

SPLIT TYPE
AIR CONDITIONER
DUCT TYPE (50Hz)

SERVICE MANUAL



Indoor unit	Outdoor unit
ARYC72LHTA	AOYA72LALT
ARYC90LHTA	AOYA90LALT

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SPECIFICATIONS

ELECTRICAL DATA

TYPE		Cooling and heating	
INDOOR UNIT		ARYC72LHTA	ARYC90LHTA
OUTDOOR UNIT		AOYA72LALT	AOYA90LALT
COOLING CAPACITY		20.3 kW	25.0 kW
HEATING CAPACITY		22.6 kW	28.0 kW
POWER SOURCE		400 V, 50 Hz, Three phases, 4W	
RUNNING CURRENT	Cooling	9.6 A	11.9 A
	Heating	9.6 A	12.5 A
INPUT WATTS	Cooling	6.25 kW	7.82 kW
	Heating	6.27 kW	8.24 kW
EER	Cooling	3.25 kW/kW	3.20 kW/kW
	Heating	3.60 kW/kW	3.40 kW/kW
STARTING CURRENT		12.1 A	12.1 A
MOISTURE REMOVAL		4.5 L/hr	6.0 L/hr
AIR CIRCULATION INDOOR		4,300 m3/hr	4,850 m3/hr
AIR CIRCULATION OUTDOOR	Cooling	9,300 m3/hr	10,700 m3/hr
	Heating	9,300 m3/hr	10,800 m3/hr
MAXIMUM CURRENT		22.8 A	25.8 A

FAN MOTOR

INDOOR UNIT Fan 1/Fan 2	Discrimination	MFG-90WVM	MFG-90WVM
	High	900 / 940 r.p.m.	910 / 950 r.p.m.
	Medium	790 / 830 r.p.m.	820 / 860 r.p.m.
	Low	620 / 760 r.p.m.	630 / 810 r.p.m.
OUTDOOR UNIT	Discrimination	MFE-E4TVM	MFE-E4TVM
	Cooling	730 r.p.m.	830 r.p.m.
	Heating	730 r.p.m.	840 r.p.m.

NOISE LEVEL

INDOOR UNIT	High	47 dB(A)	49 dB(A)
	Medium	44 dB(A)	46 dB(A)
	Low	41 dB(A)	43 dB(A)
OUTDOOR UNIT	Cooling	57 dB(A)	58 dB(A)
	Heating	57 dB(A)	59 dB(A)

COMPRESSOR AND REFRIGERANT

TYPE	Hermetic type, Inverter, 4 poles, 3 phase, DC motor, Twin rotary		
DISCRIMINATION	806 876 80		
WEIGHT (with oil)	28.0 kg		
REFRIGERANT TYPE	R410A		
PRECHARGED REFRIGERANT	11,200 g		
FULL CHARGE	Pipe length	20 m	11,200 g
		40 m	13,400 g
		60 m	15,600 g
		75 m	17,250 g
ADDITIONAL CHARGE	110 g/m		
MAXIMUM PIPE HEIGHT	30 m		

DIMENSIONS

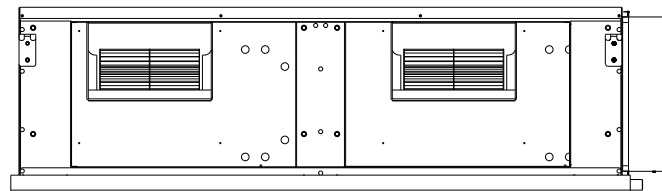
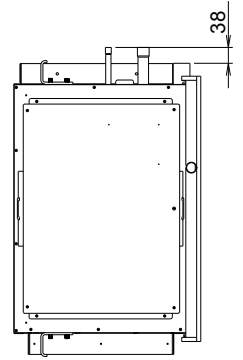
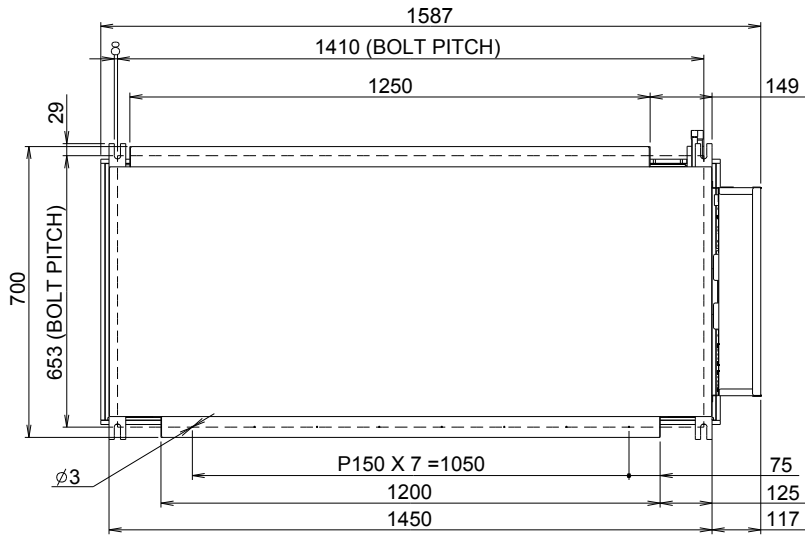
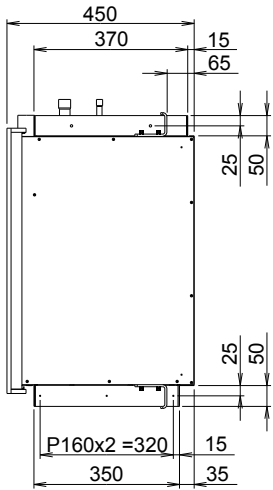
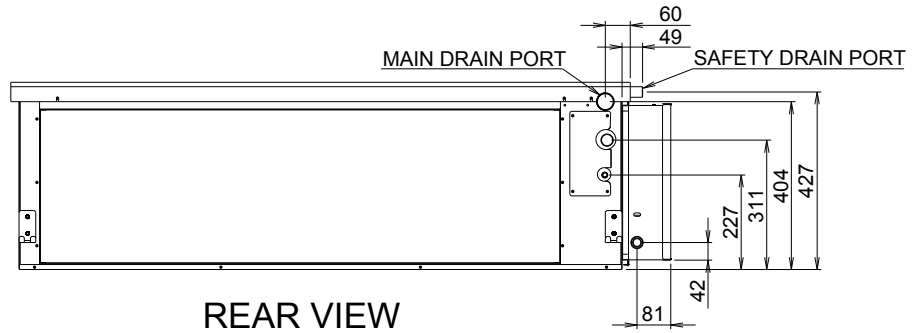
INDOOR UNIT	H x W x D	450 x 1,587 x 700	550 x 1,587 x 700
OUTDOOR UNIT	H x W x D	1,690 x 930 x 765 mm	

WEIGHTS

INDOOR UNIT	Shipping / Net	115 / 100	125 / 110
OUTDOOR UNIT	Shipping / Net	243 kg / 215 kg	

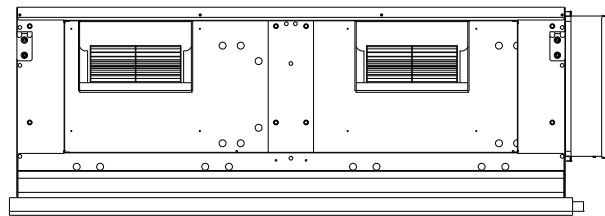
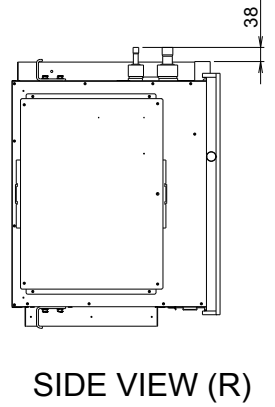
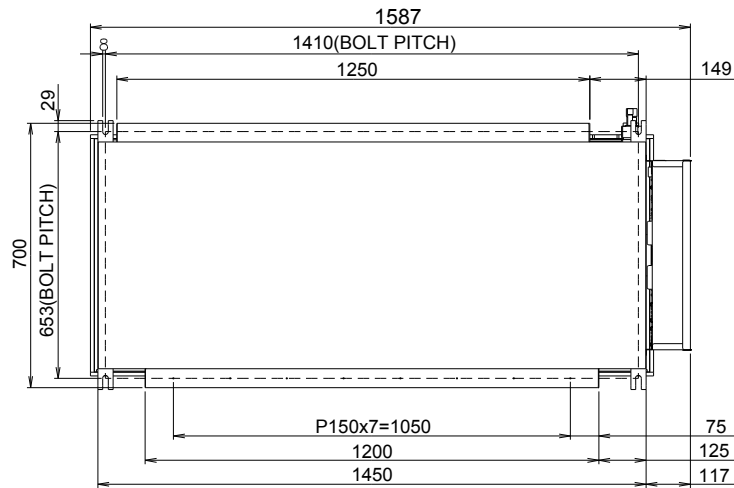
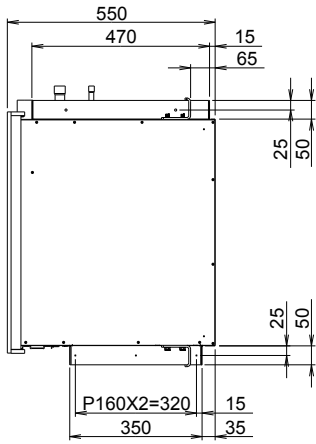
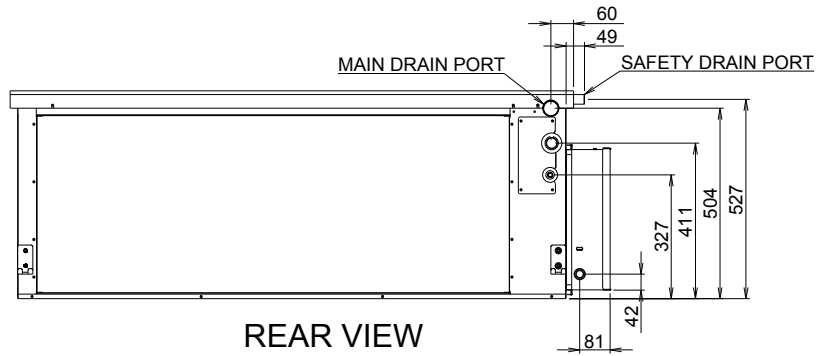
DIMENSIONS

INDOOR UNIT
ARYC72LHTA
(unit : mm)



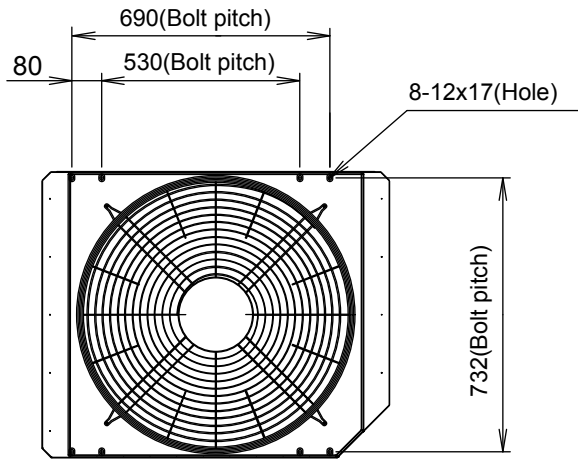
Drain pipe diameter
Inside : 36.0 mm
Outside : 38.0 mm

INDOOR UNIT
ARYC90LHTA
(unit : mm)

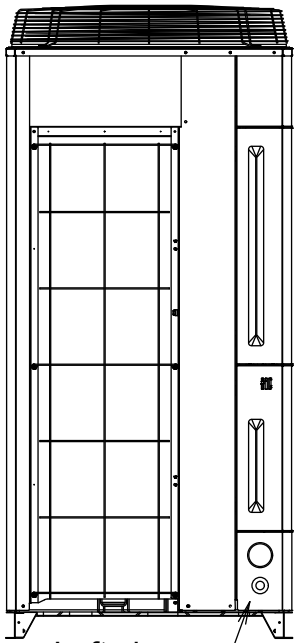


Drain pipe diameter
Inside : 36.0 mm
Outside : 38.0 mm

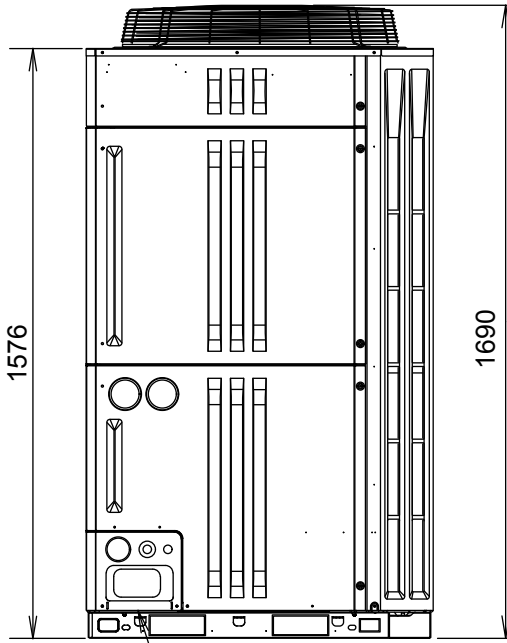
OUTDOOR UNIT
(unit : mm)



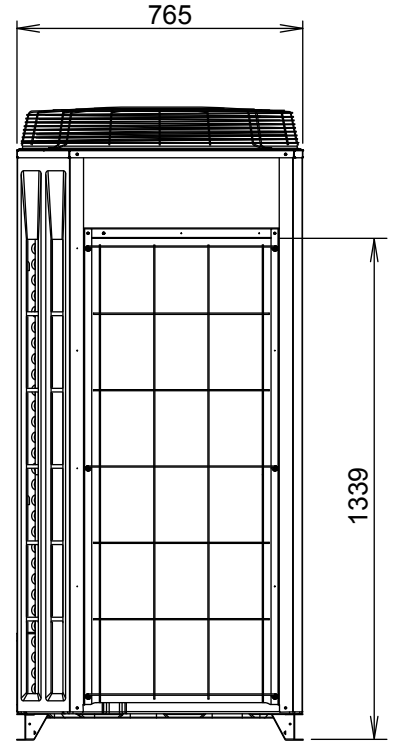
Top view



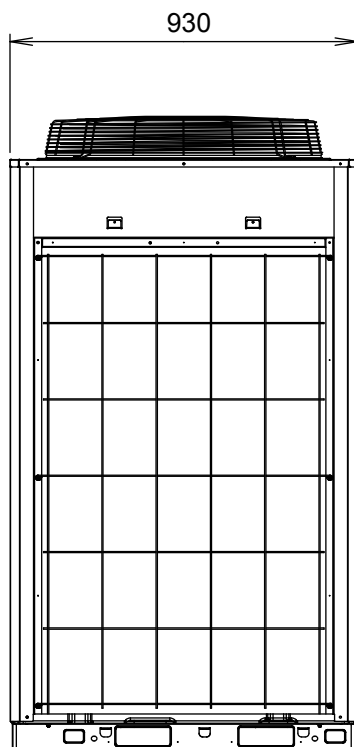
Left view
B



A, C Front view



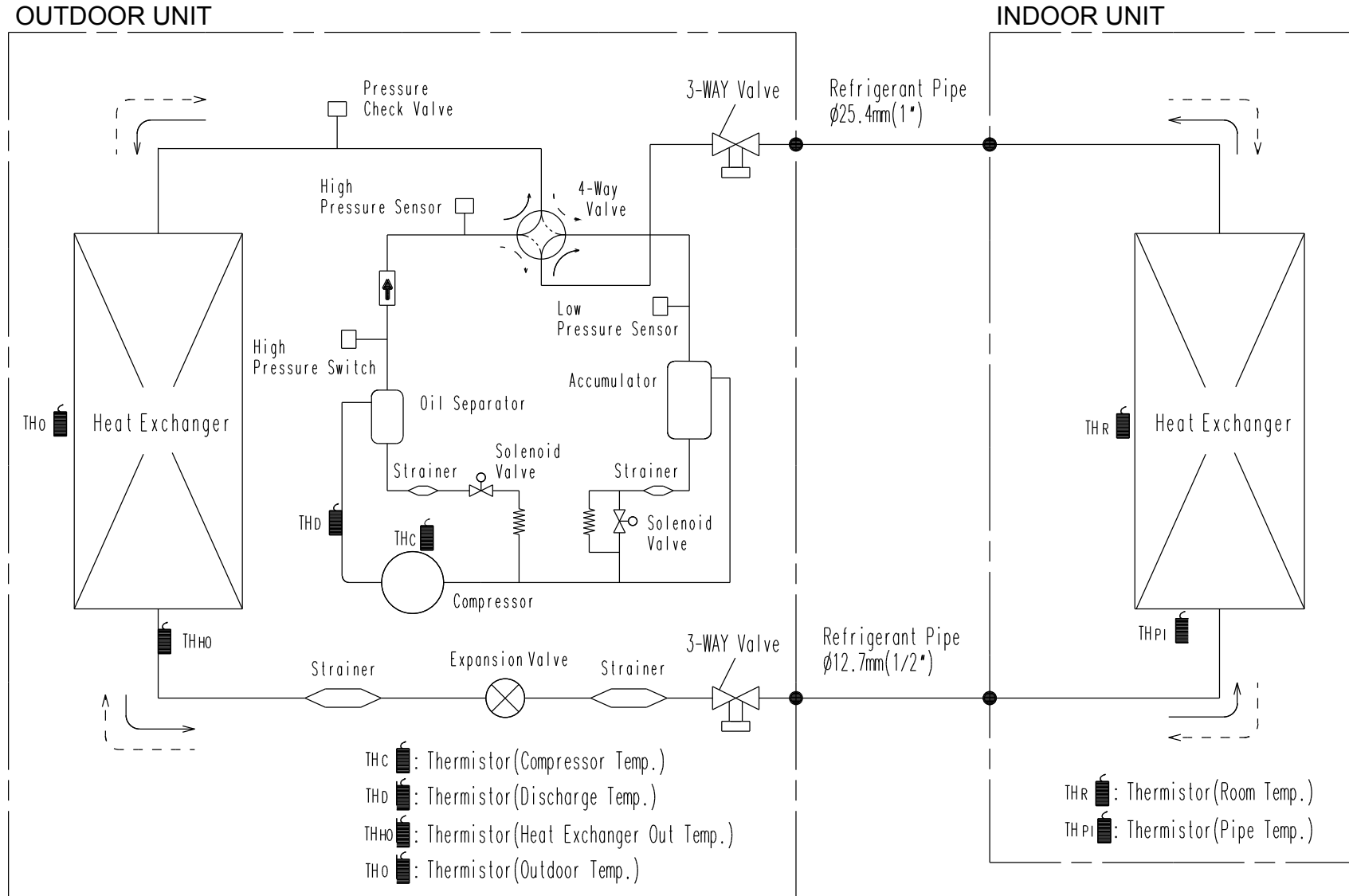
Right view



Rear view

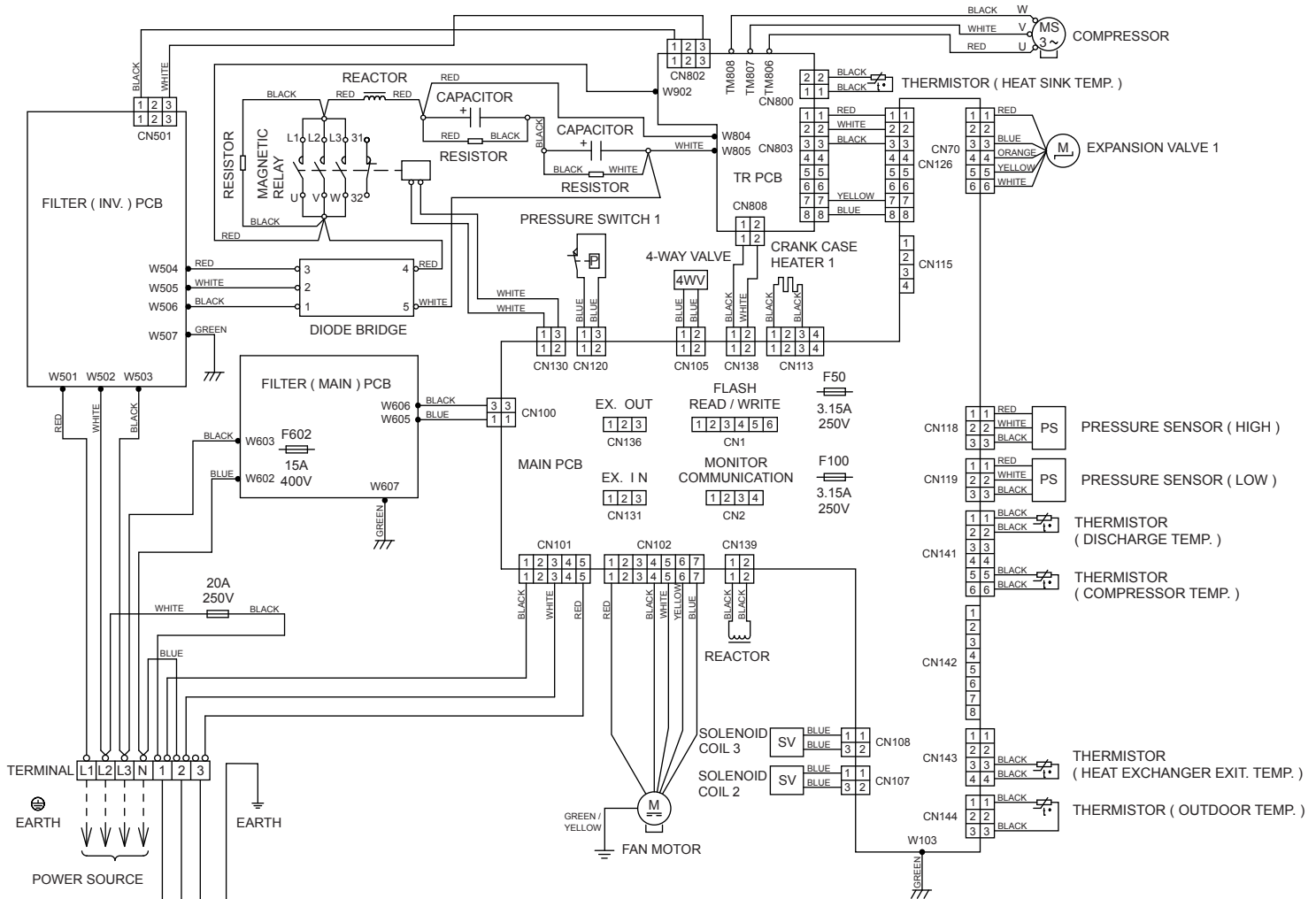
REFRIGERANT SYSTEM DIAGRAM

—> Cooling flow
 - - -> Heating flow

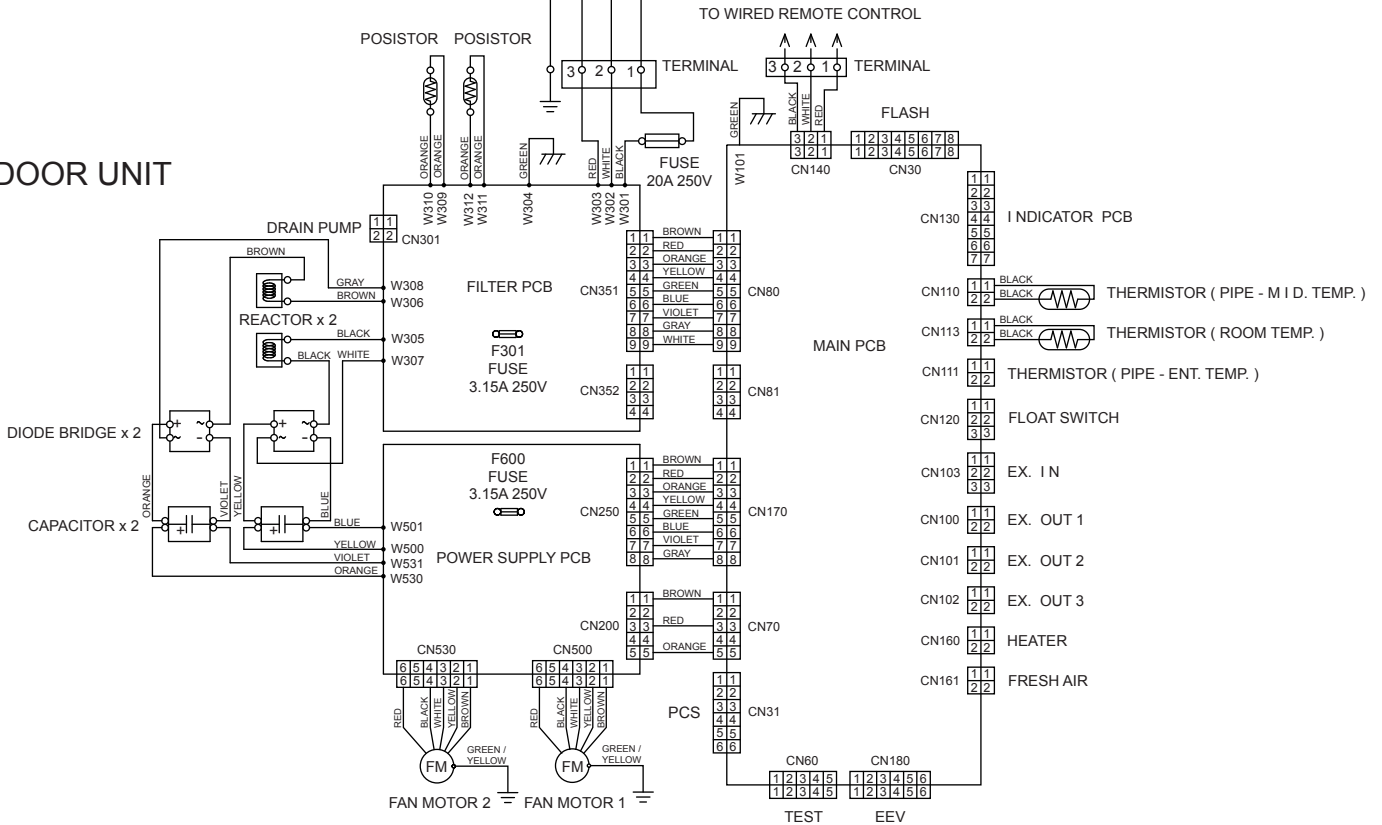


CIRCUIT DIAGRAM

OUTDOOR UNIT



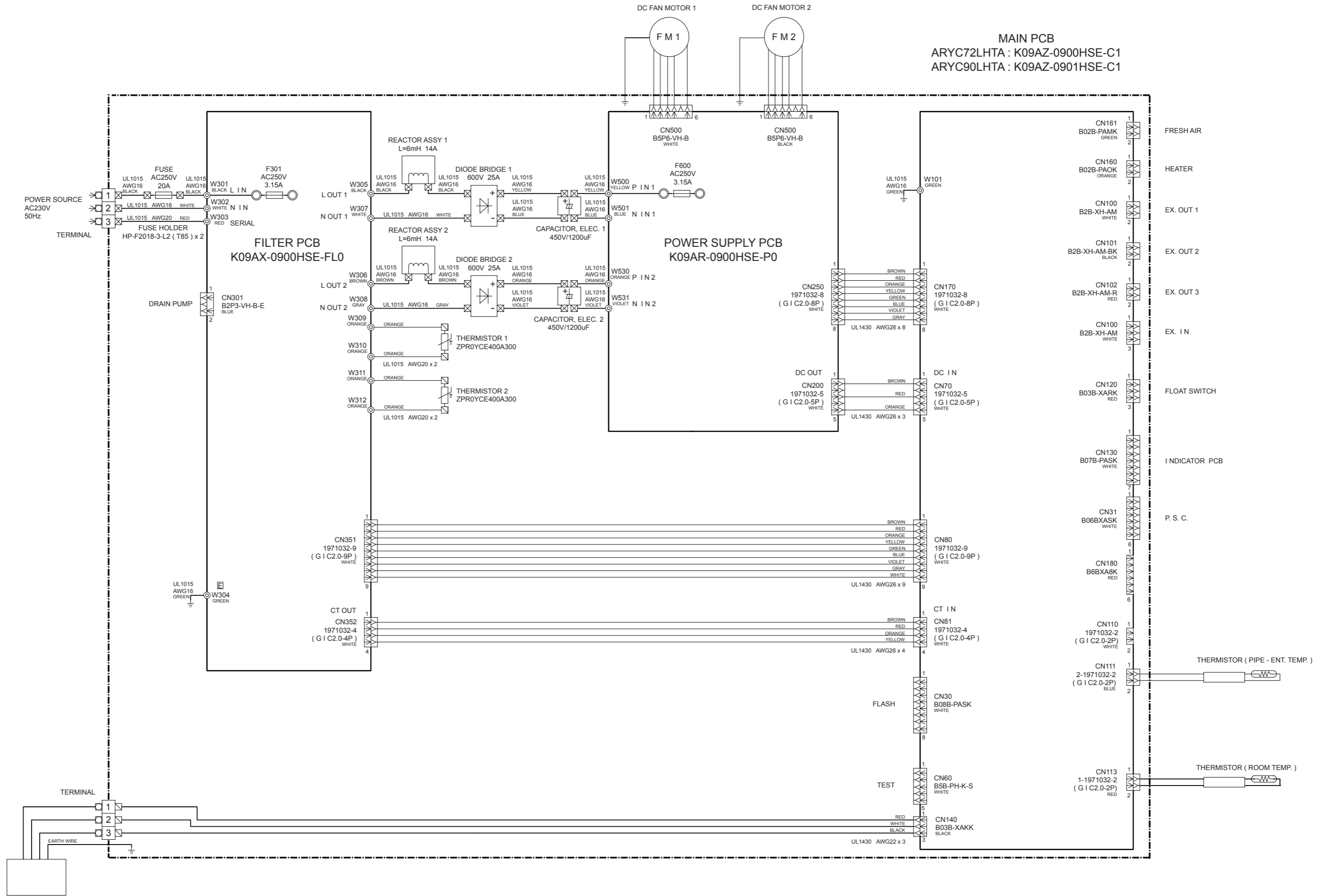
INDOOR UNIT



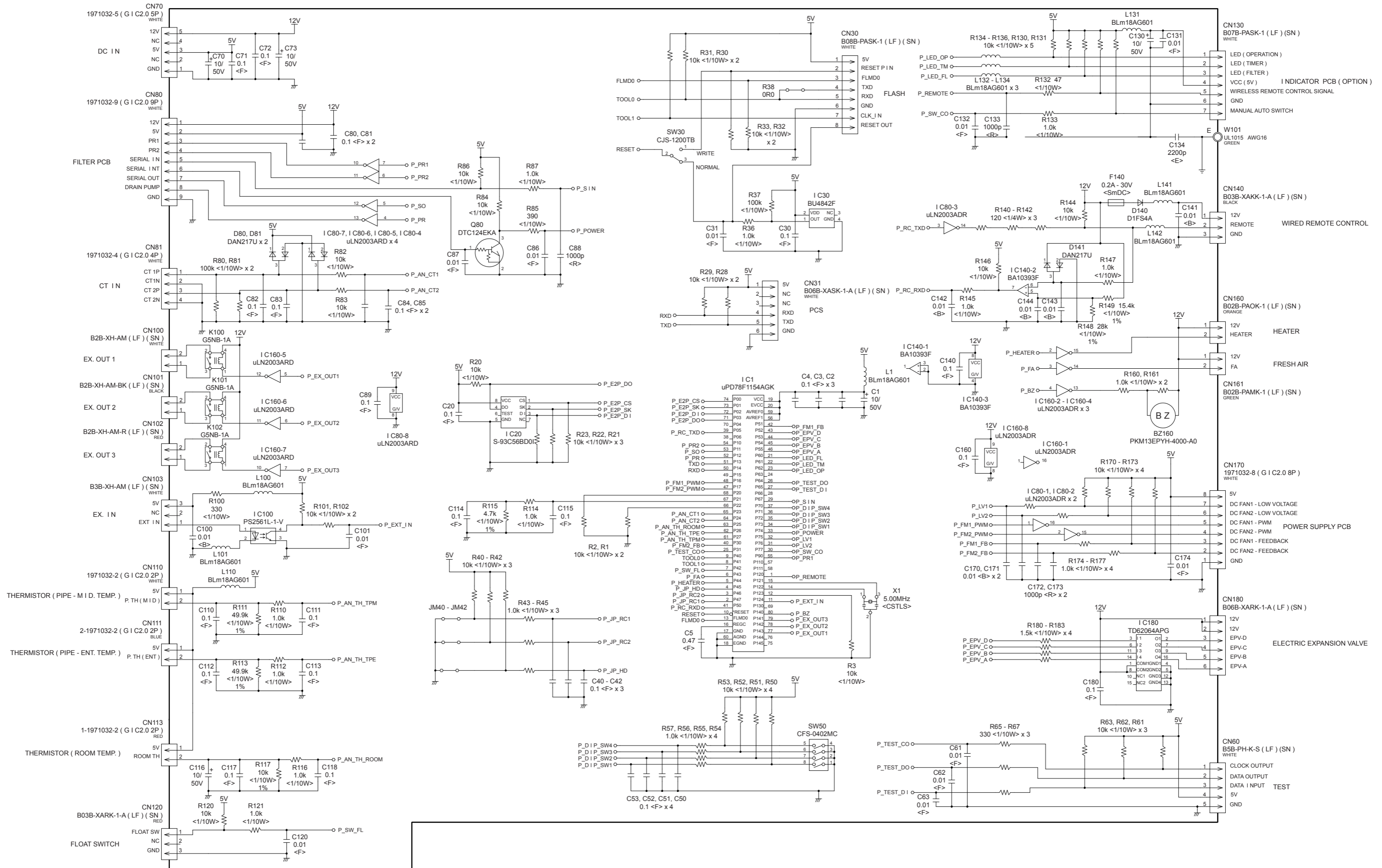
INDOOR PCB CIRCUIT DIAGRAM

CONTROL UNIT
 ARYC72LHTA : EZ-0122WHSE
 ARYC90LHTA : EZ-01221HSE

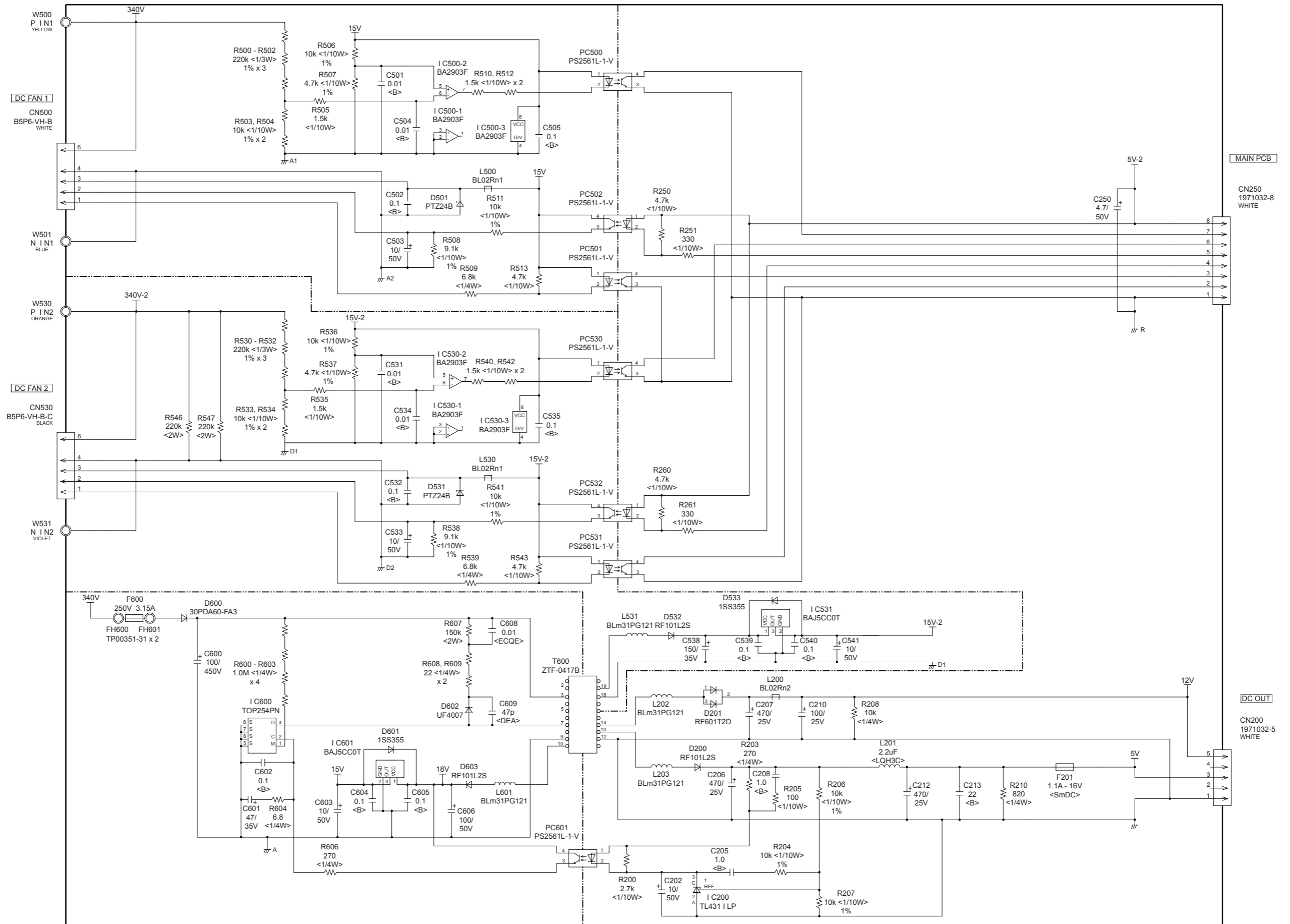
MAIN PCB
 ARYC72LHTA : K09AZ-0900HSE-C1
 ARYC90LHTA : K09AZ-0901HSE-C1



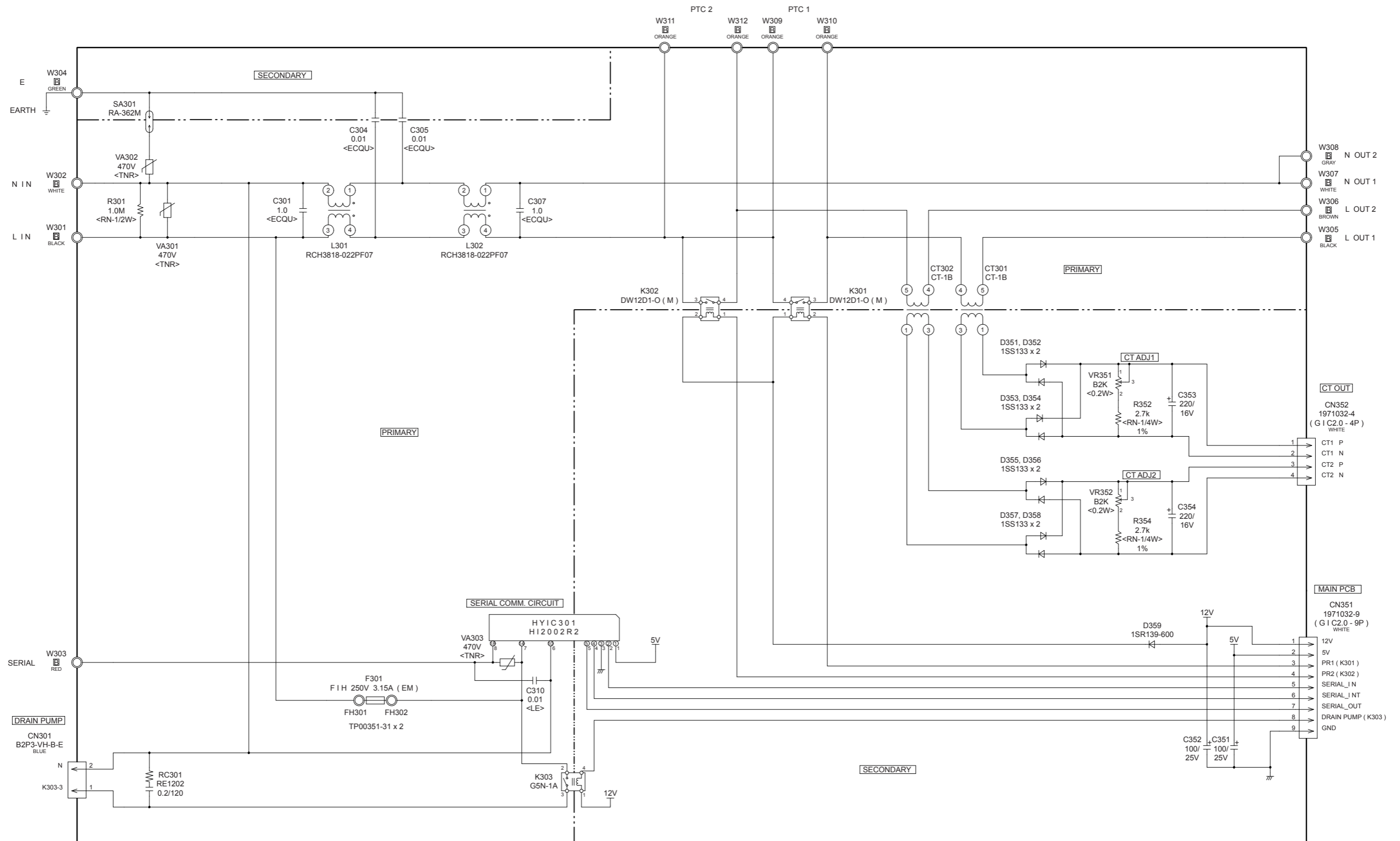
MAIN PCB
 ARYC72LHTA : K09AZ-0900HSE-C1
 ARYC90LHTA : K09AZ-0901HSE-C1



INDOOR UNIT
POWER SUPPLY PCB
K09AR-0900HSE-P0

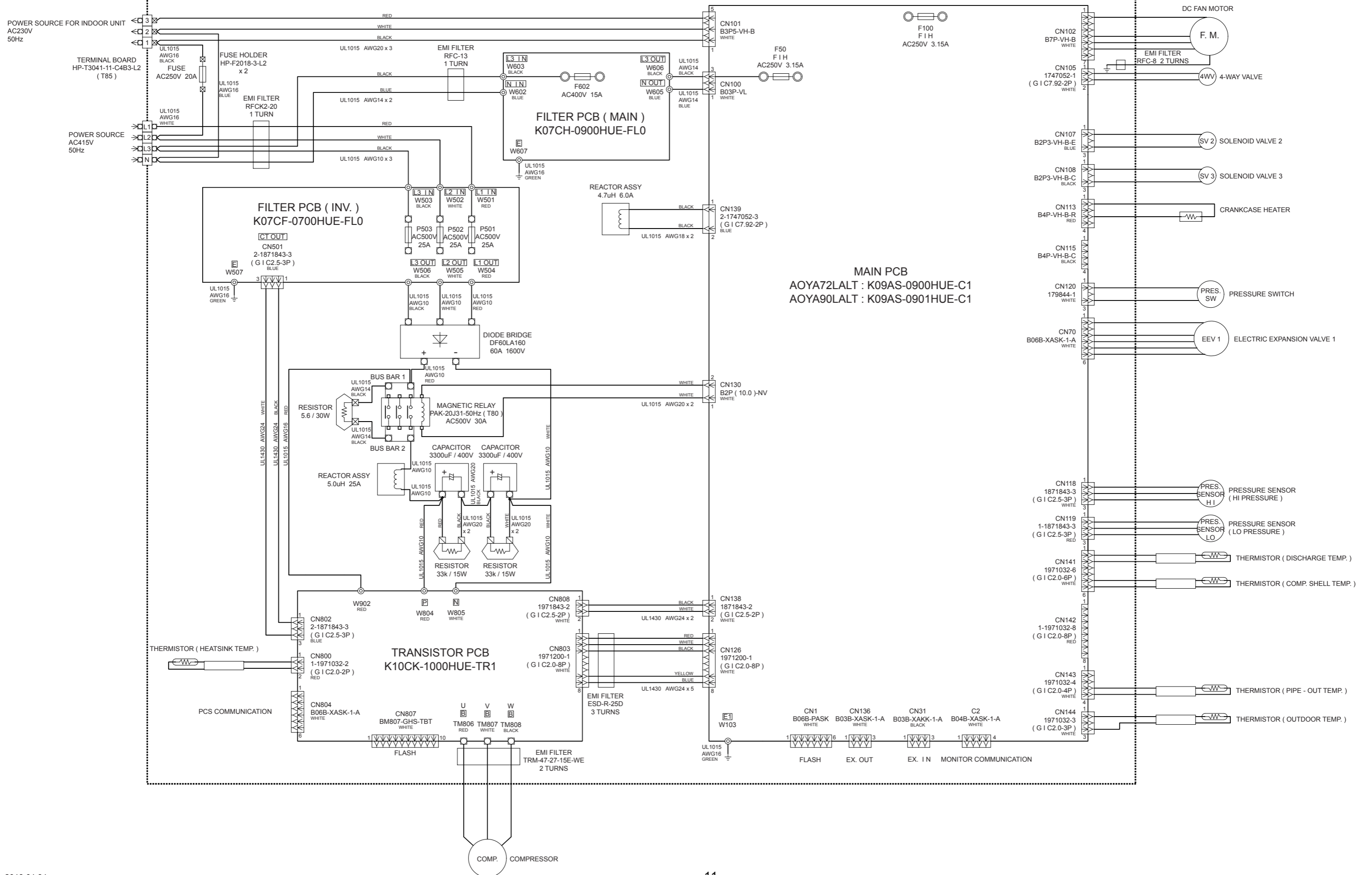


INDOOR UNIT
 FILTER PCB
 K09AX-0900HSE-FL0

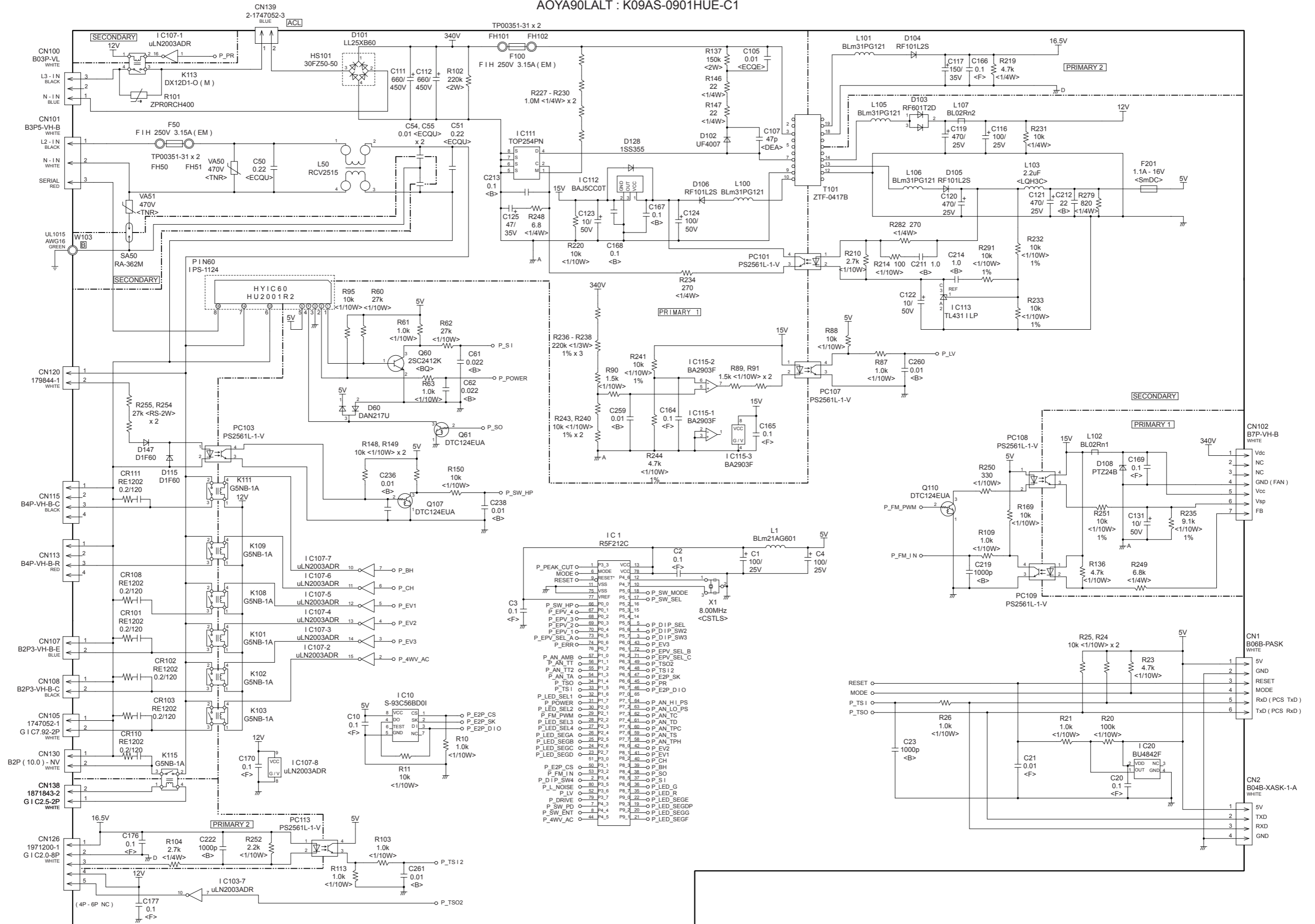


OUTDOOR PCB CIRCUIT DIAGRAM

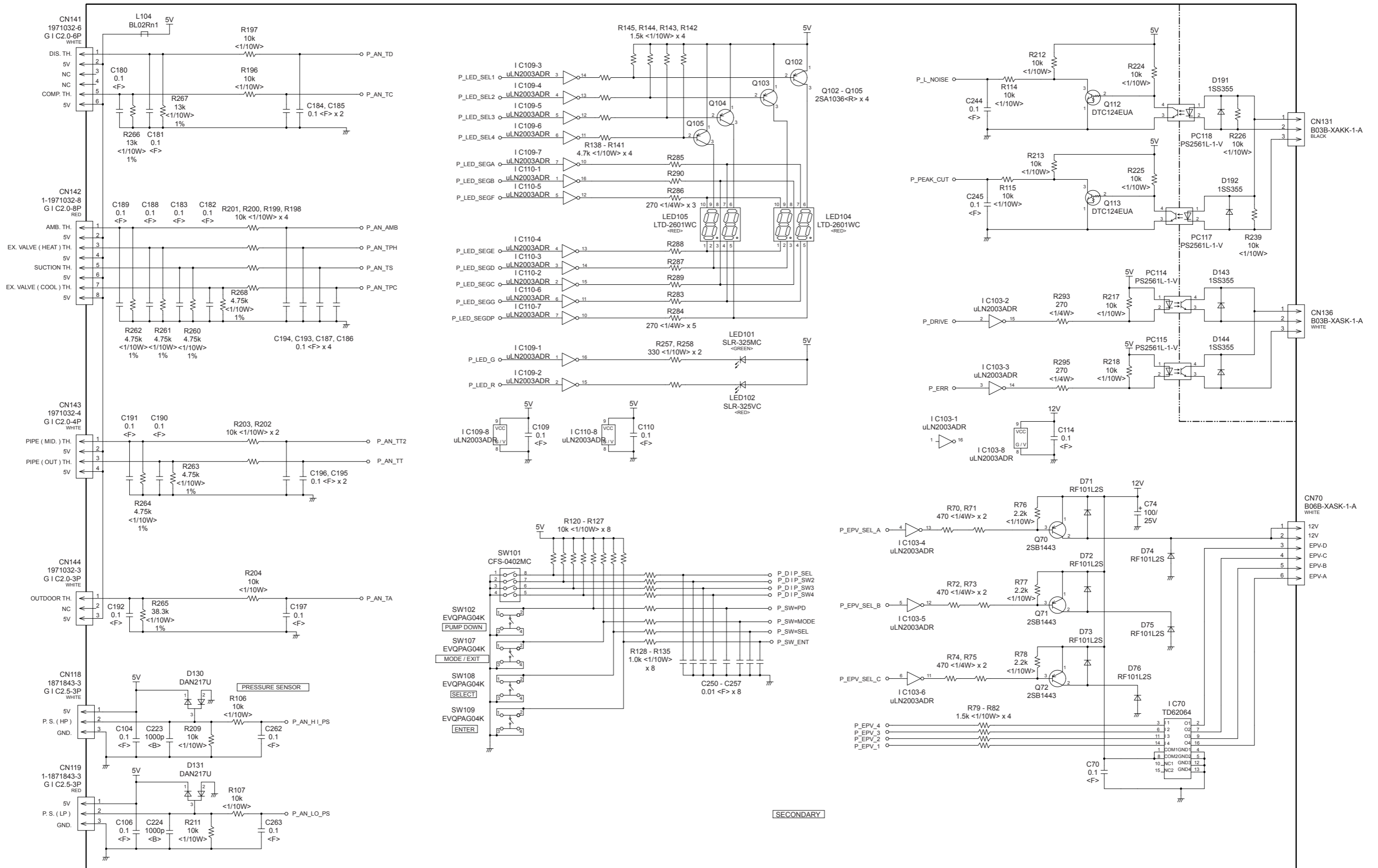
INVERTER ASSEMBLY
 AOYA72LALT : EZ-0092HUE
 AOYA90LALT : EZ-0098HUE



MAIN PCB - 1
 AOYA72LALT : K09AS-0900HUE-C1
 AOYA90LALT : K09AS-0901HUE-C1

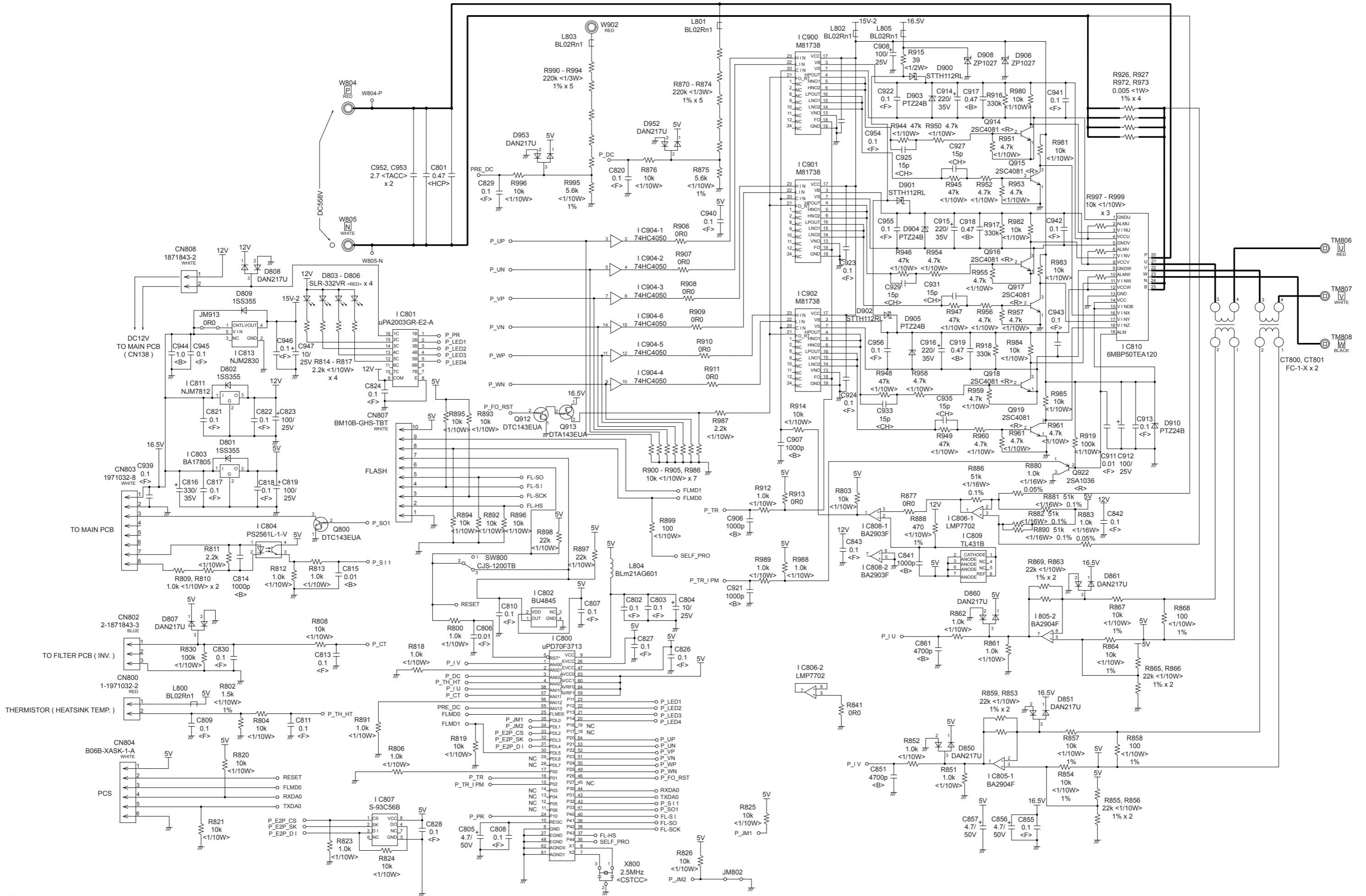


MAIN PCB - 2
 AOYA72LALT : K09AS-0900HUE-C1
 AOYA90LALT : K09AS-0901HUE-C1



SECONDARY

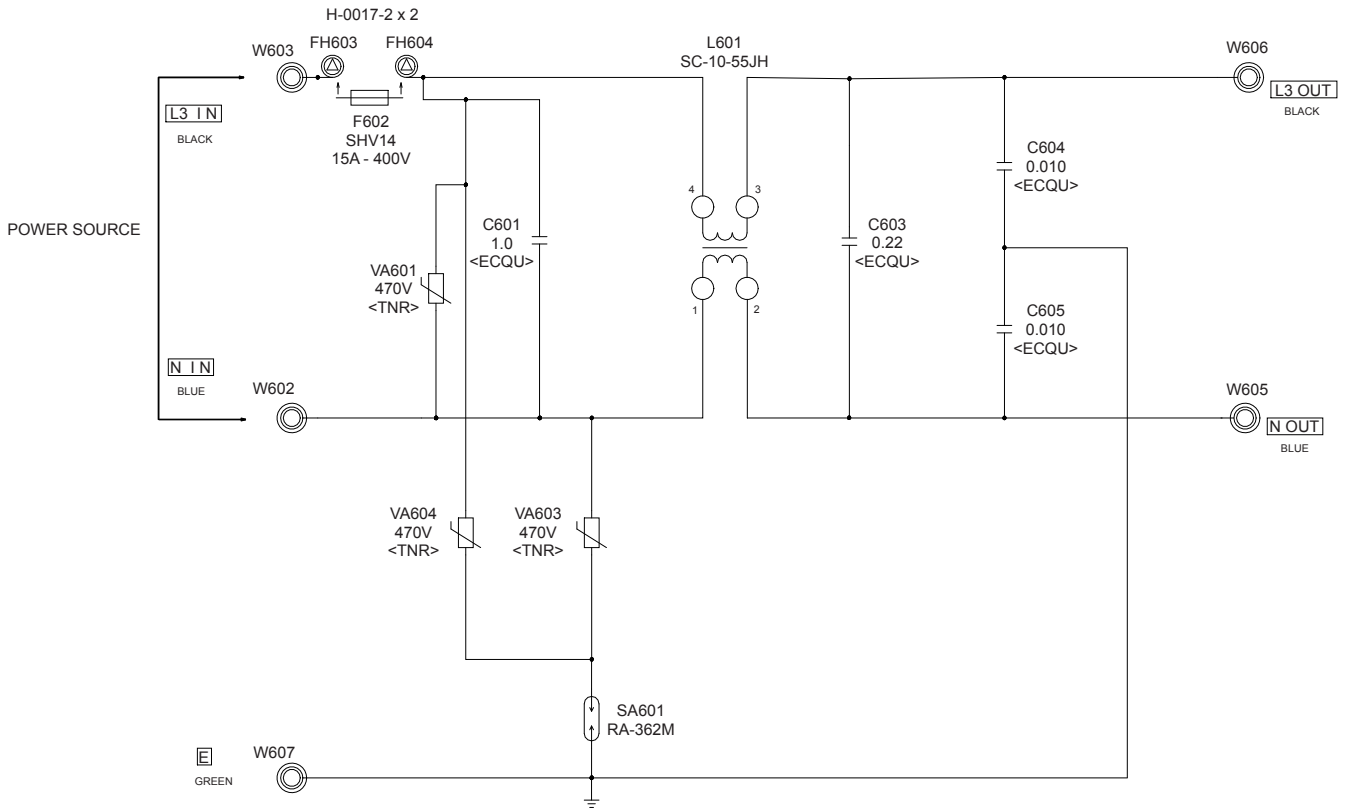
OUTDOOR UNIT TRANSISTOR PCB K10CK-1000HUE-TR1



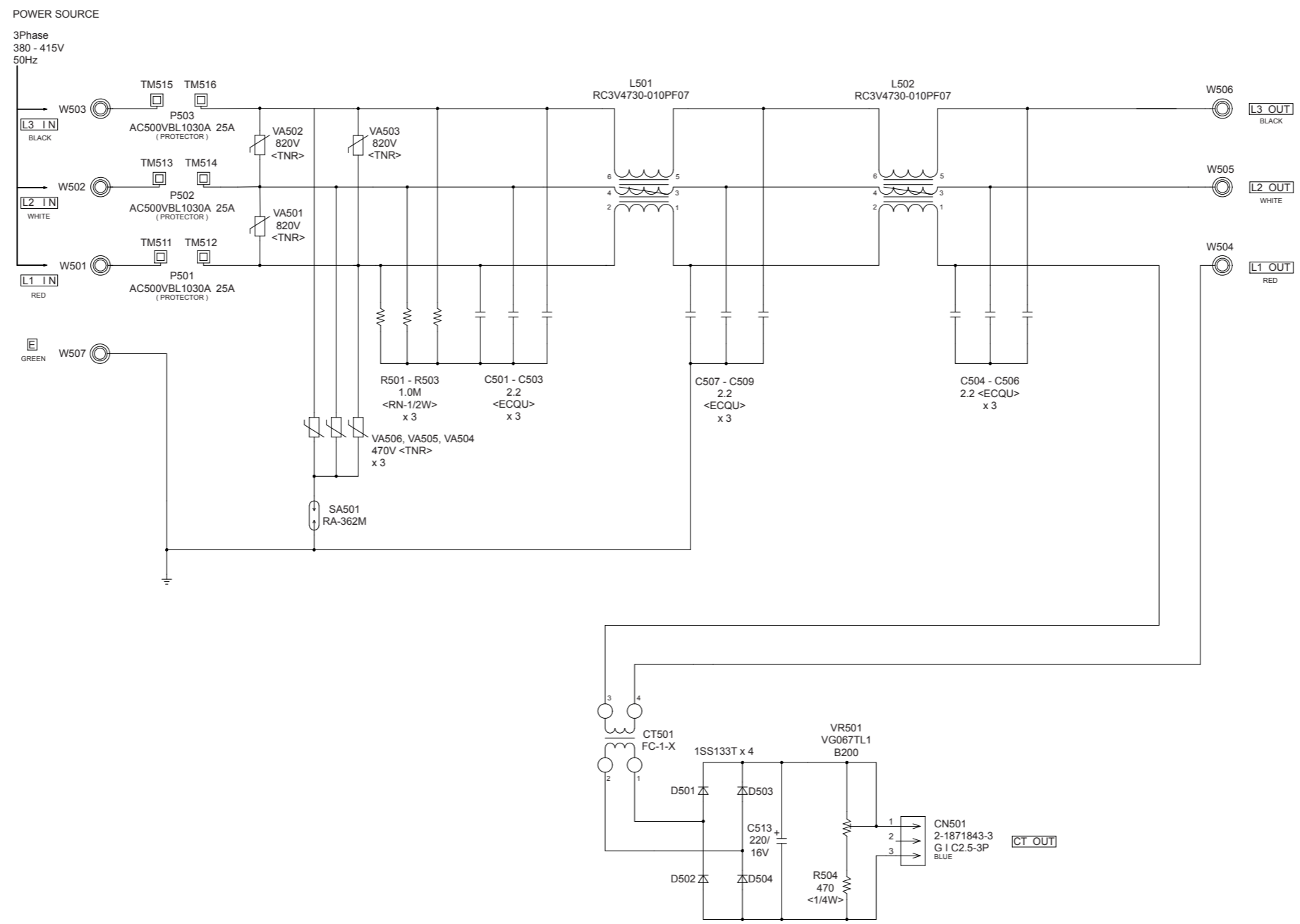
OUTDOOR UNIT

FILTER PCB (MAIN)

K07CH-0900HUE-FL0



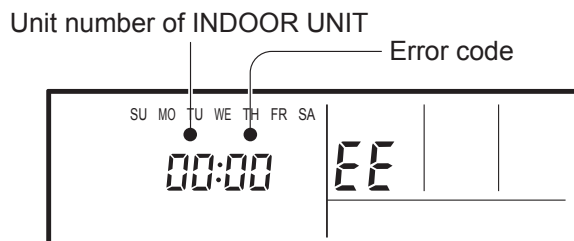
OUTDOOR UNIT
 FILTER PCB (INV.)
 K07CF-0700HUE-FL0



ERROR DETECTION

Troubleshooting at a wired remote control

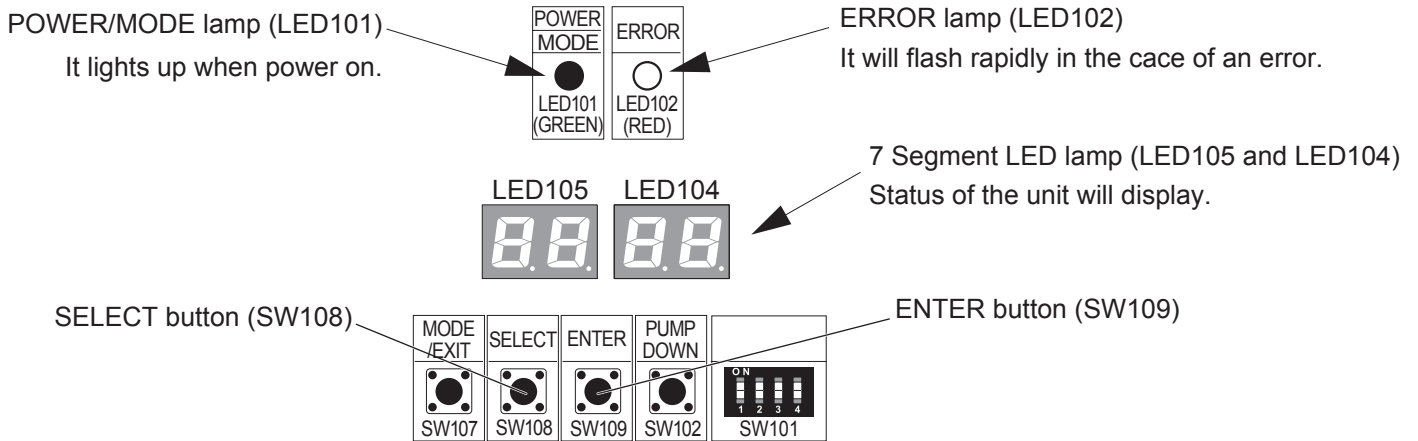
When the error indication “E:EE” is displayed, it indicates an error has occurred.



Ex. Self-diagnosis

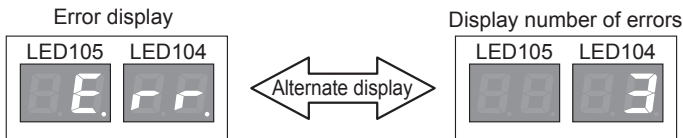
Error code	Error contents
00	Wired remote controller error
01	Indoor signal error
13	
26	
27	
02	Indoor room temperature sensor error
04	Indoor heat exchanger temperature sensor (middle) error
06	Outdoor heat exchanger temperature sensor (outlet) error
08	Power voltage error
0A	Outdoor temperature sensor error
0C	Outdoor discharge pipe temperature sensor error
0E	Heat sink thermistor (Inverter) error
0F	Discharge temperature error
11	Indoor unit distinction error
12	Indoor fan 1 error
15	Compressor temperature sensor error
16	Pressure switch error, Pressure sensor error
17	IPM protection
18	Outdoor CT error
19	INV voltage protection
1A	Compressor location error
1b	Outdoor fan error
20	Indoor manual auto switch error
24	Excessive high pressure protection on cooling
2A	Power supply frequency detection error
2b	Compressor temperature error
2C	4-way valve error
2E	Inverter error
2F	Low pressure error
34	Indoor fan 2 error
37	Indoor fan motor 1 driving circuit error
38	Indoor fan motor 2 driving circuit error

OUTDOOR UNIT LED

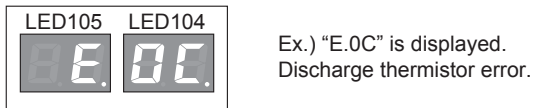


ERROR DISPLAY MODE

- (1) If an error has occurred, ERROR LED (LED102) will flash rapidly.
Then 7 Segment LED will alternately display "Err" and number of errors.

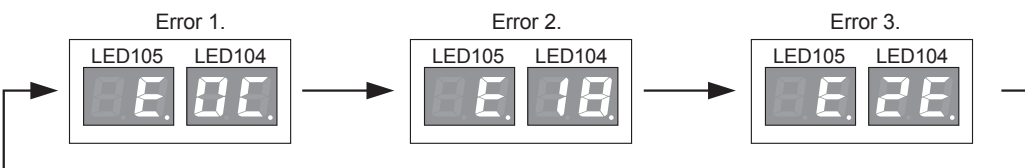


- (2) Error contents will display if ENTER button (SW109) is pressed in (1).
For error contents, refer to the table.



CODE	DESCRIPTION
E. 06.	Outdoor heat exchanger thermistor (outlet) error
E. 0A.	Outdoor thermistor error
E. 0C.	Outdoor discharge pipe thermistor error
E. 0E.	Heat sink thermistor (inverter) error
E. 0F.	Discharge temperature error
E. 13.	Indoor signal error
E. 15.	Compressor thermistor error
E. 16.	Pressure switch error, Pressure sensor error
E. 17.	IPM protection
E. 1A.	Compressor location error
E. 1b.	Outdoor fan error
E. 24.	Excessive high pressure protection
E. 2b.	Compressor temperature error
E. 2E.	Inverter error
E. 2F.	Low pressure error
E. 98.	Pump down error
E. 99	Indoor unit error condition

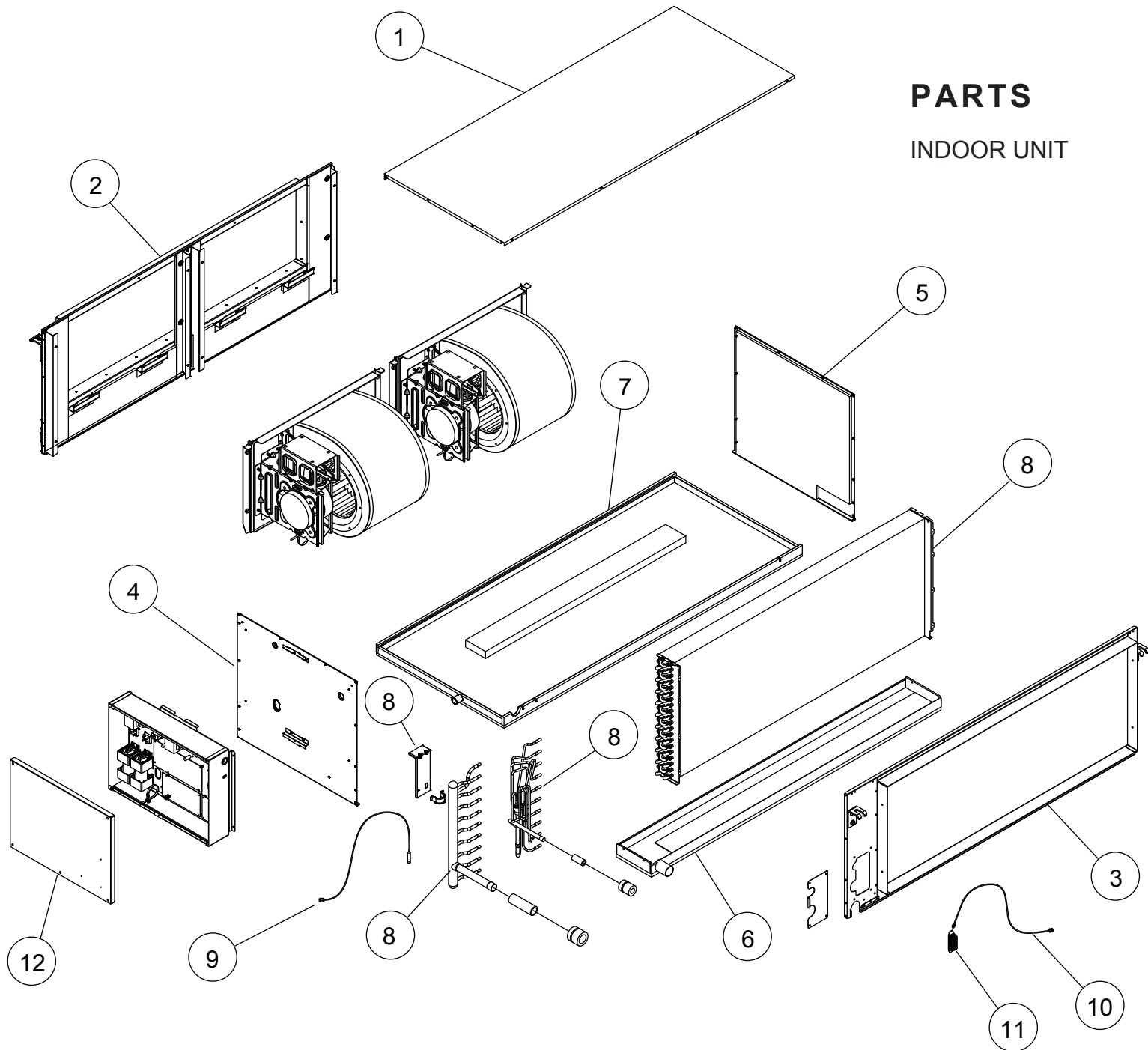
- (3) If SELECT button (SW108) is pressed in (2), contents of all the errors will display.



- (4) If ENTER button (SW109) is pressed, it will return to state of (1).
If no action is taken, it will return to the state of (1) after 60 seconds.

PARTS

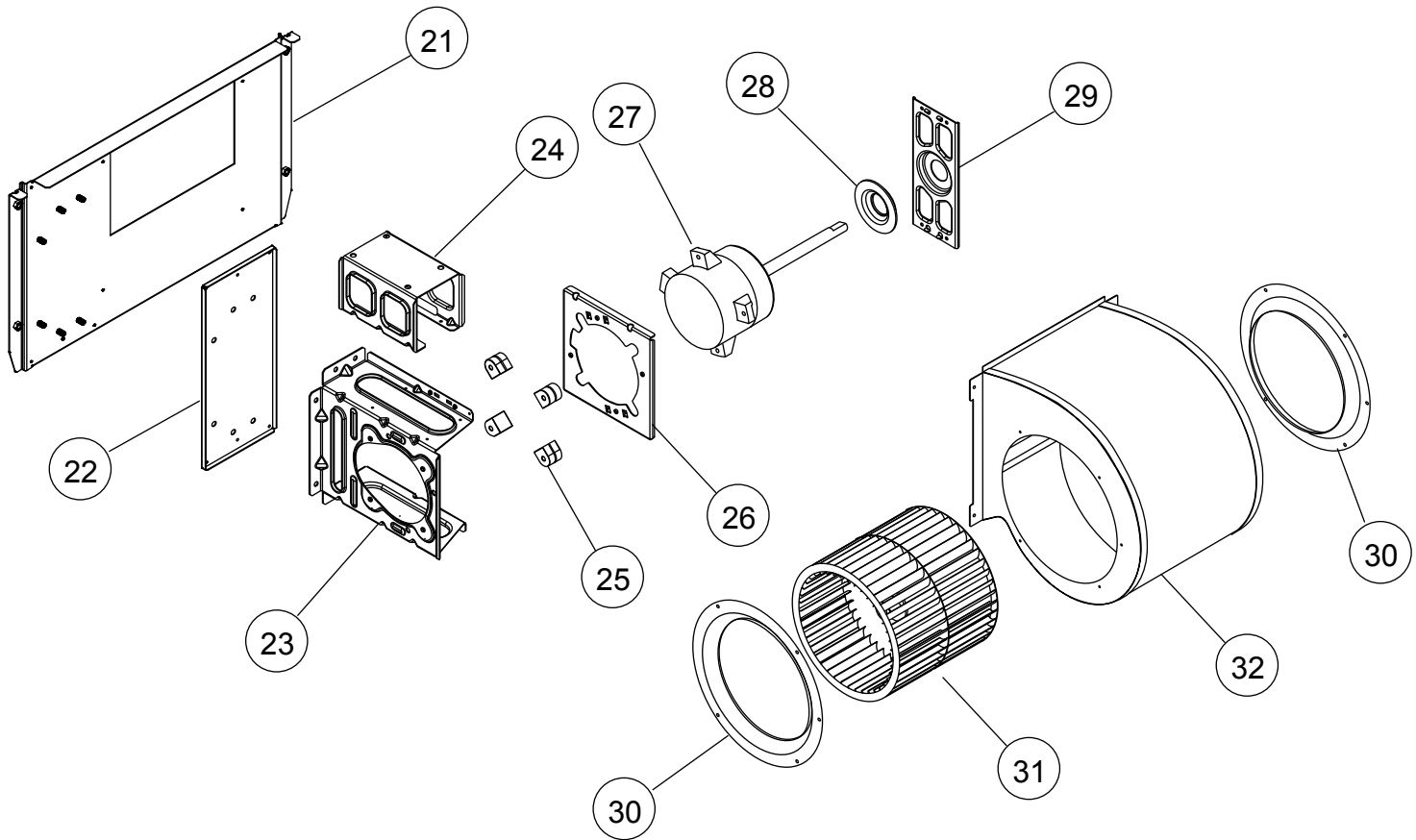
INDOOR UNIT



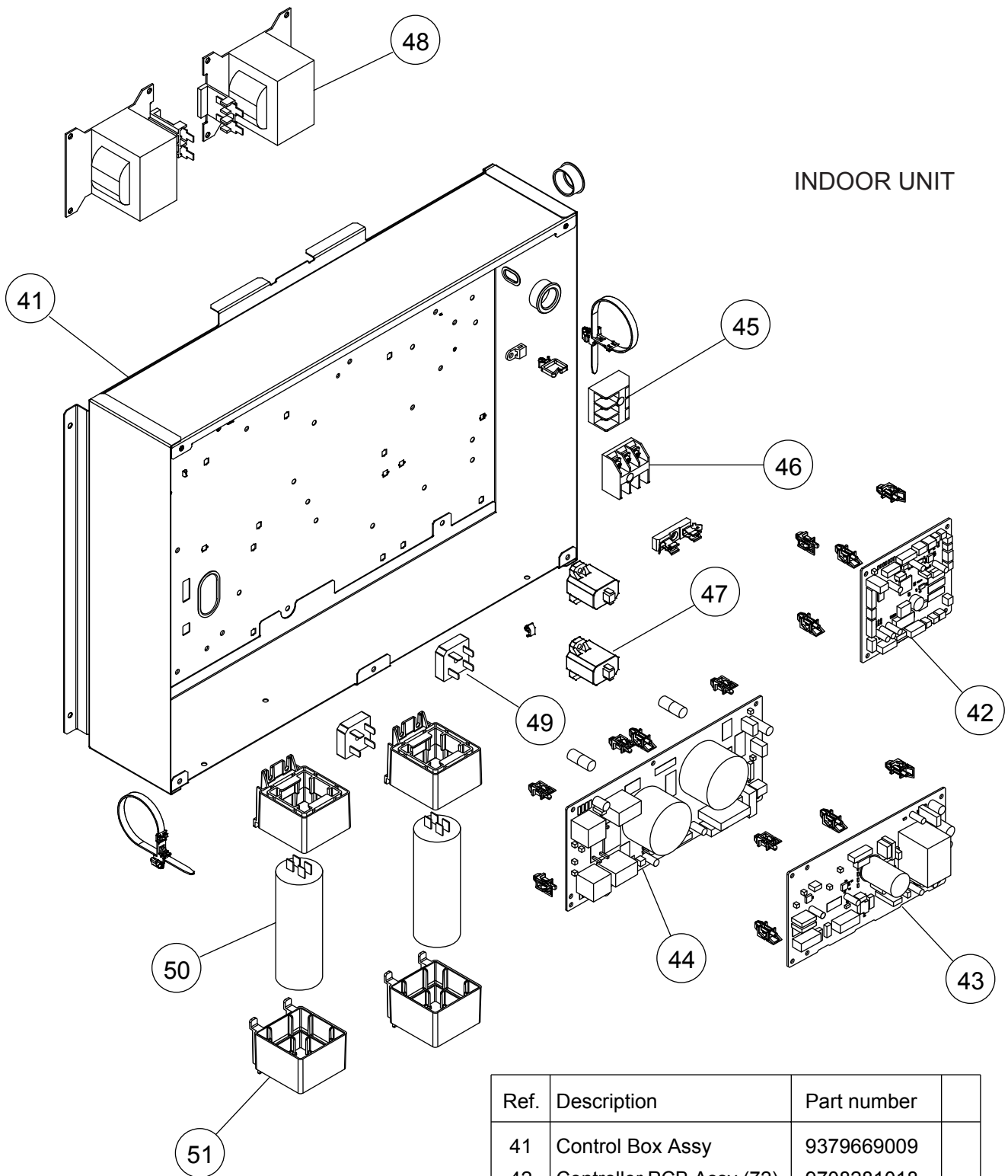
Ref.	Description	Part number
1	Top Plate Sub Assy	9379733007
2	Panel Front Sub Assy (72)	9379734011
2	Panel Front Sub Assy (90)	9379734004
3	Panel rear Sub Assy (72)	9379736015
3	Panel rear Sub Assy (90)	9379736008
4	Panel Side R Sub Assy (72)	9379737012
4	Panel Side R Sub Assy (90)	9379737005
5	Panel Side L Sub Assy (72)	9379738019
5	Panel Side L Sub Assy (90)	9379738002

Ref.	Description	Part number
6	Drain Pan Sub Assy	9379917001
7	Safety Drain Pan Sub Assy	9379918008
8	Evaporator Total Assy (72)	9379739016
8	Evaporator Total Assy (90)	9379739009
9	Pipe Thermistor	9900558000
10	Room Thermistor	9900559007
11	Thermistor Bracket	313557406106
12	Control Box Cover	9379500005

INDOOR UNIT

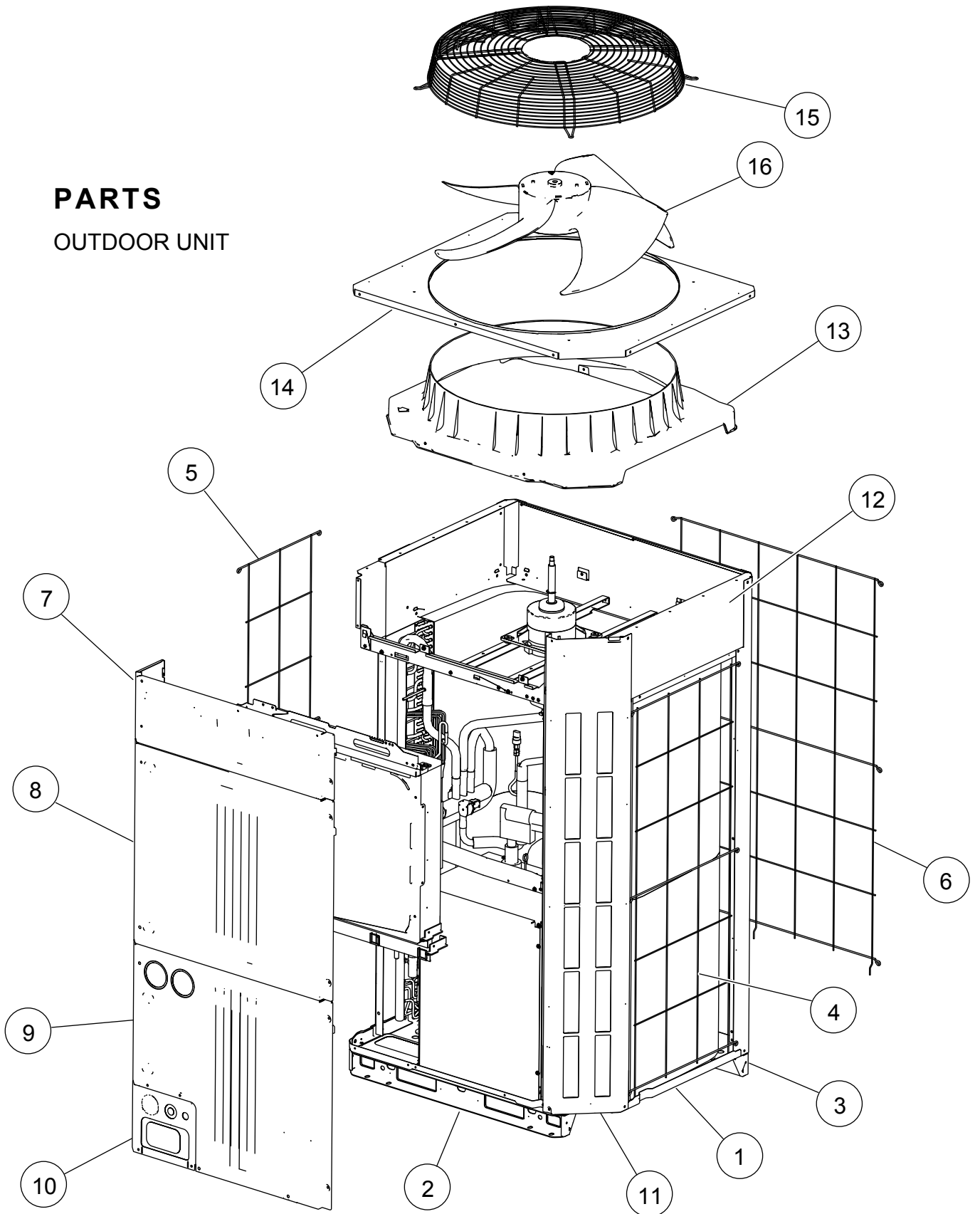


Ref.	Description	Part number
21	Panel fan Assy	9379453004
22	Motor Bracket Plate	9379566001
23	Motor Bracket	9379502009
24	Motor Bracket Angle	9379565004
25	Cushion Rubber	9379670005
26	Motor Plate	9379445009
27	Fan motor	9602931019
28	Cushion Rubber (Motor)	9379501002
29	Motor Cover	9379503006
30	Kit (Bell Mouth Sub Assy)	9371382012
31	Sirocco Fan L	9364665054
32	Kit (Casing Sub Assy)	9371381015



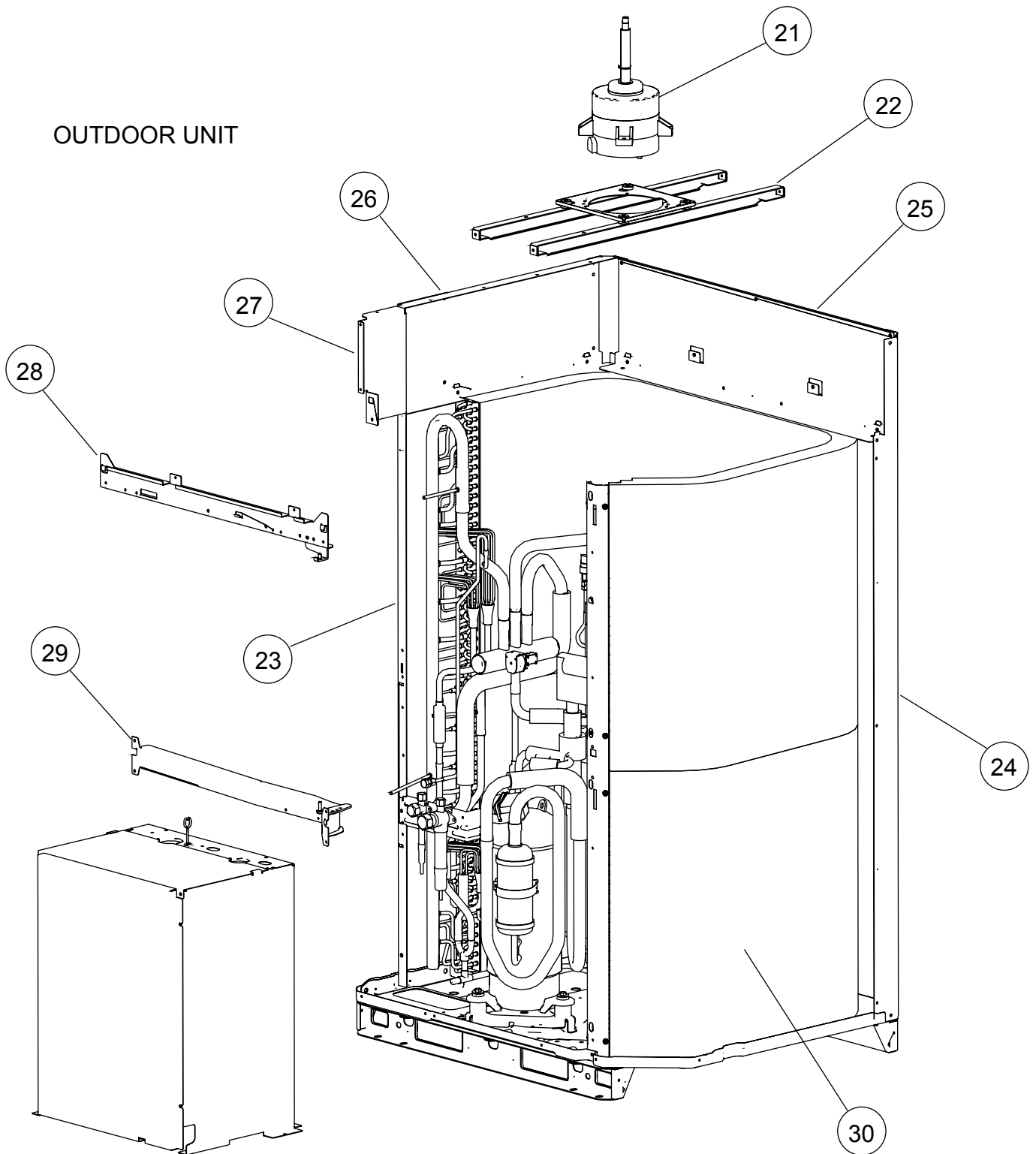
Ref.	Description	Part number
41	Control Box Assy	9379669009
42	Controller PCB Assy (72)	9708281018
42	Controller PCB Assy (90)	9708281025
43	Power Supply PCB Assy	9708279015
44	Filter PCB Assy	9708277011
45	Terminal	9900568009
46	Terminal	9900567002
47	Thermistor	9704265012
48	Reactor Assy	9900554019
49	Diode	0100122107
50	Capacitor	9705387010
51	Capacitor Bracket	9373155010
--	Remote Control	9318593013

PARTS
OUTDOOR UNIT



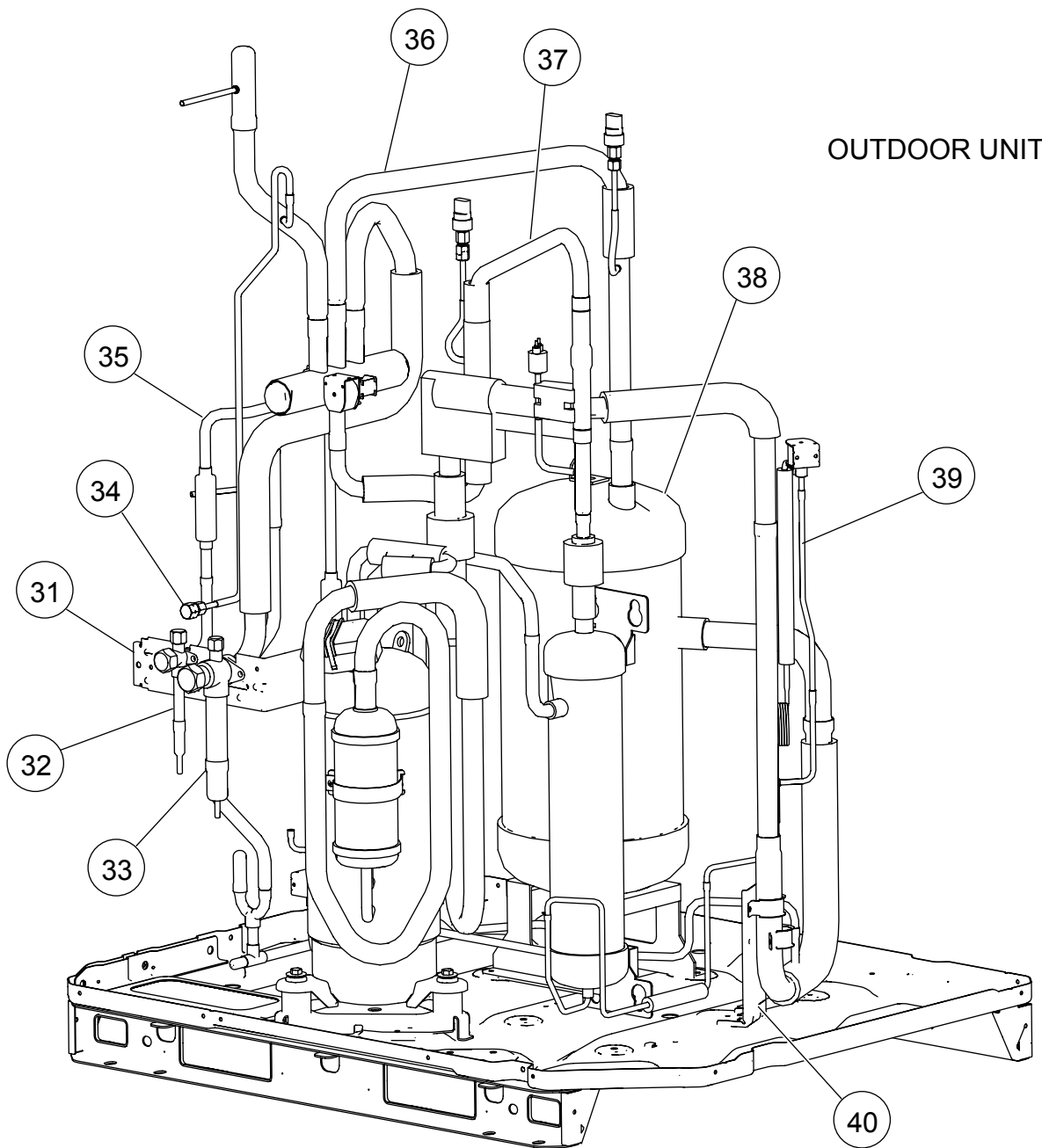
Ref.	Description	Part number	Ref.	Description	Part number
1	Base S Assy	9378454040	9	Panel Bottom S	9380232018
2	Base Foot FS Assy	9378856011	10	Conduit Plate	9378493018
3	Base Foot RS Assy	9378856035	11	Main Piller	9378468009
4	Net Right Sub Assy	9378927001	12	Right Panel Sub Assy	9378920002
5	Net Left Sub Assy	9378928008	13	Bell Mouth Sub Assy	9379709002
6	Net Rear Sub Assy	9378926011	14	Top Panel S	9378491014
7	Front Panel S	9378480018	15	Fan Guard	9378498006
8	Panel Top S	9380231011	16	Propeller Fan	9378488007

OUTDOOR UNIT



Compressor box

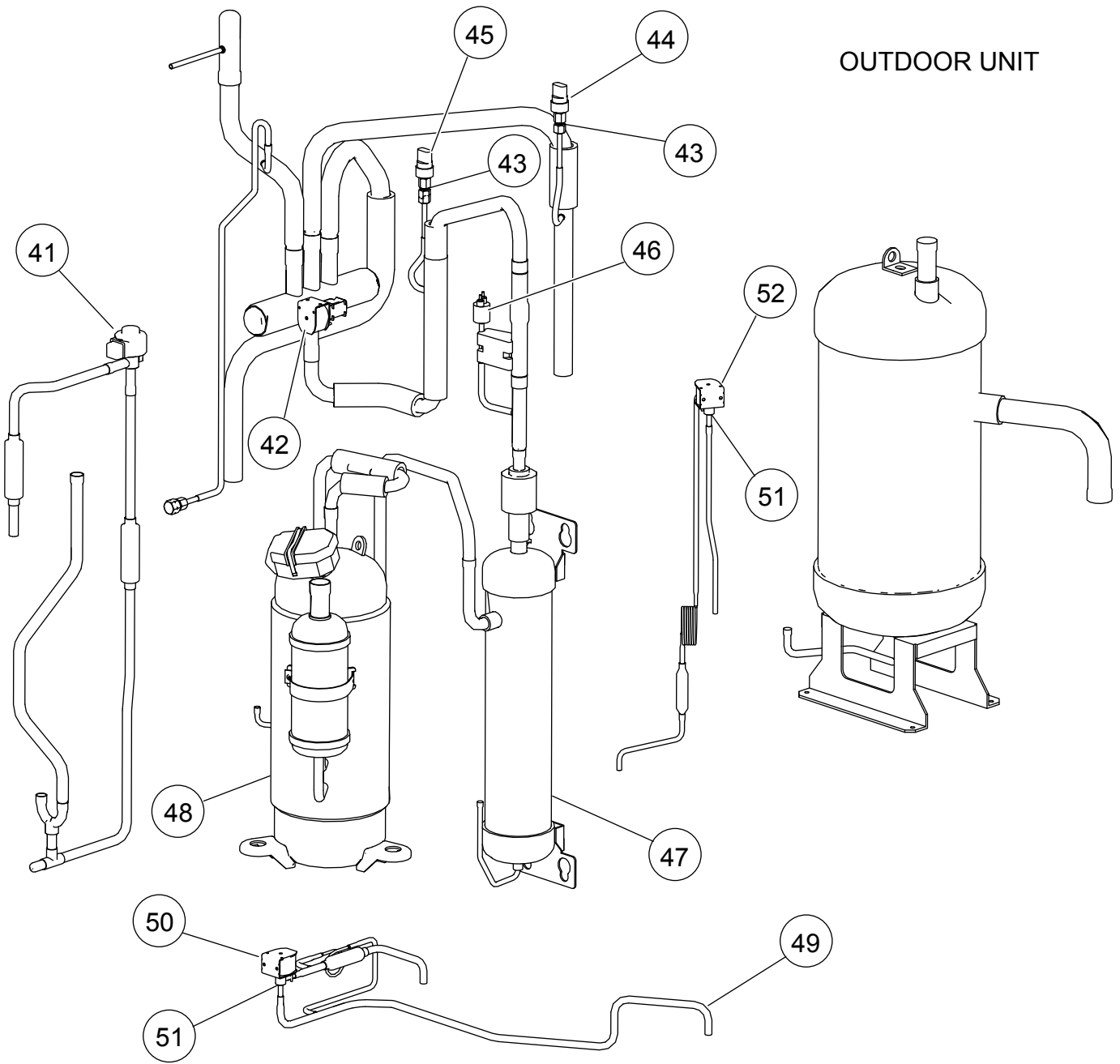
Ref.	Description	Part number
21	Fan Motor	9602663002
22	Motor bracket Sub Assy	9378925007
23	Side Pillar Sub Assy	9379202008
24	Rear Pillar	9378472006
25	Rear Panel S Sub Assy	9378921016
26	Left Panel Sub Assy	9378919006
27	Beam Bracket	9378473003
28	Front Beam S Sub Assy	9378922013
29	Center Beam S Sub Assy	9378924017
30	Condenser Sub Assy	9379053020



OUTDOOR UNIT

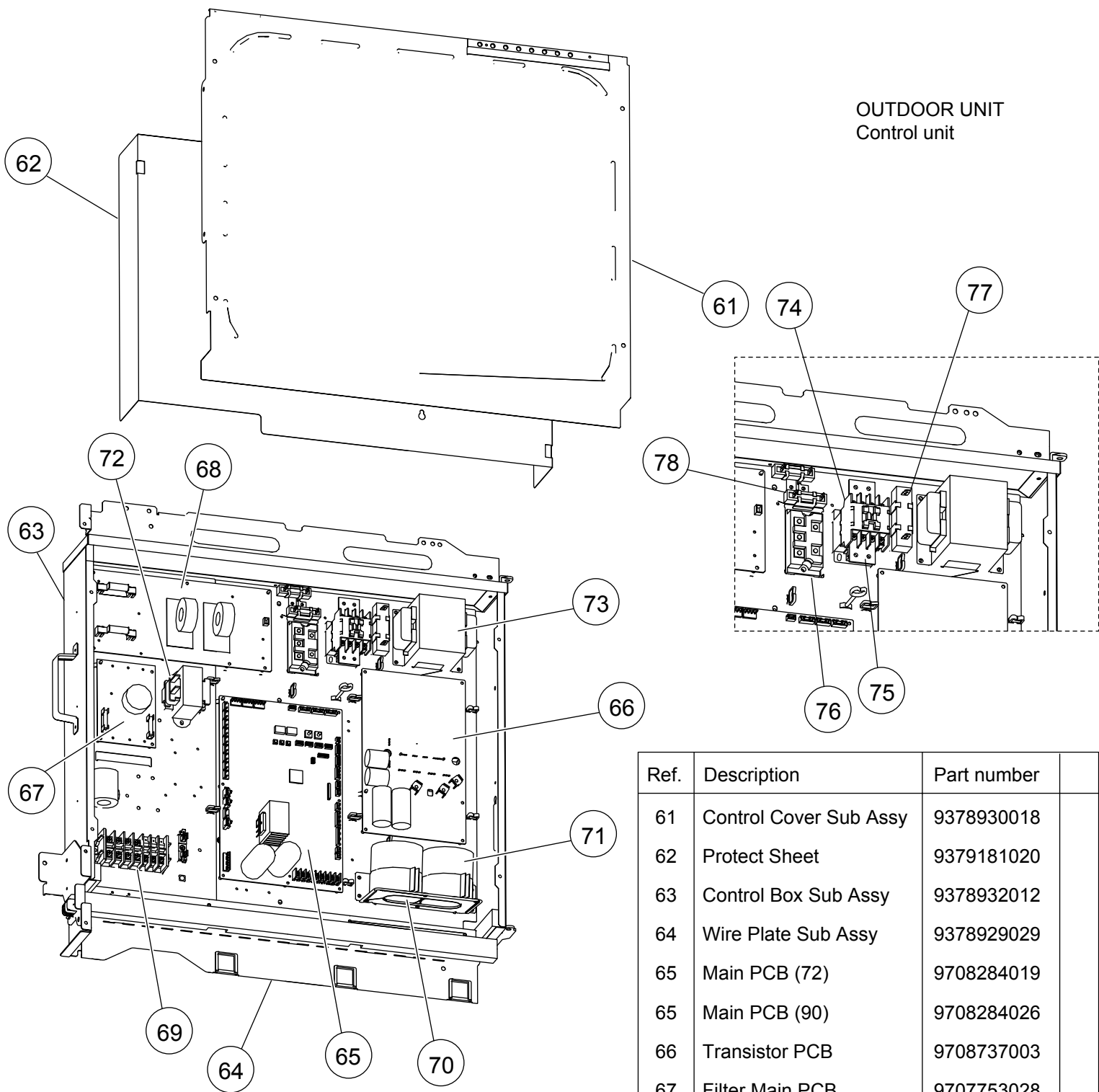
Ref.	Description	Part number
31	Valve Plate	9378466005
32	3-way Valve Assy	9379039031
33	3-way Valve Assy	9379039048
34	Check Joint Assy	9372802038
35	Expansion Valve Assy	9378750036
36	4-way Valve Assy	9379052023
37	Joint Pipe Oil Separator B Assy	9378737051
38	Accumulator Sub Assy	9379221016
39	Oil Return Valve C Assy	9378747067
40	Bracket SP	9379060004
--	Belt Heater	9361140271
--	Thermistor Assy	9900524005
--	Heat Exchanger Thermistor	9900562007
--	Outdoor Thermistor	9900508005

OUTDOOR UNIT



Ref.	Description	Part number
41	Expansion Valve Coil	9970114007
42	Solenoid (4-way valve)	9970090011
43	Union Joint	9970091018
44	Sensor (Low pressure)	9900505035
45	Sensor (High pressure)	9900505028
46	Pressure Switch	9900504038
47	Oil Separator	9379677004
48	Compressor Sub Assy	9379228022
49	Oil Return Valve A Assy	9378745025
50	Solenoid	9900189204
51	Solenoid Valve	9900188030
52	Solenoid	9900189198





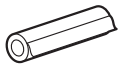

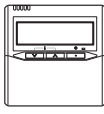



OUTDOOR UNIT
Control unit



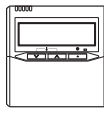


Ref.	Description	Part number
61	Control Cover Sub Assy	9378930018
62	Protect Sheet	9379181020
63	Control Box Sub Assy	9378932012
64	Wire Plate Sub Assy	9378929029
65	Main PCB (72)	9708284019
65	Main PCB (90)	9708284026
66	Transistor PCB	9708737003
67	Filter Main PCB	9707753028
68	Filter Inverter PCB	9707754018
69	Terminal	9900569006
70	Capacitor Bracket	9379183000
71	Capacitor	9704268037
72	Reactor	9900468019
73	Reactor	9900545017
74	Magnetic Relay	9900566005
75	Bus Bar	9378834002
76	Diode Power	0001113013
77	Resistor	0200441016
78	Resistor	0200444017

ACCESSORIES


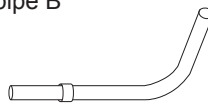

INDOOR UNIT

Name and Shape	Q'ty	Application
Special nut A (Large flange) 	4	For suspending the indoor unit from ceiling
Special nut B (Small flange) 	4	
Washer 	8	
Coupler heat insulation (Large) 	1	For indoor side pipe joint (Gas pipe)
Coupler heat insulation (Small) 	1	For indoor side pipe joint (Liquid pipe)
Binder (LL) 	4	For fixing the heat insulation
Remote control 	1	For air conditioner operation
Screw (Flush heads) 	2	For installing indoor unit remote control
Binder (Medium) 	1	For fixing the remote control cable
Binder (Small) 	1	

OPTIONAL PARTS

Exterior	Parts name	Model No.	Summary
	Wired remote control	UTB-TUD	For dual remote controls
	Remote sensor	UTD-RS100	New amenity space can be offered by installing the Remote sensor in the remote control
	External control set	UTD-ECS5A	Use to connect various peripheral devices and air conditioner PC board

OUTDOOR UNIT

Name and shape	Q'ty	Application
Joint pipe A 	1	For connecting gas pipe (Straight type)
Joint pipe B 	1	For connecting gas pipe (L type)
Binder 	7	For binding power cable and transmission cable

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