ZD4201	0403-000252	DIODE-ZENER;BZX84C3V6,3.4-3.8V,350MW,SOT-23,TP	1
ZD4203	0403-000258	DIODE-ZENER;BZX84C5V6,5.6,225mW,SOT-23,TP	1
ZD4202	0403-001285	DIODE-ZENER;BZX84-C11,10.4-11.6V,350mW,SOT-23,TP	1
Q2321,Q401	0501-000534	TR-SMALL SIGNAL;2SC2412K,NPN,200mW,SOT-23,TP,180-	2
Q6103	0501-002296	TR-SMALL SIGNAL;MMST2907A,PNP,200MW,SMT3,TP,100-3	1
Q6101,Q6102	0504-000127	TR-DIGITAL;FJV3102RMTF,NPN,200MW,10K/10K,SOT-23,T	2
Q4201	0504-001064	TR-DIGITAL;DTC114EKA,NPN,200mW,10K/10K,SOT-23,TP	1
IC05,IC06,IC07	0506-000175	TR-ARRAY;2003,NPN,7,1W,SOP-16,ST,1000	3
PC2321	0604-001003	PHOTO-COUPLER;TR,50-150%,200mW,DIP-4,ST	1
PC4201	0604-001038	PHOTO-COUPLER;TR,130-260%,200mW,DIP-4,ST	1
IC361	1103-001175	93LC56,128x16,SOP,8P,5x4mm,2.5/6.0V,-40to+85C	1
IC4202	1203-000274	IC-POSI.FIXED REG.;7805,TO-220,3P,-,PLASTIC,4.8/5	1
IC4201	1203-002545	IC-PWM CONTROLLER;266,DIP,8P,300MIL,PLASTIC,-0.3/	1
IC0102	1203-003334	IC-RESET;S-801,SOT-23,5P,2.9x1.6mm,PLASTIC,3.716/	1
VA71	1405-000160	VARISTOR;680V,4500A,17.5x6.5mm,TP,INR14D681KORSY	1
R4204,R4205	2002-001104	R-COMPOSITION;12Mohm,5%,1/2W,AA,TP,3.4x9mm	2
R4203	2003-000448	R-METAL OXIDE(S);100Kohm,5%,2W,AA,TP,4x12mm	1
R4206	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	1
R2102,R2104,R2106	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	3
R4202	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	1
R6107,R6106,R0101,R403,R404,R405,R2322,R2323	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	8
R6103,R6104	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	2
R4201	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	1
R2321,R402	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	2
R401,R6601	2007-000087	R-CHIP;6.8Kohm,5%,1/10W,TP,1608	2
R301,R302,R406,R501,R6105,R6602	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	6
R361,R362	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	2
R2107	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	0
R0102	2007-000109	R-CHIP;1Mohm,5%,1/10W,TP,1608	1
R303,R305,R306	2007-000116	R-CHIP;120ohm,5%,1/10W,TP,1608	3
R6108	2007-000119	R-CHIP;560ohm,5%,1/10W,TP,1608	1
R4207	2007-000124	R-CHIP;2.2Kohm,5%,1/10W,TP,1608	1
R4208	2007-000312	R-CHIP;10ohm,5%,1/4W,TP,3216	1
R201,R202,R203,R204,R205,R206,R207,R208	2007-000944	R-CHIP;47Kohm,5%,1/4W,TP,3216	8

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INDOOR MAIN PCB(DB93-07499B)(CONT.)

LOCATION	CODE	DESC_SPEC	Q'TY
R201,R202,R203,R204,R205,R206,R207,R208	2007-000944	R-CHIP;47Kohm,5%,1/4W,TP,3216	8
R2103,R2105	2007-001068	R-CHIP;6.8Kohm,1%,1/10W,TP,1608	2
C4202	2201-000983	C-CERAMIC,DISC;1NF,10%,2KV,7.5mm	1
C701	2201-000983	C-CERAMIC,DISC;1NF,10%,2KV,7.5mm	0
C4203,C4204	2201-000987	C-CERAMIC,DISC;2.2NF,20%,400V,Y5U,BK,12.5X6MM,10	2
C4205	2201-002193	C-CERAMIC,DISC;0.082nF, 10%,3000V,5mm	1
C361,C401,C2322,C2323,C6101,C6102	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,TP,1608	6
C301,C302,C305, C402,C509	2203-000440	C-CER,CHIP;1nF,10%,50V,X7R,TP,1608,-	5
C0101,C0102,C0103,C0104,C0105,C0106,C0107,C2102,C2103,C403,C2321,C4201,C4206,C4207,KC46,KC47,C6601	2203-005249	C-CER,CHIP;100nF,10%,50V,X7R,TP,1608,-	17
C2101	2203-005249	C-CER,CHIP;100nF,10%,50V,X7R,TP,1608,-	1
XC71,XC72	2301-001220	C-FILM,LEAD-PPF;100nF,10%,275V,BK,18x6x12,15	2
CR71	2301-001363	C-FILM,LEAD-PPF;2000nF,+10-5%,450V,BK,38x18x30mm,3	1
CE4205	2401-000038	C-AL;470uF,20%,25V,GP,TP,85度， 10x12.5mm,5mm	1
CE4204	2401-000151	C-AL;1000uF,20%,25V,GP,TP,85度， 10x20,5mm	1
CE6101	2401-002094	C-AL;47uF,20%,25V,GP,TP,85度， 5x11,2.5mm	1
CE4201,CE4202	2401-004330	C-AL;22µF,20%,500V,-,TP,12.5X25,7.5mm	2
L4201	2702-001118	INDUCTOR-RADIAL;5000uH,10%,8.0x11.0mm	1
X0101	2802-001179	RESONATOR-CERAMIC;4MHZ,0.5%,BK,8X3X5.5MM	1
BZ6101	3002-001129	BUZZER-PIEZO;85DB,-,-,2KHZ,-	1
SS71	3502-000115	SSR;12Vdc,-,2A,1mS,1mS	1
F701-1	3601-000263	FUSE-CARTRIDGE;250V,3.15A,SLOW-BLOW,GLASS,5.2x20mm	1
F702	3601-001209	FUSE-RADIAL LEAD;250V,1A,TIME-LAG,-,8.5x8mm	1
CN72	3711-000262	CONNECTOR-HEADER;1WALL,3P,1R,7.92MM,STRAIGHT,SN,W	1
CN44	3711-000879	HEADER-BOARD TO CABLE;BOX,3P,1R,2.5mm,STRAIGHT,SN	1
CN6601	3711-000941	HEADER-BOARD TO CABLE;BOX,4P,1R,2.5mm,STRAIGHT,SN	0
CN22	DB39-01194A	CONNECT WIRE	1
PCB	DB41-00752A	VIVALDI INDOOR INVERTER PCB FR-4	0
PCB	DB41-00794A	VIVALDI INDOOR INVERTER PCB FR-4	1
F701	DB61-00924A	HOLDER-FUSE;500V,-,100M	1
485 SUB PBA	DB93-04257C	INDOOR SUB PBA	1
CN91(1-8)	DB93-06896C	Vivaldi-P/J,190mm,25045TP,SMH250-5HRT,AWG#26,SSEC	1
VA71	DB67-00942A	VARISTOR CAP	1

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■ INDOOR SUB PCB : DB93-04257C

LOCATION	CODE	DESC_SPEC	PARA1	PARA2	Q'ty	SA/SNA
CD312	0406-001204	DIODE-TVS	SMBJ5.0CA	*	1	SNA
IC20	0801-000393	IC-CMOS LOGIC	MM74HC86M	SOIC-14	1	SNA
IC18	1006-001371	IC-BUS TRANSCEIVER	ISL3175EIBZ	*	1	SNA
CN31	3711-000015	CONNECTOR-HEADER	SMW250-02	WHT	1	SNA
CN12	3711-003847	HEADER-BOARD TO CABLE	SMAW200-12	WHT	1	SNA
RY01	3501-001248	RELAY-MINIATURE	G6S-2	12V/2A	1	SNA
CN11	3711-006040	HEADER-BOARD TO BOARD	25430WR-10A00	BLK	1	SNA
R315	2007-000090	R-CHIP	10K-J	1/10W,1608	1	SNA
C304,C305,C306,C307	2203-000192	C-CER,CHIP	100nF	50V,2012	4	SNA
R201,R202,R203	2007-000084	R-CHIP	4.7K-J	1/10W,1608	3	SNA
R302,R303,R304,R305	2007-000300	R-CHIP	10K-J	1/8W,2012	4	SNA
R204,R205,R206	2007-000078	R-CHIP	1K-J	1/10W,1608	3	SNA
R350	2007-000029	R-CHIP	0ohm,5%,	1/8W,TP,2012	1	SNA
C302,C303	2203-000189	C-CER,CHIP	100nF	25V,1608	2	SNA
C316	2203-005249	C-CER,CHIP	100nF	50V,1608	1	SNA
PCB	DB41-00528A	PCB SUB-INDDOR 485	CEM3	*	1	SNA

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OUTDOOR MAIN PCB DB93-07112K (AQV18E**),DB93-07112L(AQV24E**)

Design location	CODE	DESC_SPEC	18K	24K
D451,D452,D453,D454	0401-000133	DIODE-SWITCHING;RLS4148,75V,150mA,LL-34,TP	4	4
D103,D104,D105,D106	0402-001427	DIODE-RECTIFIER;ES1D,200V,1A,DO-214AC,TP	4	4
D102,D401,D402,D403	0402-001429	DIODE-RECTIFIER;US1J,600V,1A,DO-214AC,TP	4	4
BD01	0402-001553	DIODE-BRIDGE;GBPC3506W,600V,35A,SQUARE-4,BK	1	1
ZD451,ZD452,ZD501, ZD502	0403-000258	DIODE-ZENER;MMBZ5232B,5%,225mW,SOT-23,TP	4	4
CD31,CD32	0406-001109	DIODE-TVS;SAC5.0,7.6/-/-V,500W,DO-15	2	2
D201	0407-000123	DIODE-ARRAY;DAN202K,80V,100mA,CA2-3,SOT-23,TP	1	1
Q904,Q905,Q906,Q907	0504-000001	TR-DIGITAL;DTA114EKA,PNP,200mW,10K/10K,SOT-23,TP	4	4
Q801	0504-000127	TR-DIGITAL;FJV3102RMTF,NPN,200MW,10K/10K,SOT-23,T	1	1
Q902	0504-000127	TR-DIGITAL;FJV3102RMTF,NPN,200MW,10K/10K,SOT-23,T	1	0
IC51,IC52,IC53,IC54,IC55 ,IC72	0506-000175	TR-ARRAY;2003,NPN,7,1W,SOP-16,ST,1000	6	6
Q803	0508-001154	TR-IGBT; -,600V,80A,-,195W,TO-3P	1	1
IC12,IC61,IC62	0604-001172	PHOTO-COUPLER;TR,100-300,200mW,SOP,TP	3	3
IC30	0801-000393	IC-CMOS LOGIC;74HC86,OR GATE,SOP,14P,150MIL,QUAD,S	1	1
IC20	1006-001371	IC-BUS TRANSCEIVER	1	1
IC21	1202-000104	IC-VOLTAGE COMP.;393,SOP,8P,150MIL,DUAL,36V,CMO	1	1
IC16,IC19	1203-000274	IC-POSI.FIXED REG.;7805,TO-220,3P,-,PLASTIC,4.8/5	2	2
IC13	1203-002948	IC-POSI.ADJUST REG.;TL431ACD,SOP,8P,4.9X3.9MM,PLA	1	1
IC59	1203-003334	IC-RESET;S-801,SOT-23,5P,2.9x1.6mm,PLASTIC,3.716/	1	1
IC11	1203-003527	IC-PWM CONTROLLER;TOP243,DIP,7P,9.83x6.6mm,PLASTIC	1	1
R107	2003-000708	R-METAL OXIDE(S);47ohm,5%,1W,AA,TP,3.3x9mm	1	1
R101	2003-000855	R-METAL OXIDE(S);47Kohm,5%,3W,AA,TP,6x16mm	1	1
R110	2003-002246	R-METAL OXIDE(S);620ohm,5%,1W,AA,TP,2.4x6.4mm	1	1
R001	2006-001168	R-CEMENT;200ohm,5%,10W,CB,BK,15.7x11.5x34.2mm	1	1
R421	2006-001145	ASSY-R CEMENT	1	1
R401,R402,R403,R404,R 405,R406	2007-000074	R-CHIP;100ohm,5%,1/10W,TP,1608	6	6
R504,R505,R506,R507,R 553,R606,R607	2007-000076	R-CHIP;330ohm,5%,1/10W,TP,1608	7	7
R323,R342,R808	2007-000077	R-CHIP;470ohm,5%,1/10W,TP,1608	3	3
R103,R512,R557,R559,R 601,R604	2007-000078	R-CHIP;1Kohm,5%,1/10W,TP,1608	6	6
R205,R208	2007-000080	R-CHIP;2Kohm,5%,1/10W,TP,1608	2	2
R104	2007-000082	R-CHIP;3.3Kohm,5%,1/10W,TP,1608	1	1
R324,R325,R327,R328, R407	2007-000084	R-CHIP;4.7Kohm,5%,1/10W,TP,1608	5	5
R315	2007-000097	R-CHIP;47Kohm,5%,1/10W,TP,1608	1	1
R914	2007-000087	R-CHIP;6.8Kohm,5%,1/10W,TP,1608	1	0
R302,R303,R304,R305, R306,R316,R509,R552, R554,R555,R556,R558, R560,R561,R562,R563, R566,R573,R574,R805, R916,R917	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	22	22
R913	2007-000090	R-CHIP;10Kohm,5%,1/10W,TP,1608	1	0
R510	2007-000109	R-CHIP;1Mohm,5%,1/10W,TP,1608	1	1
R551	2007-000109	R-CHIP;1Mohm,5%,1/10W,TP,1608	1	1
R102	2007-000111	R-CHIP;6.8ohm,5%,1/10W,TP,1608	1	1
R408,R409,R410	2007-000113	R-CHIP;33ohm,5%,1/10W,TP,1608	3	3

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OUTDOOR MAIN PCB DB93-07112K (AQV18E**),DB93-07112L(AQV24E**),(CONT.)

Design location	CODE	DESC_SPEC	18K	24K
R301	2007-000116	R-CHIP;120ohm,5%,1/10W,TP,1608	1	1
R115	2007-000385	R-CHIP;14.3Kohm,1%,1/4W,TP,3216	1	1
R502,R515	2007-000455	R-CHIP;18Kohm,1%,1/10W,TP,1608	2	2
R706,R707,R708	2007-000512	R-CHIP;2.4Kohm,5%,1/10W,TP,1608	3	3
R807	2007-000553	R-CHIP;20ohm,5%,1/4W,TP,3216	1	1
R503,R514	2007-000614	R-CHIP;24Kohm,1%,1/10W,TP,1608	2	2
R112,R113,R114	2007-000924	R-CHIP;470Kohm,1%,1/4W,TP,3216	3	3
R412	2007-000929	R-CHIP;470ohm,1%,1/10W,TP,1608	1	1
R806	2007-000950	R-CHIP;47ohm,5%,1/4W,TP,3216	1	1
R511,R910,R911,R912	2007-000965	R-CHIP;5.1Kohm,5%,1/10W,TP,1608	4	4
R907,R908,R909	2007-001179	R-CHIP;8.2Kohm,5%,1/10W,TP,1608	3	3
R900,R901,R902,R903,R904,R905,R906	2007-001318	R-CHIP;1Kohm,5%,1/4W,TP,3216	7	7
R201,R202,R206,R207	2007-002667	R-CHIP;90.9Kohm,1%,1/4W,TP,3216	4	4
R106,R203,R204	2007-007342	R-CHIP;1.82Kohm,1%,1/10W,TP,1608	3	3
R105	2007-007445	R-CHIP;9.09Kohm,1%,1/10W,TP,1608	1	1
R116,R117,R118	2007-008261	R-CHIP;150Kohm,1%,1/2W,TP,5025	3	3
C307,C308,C309,C310	2201-000154	C-CERAMIC,DISC;10NF,+80-20%,2KV,Y5P,TP,20X5MM,7.5	4	4
C105,C106	2201-000322	C-CERAMIC,DISC;2.2NF,10%,2KV,Y5P,TP,13X5MM,10	2	2
C903	2201-000322	C-CERAMIC,DISC;2.2NF,10%,2KV,Y5P,TP,13X5MM,10	1	0
C411,C412,C413,C414,C415,C416	2203-000125	C-CER,CHIP;1.2nF,10%,50V,X7R,TP,1608,-	6	6
C201,C203,C204,C205,C301,C451,C452,C453,C454,C567,C603,C607,C801,C900,C901,C902,C907,C908	2203-000257	C-CER,CHIP;10nF,10%,50V,X7R,TP,1608,-	18	18
C108	2203-001414	C-CER,CHIP;330NF,10%,50V,X7R,TP,2012	1	1
C318,C319,C320,C321	2203-002002	C-CER,CHIP;33pF,5%,50V,NPO,BK,1608,-	4	4
C109,C112,C116,C117,C121,C202,C302,C303,C304,C305,C306,C404,C405,C406,C407,C408,C409,C410,C417,C418,C501,C502,C503,C504,C505,C506,C507,C508,C509,C510,C511,C512,C513,C553,C554,C555,C556,C560,C561,C563,C565,C568,C570,C575,C576,C706,C3011	2203-005249	C-CER,CHIP;100nF,10%,50V,X7R,TP,1608,-	47	47
C419,C420	2203-002398	C-CER,CHIP;22nF,10%,50V,X7R,1608	2	2
C113,C122,C802	2203-005261	C-CER,CHIP;1000nF,10%,25V,X7R,-,3216	3	3
C904	2203-006104	C-CER,CHIP;1000nF,10%,50V,X7R,3225	1	0
C008	2301-000141	C-FILM,LEAD-PEF;10nF,10%,630V,TP,16x11x7.5mm,5	1	1
C422,C803	2306-000123	C-FILM,LEAD-PPF;100nF,5%,630V,BK,26x16.5x8.5,2/100nF,5%,630V,17x12x6,15mm	2	2
C123	2401-000303	C-AL;100uF,20%,25V,GP,TP,6.3x11,5	1	1
C552,C559,C562,C564,C569,C574,C577	2401-000493	C-AL;10uF,20%,50V,LZ,TP,5x11mm,5mm ,105℃	7	7
C906	2401-000493	C-AL;10uF,20%,50V,LZ,TP,5x11mm,5mm ,105℃	1	0

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OUTDOOR MAIN PCB DB93-07112K (AQV18E**),DB93-07112L(AQV24E**)(CONT.)

Design location	CODE	DESC_SPEC	18K	I 24K
C905	2401-000880	C-AL;220uF,20%,50V,WT,TP,10x16mm,5m	1	0
C114,C421	2401-002274	C-AL;220uF,20%,35V,WT,TP,8x11.5mm,5 ,105℃	2	2
C107,C118,C401, C402,C403	2401-002438	C-AL;47μF,20%,50V,WT,TP,6.3x11,5mm,105℃	5	5
C104	2401-003541	C-AL;10uF,20% ,450V,WT,TP,12.5x20mm,5	1	1
C119,C805	2401-003585	C-AL;220uF,20%,35V,WT,TP,8x11.5mm,5 ,105℃	2	2
C110	2401-001374	C-AL;470uF,20%,16V,WT,TP,10x12.5mm,5mm	1	1
C101,C102,C103	2401-003740	C-AL;560uF,20%,400V,WT,BK,35x50mm,10 ,105℃	3	3
XTAL51	2802-001179	RESONATOR-CERAMIC;4MHZ,0.5%,BK,8X3X5.5MM	1	1
XTAL	2802-001198	RESONATOR-CERAMIC;10MHZ,0.5%,BK,8X3X5.5MM	1	1
RY03,RY04	3501-001154	R E L A Y - MINIATURE;12Vdc,200mW,3000mA,1FormA,10mS,10m	0	2
RY05	3501-001154	R E L A Y - MINIATURE;12Vdc,200mW,3000mA,1FormA,10mS,10m	1	1
RY31	3501-001248	RELAY-MINIATURE;12V,-,11.7MA,DPDT,4MS,4MS	1	1
RY01	3501-001268	RELAY-POWER;12V,0.9W,25000mA,SPST,20mS,10mS	1	1
CN00	3711-003843	HEADER-BOARD TO CABLE	1	1
CN71	3711-004019	CONNECTOR-HEADER	1	0
CN34	3711-004182	CONNECTOR-HEADER;BOX,10P,1R,2MM,STRAIGHT,SN,NTR	1	1
CN61	3711-004484	CONNECTOR-HEADER;BOX,5P,1R,2mm,STRAIGHT,SN	1	1
REACTOR01, REACTOR02	3712-001139	CONNECTOR-TERMINAL;TAB,MALE,-,6.35X0.8MM	2	2
Q901	DB13-00003A	IC DRIVER GATE;-,SOT-23,-,-,1P,1P,0.2mm,2.93x1.3mm	1	0
PT02	DB26-00075A	TRANS PULSE;PT_50,MH080FXEA4,10,65.5,8~14,EI2218,	1	1
IC451,IC452	DB32-00173A	S E N S O R M A G - C T S E N S O R ; A S C 7 1 2 , 5 H P INVERTER,-,-40~150	2	2
PCB MAIN	DB41-00778A	PCB	1	1
IC01	DB91-00532E	XSA OUTDOOR Inv Micom,MN103SFA7K,80P, ROM Size: 256K bytes	0	1
IC01	DB09-00517A	IC MICOM;MN103FA7K,-,80P,+5V,10 MHz,Flash Memory,	0	1
IC01	DB91-00744A	OUTDOOR Inv Micom,MN103SFA7K,80P, ROM Size: 256K bytes	1	0
IC01	DB09-00517A	IC MICOM;MN103FA7K,-,80P,+5V,10 MHz,Flash Memory,	1	0
IC50	DB91-00945A	ASSY MICOM 09R FORTE,VIVACE, MONTBLANC 18K24K	1	1
IC50	DB09-00338A	IC MICOM;MB90F823,-,80 P,5 V,24 MHz,STM-0493-OA,-	1	1
IC701	DB91-00845A	EEPROM DATA	1	0
IC701	1103-001038	IC-EEPROM;93LC66,4KBIT,256X16BIT,SOP,8P,5X4MM,-,2	1	0
IC701	DB91-00844A	EEPROM DATA	0	1
IC701	1103-001038	IC-EEPROM;93LC66,4KBIT,256X16BIT,SOP,8P,5X4MM,-,2	0	1
L/W COMM 485	DB93-04333B	CONNECT WIRE	1	1
C/W COMP	DB93-04335B	CONNECT WIRE	1	1
YEL,BLU ,RED	DB93-04338A	CONNECT WIRE	0	1
L/W EARTH	DB93-04344A	CONNECT WIRE	1	1
C/W 4 WAY	DB93-04349A	CONNECT WIRE	1	1
L/W POWER L_1	DB93-04351A	CONNECT WIRE	1	1
L/W POWER N	DB93-04351B	CONNECT WIRE	1	1
IC81	DB95-00595A	ASSY-PHOTO COUPLER;MH080FXEA4,-	1	1
IPM	DB95-00954A	ASSY-IPM MITSUBISHI	0	1
IPM	DB95-00960A	ASSY-IPM MITSUBISHI	1	0
D101	DB98-16591A	ASSY-DIODE RECTIFIER;FEP30JP	1	1
LED2	DB98-16600A	ASSY-LED GREEN;----------	1	1

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OUTDOOR MAIN PCB DB93-07112K (AQV18E**),DB93-07112L(AQV24E**),(CONT.)

Design location	CODE	DESC_SPEC	18K	I 24K
LED1	DB98-16601A	ASSY-LED RED;----------	1	1
LED3	DB98-16602A	ASSY-LED YEL;----------	1	1
CN51	DB98-22298A	ASSY-HOOK WHT;INVERTER,SMAW250A-04,RED	1	1
CN50	DB98-22299A	ASSY-HOOK WHT;INVERTER,SMAW250A-04,WHT	1	1
CN30	DB98-24921A	ASSY-CONNECTOR;AS-WB670X,SMAW250A-06,WHT	1	1

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OUTDOOR EMI PCB DB93-07054A (AQV18E**),DB93-07054B(AQV24E**)

LOCA.	CODE	NAME	EMI_18K	EMI_24K
			DB93-07054A	DB93-07054B
VA01,VA02,VA03,VA05	1405-000154	VARISTOR	4	4
R002,R003	2001-001150	R-CARBON(S))	2	2
C009,C010	2201-000540	C - C E R A M I C , D I S C , C S 1 5 - E2GA472MYNS,14.5x7	2	2
C007	2301-001285	C-FILM,LEAD-PPF	0	0
C007	2301-001577	C-FILM,LEAD-PPF	1	1
C003	2301-001577	C-FILM,LEAD-PPF	1	1
L,N	3712-001139	CONNECTOR-TERMINAL	2	2
FUSE	3601-001381	FUSE-CARTRIDGE	0	0
FUSE	3601-001159	FUSE-CARTRIDGE	0	0
FUSE CLIP	3602-001038	FUSE-CLIP	0	0
DSA	4715-001093	POSISTOR	1	0
DSA	DB47-00016A	POSISTOR	0	1
FT00,FT01	DB27-00040A	COIL CHOKE	2	2
PCB	DB41-00724A	PCB OUTDOOR EMI	1	1
C004,C005	2201-000154	C-CERAMIC,DISC	2	2
VA01,VA02,VA03,VA05	DB67-00942A	VARISTOR CAP	4	4
	DB93-06817A	ASSY CONNECTOR WIRE-POWER	1	1
L/W EARTH	DB93-04344B	CONNECT WIRE	1	1

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■ OUTDOOR DISPLAY PCB : DB93-04329A

Location No.	Code No.	Description	Specification	Q'ty	SNA/SA
D901	0401-000005	DIODE-SWITCHING	1N4148,75V,150mA,DO-35,TP	1	SNA
LED93	0601-001373	LED	ROUND,RED,3MM`,630NM	1	SNA
LED92	0601-001375	LED	ROUND,GRN,3mm,570nm,3.8x5.3mm	1	SNA
LED91	0601-001377	LED	ROUND,YEL,3mm,585nm,3.8x5.3mm	1	SNA
K1	3404-001220	SWITCH-TACT	12V,50mA,160gf,6.1x6.1x5.0mm,SPST	1	SNA
CN953	3711-004068	HEADER-BOARD TO CABLE	BOX,5P,1R,2MM,ANGLE,SN,WHT	1	SNA
PCB	DB41-00545A	PCB MAIN-DISPLAY	AQV12JAKCV,FR-1,1,1.0,1.6T,-,Q,30,-,-	1	SNA

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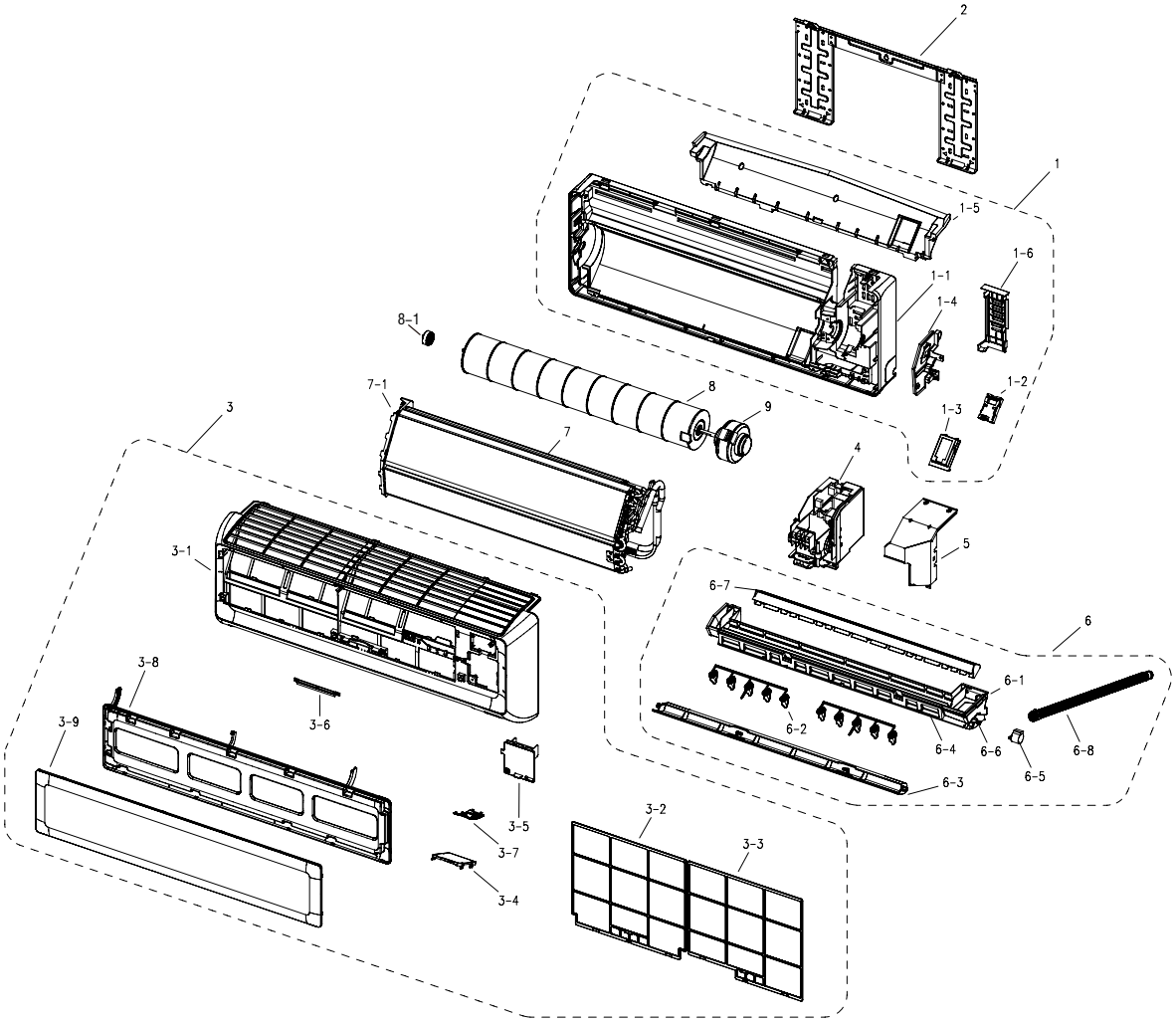
5. Exploded Views and Parts List

5-1 Indoor Unit



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■ Parts List

No.	Code No.	Description	Specification	Q'TY		SA/SNA
				AQV18EWAN	AQV24EWAN	
1	DB94-01153C	ASSY BACK BODY	ASSY	1	1	**SA**
1-1	DB61-03029B	BODY BACK	HIPS	1	1	**SA**
1-2	DB93-04230B	ASSY MPI	ASSY	1	1	**SA**
1-3	DB63-01583B	COVER-MPI	HIPS	1	1	**SA**
1-4	DB96-03817A	SUPPORT-EVAP RH	HIPS	1	1	**SA**
1-5	DB69-01039A	SEAL-INSUL BODY REAR	EPS(30)	1	1	**SA**
1-6	DB61-01981C	HOLDER-PIPE	HIPS	1	1	**SA**
2	DB90-02738A	ASSY-PLATE HANGER	SGCC-M, T0.7	1	1	**SA**
3	DB92-01402M	ASSY PANEL FRONT	ASSY	1	1	**SA**
3-1	DB64-02128A	PANEL FRONT	HIPS	1	1	**SA**
3-2	DB63-02129A	FILTER-PRE L	PP	1	1	**SA**
3-3	DB63-02130A	FILTER-PRE R	PP	1	1	**SA**
3-4	DB90-04375B	ASSY CASE-PCB	ASSY	1	1	**SA**
3-5	DB97-11889A	ASSY COVER TERMINAL	ASSY	1	1	**SA**
3-6	DB90-04301D	ASSY COVER DISPLAY	ASSY	1	1	**SA**
3-7	DB64-02129E	GRILLE-AIR INLET	HIPS	1	1	**SA**
3-8	DB64-02130A	DECO-GRILLE	HIPS	1	1	**SA**
3-9	DB93-07043B	ASSY-DISPLAY	ASSY	1	1	**SA**
4	DB93-06998D	ASSY CONTROL IN	ASSY	1	1	**SA**
5	DB90-04703A	ASSY COVER CONTROL IN	T0.5	1	1	**SA**
6	DB94-01925A	ASSY TRAY DRAIN	ASSY	1	1	**SA**
6-1	DB63-01071A	TRAY DRAIN	ABS	1	1	**SA**
6-2	DB61-03660A	BLADE-V	PP	2	2	**SA**
6-3	DB61-03661A	BLADE-H	ABS	1	1	**SA**
6-4	DB62-05903A	INSULATION-TRAY FR	EPS(40)	1	1	**SA**
6-5	DB31-00370A	MOTOR STEP	DC12V,600gf.cm	1	1	**SA**
6-6	DB62-02941A	CUSHION-TRAY RH	EPS(30)	1	1	**SA**
6-7	DB63-01066A	TRAY-STABILIZER	HIPS	1	1	**SA**
6-8	DB94-00458D	ASSY DRAIN-HOSE	ASSY	1	1	**SA**
7	DB96-11950B	ASSY EVAP TOTAL	ASSY	1	-	**SA**
	DB96-11950A	ASSY EVAP TOTAL	ASSY	-	1	**SA**
7-1	DB63-01065A	HOLDER-EVAP	HIPS	1	1	**SA**
8	DB94-01556B	ASSY-CROSS FAN	ASSY ; AS +GF20%	1	1	**SA**
8-1	DB94-00455B	ASSY RUBBER BEARING	ASSY	1	1	**SA**
9	DB31-00533A	MOTOR FAN	-	1	1	**SA**

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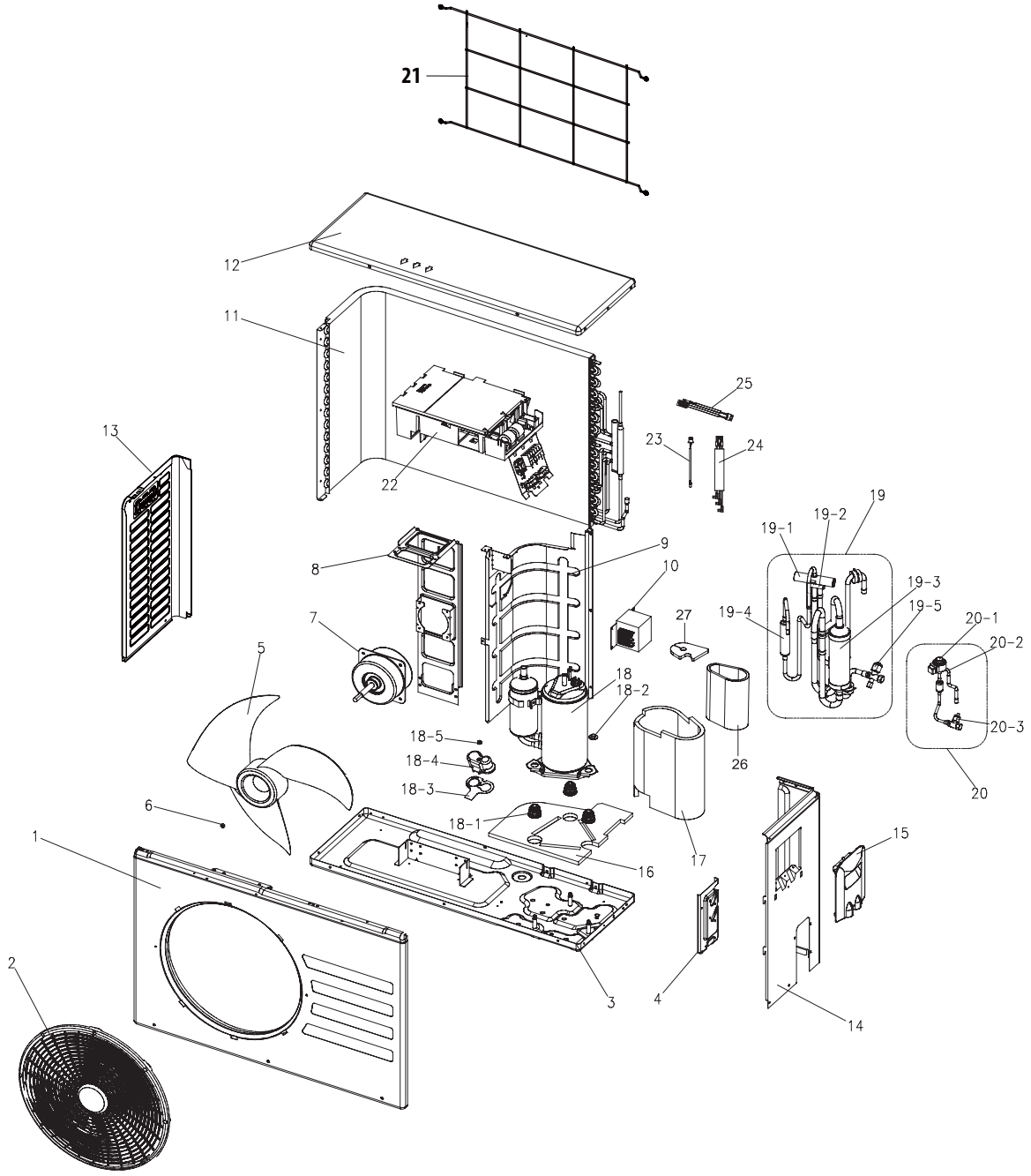
5-2 Outdoor Unit



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■ Parts List

No.	Code No.	Description	Specification	Q'TY		SA/SNA
				AQV18EWAX	AQV24EWAX	
1	DB90-03914F	ASS'Y CABI FRONT	ASS'Y, SC-94445T	1	1	SA
2	DB63-00838A	GUARD FAN	HIPS, SC-90073R	1	1	SA
3	DB90-00970W	ASS'Y BASE OUT	ASS'Y, SC-94445T	1	-	SA
	DB90-00970V	ASS'Y BASE OUT	ASS'Y, SC-94445T	-	1	SA
4	DB61-01593A	BRACKET VALVE	SECC-P, SC-94445T	1	1	SA
5	DB67-00142A	FAN-PROPELLER	AS+G/F20%, Φ420	1	1	SA
6	DB60-30020A	SCREW-MACHINE	M6	1	1	SA
7	DB31-00492A	MOTOR FAN OUT	AC Motor	1	-	SA
	DB31-00264D	MOTOR FAN OUT	AC Motor	-	1	SA
8	DB61-00686A	BRACKET MOTOR	SGCC-M	1	1	SA
9	DB94-01210D	ASS'Y PARTITION	ASS'Y, SGCC-M	1	1	SA
10	DB27-00042A	REACTOR	PPS, 15A	1	-	SA
	DB27-00043A	REACTOR	PPS, 20A	-	1	SA
11	DB96-04087B	ASS Y COND UNIT	ASS Y	1	-	SA
	DB96-11900A	ASS'Y COND UNIT	ASS'Y	-	1	SA
12	DB90-10616G	ASS'Y CABI UP	ASS'Y, SC-94445T	1	1	SA
13	DB90-01351A	ASSY CABINET SIDE LF	ASSY, SC-94445T	1	1	SA
14	DB90-01651E	ASS'Y CABINET SIDE RH	ASS'Y, SC-94445T	1	1	SA
15	DB90-03305B	ASSY COVER CONTROL	ABS, SC-90073R	1	1	SA
16	DB63-01718A	FELT COMP BASE	FELT+PVC Sheet	1	-	SA
	DB63-01719A	FELT COMP BASE	FELT+PVC Sheet	-	1	SA
17	DB63-02343A	FELT COMP SIDE	FELT+PVC Sheet	1	-	SA
	DB63-01668A	FELT COMP SIDE	FELT+PVC Sheet	-	1	SA
18	G4T150FUAEQ	COMPRESSOR	ROTARY, BLDC	1	-	SA
	G8T260FUAEW	COMPRESSOR	ROTARY, BLDC	-	1	SA
18-1	DB63-02296A	GROMMET ISOLATOR	NR	3	-	SA
	DB63-02297A	GROMMET ISOLATOR	NR	-	3	SA
18-2	DB60-30028A	SCREW HEX	M8	3	3	SNA
18-3	DB63-00817A	GASKET	EPDM	1	1	SNA
18-4	DB63-00816A	COVER TERMINAL	PBT (G/F 15%)	1	1	SNA
18-5	6021-001142	SCREW MACHINE	M5	1	1	SNA
19	DB96-11299A	ASS'Y VALVE 4WAY	ASS'Y	1	-	SA
	DB96-08939C			-	1	
19-1	DB62-02338A	4WAY VALVE	R410A, SANHUA	1	1	SNA
19-2	DB33-00002C	SOLENOID COIL	ASS'Y	1	1	SNA
19-3	DB67-00765A	ACCUMULATOR	STEEL ACCUM.	-	1	SNA
19-4	DB97-02054A	TUBE MUFFLER	C1220T-0	1	1	SNA
19-5	DB62-02285A	VALVE SERVICE	R410A, SANHUA, 1/2"	1	-	SNA
	DB62-02342A		R410A, SANHUA, 5/8"	-	1	
20	DB99-01047A	ASS'Y VALVE EEV	ASSY	1	1	SA
20-1	DB62-05932B	VALVE EXPANSION COIL	FUJIKOKI	1	1	SNA
20-2	DB62-04065A	VALVE EXPANSION BODY	FUJIKOKI	1	1	SNA
20-3	DB62-02283A	VALVE SERVICE	R410A, SANHUA, 1/4"	1	1	SNA
21	DB64-02083A	SCREEN-COND BAR	P.E.H 100%	1	1	SA
22	DB93-07025M	ASS'Y CONTROL OUT	ASS'Y	1	-	SA
	DB93-07025N	ASS'Y CONTROL OUT	ASS'Y	-	1	SA
23	DB32-00176A	THERMISTOR OUT/DIS	ASS'Y	1	1	SA
24	DB32-00175A	THERMISTOR COND	ASS'Y	1	1	SA
25	DB93-07443A	CONNECT WIRE COMP	ASS'Y	1	1	SA
26	DB63-02344A	FELT COMP SIDE OUT	FELT+PVC Sheet	1	-	SA
	DB63-02024A	FELT COMP SIDE OUT	FELT+PVC Sheet	-	1	SA
27	DB63-02342A	FELT COMP TOP	FELT+PVC Sheet	1	-	SA
	DB63-02025A	FELT COMP TOP	FELT+PVC Sheet	-	1	SA

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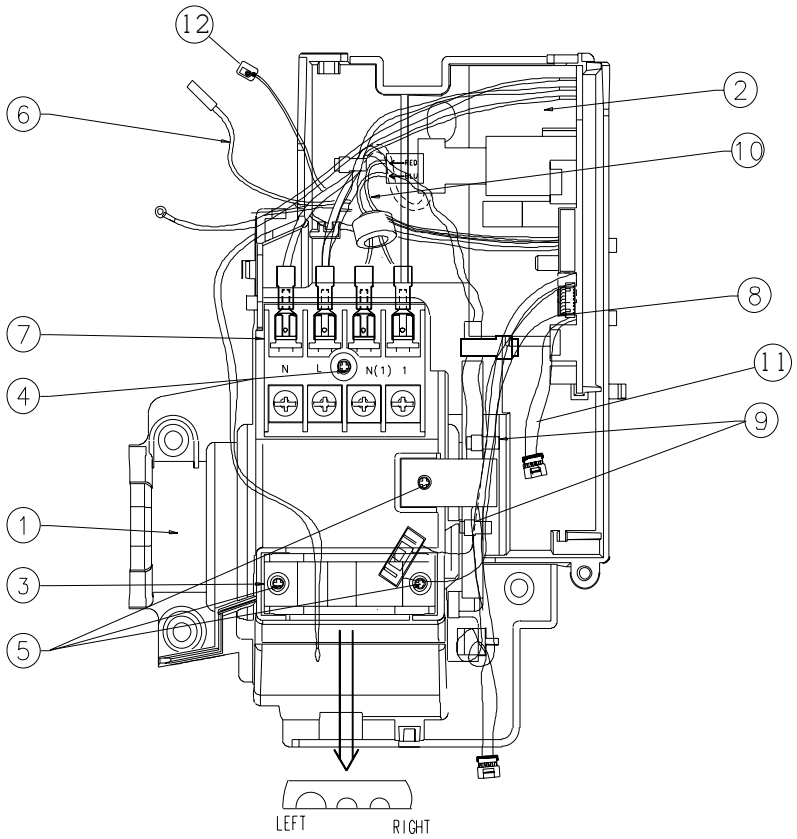
5-3 ASSY-CONTROL IN DB93-06998D



■ PartList

No	CODE	NAME	SPEC	QUANTITY	SA/SNA
1	DB61-03662A	CASE CONTROL IN	VIVALDI	1	SNA
2	DB93-07499B	ASS'Y PCB MAIN	VIVALDI3 STD	1	SA
3	DB61-01097A	HOLDER WIRE CLAMP	ABS,-,-,-,BLK,V21-PJ	1	SNA
4	DB91-00309A	SCREW	PH M3*L25	1	SNA
5	DB97-02418A	SCREW	TH M4*L10	2	SNA
6	DB95-01113F	ASS'Y THERMISTOR	3%;;BLK;SMH200;WHT	1	SA
7	DB65-00004U	TERMINAL BLOCK	[1(L),2(N),F1,F2]	1	SNA
8	DB93-04688A	ASSY C/W LOUVER	5P	1	SNA
9	DB65-10088D	CABLE-TIE	NYLON66	2	SNA
10	DB93-07171A	C/W 485 COMM	RED/BLUE	1	SNA
11	DB93-04695B	C/W M P I	100mm	1	SNA
12	DB95-01703A	ASSY HUMIDITY	3 P	1	SA

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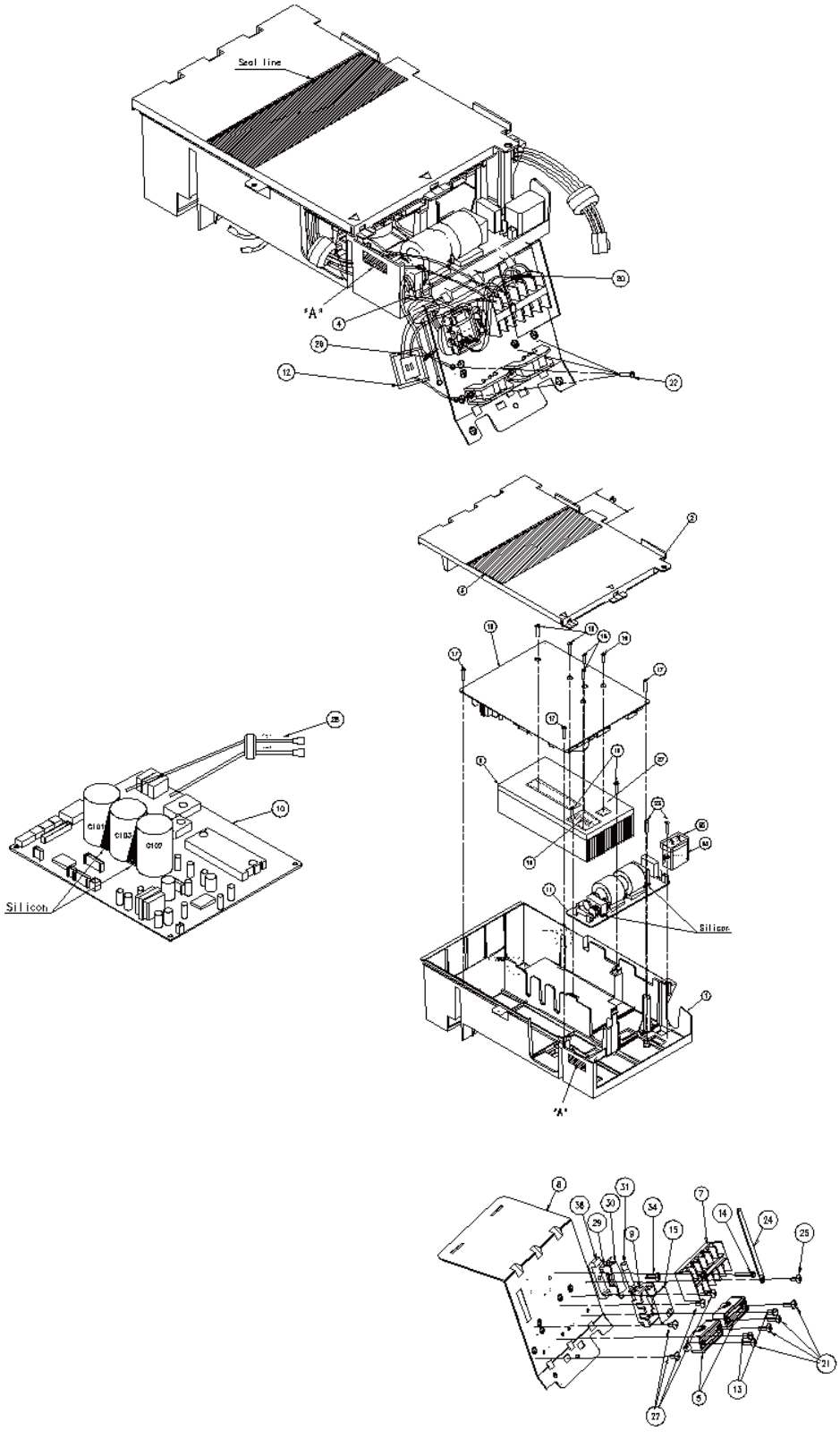
■**AQV18E** : DB93-07025M**
AQV24E : DB93-07025N**



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Part List

CODE	DESC_SPEC	VIVALDI 18K	VIVALDI 24K	SA/SNA
		DB93-07025M	DB93-07025N	
2301-001379	C-FILM,LEAD-OTHER	0	1	SNA
DB61-40239A	HOLDER-FUSE	1	1	SNA
DB61-02474A	HOLDER-FUSE CASE	1	1	SNA
3601-001159	FUSE-CARTRIDGE	1	0	SNA
3601-001381	FUSE-CARTRIDGE	0	1	SNA
6002-000231	SCREW-TAPPING	1	1	SNA
6002-000214	SCREW-TAPPING	4	4	SNA
6002-000536	SCREW-TAPPING	1	2	SNA
6002-000555	SCREW-TAPPING	1	1	SNA
6002-000630	SCREW	3	3	SNA
6001-001054	SCREW-MACHINE	2	2	SNA
6009-001001	SCREW	4	4	SNA
DB61-00206B	HOLDER-WIRE	1	1	SNA
DB61-00250A	HOLDER WIRE CLAMP	2	2	SNA
DB61-02973A	CASE CONTROL-BASE	1	1	SNA
DB61-02974A	CASE CONTROL-COVER	1	1	SNA
DB61-02975A	CASE-DISPLAY PCB	1	1	SNA
DB61-02977B	PLATE-CONTROL OUT	1	1	SNA
DB62-04566B	INSULATION-CONTROL BOX TOP	1	1	SNA
DB62-05315A	HEAT SINK	0	1	SNA
DB62-06103A	HEAT SINK	1	0	SA
DB62-05320A	ASSY-INSULATOR MICA	1	1	SNA
DB65-10088D	CABLE-TIE	2	1	SNA
DB73-00449A	RUBBER	0	1	SNA
DB91-00306A	ASSY-SCREW MACHINE	2	2	SNA
DB91-00307A	ASSY-SCREW MACHINE	5	5	SNA
DB93-07036A	ASSY CONNET WIRE-FUSE TO TERMINAL	1	1	SNA
DB93-04329A	ASSY PCB DISPLAY	1	1	SA
DB93-04334B	CONNECT WIRE	1	1	SNA
DB93-04337A	CONNECT WIRE	1	1	SNA
DB93-04908C	CONNECT WIRE	0	1	SNA
DB93-04908G	CONNECT WIRE	1	0	SNA
DB93-07112K	ASSY-PCB OUT	1	0	SA
DB93-07112L	ASSY-PCB OUT	0	1	SA
DB93-07054A	ASSY-PCB EMI	1	0	SA
DB93-07054B	ASSY-PCB EMI	0	1	SNA
DB95-01712E	ASSY NOISE ABSORBER	1	1	SA
DB95-01078F	ASSY-TERMINAL BLOCK	1	1	SNA
DB65-00228A	TERMINAL BLOCK	1	1	SNA
DB97-11259A	ASSY-SCREW	1	1	SNA
DB73-00471A	RUBBER-FUSE BLOCK	1	1	SNA
DB98-24813A	ASSY	0.002	0.002	SNA

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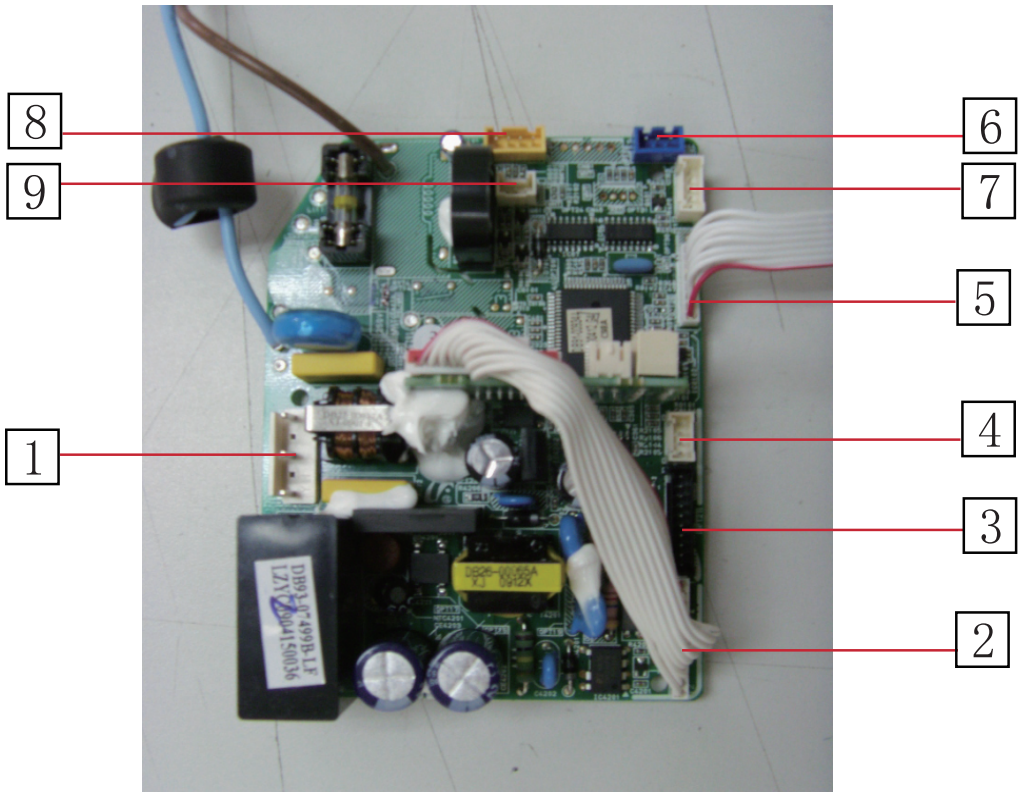
10. PCB Diagram

10-1 Indoor PCB



1	CN72-FAN MOTOR
2	CN22-COMMUNICATION
3	CN46-DOWNLOAD
4	CN43-TEMPERATURE SENSOR
5	CN91-DISPLAY
6	CN44-FAN MOTOR FEEDBACK
7	CN63-BLADE MOTOR
8	CN6601-MPI FEEDBACK
9	CN42-HUMIDITY SENSOR

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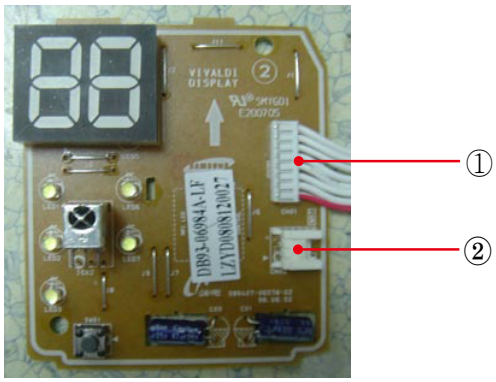
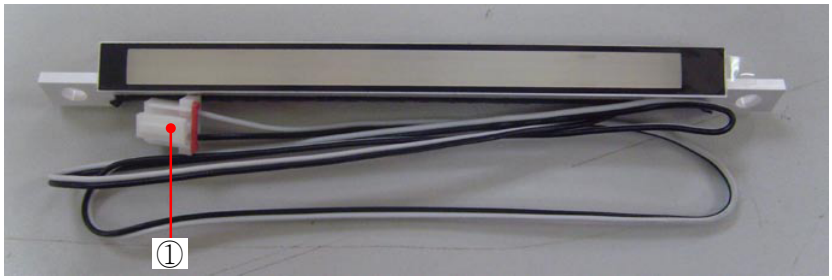
10-1-2. Indoor Display PCB



① CN01-DISPLAY #1:DIO #2:CLK #3:STB #4:IRQ #5:GND #6:Vcc #7:Remocon Signal Output #8:MPI Display Control

10-1-3. Indoor MPI DISPLAY PCB



① MPI DISPLAY CONNECTION #1:MPI Lamp driving signal #2:Null #3:Vcc	

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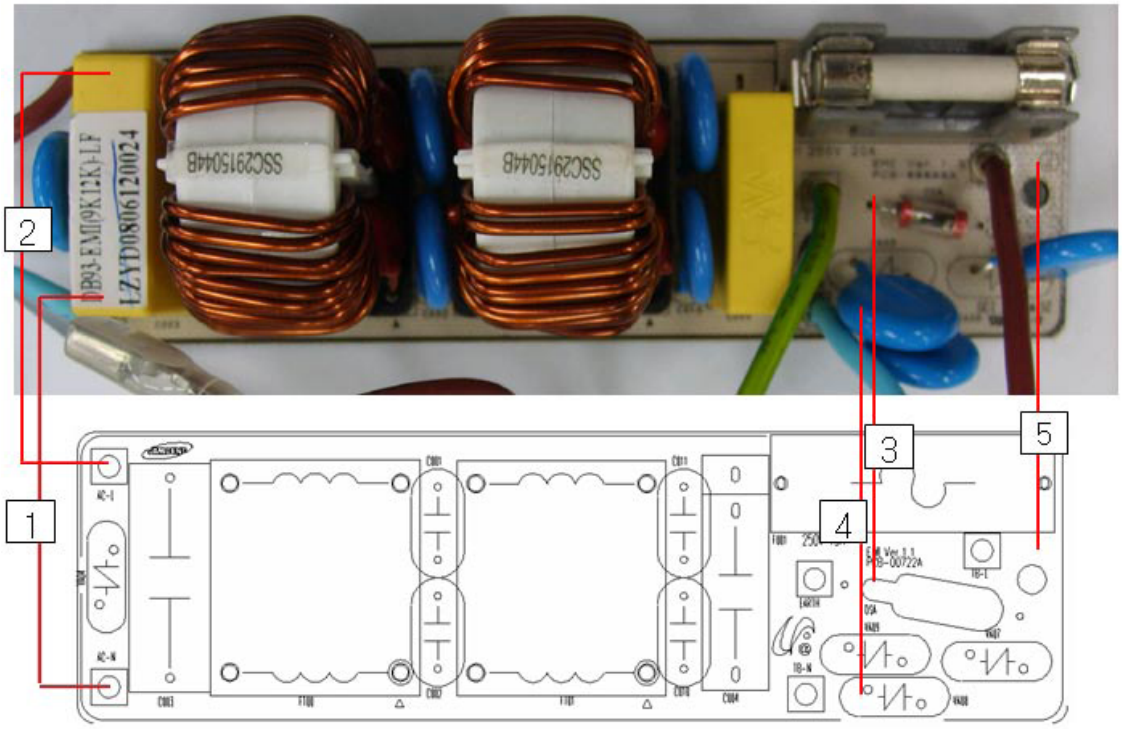
10-1-4.Indoor EMI PCB



1	POWER N WIRE
2	POWER L WIRE
3	EARTH WIRE
4	POWER N WIRE
5	POWER L WIRE

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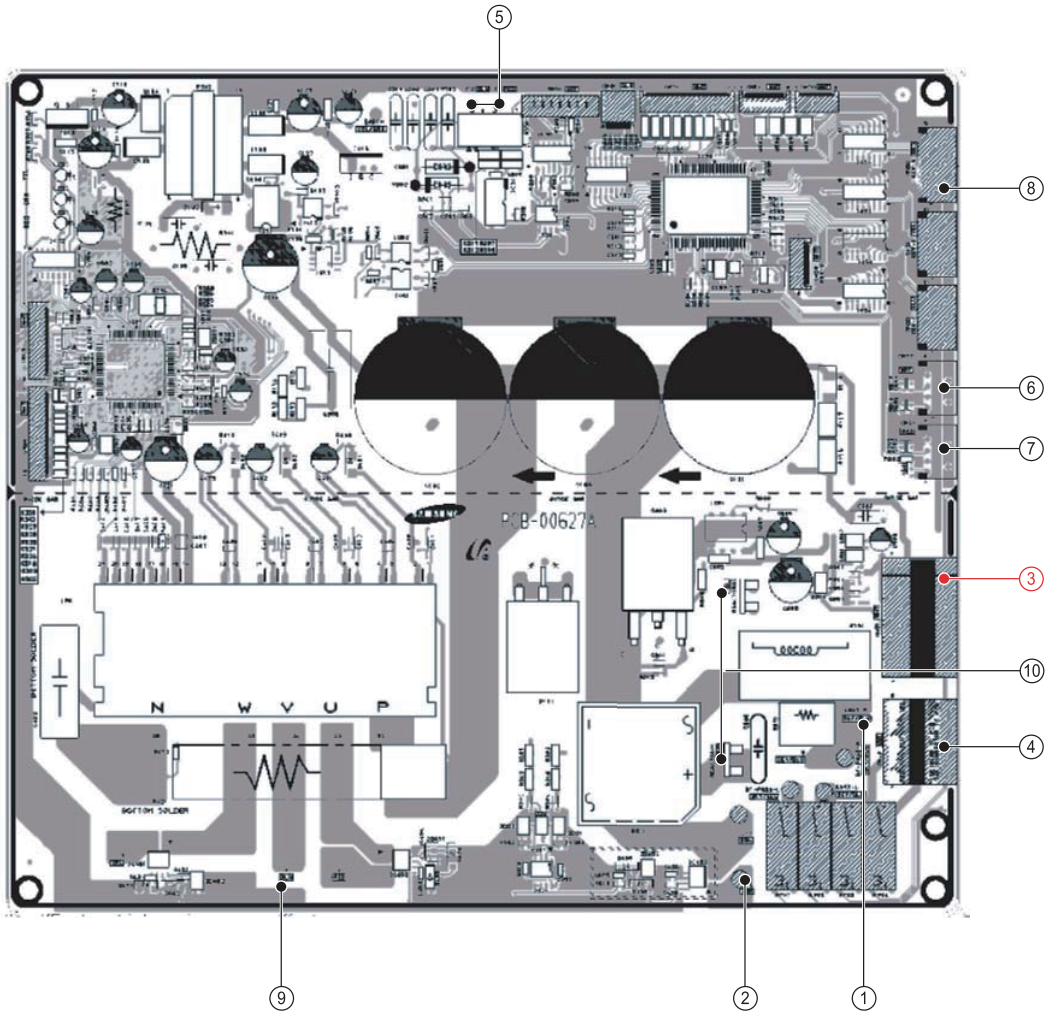
10-2 Outdoor PCB

⚠ The red number connecter is not used.



①	Power N	⑥	COND/OLP Temperature Sensor
②	Power L	⑦	DIS/OUT Temperature Sensor
③	BLDC FAN	⑧	EEV Connector
④	AC FAN	⑨	Comp. Connector Wire
⑤	Communication 485	⑩	Reactor Connector Wire

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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.

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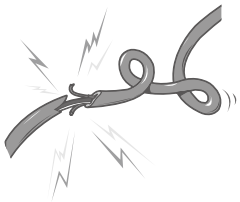
1-3 Precautions for the Safety

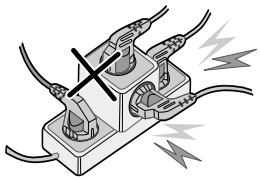
- Do not pull any electric wires and do not touch an auxiliary power switch with a wet hand.
  - There is a danger of electric shock or fire.

- In case any wire or power plug has been damaged, replace it to eliminate any possible danger.

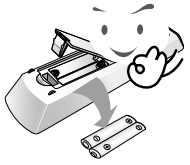


- Do not bend the power cord by force and do not put any heavy object on the power cord.
  - There is a danger of electric shock or fire.

- 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.



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2. Product Specifications

2-1 The Feature of Product

2-1-1 The Feature of Product

■ **good' sleep Mode**

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

■ **Catechin Filter**

Catechin,extracted from the green tea,is contained in the filter and deactivates captured bacteria and unpleasant odors.

■ **Silver Nano Evaporator**

■ **Deodorizing Filter**

Activated carbon is incorporated in the filter,efficiently absorbing cigarette smoke, pet odors, and other unpleasant smells, replacing them with clean,refreshing air.

■ **mpi Mode**

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

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2-1-2 Modified items compared with Basic model

Modified part	New contents and characteristic	New model		New model	
		AQV18EWAN	AQV18UGAN	AQV24EWAN	AQV24UGAN
Indoor	Indoor Design changed				
	Front Display changed				
Outdoor	chassis changed				

2-1-3 New components to be applied

Part	New contents and characteristic	Image
Indoor	mpi (optionable)	
	mpi lamp (optionable)	
	HUMIDITY SENSOR (optionable)	

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2-2 Product Specifications

Item				Model	AQV18EWAN/AQV18EWAX		AQV24EWAN/AQV24EWAX	
					Indoor Unit	Outdoor Unit	Indoor Unit	Outdoor Unit
Type					Wall-mounted		Wall-mounted	
Performance	Capacity	Cooling		kW (Low / Std / Max)	1.60 / 5.00 / 6.00		2.20 / 6.80 / 8.00	
		Heating			1.20 / 6.00 / 7.50		1.90 / 8.00 / 9.50	
	Running Frequency	Cooling		Hz (Low / Std / Max)	15 / 62 / 73		15 / 54 / 68	
		Heating			15 / 69 / 89		15 / 61 / 85	
	Dehumidifying			ℓ/h	1.56		2.81	
	Air Volume	Cooling		㎥/min (H/M/L)	12.33/11.40/10.57	47	14.24/12.47/10.65	47
		Heating			13.88/12.91/11.97	46	14.81/12.99/12.05	46
	Noise	Cooling		dB (H/L)	46	57	47	60
		Heating			46	57	47	60
	Energy Efficiency Ratio	Cooling		W/W (Std)	3.40		3.01	
		Heating			3.61		2.81	
	Power			ph-V-Hz	1-220/240-50		1-220/240-50	
Power	Power Consumtion	Cooling		W (Low / Std / Max)	310 / 1470 / 1800		590 / 2260 / 2950	
		Heating			260 / 1660 / 2300		560 / 2850 / 4000	
	Operating Current	Cooling		A (Low / Std / Max)	1.7 / 6.8 / 8.3		3.0 / 10.6 / 13.9	
		Heating			1.6 / 7.7 / 10.5		2.8 / 13.0 / 19.0	
	Power Factor	Cooling		% (Low / Std / Max)	75 / 90 /95		75 / 90 /95	
		Heating			75 / 90 /95		75 / 90 /95	
Size	Outer Dimension	Width x Height x Depth		mm	1065 X 298 X 222	880 X 638 X 310	1065 X 298 X 222	880 X 638 X 310
	Weight (Net)			kg	13.0	46.0	13.0	52.0
	Refrigerant Pipe	Liquid		mm x L(m)	Φ6.35 x 5		Φ6.35 x 5	
		Gas		mm x L(m)	Φ12.70 x 5		Φ15.88 x 5	
	Drain Hose			D x L(mm)	Φ20 x 550		Φ20 x 550	
	Compressor	Type			Rotary, G4T150FUAEQ		Rotary, G8T260FUAEW	
		Motor	Type		Hermetic		Hermetic	
			Rated Output		1324W		2454W	
	Oil Type				FREOLα68ES-T		FREOLα68ES-T	
	Blower	Type			Cross-flow	Propeller	Cross-flow	Propeller
		Motor	Type		Resin / Steel, AC	Resin / Steel, DC	Resin / Steel, AC	Resin / Steel, DC
			Rated Output	W	40	90	40	93
Heat Exchanger					2 Row 16 Step	2 Row 28 Step	2 Row 16 Step	2 Row 28 Step
Refrigerant Control Unit					EEV		EEV	
Freezer Oil Capacity				cc	700		700	
Refrigerant to Change (R410A)				g	1,450		1,450	
Protection Device (OLP)					None		None	
Cooling Test Condition					Indoor Unit : DB27°C WB 19°C		Outdoor Unit : DB35°C WB 24°C	
Heating Test Condition					Indoor Unit : DB20°C WB 15°C		Outdoor Unit : DB7°C WB 6°C	
Operation conditon range		cooling		indoor	16°C ~ 32°C		16°C ~ 32°C	
				Outdoor	-10°C ~ 43°C		-10°C ~ 43°C	
		heating		indoor	27°C or less		27°C or less	
				Outdoor	-15°C ~ 24°C		-15°C ~ 24°C	

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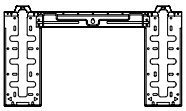
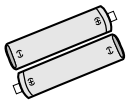
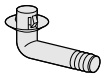
2-3 Accessory and Option Specifications

2-3-1 Accessories

Item	Descriptions	Code-No.	Q'TY	Remark
	Plate-hanger	DB90-02738A	1	Indoor Unit
	Remote Control	DB93-07547A	1	
	Batteries for Remote Control	DB47-90024A	2	
	User's Manual	DB98-29980A	1	
	Installation Manual	DB98-29786A	1	
	Drain Plug	DB67-20011A	1	Outdoor Unit
	Rubber Leg	DB73-20134A	4	

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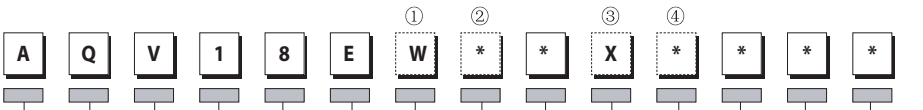
12. Reference Sheet

12-1 Index for Model Name

※ Project model code for overseas from 2007(For RAC Export Models)

Model Code



Product Division	
AS	Cooling Only
AQ	Heat Pump

Inverter	
V	Inverter
None	Non Inverter

Capacity	
09	9,000 Btu
12	12,000 Btu
18	18,000 Btu
24	24,000 Btu
30	30,000 Btu
36	36,000 Btu

Product classification	
B	BIG
E	Vivaldi(Deluxe)
F	Forte
G	GP
H	HB
J	WW Premium
L	Forte Deluxe
M	Moderato
P	Presto
T	Tiffany
U	Vivaldi(STD)
V	Vivace
W	WW
X	Forte Extreme
Z	Tsar

Version	
A	New Developed Model
B	1st VE Model
C	2nd VE Model

Buyer Code	
MID	MIDDLE EAST
SER	RUSSIA

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

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

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

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

□ Except the RAC Export Models for China.

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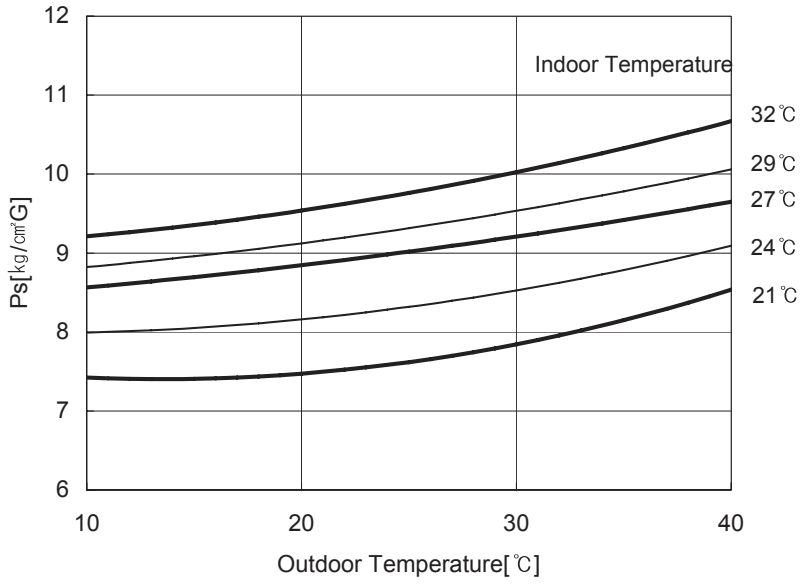
12-2 Low Refrigerant Pressure Distribution

Note : • Please measure the refrigerant pressure after the air conditioner operates on testing cooling mode during more than 10 minutes.

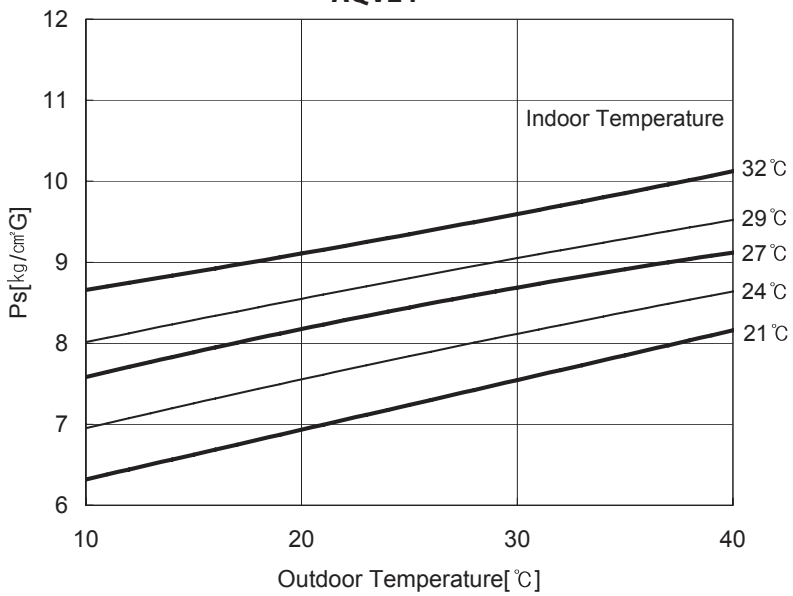
☐Indoor Temp. Variation : 20℃ ~ 32℃
☐Outdoor Temp. Variation : -5℃ ~ 45℃

Low Refrigerant Pressure Distribution

AQV18**



AQV24**



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■Power/Heat

W	cal/s	kcal/h	Btu/h	HP	kg·m/s	lb·m/s
1	0.23885	0.85985	3.4121	0.001341	0.10197	0.73756
4.1868	1	3.6	14.286	0.0056146	0.42693	3.088
1.163	0.27778	1	3.9683	0.0015596	0.11859	0.85778
0.29307	0.06999	0.252	1	$3.9302x10^{-4}$	0.029885	0.21616
745.7	178.11	641.19	2,544.4	1	76.04	550
9.8067	2.3423	8.4322	33.462	0.013151	1	7.233
1.3558	0.32383	1.1658	4.6262	0.0018182	0.13826	1

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12-4 Q & A for Non-trouble

Classification	Class	Description
Cooling	Q	**The cooling is weak.**
	A	When it is hot outside, its cooling capacity decreases due to the increase of the ambient temperature. When the dust filter gets blocked or warm outside air gets in, the cooling capacity will decrease. So, make sure to clean the dust filter frequently, prevent heat loss by closing the doors and insulate the cooling area by using curtains, blinds, shades or window tinting.
	Q	**The cooling is good generally. But, it gets weak when it is considerably hot.**
	A	It occurs when the outdoor unit is exposed to direct sun light and heat-up air is not ventilated well.So, set up a sunblind over the outdoor unit and keep stuff away from the unit to increase the ventilation. When the cooling capacity decreases during a heat wave, clean the heat exchanger of the outdoor unit or spray some cold water to the heat exchanger to increase the cooling capability.
	Q	**The cooling is weak. Does it need refrigerant charging?**
	A	It is not correct charging refrigerant regularly. Except that you have moved in several times or the connection pipes are broken, the refrigerant does not run low. So, when refrigerant is additionally charged, it could be costly and cause a product's failure. When the refrigerant leaks, all of it will escape in a short time resulting in cooling failure and no water coming out of the drain hose. So, if water comes out from the drain hose, it indicates the normal operation of the product and it does not need refrigerant charging.
	Q	**It fails to do cooling.**
	A	When the air conditioner is set to Ventilation or the desired temperature is set higher than the current temperature, it fails to do cooling. In this case, select Cooling or set the desired temperature lower.
Leakage	Q	**It floods the floor.**
	A	Place the drain hose properly. When it is not placed properly, the drain water would flow back flooding the floor. So, straighten out the drain hose for the water to be drained well.
	Q	**Water drips at the drain connection (service valve) of the outdoor unit.**
	A	When a glass bottle is taken out of the refrigerator, moisture gets condensed on its surface due to the temperature differences. The same principle applies to the air conditioner. When cold refrigerant goes through the copper tube, moisture gets condensed on the surface of the tube and the connection areas. To prevent the water condensation, the pipes are insulated. But, the connection areas of the outdoor unit are not insulated for the purpose of maintenance or repair, and water gets condensed due to the temperature differences and drips down. Generally, it evaporates right away. But, when it drips much during muggy days, put a water pan on the floor.
	Q	**It leaks even though a drain pump is used.**
	A	It occurs when the drain pump is plugged out or it is out of order. Check the power of the drain pump and the position of the drain hose, and when the pump is faulty, contact the drain pump manufacturer. Samsung Electronics do not manufacture drain pumps. So, we are not able to correct the drain pump problems.
Smells	Q	**Whenever the air conditioner is turned on, it irritates my eyes and gives me a headache.**
	A	There are no components in the air conditioner irritating the eyes and sending out chemical smells. But, when the air conditioner is turned on, other smell sources are sucked into the air conditioner and get out of it. So, find and root out the smell sources. Generally, it occurs at a interior renovated place, a pharmacy, a gasoline handling place, a tire shop, a second-hand book shop or an electronic component handling place; when its chemical or musty smells are sucked in and sent out, it can be misled that the air conditioner generates them. So, find and root out the problem or refresh the room frequently.

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Classification	Class	Description
Smells	Q	**Whenever the air conditioner is turned on, it stinks.**
	A	There are no components in the air conditioner sending out chemical smells. But, when the air conditioner is turned on, other smell sources are sucked into the air conditioner and get out of it. So, find and root out the smell sources. Generally, when the drain hose is taken out to the washing room or there are sources of smells such as a diaper bin, a shoe shelf or a socks bin, bad smells generate. Also, it occurs where glass cleaners or air fresheners are used; when they are sucked in interacting with dusts and moistures inside, bad smells generate. These kinds of organic materials noxious to human bodies. So, we recommend against the use of them.
	Q	**Whenever the air conditioner is turned on, it smells sour.**
	A	When the room is papered recently, its paste smells would be sucked inside. Also, when the air conditioner is installed in the study room of young boys loving sweat-generating activities such as the basketball, excessive sweats evaporate and get sucked into the air conditioner resulting in bad smells. So, find and root out the problem or refresh the room frequently.
	Q	**Whenever the air conditioner is turned on, it smells musty.**
	A	It is due to the improper keeping of the product after its use. When keeping the product, dry up the inside with the operation of Ventilation to prevent must. When the product is kept without drying up the inside with Ventilation, mold would grow inside resulting in must. So, open the windows and switch on the Ventilation function to get rid of the saturated smell inside.
	Q	**Whenever the air conditioner is turned on, it sends out bad smells such as stale smells.**
	A	It occurs generally when there are pet animals in the house. Their smells stay at the same place. But, when the air conditioner is turned on, the air gets circulated resulting in the circulation of the smells. So, find and root out the problem or refresh the room frequently.
	Q	**It sends out bad smells.**
	A	When the air filter is filthy, it could send out bad smells. So, clean the filter and ventilate the room with the windows open while operating the Ventilation function.
Operation	Q	**It won't start.**
	A	There is a power failure or it is plugged out. Also, check if the power distribution panel is switched off.
	Q	**It goes off during operation.**
	A	When the hot air does not escape properly, it goes off during operation. It occurs when it does not ventilate properly because the outdoor unit is covered, the back of the outdoor unit is blocked by a cardboard or a plywood panel, and the front of the outdoor unit is blocked by the closed window or other obstacles. Clear the above obstacles from the outdoor unit.
	Q	**It generally works properly. But, when it's considerably hot, it goes off during operation.**
	A	It occurs when the outdoor unit is exposed to direct sunlight and the hot air does not escape properly. Set up a sun blind over the outdoor unit and clear the neighboring obstacles from the outdoor unit to provide good ventilation. When it goes off frequently during a heat wave, it would prevent the turn-off and increase the cooling capacity cleaning the outdoor unit or spraying some water to the heat exchanger.
	Q	**The remote controller won't operate.**
	A	When the batteries run out or the transmitter or receiver of the remote controller is blocked by obstacles, change the batteries or keep the obstacles away from the controlling area. Also, the remote controller may not work under intensive light from a 3-wave length lamp or a neon sign due to the EMI. In this case, take the remote controller closer to the receiver.

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Classification	Class	Description
Installation	**Q**	**Who installs the air conditioner? (Relocation/Re-installation)**
	A	When relocating or re-installing the air conditioner, make sure to contact Samsung Electronics Service Center or Authorized Service Agent and have them to do the job. (If not, it could cause personal injury or product damage.) The cost for the relocation/re-installation of the air conditioner is subject to the customer's expense. There is a cost table. But, our service engineer needs to visit to total up the cost correctly. When you move in, make sure to contact Samsung Electronics Service Center or Authorized Service Agent in advance to streamline the process.
	Q	**Is it possible to install the outdoor unit outside?**
	A	It is possible to install it at a designated place in the apartment or on the rooftop nearby. But, it's illegal hanging an angle iron case with the outdoor unit in it outside the apartment. Also, it is illegal obstructing passers-by with the outdoor unit installed outside.
	Q	**What can be done to install the outdoor unit facing the road because it is a commercial building?**
	A	The following is an excerpt from Building Code going into effect from JUNE 1st 2005. "The exhaust pipe of a cooling or ventilation facility installed in a building adjacent to the streets of commercial or residential areas shall be installed higher than 2 m to prevent the exhaust air from blowing directly to passers-by and the current facilities shall be corrected by MAY 31st 2005." So, please install it higher than 2 m or not to blow the hot exhausting air directly to passers-by.
	Q	**What about installing a windscreen during installation not to blow hot air directly to passers-by?**
	A	When the hot air from the front of the outdoor unit is blocked, the product's performance will be affected and it will fail to operate properly. So, keep it at least 300mm away from its surrounding walls and give it good ventilation.

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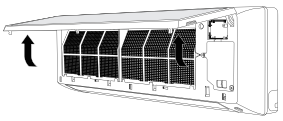
12 - 5 Cleaning/Filter Change

12-5-1 Cleaning your Air Conditioner

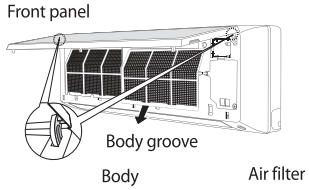
To get the best possible use out of your air conditioner, you must clean it regularly to remove the dust that accumulates on the air filter.

• Before cleaning your air conditioner, ensure that you have switched off the breaker used for the unit.

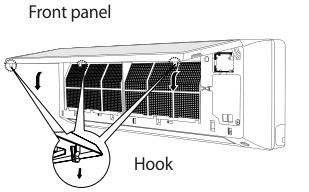
1. Open the front panel by pulling tabs on the lower right and left sides of the indoor unit.



2. Detach the front panel by pulling it forwards.
3. Hold the edge of the air filter under the front panel and pull to release.
4. Remove all dust on the air filter with a vacuum cleaner or brush.
5. When you finish, insert the top of the filter into the slot and fix it to 5 tabs or 3 tabs of the panel.



6. Clean the front panel with a damp cloth and mild detergent (do NOT use benzene, solvents or other chemicals).
7. Reassemble the air filter and the front panel.



Note : • If you have not used the air conditioner for a long period of time, set the fan going for three to four hours to dry the inside of the air conditioner thoroughly.

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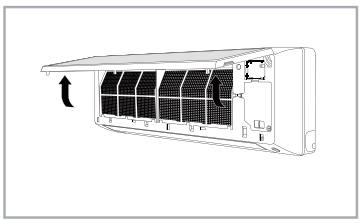
12-5-2 Cleaning Anti-allergy Filter(OPTION)

Anti-allergy filter protects you from allergy-causing particles, even if you raise pets at home.

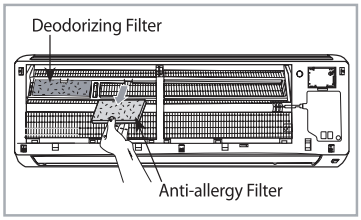


1 Open the upper front panel by pulling the lower right and left tabs of the panel.

2 Detach the anti-allergy filter(sky blue) by pulling it forwards.

3 Wash the filter with clean water.

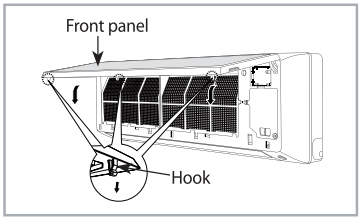
- ◆ Make sure not to rub the filter when washing.



4 Dry it in the shade, and then insert it in its place.

- ◆ Avoid direct sunlight when dry the anti-allergy filter. If not, it may cause variation.

5 Close the front panel.

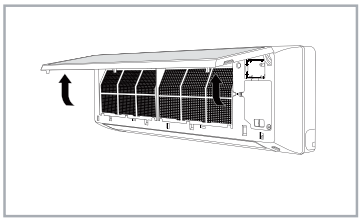


Note

- ◆ ***You should clean the filters every 3 months even if the cleaning period might be different depending on how long and where you are using.***
- ◆ ***The filter function is not affected even if deodorizing filter and anti-allergy filter are inverted.***

12-5-3 Replacing Deodorizing Filter(OPTION)

Activated carbon is incorporated in the Deodorizing filter, efficiently absorbing cigarette smoke, pet odors and other unpleasant smells.

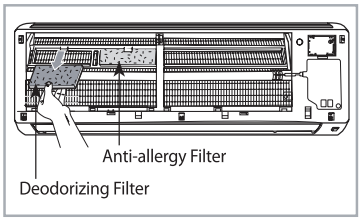


1 Open the upper front panel by pulling the lower right and left tabs of the panel.

2 Detach the deodorizing filter(black) by pulling it forwards.

3 Replace the deodorizing filter with a new one into the slot.

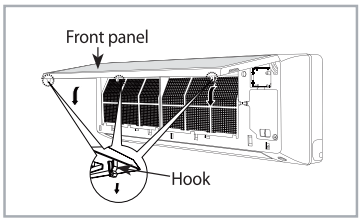
- ◆ Use the deodorizing filter you purchased after removing the vinyl wrap.



4 Close the front panel.

Note

- ◆ ***You should clean the filters every year even if the replacing period might be different depending on how long and where you are using.***
- ◆ ***You can purchase deodorizing filter at the customer care center.***
- ◆ ***The filter function is not affected even if deodorizing filter and anti-allergy filter are inverted.***



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12-6-1 Before Installation

Keep the air conditioner outlet and inlet free from its surroundings.
In case of installation, keep the symmetry and fix it to prevent vibration.
The pipe length shall meet the standard as far as possible.

12-6-2 Installation Procedure

■ Location

Install the product in an area to guarantee the best cooling effect, convenience of piping and electric work, and inexistence of vibration or wind.

■ Wall Drilling

Drill the wall downward in a diameter of 60 to 65mm.

■ Fixing Indoor Unit & Outdoor Unit

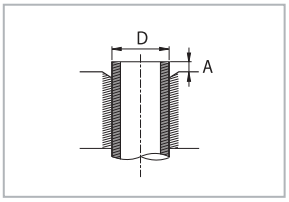
Fix the air conditioner indoor unit securely to the wall. Secure the outdoor unit in a suitable position.

■ Pipe Spooling & Connecting

You shall cut the pipe with a pipe cutter and grind all the burrs of the cut surface.
Pipe expansion may continue until the pipe surface becomes uneven or torn apart.
Be sure to use a torque wrench to tighten pipes or flare nuts.

<Torque & Depth>

Outer Diameter(D)	Torque(kgf·cm)	Depth(A)
6.35mm(1/4")	140~170	1.3mm
9.52mm(3/8")	250~280	1.8mm
12.70mm(1/2")	380~420	2.0mm
15.88mm(5/8")	440~480	2.2mm
19.05mm(3/4")	990~1,210	2.2mm



■ Leak Test

Put an inert gas like nitrogen in the outdoor unit pipe and put soap bubbles or other test liquids on the pipe surface for the leak test.

■ Drain Hose Connecting

Install the drain hose downward to drain water naturally. Be sure to pour water into the hose to check if it drains well.

■ Electric & Earth Work

Electric and earth work shall meet the "Electric Facility Technology Standard" and the "Internal Wire Regulation" of the Electric Business Laws.

■ Inspection & Trial Run

Upon completion of the tests, you shall make a trial run while you explain the main functions of the air conditioner to finish the installation.

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12 - 7 Installation Diagram of Indoor Unit and Outdoor Unit

12 - 7 - 1 Air-Purge Procedure

1) Connect each assembly pipe to the appropriate valve on the outdoor unit and tighten the flare nut.

2) Connect the charging hose of low pressure side of manifold gauge to the packed valve having a service port as shown at the figure.

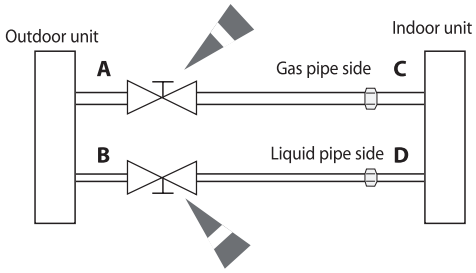
3) Open the valve of the low pressure side of manifold gauge counter-clockwise.

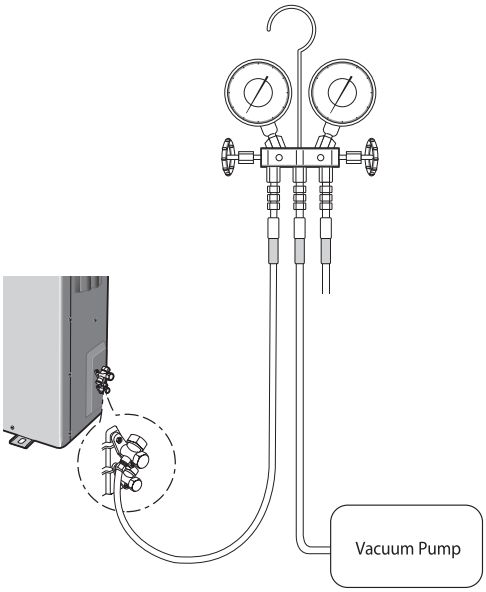
4) Purge the air from the system using vacuum pump for about 30 minutes.
   - Make sure that pressure gauge show -0.1MPa(-76cmHg) after about 30 minutes.
   - This procedure is very important in order to avoid gas leak.
   - Turn off the vacuum pump.
   - Close the valve of the low pressure side of manifold gauge clockwise.
   - Remove the hose of the low pressure side of manifold gauge.

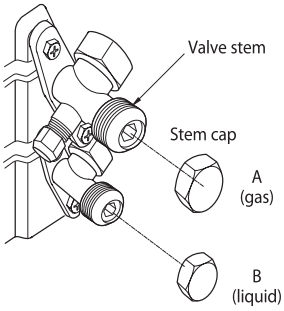
5) Set valve cork of both liquid side and gas side of packed valve to the open position.

6) Mount the valve stem nuts and the service port cap to the valve, and tighten them at the torque of 183kgf•cm with a torque wrench.

7) Check for gas leakage.
   - At this time, especially check for gas leakage from the 3 way valve's stem nuts, and from the service port cap.







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12-7-2 "Pump down" Procedure

Pump down will be carried out when an evaporator is replaced or when the unit is relocated in another area.

1) Remove the caps from the 3 way valve and the 3-Way valve.

2) Turn the 3-Way valve clockwise to close and connect a pressure gauge (low pressure side) to the service valve, and open the 3 way valve again.

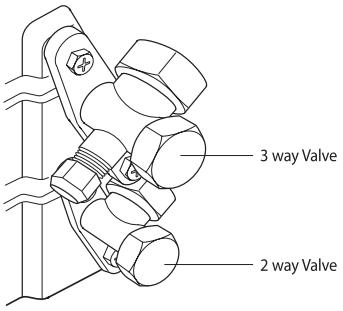
3) Set the unit to cool operation mode. (Check if the compressor is operating.)

4) Turn the 3-Way valve clockwise to close.

5) When the pressure gauge indicates "0" turn the 3-Way valve clockwise to close.

6) Stop operation of the air conditioner.

7) Close the cap of each valve.



Remarks

Relocation of the air conditioner

- Refer to this procedure when the unit is relocated.
- Carry out the pump down procedure (refer to the details of 'pump down').
- Remove the power cord.
- Disconnect the assembly cable from the indoor and outdoor units.
- Remove the flare nut connecting the indoor unit and the pipe.
- At this time, cover the pipe of the indoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
- Disconnect the pipe connected to the outdoor unit.
  At this time, cover the valve of the outdoor unit and the other pipe using a cap or vinyl plug to avoid foreign material entering.
- Make sure you do not bend the connection pipes in the middle and store together with the cables.
- Move the indoor and outdoor units to a new location.
- Remove the mounting plate for the indoor unit and move it to a new location.

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GSPN(Global Service Partner Network)

Area	Web Site
North America	http://service.samsungportal.com
Latin America	http://latin.samsungportal.com
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Europe	http://europe.samsungportal.com
China	http://china.samsungportal.com
Asia	http://asia.samsungportal.com
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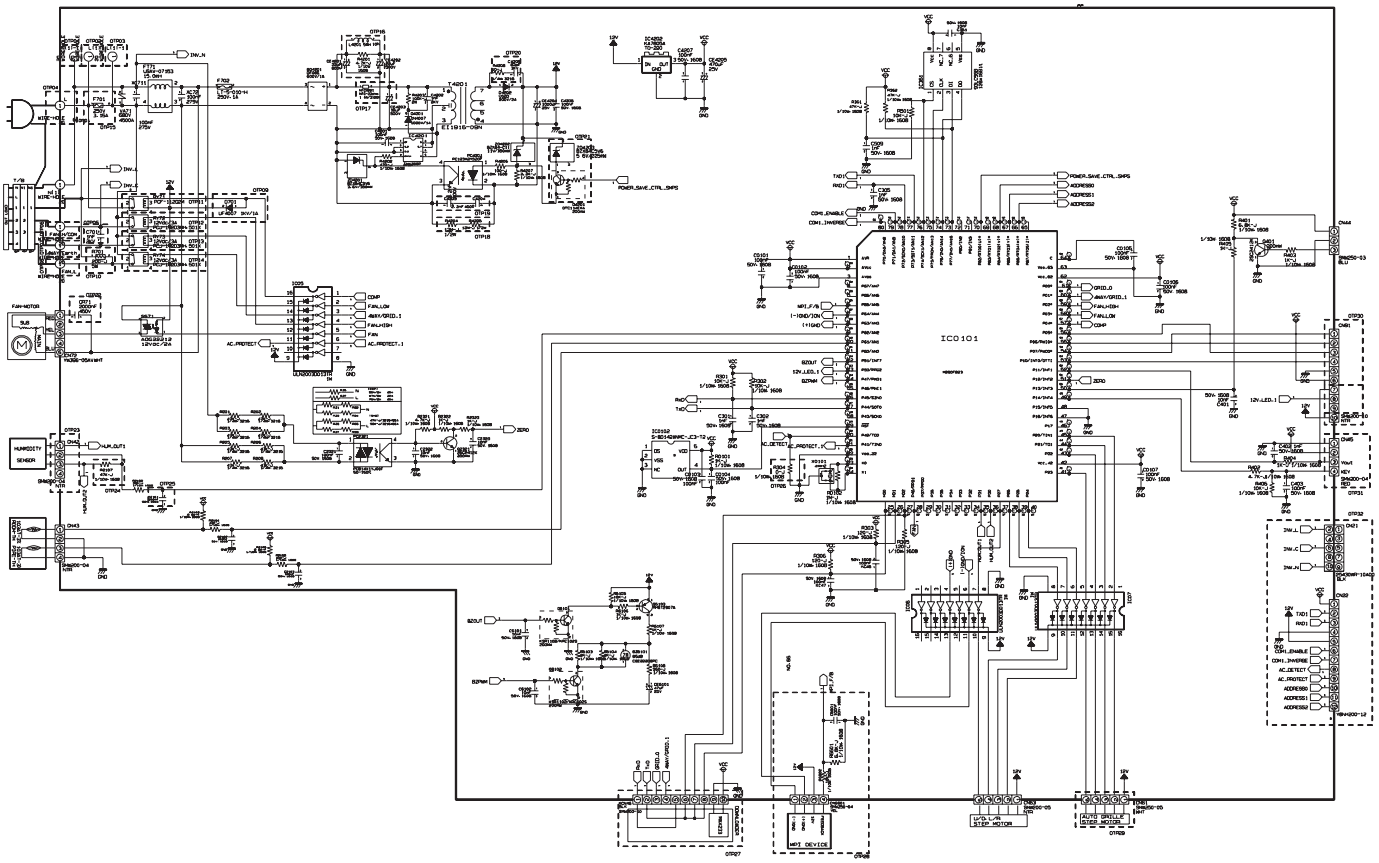
8. Schematic Diagram

8-1 Indoor Unit



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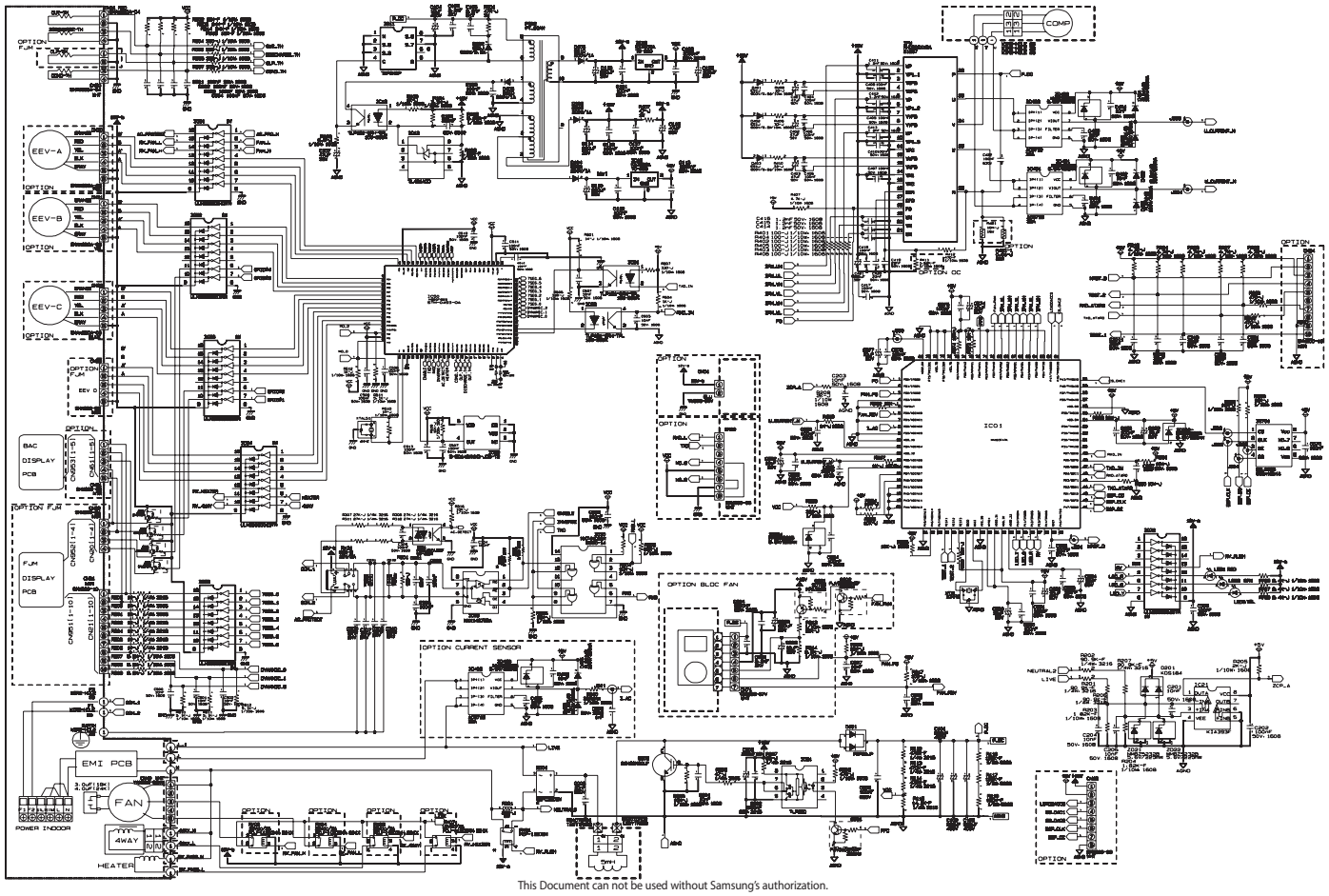

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4. Troubleshooting

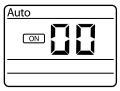
4-1 Setting Option Setup Method

ex) Option No. : 65 80 37 02 38

Step 1 : Enter the Option Setup mode.

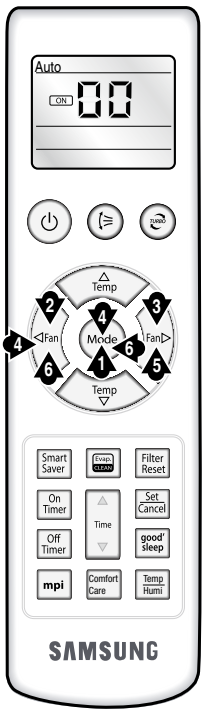
1st Take out the batteries of remote control.

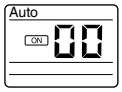
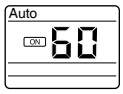
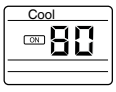
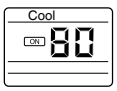
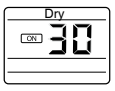
2nd Press the temperature ▲ ▼ button simultaneously and insert the battery again.

3rd Make sure the remote contr display shown as 

.

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



	Feature	Display
1	The default value is  . Every time you push the Mode button, the display panel reads ON Auto ➡ Cool ➡ Dry ➡ Fan ➡ Heat , OFF Auto ➡ Cool ➡ Dry ➡ Fan ➡ Heat repeatedly.	
2	Push the ◀ button to set the display panel to 6. Every time you push the ◀ button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	
3	Push the ▶ button to set the display panel to 5. Every time you push the ▶ button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	
4	Push the Mode button to  . Push the ◀ button to set the display panel to 8. Every time you push the ◀ button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	
5	Push the ▶ button to set the display panel to 0. Every time you push the ▶ button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	
6	Push the Mode button to  . Push the ◀ button to set the display panel to 3. Every time you push the ◀ button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	

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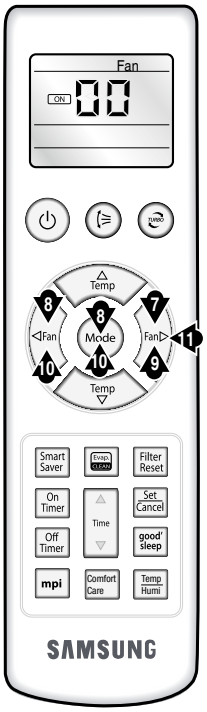
4-1 Setting Option Setup Method(continue)

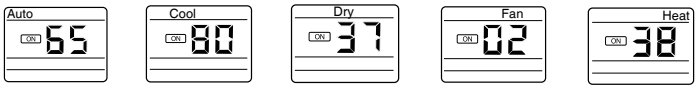


	Feature	Display
7	Push the button to set the display panel to 7. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Dry 37
8	Push the Mode button to Fan 00. Push the button to set the display panel to 0. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Fan 00
9	Push the button to set the display panel to 2. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Fan 02
10	Push the Mode button to Heat 00. Push the button to set the display panel to 3. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Heat 30
11	Push the button to set the display panel to 8. Every time you push the button, the display panel reads 0➡1➡2➡3➡ ..... ➡9➡A➡b➡c➡d➡E➡F repeatedly.	Heat 38

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

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

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



Step 4 : Pressing the ON/OFF button ( )

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

Step 5 : Unit operation test-run

First, Remove the battery from the remote control.

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

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

• Error Mode

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

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

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■ OPTION ITEMS

REMOCON / MODEL	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7	SEG8	SEG9	SEG10
AQV18EWA	2	E	7	7	7	7	5	2	1	C
AQV24EWA	3	C	8	7	7	7	5	2	4	D

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4-2 Display Error and Check Method

4-2-1 Display Error mode

<table>
<tr><th colspan="4">Error Mode</th><th rowspan="2">Cauase</th><th rowspan="2">Follow-up Measures</th><th colspan="4">operation</th><th rowspan="2">Trouble Shooting</th></tr>
<tr><th rowspan="2">Indoor 7-Segment</th><th colspan="3">Outdoor LED</th><th>Comp.</th><th>Outdoor Fan</th><th>Indoor Fan</th><th>MPI</th></tr>
<tr><th>Y</th><th>G</th><th>R</th></tr>
<tr><td>E101</td><td colspan="3">no display</td><td>1min.Time out Communicatiion (Indoor detection)</td><td>- Check the connector of indoor-outdoor cable
- Check the fuse</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-1</td></tr>
<tr><td>E121</td><td colspan="3">no display</td><td>Indoor Temperature Sensor Error(OPEN/ SHORT)</td><td rowspan="2">- Check assembling status of the sensor part's connector on the indoor unit main PCB
- Measure the resistance value on both sides connector no. 1 and no. 2 (E121), no. 3 and no. 4 (E122) - by separating the sensor part's connector
<table><tr><th>Temp. (˚C)</th><th>Resistance Valve(KΩ)</th><th>Temp. (˚C)</th><th>Resistance Valve(KΩ)</th><th>Others</th></tr><tr><td>15</td><td>14.68</td><td>30</td><td>8.31</td><td rowspan="3">The error of DATA is ±2%.</td></tr><tr><td>20</td><td>12.09</td><td>35</td><td>6.94</td></tr><tr><td>25</td><td>10.00</td><td>40</td><td>5.83</td></tr></table>* If not meet the above DATA, replace sensors.</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-2</td></tr>
<tr><td>E122</td><td colspan="3">no display</td><td>Indoor Heat Exchanger Temperature Sensor Error (OPEN/SHORT)</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-3</td></tr>
<tr><td>E142</td><td colspan="3">no display</td><td>Humidity Sensor Error (in Test Mode)</td><td></td><td>OFF</td><td>OFF</td><td>OFF</td><td></td><td></td></tr>
<tr><td>E154</td><td colspan="3">no display</td><td>Indoor Fan Motor Speed Detecting Error (Occur when it continues for 15 ssecond at below 450rpm)</td><td>- Check assembling status of the Motor Hall IC output connector (CN44) on the indoor unit main PCB</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td>4-3-4</td></tr>
<tr><td>E162</td><td colspan="3">no display</td><td>EEPROM Error</td><td></td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td></td></tr>
<tr><td>E186</td><td colspan="3">no display</td><td>MPI Feedback Error</td><td>- Check the assembly status of the mpizone connector (CN6601)
- Change the mpizone</td><td>Continue</td><td>Continue</td><td>Continue</td><td>OFF</td><td>4-3-5</td></tr>
<tr><td>All blink</td><td colspan="3">no display</td><td>Option is erased or wrong option code is input</td><td>-Reset remote-control option code</td><td>OFF</td><td>OFF</td><td>OFF</td><td>OFF</td><td></td></tr>
<tr><td>E102</td><td>⊙</td><td>●</td><td>●</td><td>1min. Time out Communication (Outdooe detection)</td><td>- Check the connector of indoor-outdoor cable
- Check the fuse</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-1</td></tr>
<tr><td>E221</td><td>⊙</td><td>○</td><td>⊙</td><td>Outdoor temp sensor error</td><td rowspan="3">- Check the assembling statue of sensor parts on the outdoor PCB
E221 : CN54 PIN#1,#2
E237 : CN54 PIN#5,#6
E251 : CN54 PIN#3,#4</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-6</td></tr>
<tr><td>E237</td><td>⊙</td><td>●</td><td>⊙</td><td>Coil temp sensor error</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-7</td></tr>
<tr><td>E251</td><td>⊙</td><td>⊙</td><td>○</td><td>Discharge temp sensor error</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-8</td></tr>
<tr><td>E416</td><td>⊙</td><td>○</td><td>●</td><td>Discharge over temperature</td><td>- Check the assembling statue of sensor parts on the outdoor PCB CN54 PIN#3,#4</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-9</td></tr>
<tr><td>E458</td><td>●</td><td>○</td><td>○</td><td>Outdoor Fan error</td><td>- Check the fan was locked.
- Check the assembling status of Fan connector(CN01) the outdoor PCB
- Check the wire color of fan connector
  </td><td colspan="3">When it occur first, it shows Error.
After 10 minutes, it can be operating.</td><td>Continue</td><td>4-3-10</td></tr>
</table>

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<table>
<tr><th colspan="2" rowspan="2">Error Mode</th><th colspan="3">Outdoor LED</th><th rowspan="3">Cauase</th><th rowspan="3">Follow-up Measures</th><th colspan="4">operation</th><th rowspan="3">Trouble Shooting</th></tr>
<tr><th rowspan="2">Y</th><th rowspan="2">G</th><th rowspan="2">R</th><th rowspan="2">Comp.</th><th rowspan="2">Outdoor Fan</th><th rowspan="2">Indoor Fan</th><th rowspan="2">MPI</th></tr>
<tr><th>Indoor 7-Segment</th></tr>
<tr><td>E461</td><td>1</td><td>½</td><td>1</td><td>Comp Starting error</td><td>- Check the compressor and PCB cable
- Check the wire color
<table><tr><td>COMPRESSOR</td><td>U</td><td>V</td><td>W</td></tr><tr><td>COLOR</td><td>RED</td><td>BLU</td><td>YEL</td></tr></table>- Check the interphase resistance of compressor normal</td><td colspan="3">When it occur first, it will be trying to operate maximumly five times at one-minute interval.
If it fail, it operates after 3 minutes.
When this occur five times, it shows Error.</td><td>Continue</td><td>4-3-11</td></tr>
<tr><td>E462</td><td>,</td><td>½</td><td>,</td><td>I_Trip error / PFC Over current</td><td>-</td><td colspan="3">When it occur first, it operates after 3 minutes.
When this three times, it shows Error.</td><td>Continue</td><td>4-3-12</td></tr>
<tr><td>E464</td><td>1</td><td>1</td><td>½</td><td>IPM Over Current(O.C)</td><td>-Check the Shunt-R(R418) resistance</td><td colspan="3">When it occur first, it operates after 3 minutes.
When this nine times, it shows Error.</td><td>Continue</td><td>4-3-13</td></tr>
<tr><td>E465</td><td>½</td><td>,</td><td>1</td><td>Comp Vlimit error</td><td>- If it occur again after resetting the power, change PBA.
If it occur again even though PBA was changed, change Compressor.</td><td colspan="3">When it occur first, it operates after 3 minutes.
When this nine times, it shows Error.</td><td>Continue</td><td></td></tr>
<tr><td>E467</td><td>,</td><td>1</td><td>,</td><td>Comp rotation error</td><td>- Check the wire color
<table><tr><td>COMPRESSOR</td><td>U</td><td>V</td><td>W</td></tr><tr><td>COLOR</td><td>RED</td><td>BLU</td><td>YEL</td></tr></table></td><td colspan="3">When it occur first, it operates after 3 minutes.
When this three times, it shows Error.</td><td>Continue</td><td>4-3-14</td></tr>
<tr><td>E468</td><td>½</td><td>½</td><td>,</td><td>current sensor error</td><td>-Check short or open in every component around IC451 and IC452</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-15</td></tr>
<tr><td>E469</td><td>,</td><td>½</td><td>½</td><td>DC-Link valtage sensor error</td><td>-Measure the resistance : R113~R116</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-16</td></tr>
<tr><td>E471</td><td>,</td><td>1</td><td>½</td><td>OTP error</td><td>- Impossible to check EEPROM loading data check
- Change the PBA</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-17</td></tr>
<tr><td>E472</td><td>,</td><td>,</td><td>½</td><td>AC Line Zero Cross Signal out</td><td>- Check the assembly condition of peripheral reference number 200~</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-18</td></tr>
<tr><td>E554</td><td>,</td><td>,</td><td>1</td><td>GAS Leak error</td><td>- Check the sensor connection
- Check the pipe leak
- Check the refrigerant of compressor</td><td colspan="3">When it occur first, it operates after 3 minutes.
When this three times, it shows Error.</td><td>Continue</td><td>4-3-19</td></tr>
<tr><td>E556</td><td>½</td><td>1</td><td>1</td><td>capacity miss match</td><td>- Reset remote-control option code</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td>4-3-20</td></tr>
<tr><td>no display</td><td>1</td><td>,</td><td>½</td><td>DC-Link voltage under/over error</td><td></td><td colspan="4">it operates after 3 minutes.</td><td></td></tr>
<tr><td>no display</td><td>,</td><td>½</td><td>1</td><td>Operation Condition Error</td><td>If outside temperature come back within the normal range, it operates.</td><td>OFF</td><td>OFF</td><td>OFF</td><td>Continue</td><td></td></tr>
</table>

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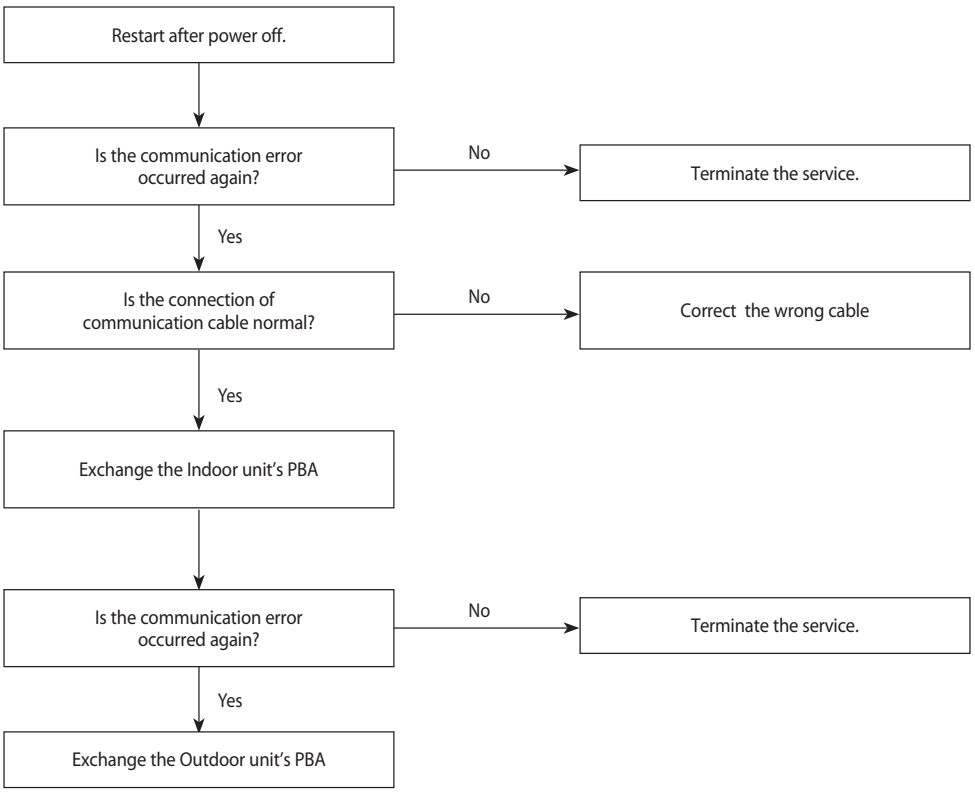
4-3-1 Communication error ↔When E 101 or E 102 is diplayed

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

2. Troubleshooting procedure



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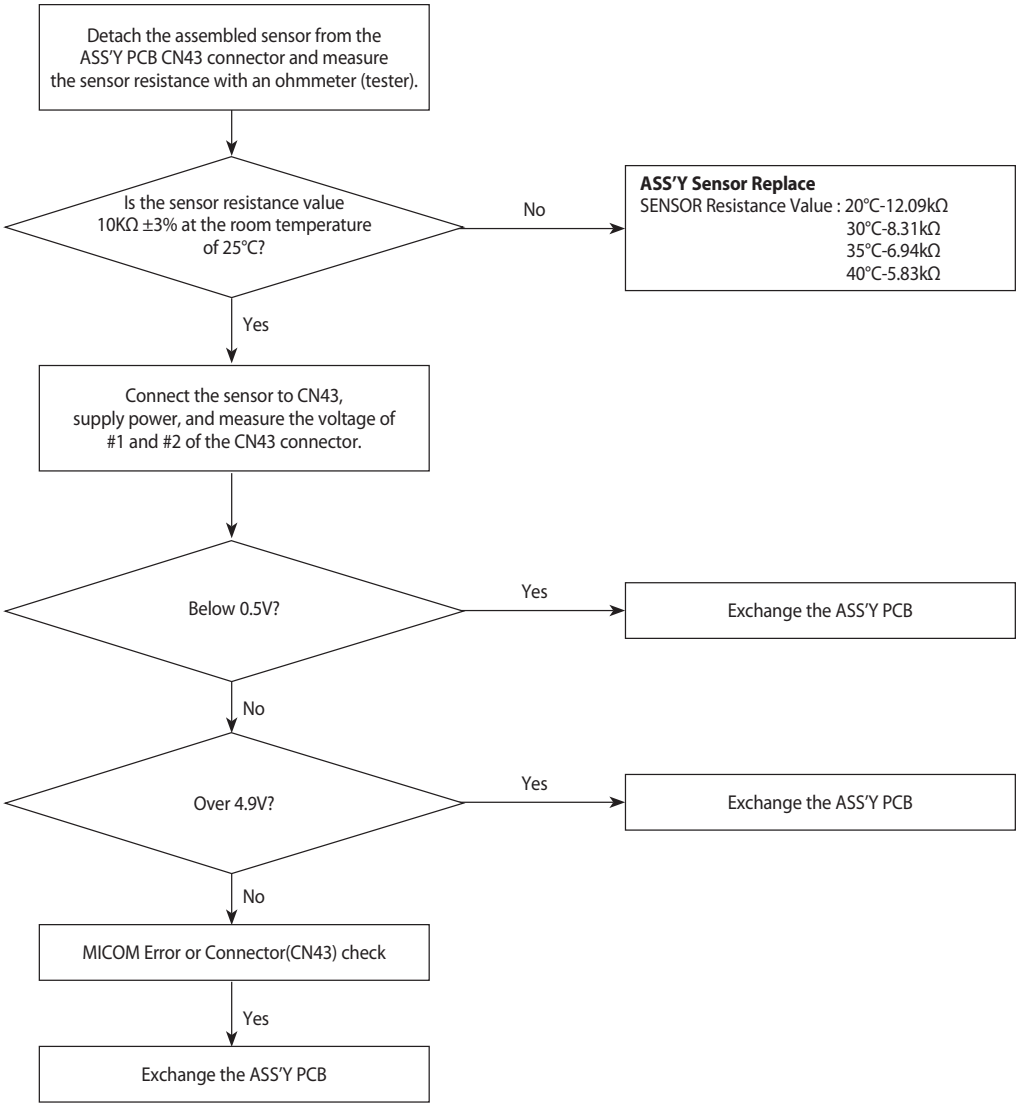
4-3-2 Indoor Temperature Sensor Error↔When E 12 1 is diplayed

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

2. Troubleshooting procedure



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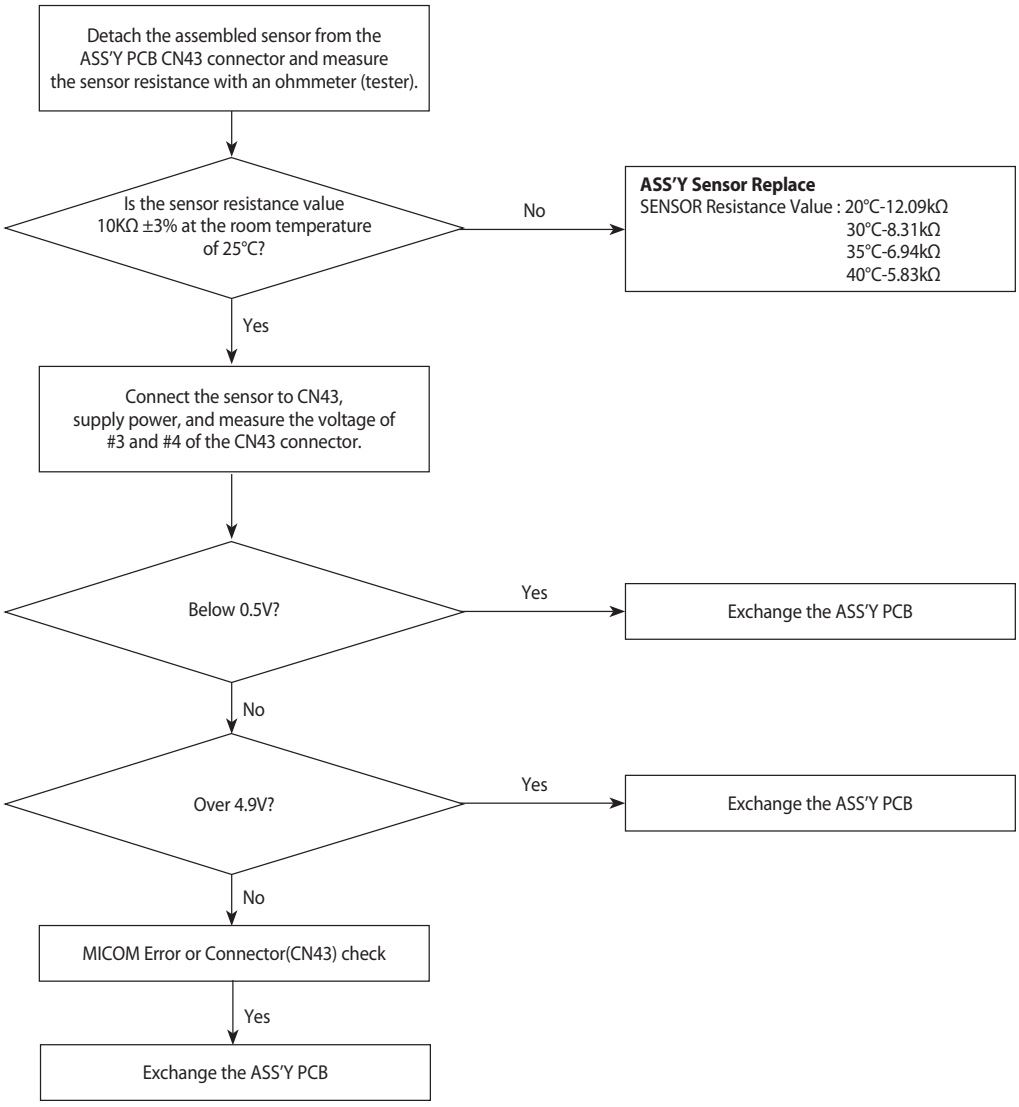
4-3-3 Indoor Heat Exchanger Temperature Sensor Error↔When E 122 is diplayed

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

2. Troubleshooting procedure



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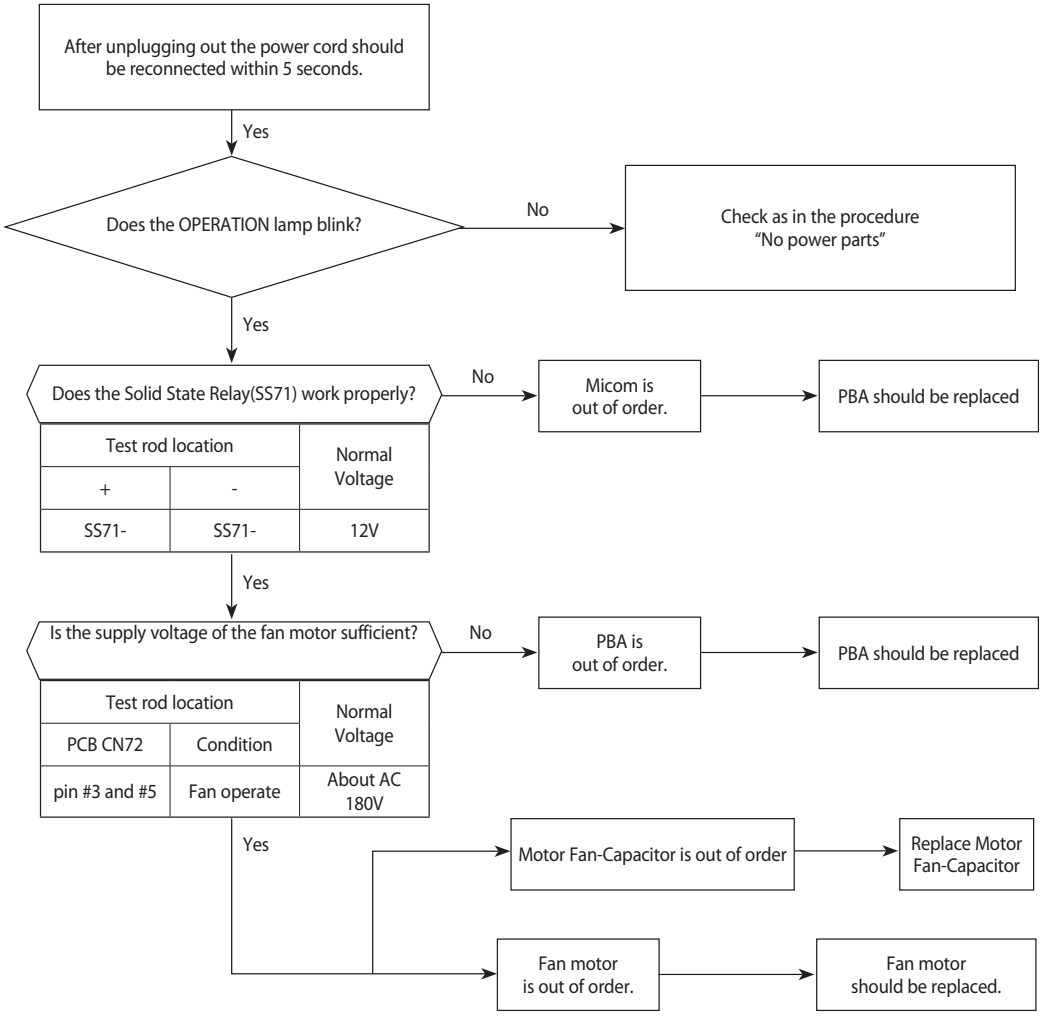
4-3-4 Indoor Fan Motor Speed Detecting Error↔When E 154 is diplayed

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

2. Troubleshooting procedure



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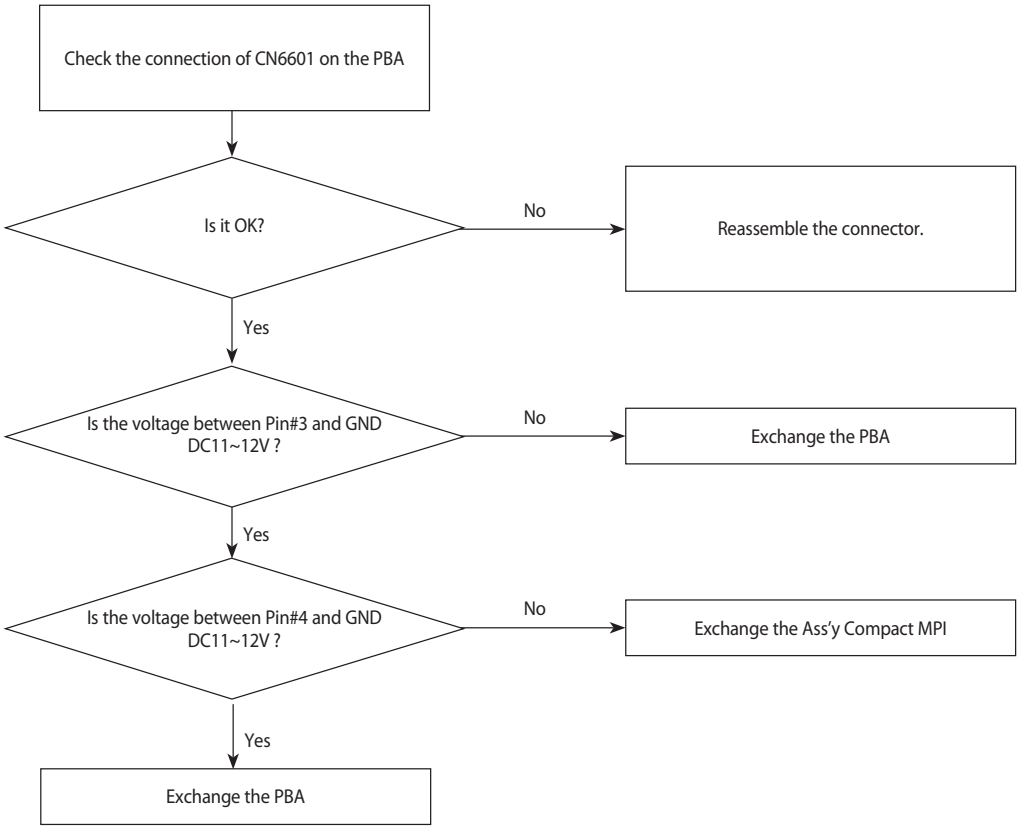
4-3-5 MPI Error ↔ Whren E 186 is displayed

1. Checklist :
   1) Is the MPI connector connected correctly in CN6601?

2. Troubleshooting procedure



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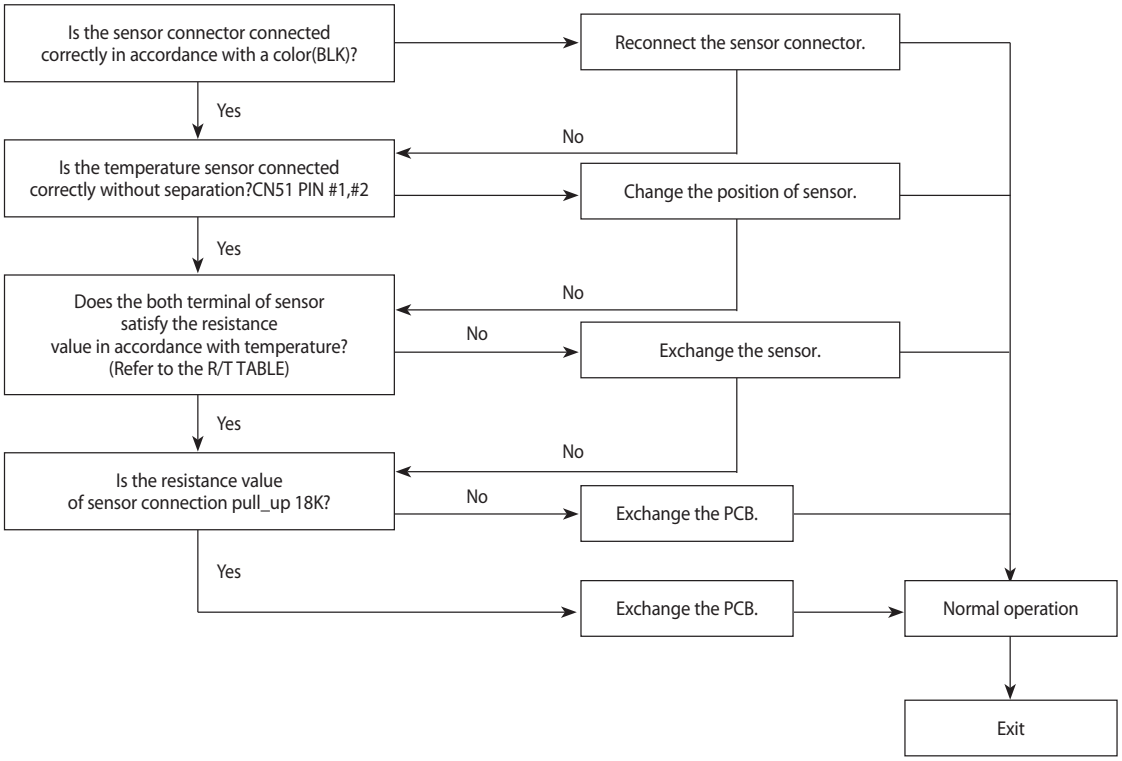
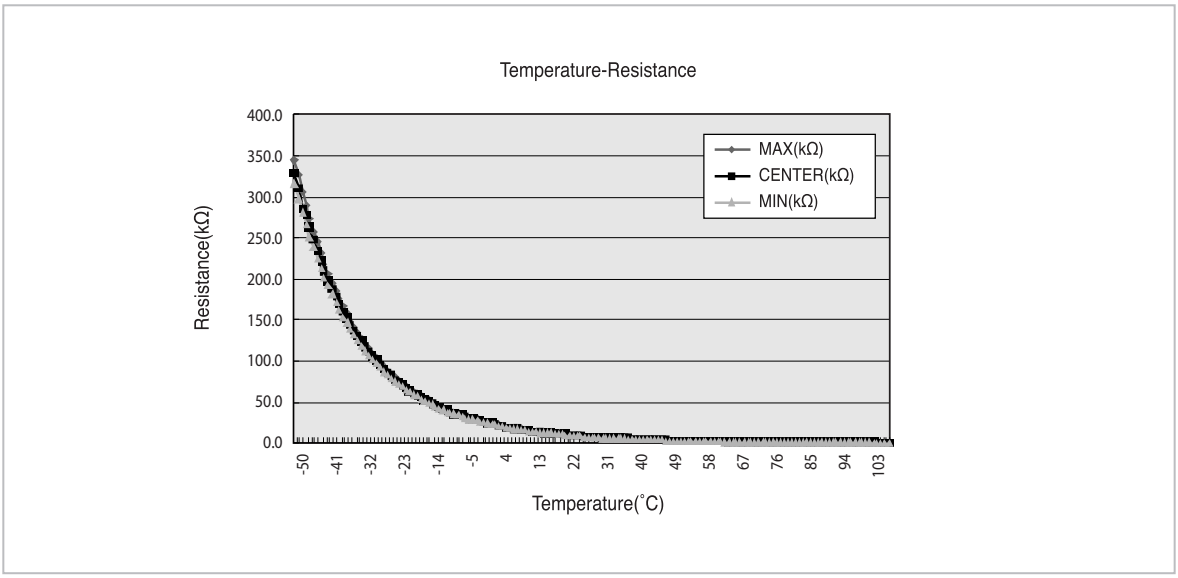
4-3-6 Outdoor temperature sensor error↔When E22 1 is diplayed

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

2. Troubleshooting procedure





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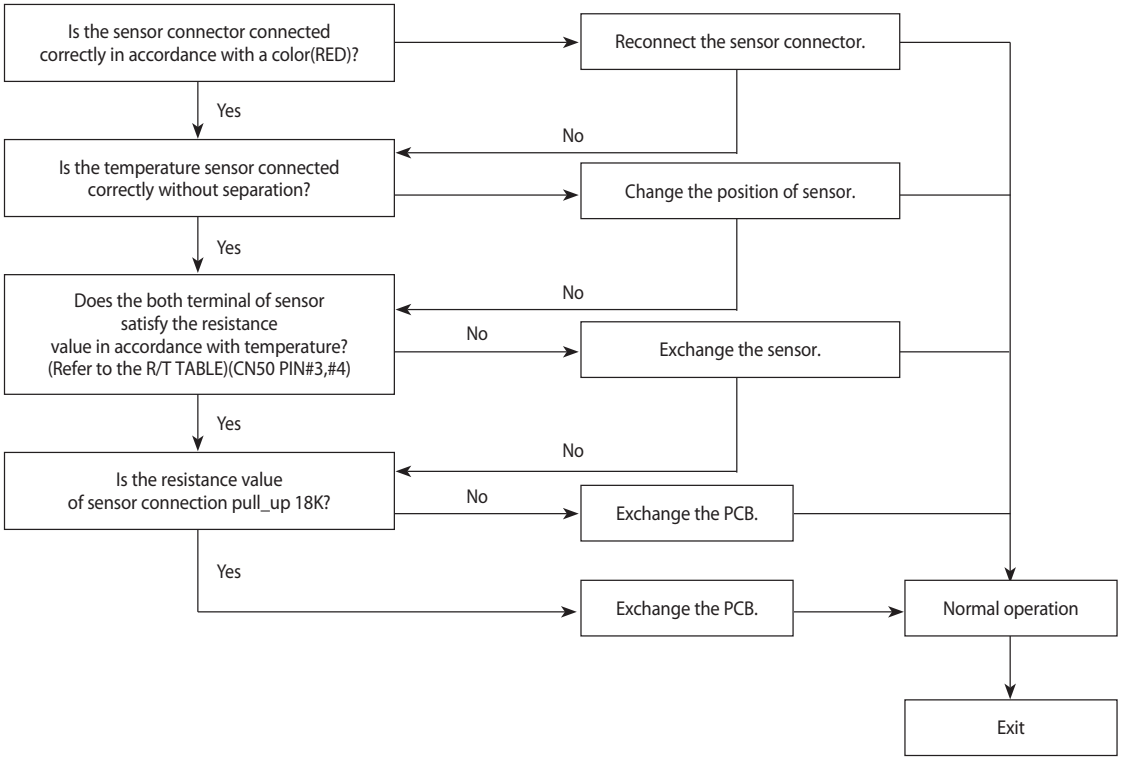
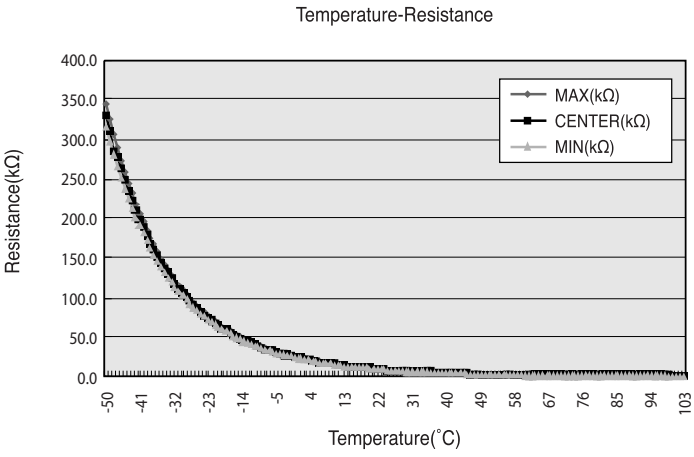
4-3-7 Coil temperature sensor error↔When E237 is diplayed

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

2. Troubleshooting procedure





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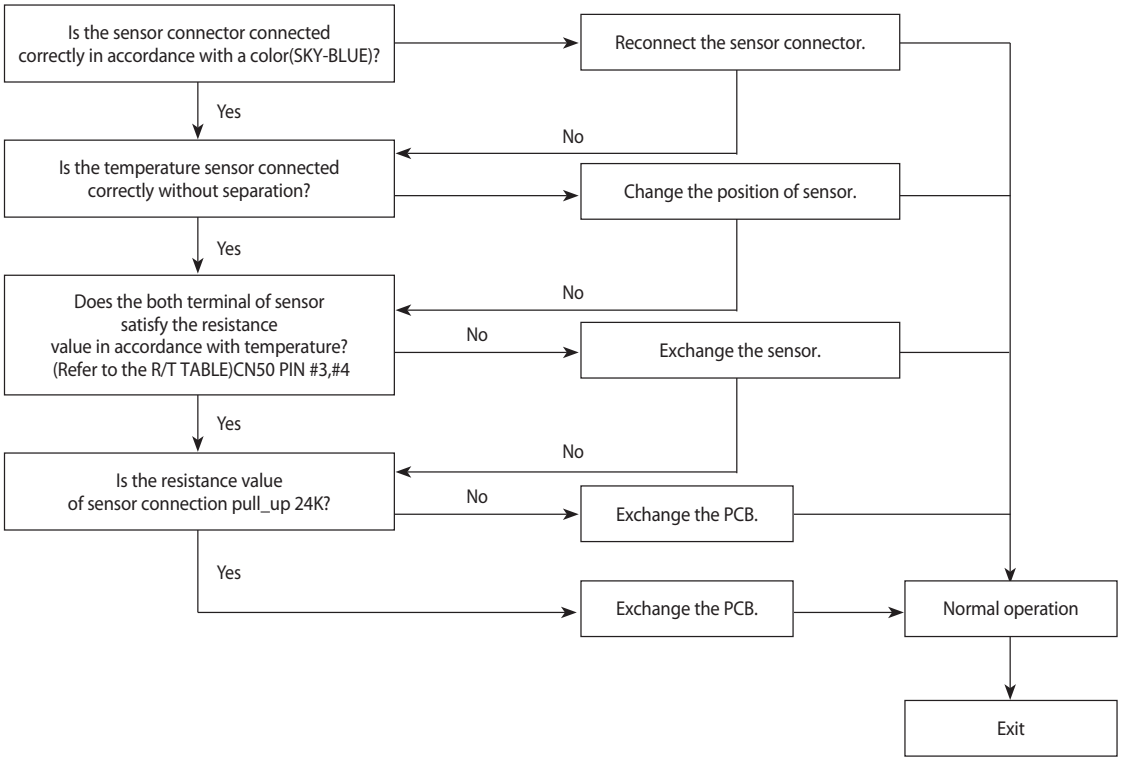
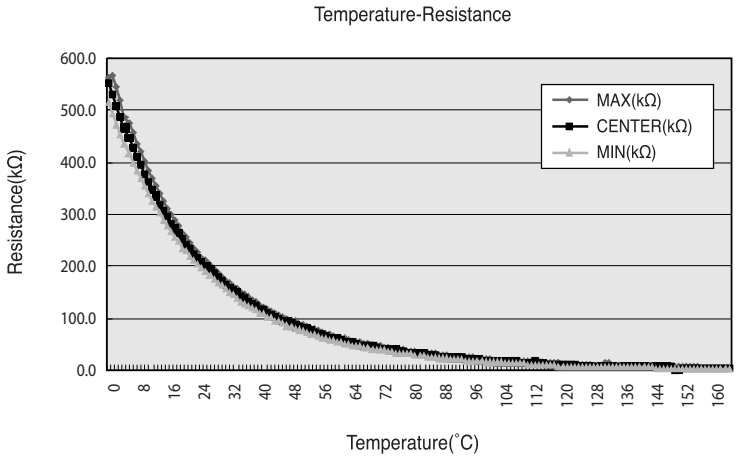
4-3-8 Discharge temperature sensor error↔When E25 1 is diplayed

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

2. Troubleshooting procedure





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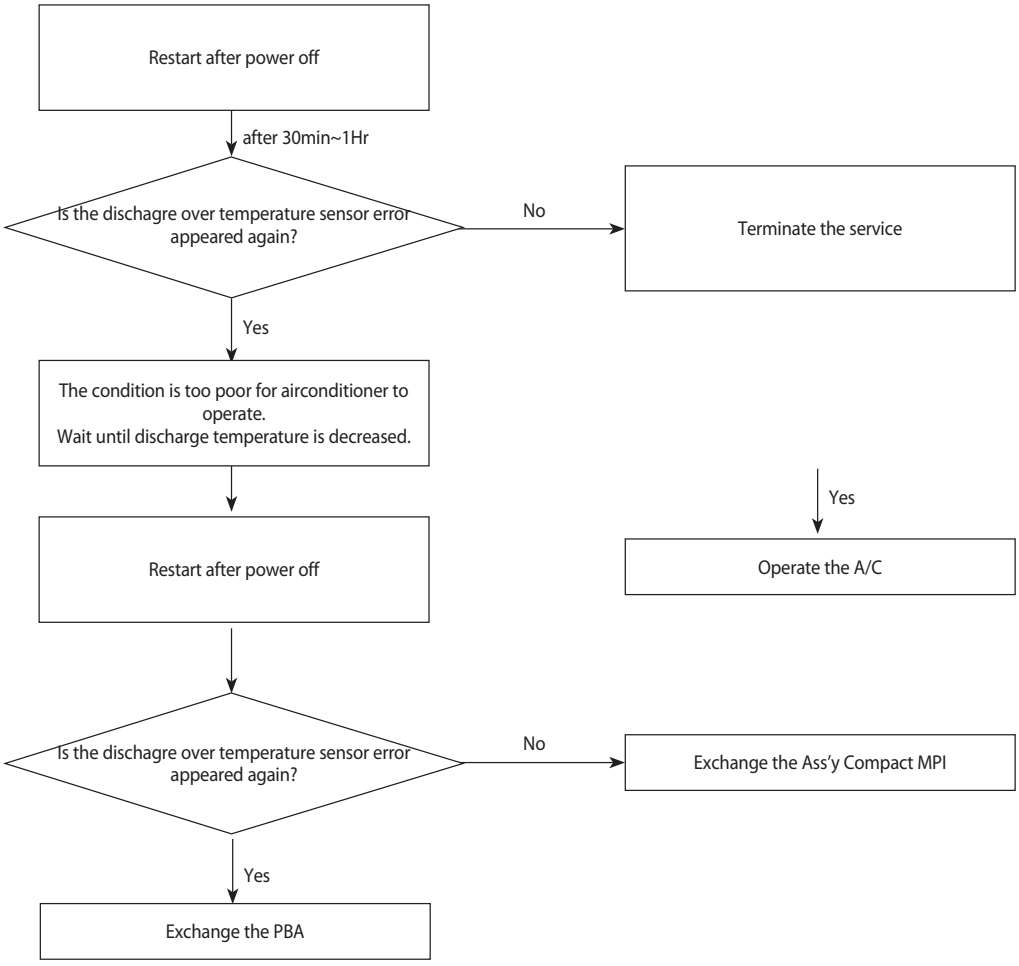
4-3-9 Discharge over temperature sensor error↔When E4 16 is diplayed

1. Checklist :
   Check the discharge temperature in the outdoor unit

2. Troubleshooting procedure



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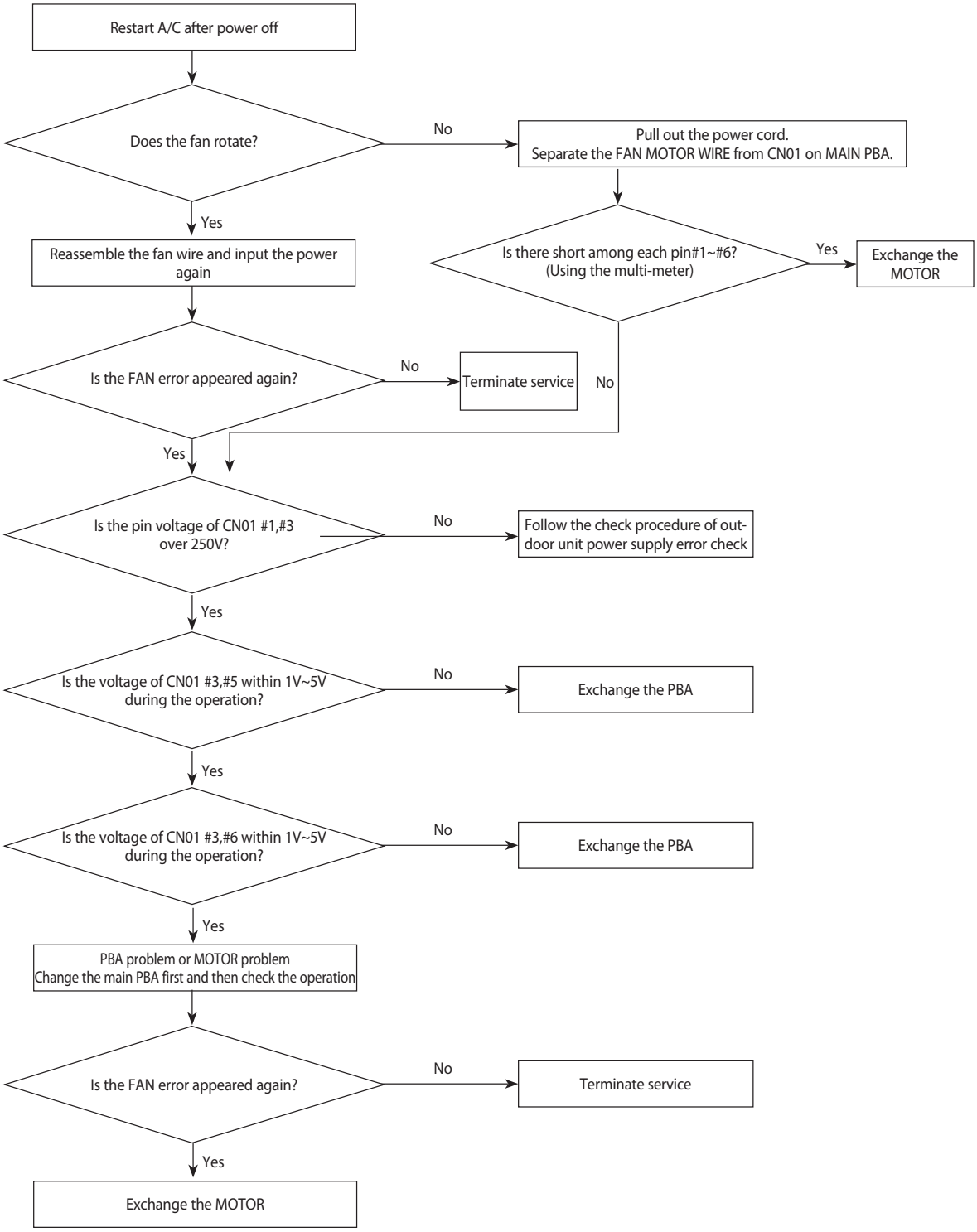
4-3-10 The Outdoor unit Fan error↔When E458 is diplayed

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

2. Troubleshooting procedure



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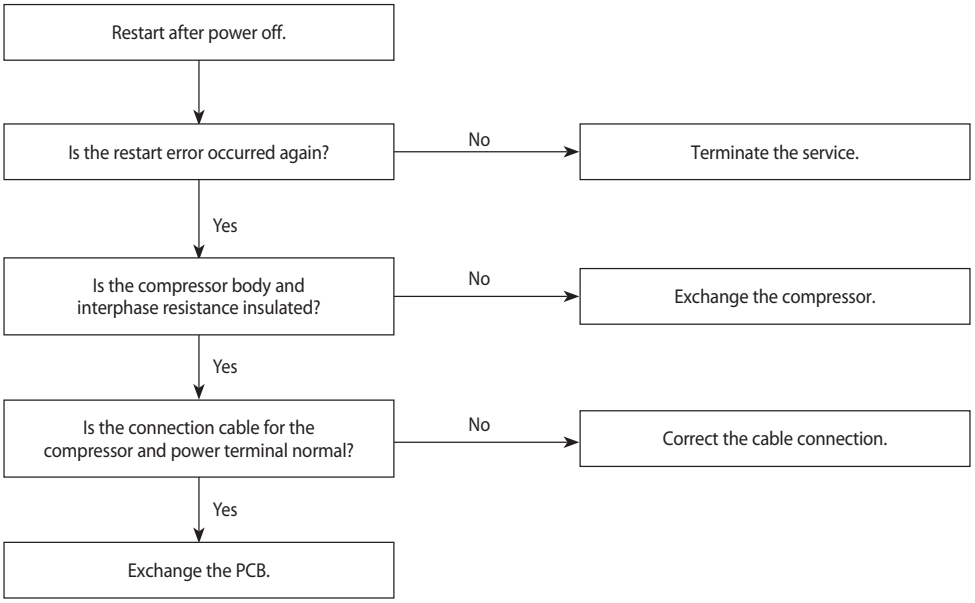
4-3-11 Compressor start error↔When E46 1 is diplayed

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

2. Troubleshooting procedure



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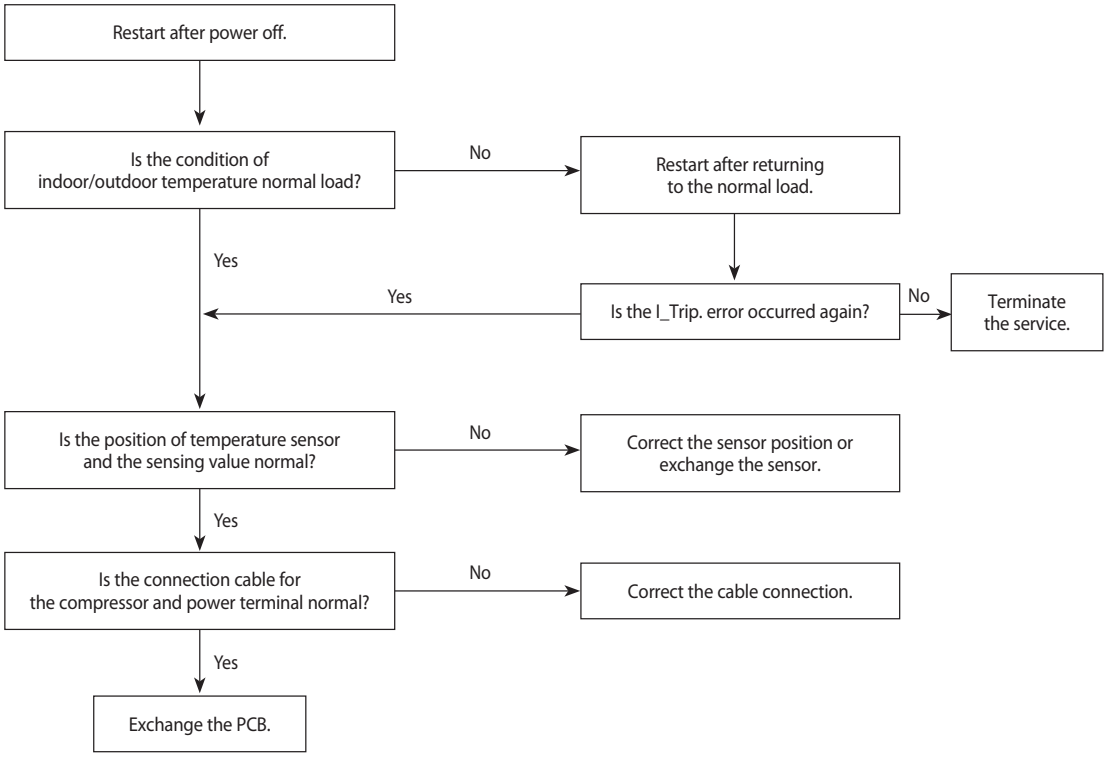
4-3-12 I_Trip error↔When E462 is diplayed

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

2. Troubleshooting procedure



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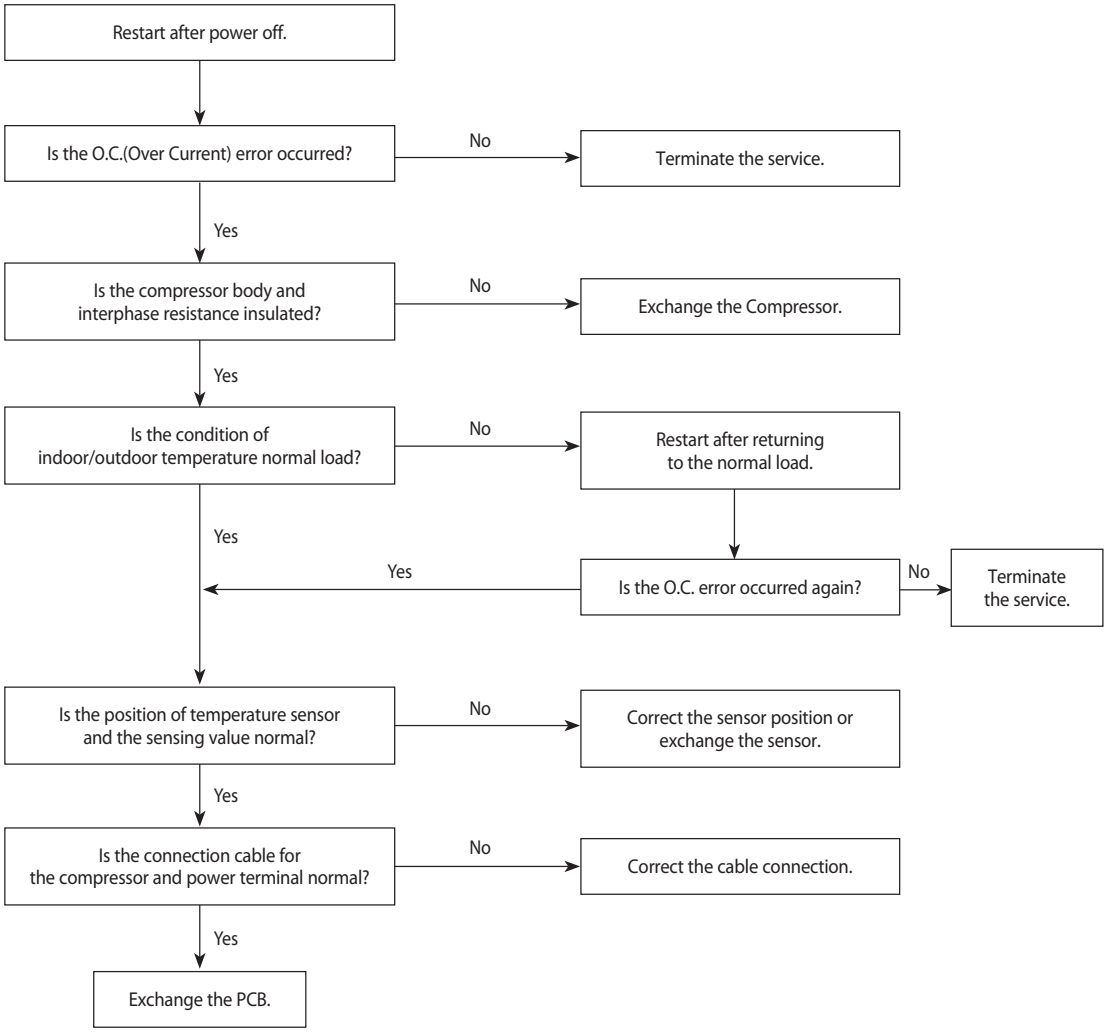
4-3-13 O.C.(Over Current) error↔When E464 is diplayed

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

2. Troubleshooting procedure



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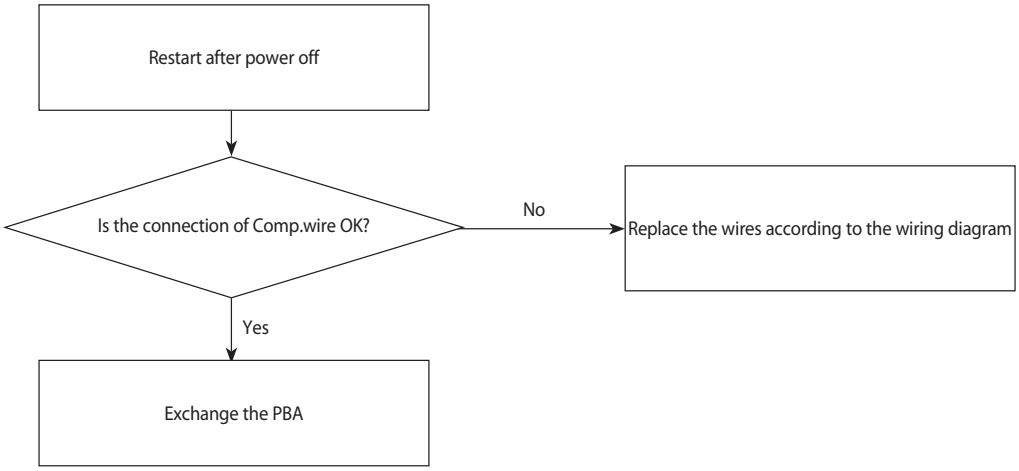
4-3-14 Comp Rotation error↔When E467 is diplayed



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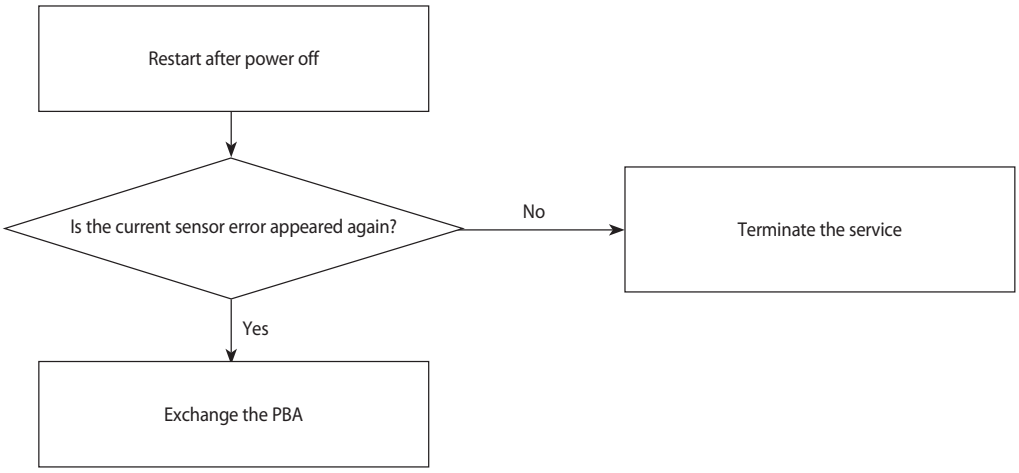
4-3-15 Current Sensor error↔When E468 is diplayed

1. Checklist :
   1) IIs there no short or open in every component around IC451 and IC452?
2. Troubleshooting procedure



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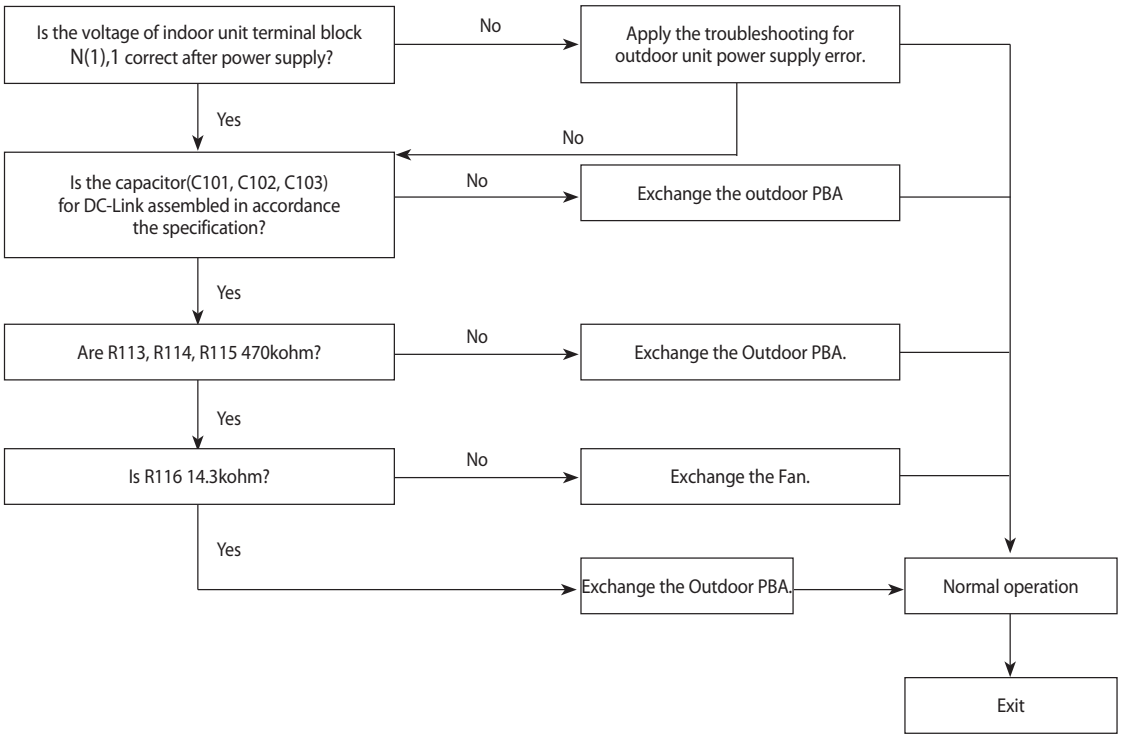
4-3-16 DC-Link voltage sensor error↔When E469 is diplayed

1. Checklist :
   1) Is the voltage of indoor unit terminal block N(1),1 correct after power supply?
   2) Is the capacitor(C101, C102, C103) for DC-Link assembled in accordance the specification?(Outdoor PBA)
   3) Are R113,R114,R115 470 Kohm?
   4) Is R116 14.3Kohm?

2. Troubleshooting procedure



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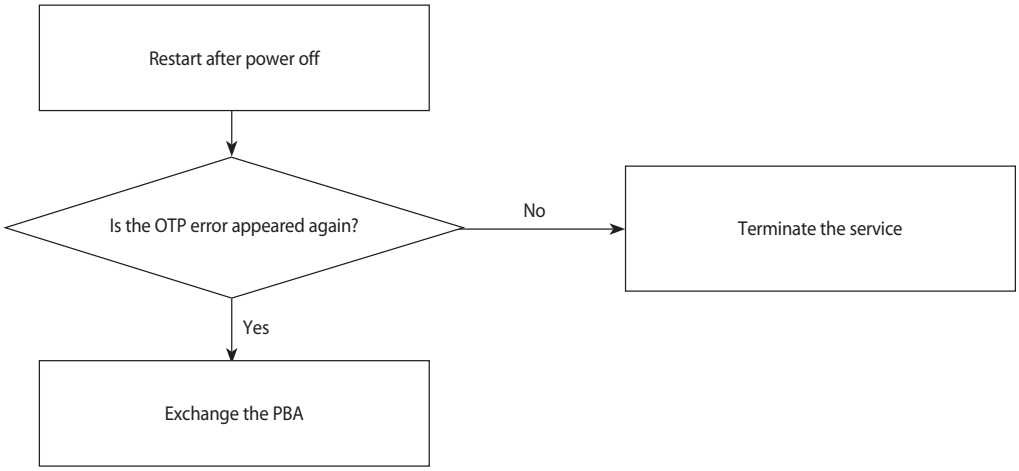
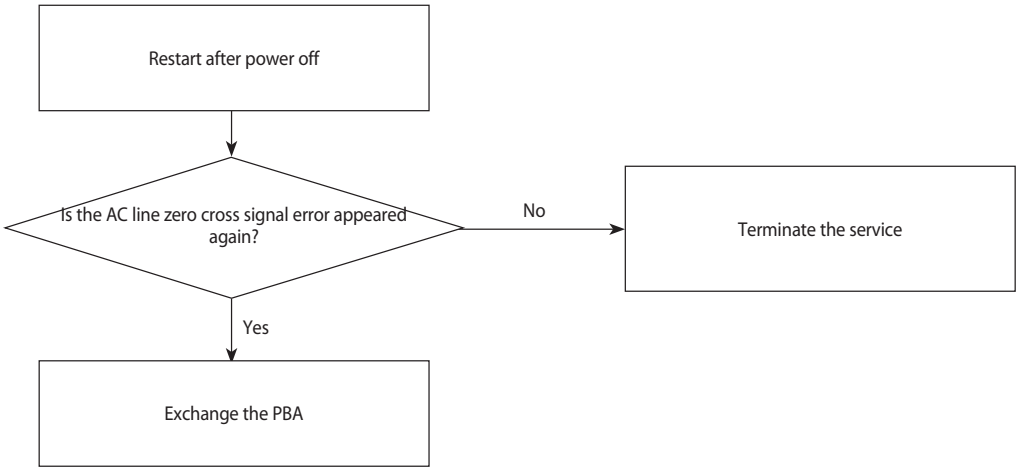
4-3-17 OTP error↔When E471 is diplayed

1. Checklist :
   1) Check the IC701's soldering status. (Is there any open or short?)
2. Troubleshooting procedure



4-3-18 AC Line Zero Cross Signal out error↔When E472 is diplayed

1. Checklist :
   1) Check the power condition at customer's house (Is there any power noise?)
   2) Have been there power failure?
2. Troubleshooting procedure



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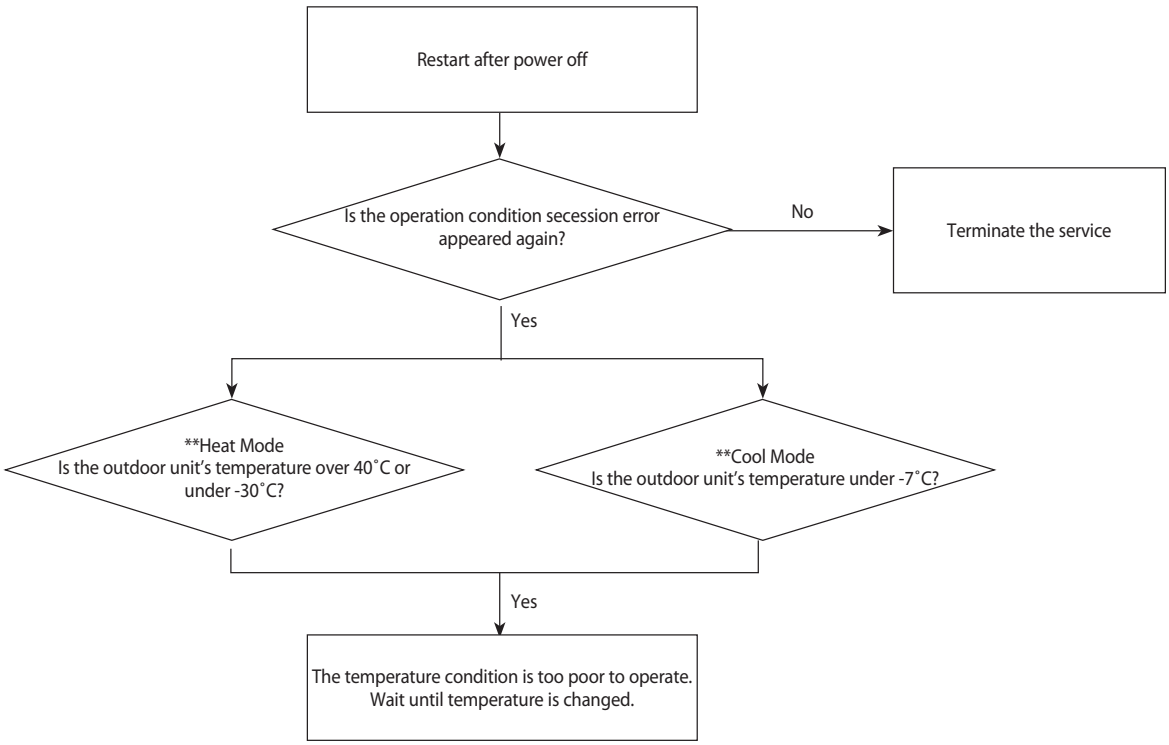
4-3-19 Operation condition secession error

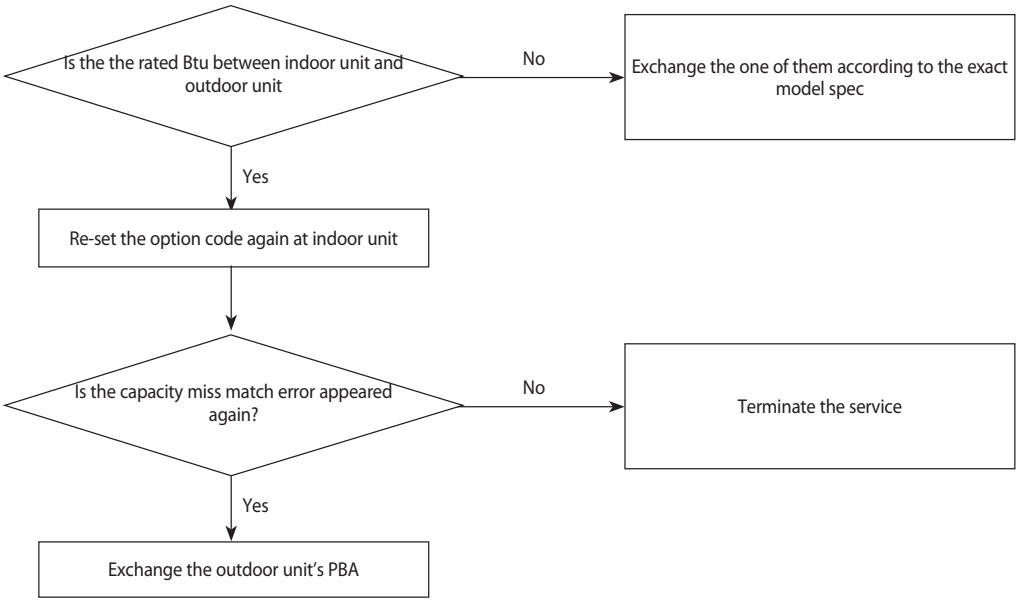
1. Checklist :
   1) Check the temperature around the outdoor unit.

2. Troubleshooting procedure



4-3-20 capacity miss match error↔When E556 is diplayed

1. Checklist :
   1) Check the Btu between indoor unit and outdoor unit
   2) Check the indoor unit's option code and outdoor unit's EEPROM data.
2. Troubleshooting procedure



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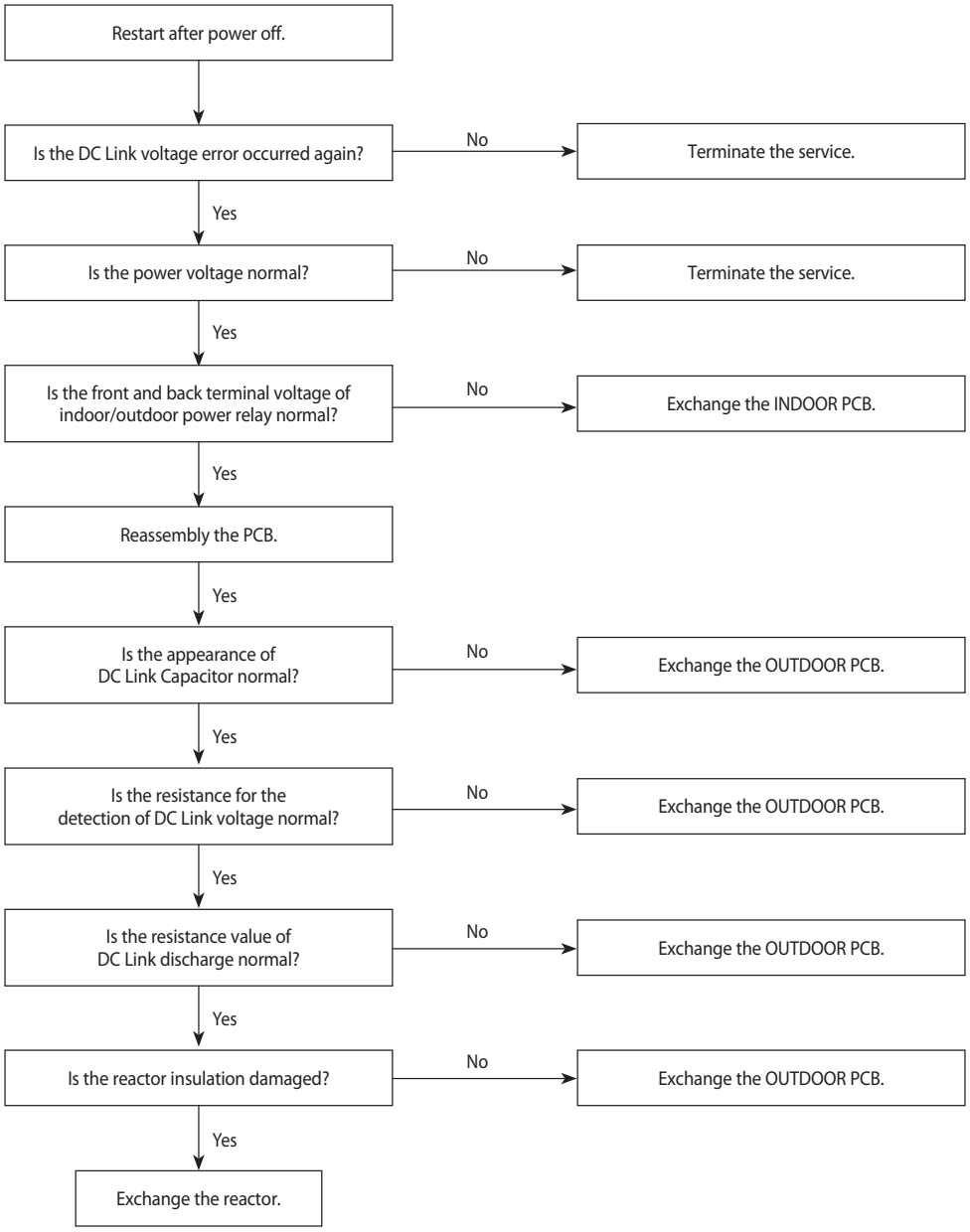
4-3-21 DC-Link Voltage under/over error

1. Checklist :
   1) Is the power voltage normal?
   2) Is the voltage of front and back terminal of indoor power relay normal?
   3) Is the resistance value for DC Link voltage detection NORMAL?
   4) Is the resistance value of DC Link discharge normal?
   5) Is the appearance of DC Link Capacitor normal?

2. Troubleshooting procedure



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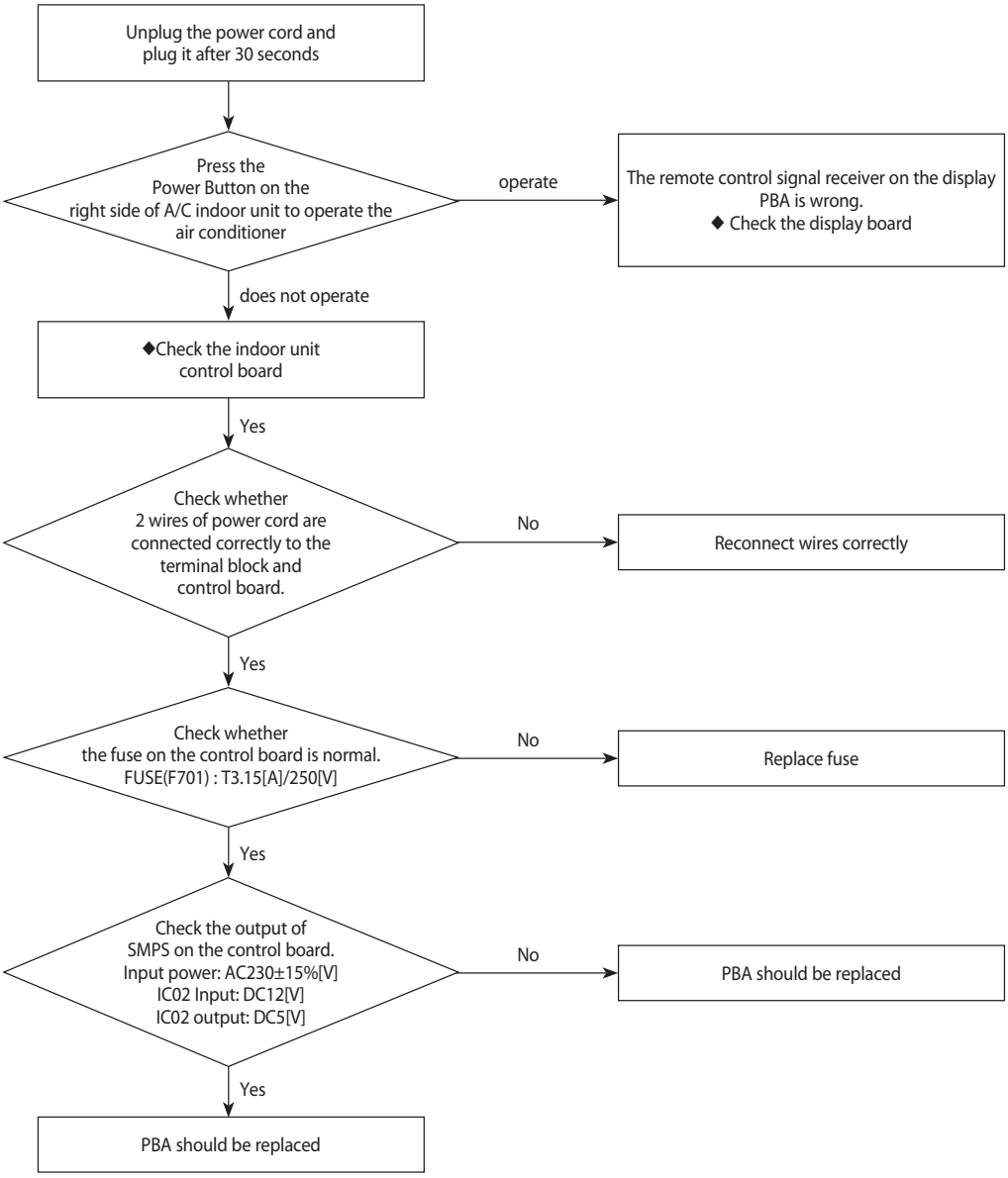
4-3-22 No Power (completely dead)-Initial diagnosis (Not displayed)

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

2. Troubleshooting procedure



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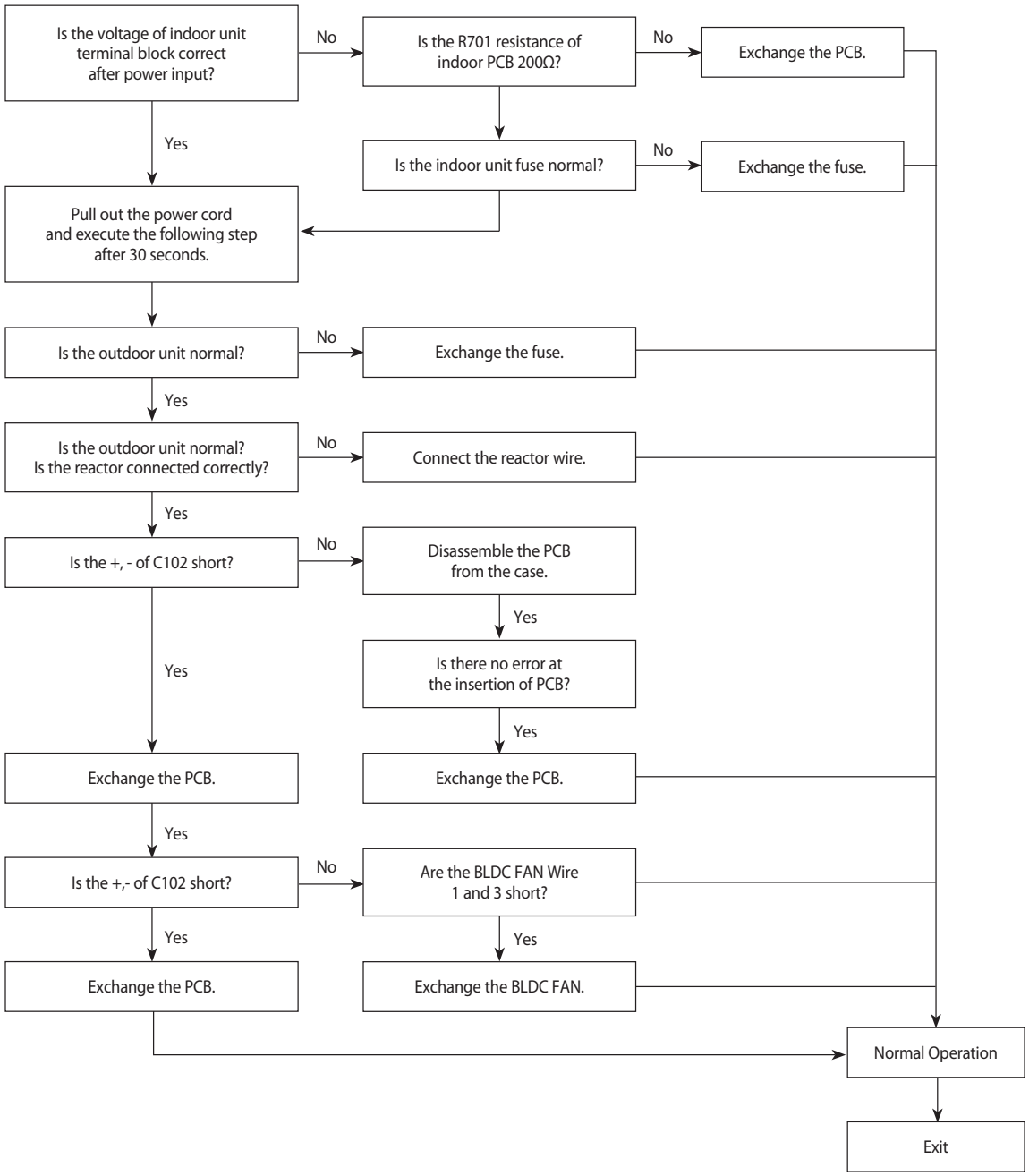
4-3-23 The Outdoor unit power supply error (Not displayed)

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

2. Troubleshooting procedure



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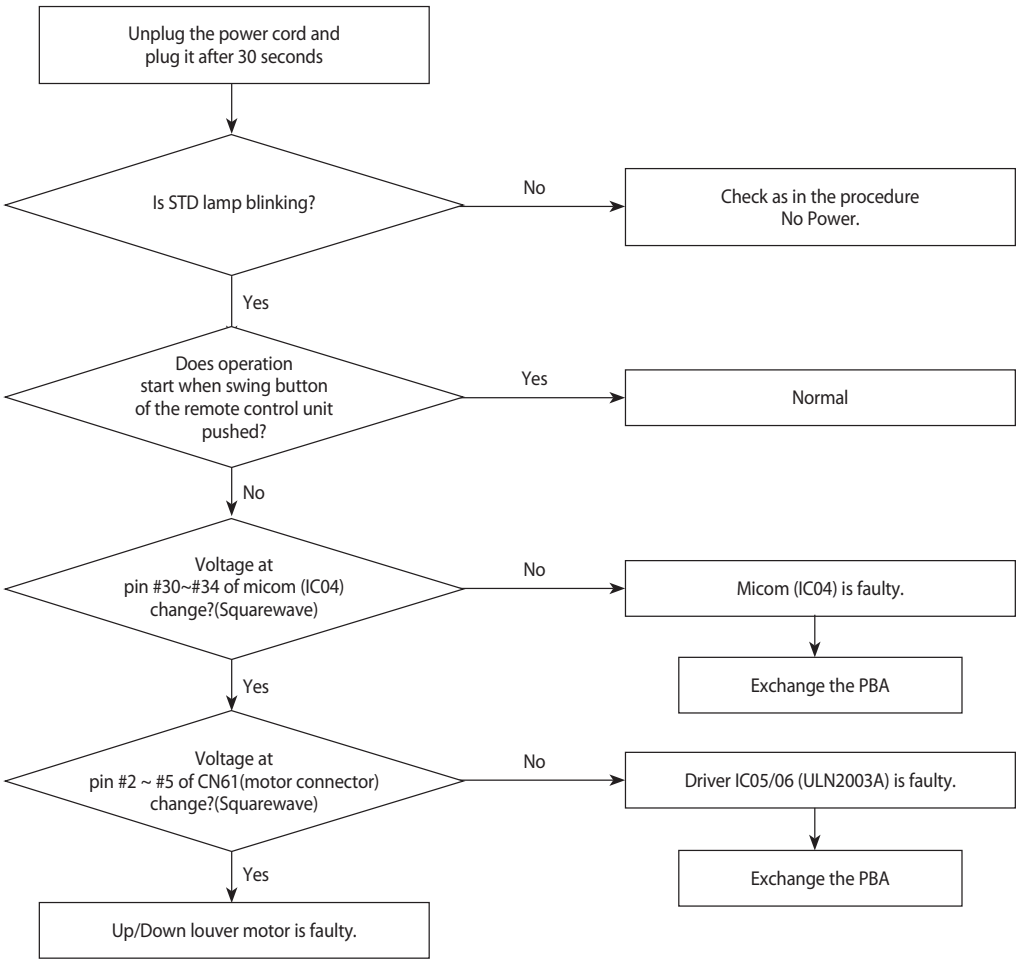
4-3-24 When the Up/Down Louver Motor Does Not Operate. (Initial Diagnosis) (Not displayed)

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

2. Troubleshooting procedure



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4-3-25 When the remote control is not receiving

1. Check if the connector was normally assembled.

2. Put the set in operation and check the voltage of No. 3 and No. 1 of the main PCB CN45 while operating the remote control. When the voltage descends below 3V, the assembly module PCB is normal and the main PCB is poor. Then replace the main PCB.

3. Replace the assembly module PCB because the module PCB is poor if the voltage between No. 3 and No. 1 of CN45 maintains 5V after the remote control starts operation.

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4-4 PCB Inspection Method

4-4-1 Pre-inspection Notices

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

4-4-2 Inspection Procedure

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

4-4-3 Indoor Detailed Inspection Procedure

No	Procedure	Inspection Method	Cause
1	Plug out and pull the PCB out of the electronic box. Check the PCB fuse.	1) Is the fuse disconnected?	• Over current • Indoor Fan Motor Short • AC Part Pattern Short of the MAIN PCB
2	Supply power. If the operating lamp twinkles at this time, the above 1)~3) have no relation.	Checking the power voltage.	
		1) Is the DB71 input voltage AC200V~AC240V?	• Power Cord is fault, Fuse open. Wrong Power Cable Wiring, AC Part is faulty.
		2) Is the voltage between both terminals of the C104 on the 2nd side of the transformer DC12V ±0.5V?	• Switching Trans or Power Circuit is faulty
		3) Is the voltage between both terminals of OUT and GND of IC19(KA78L05) DC5V ±0.5V?	• Power Circuit is faulty, Load Short
3	Press the ON/OFF button.	Checking the power voltage.	
		1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN72)?	• Relay(RY71) Coil Disconnection, IC05 is faulty
		2) Check the voltage of both terminals of terminal block 1 and N(1) after 3 minute operation.: AC220V	• Relay(RY71) Contact is faulty
4	Press the ON/OFF button. 1. FAN Speed [High] 2. Continuous Operation	1) Is the voltage over AC180V being imposed on terminal #3 and #5 of the fan motor connector(CN72)?	• Fan Motor of the indoor is faulty
		2) The fan motor of the indoor unit doesn't run.	• Fan Motor Connector(CN72) is faulty
		3) The power voltage between terminal #3 and #5 of the connector(CN72) is 0V.	• ASS'Y Main PCB is faulty • Connection is faulty

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4-4-4 Outdoor Detailed Inspection Procedure

No	Procedure	Inspection Method	Cause
1	Wait 30 seconds over after disconnecting the power cable Check the outdoor PCB.	1) Is C101 discharged? 2) Is the resistance of both terminals of C101 opened? 3) Is the fuse of EMI PCB normal? 4) Is the reactor wire connected?	• Over Current • Inner short of PCB • BLDC FAN Motor Error
2	Check the Outdoor unit PCB.	1) Is R701 200ohm? 2) Does ry74 operate normally? (IC05 & 16:0V, 1:5V) 3) Is the fuse(F701) normal? 4) Is the Sub PCB assembled normally?	• Outdoor PCB Error • SUB Relay(RY74) Error • IC05 Error • Indoor PCB Error
3	Check the LED lighting after power supply.	1) Normal: Red: Light On, Green: Flickering, Yellow: Light Off? 2) Is the voltage of C101 250V over? 3) Is the input of IC19 8V, and the output 5V? 4) Recheck after disassembling BLDC FAN Wire.	• Inner short of outdoor PCB • Wrong assembly of outdoor PCB • BLDC FAN Error
4	Check the condition of indoor & outdoor connection cable.	1) Is the green LED light on once per second? 2) Is the indoor & outdoor connection able connected in order? 3) Is the grounding wire connected to the both of indoor & outdoor unit? 4) Is the voltage of terminal block N(1), 225V?	• Wrong connection of Indoor/Outdoor wiring • Wrong assembly of outdoor communication circuit
5	Check the Comp Wire.	1) Is it connected red, blue, and yellow in order in counterclockwise. 2) Are the valve and its installation condition good? 3) Is the installation condition of outdoor unit?	• Wrong assembly • Installation condition is bad.
6	Check the BLDC Fan.	1) Is CN01 1, 3 over 250V? 2) Is CN01 3, 5 within 1V~5V? 3) Is the voltage of CN01 6 changed? 4) Is the resistance of BLDC Motor 1, 3 opened after power off?	• Outdoor PCB Error • BLDC Motor Error

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4-5 Main Part Inspection Method

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

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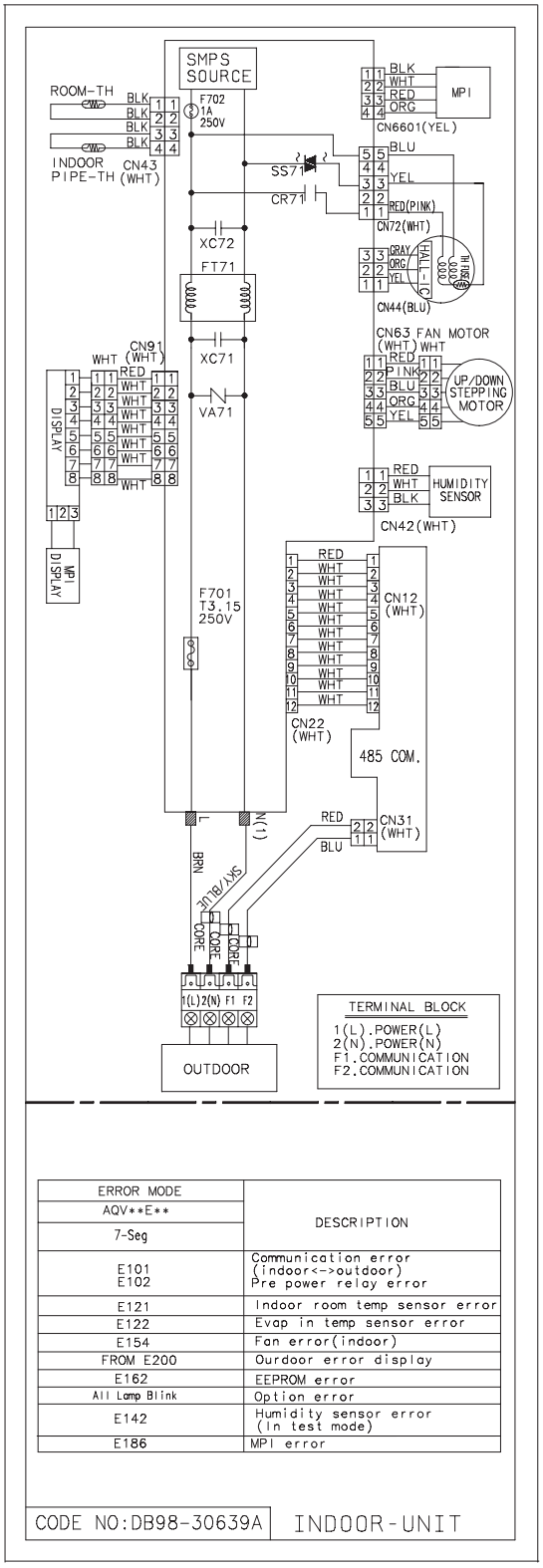
7. Wiring Diagram

7-1 Indoor Unit



ERROR MODE	DESCRIPTION
AQV**E**	
7-Seg	
E101 E102	Communication error (indoor<->outdoor) Pre power relay error
E121	Indoor room temp sensor error
E122	Evap in temp sensor error
E154	Fan error(indoor)
FROM E200	Ourdoor error display
E162	EEPROM error
All Lamp Blink	Option error
E142	Humidity sensor error (In test mode)
E186	MPI error

CODE NO:DB98-30639A INDOOR-UNIT

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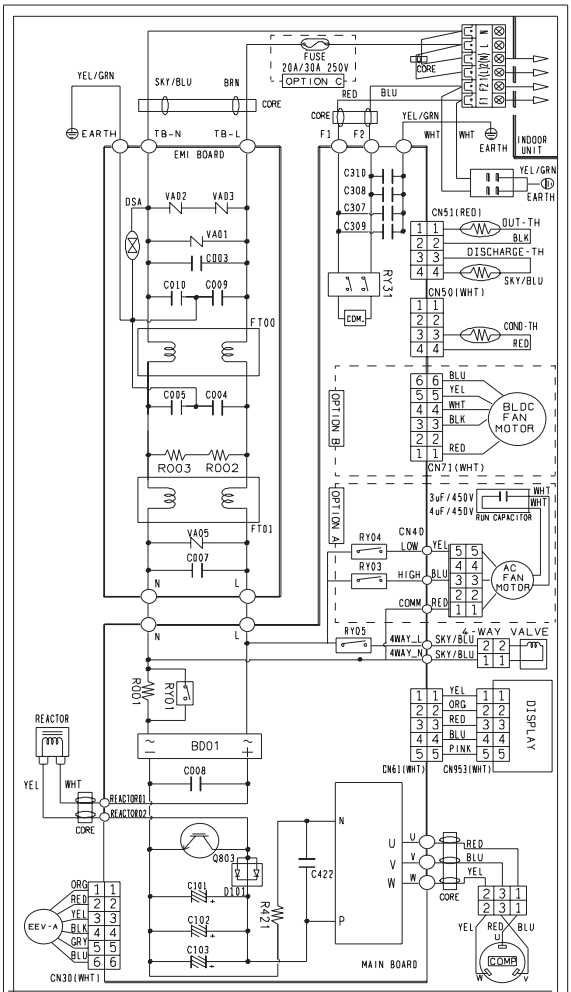

LED PATTERN			DESCRIPTION
YEL	GRN	RED	
○	○	○	Power Off / VDD NG
○	○	◎	IPM Over Current(O.C)
○	○	●	Abnormal Serial communication (Display Board:Indoor<->Outdoor)
○	●	●	Normal Operation
○	◎	●	Comp Starting error
○	◎	○	DC-Link voltage under/over error
○	●	◎	Outdoor temp sensor error(Dual/Single)
◎	○	◎	Discharge over temperature(Dual/Single)
◎	○	●	Discharge temp sensor error(Dual/Single)
◎	◎	○	current sensor error
◎	◎	●	Comp Vlimit error
◎	●	◎	Coil temp sensor error(Dual/Single)
◎	●	●	1min. Time out Comm. (Display Board:Onboard:Indoor<->Outdoor)
●	○	○	Fan error
●	○	◎	OTP error
●	○	●	Comp rotation error
●	◎	○	Operation condition secession(Dual only)
●	◎	◎	DC-Link voltage sensor error
●	◎	●	I-Trip error / PFC Over current
●	●	○	GAS Leak error(Dual/Single)
●	●	◎	AC Line Zero Cross Signal out
●	●	●	Power ON reset(1sec)
◎	○	○	capacity miss match
○	◎	◎	Test Operation Cooling Mode
◎	◎	◎	Test Operation Heating Mode

● LED ON ○ LED OFF ◎ LED BLINKING

OPTION	
OPTION A	AC FAN
OPTION B	BLDC FAN
OPTION C	FUSE AQV18***:20A, AQV24***:30A

CODE NO:DB98-29987A | OUTDOOR UNIT

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