

SPLIT TYPE
ROOM AIR CONDITIONER
DUCT TYPE

SERVICE MANUAL



Indoor unit	Outdoor unit
ARU9RLF	AOU9RLFC
ARU12RLF	AOU12RLFC

(Serial number : R)
Refer to the service
bulletin RAC-0059

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SPECIFICATIONS

ELECTRICAL DATA

TYPE		Cool & heat inverter	
INDOOR UNIT		ARU9RLF	ARU12RLF
OUTDOOR UNIT		AOU9RLFC	AOU12RLFC
COOLING CAPACITY		9,000 Btu/h	12,000 Btu/h
HEATING CAPACITY		12,000 Btu/h	16,000 Btu/h
POWER SOURCE		208/230 V	
FREQUENCY		60 Hz	
RUNNING CURRENT	Cooling	3.0 A	4.4 A
	Heating	3.9 A	6.0 A
INPUT WATTS	Cooling	0.62 kW	0.94 kW
	Heating	0.85 kW	1.30 kW
E.E.R.	Cooling	14.5 Btu/Wh	12.8 Btu/Wh
COP	Heating	14.1 Btu/Wh	12.3 Btu/Wh
MOISTURE REMOVAL		1.5 Pints/h 0.7 L/h	2.7 Pints/h 1.3 L/h
AIR CIRCULATION HIGH		350 CFM 600 m ³ /h	380 CFM 650 m ³ /h
MAXIMUM CURRENT	Cooling	9.3 A	9.4 A
	Heating	10.8 A	10.9 A

FAN MOTOR

POWER SOURCE		208/230 V	
INDOOR UNIT	High	1,260 r.p.m.	1,340 r.p.m.
	Medium	1,160 r.p.m.	1,240 r.p.m.
	Low	1,060 r.p.m.	1,140 r.p.m.
	Quiet	960 r.p.m.	1,030 r.p.m.
OUTDOOR UNIT Cooling		590 r.p.m.	870 r.p.m.
OUTDOOR UNIT Heating		720 r.p.m.	780 r.p.m.

NOISE LEVEL

INDOOR UNIT Cooling	High	28 dB	29 dB
	Medium	27 dB	28 dB
	Low	26 dB	27 dB
	Quiet	25 dB	26 dB
INDOOR UNIT Heating	High	28 dB	29 dB
	Medium	26 dB	28 dB
	Low	25 dB	27 dB
	Quiet	24 dB	24 dB
OUTDOOR UNIT Cooling		44 dB	49 dB
OUTDOOR UNIT Heating		49 dB	50 dB

COMPRESSOR AND REFRIGERANT

COMPRESSOR TYPE	Hermetic type, 4 pole, 3 phase, DC inverter motor, Rotary		
DISCRIMINATION	808-884-80		
WEIGHT (with oil)	20 lb. 8 oz., 9.3 kg		
PRECHARGED REFRIGERANT	2 lb. 10-5/16 oz., 1,200 g		
REFRIGERANT TYPE	R410A		
FULL CHARGE	Pipe length 49 ft.	2 lb. 10-5/16 oz., 1,200 g	
	66 ft.	3 lb. 27/32 oz., 1,300 g	
ADDITIONAL CHARGE	0.22 oz./ft, 20 g/m		
MAXIMUM PIPING HEIGHT	49 ft., 15m		

DIMENSIONS

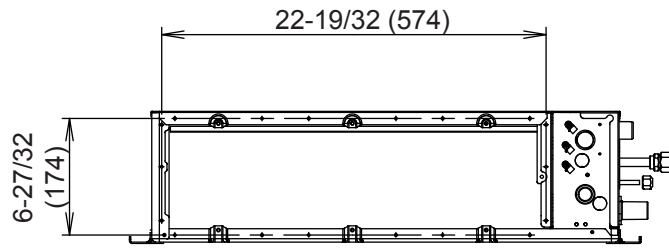
INDOOR UNIT H x W x D	7-25/32 x 27-9/16 x 24-13/32 inch 198 x 700 x 620 mm
OUTDOOR UNIT H x W x D	24-13/32 x 31-3/32 x 11-13/32 inch 620 x 790 x 290 mm

WEIGHT

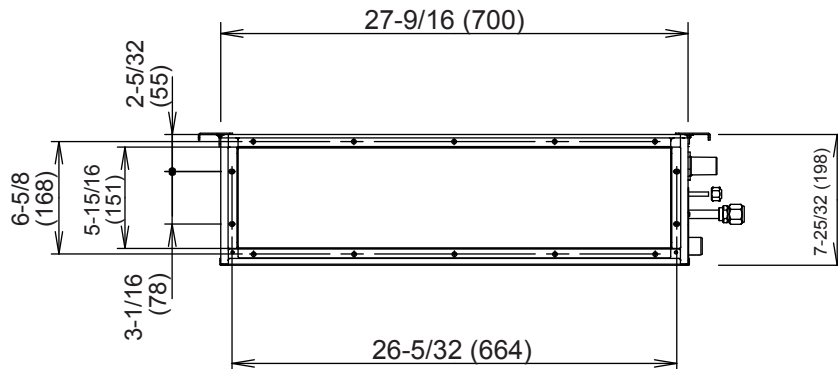
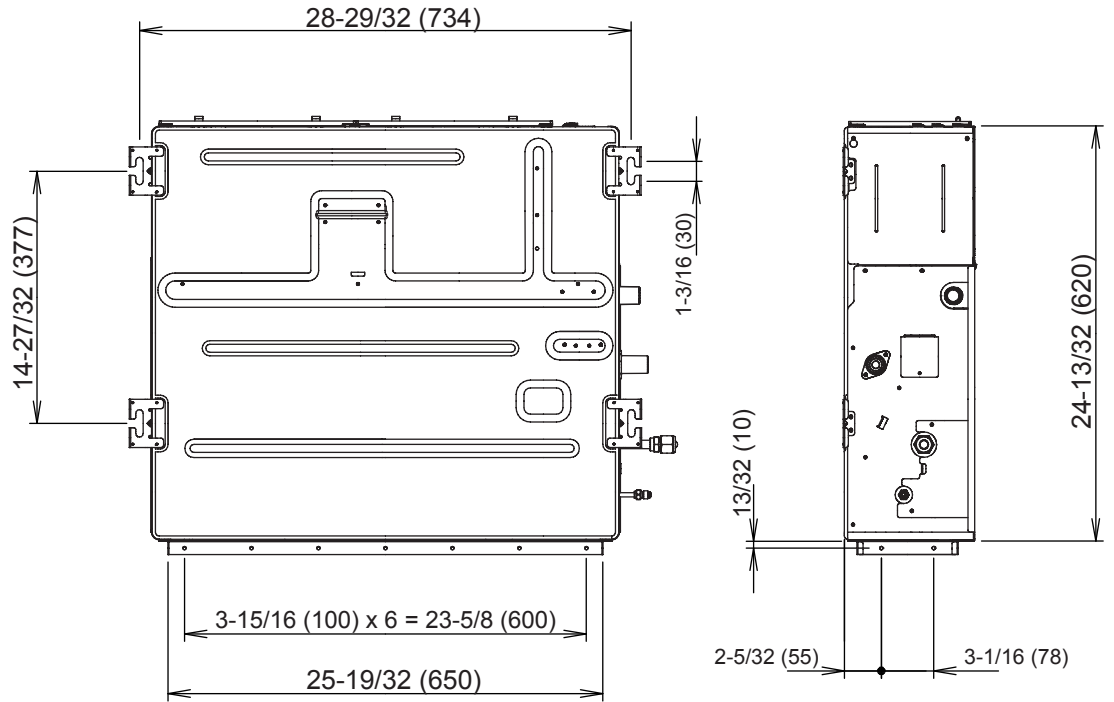
INDOOR UNIT Net / Shipping	41 lb. / 57 lb. 19 kg / 26 kg
OUTDOOR UNIT Net / Shipping	84 lb. / 93 lb. 38 kg / 42 kg

DIMENSIONS

unit : inch (mm)

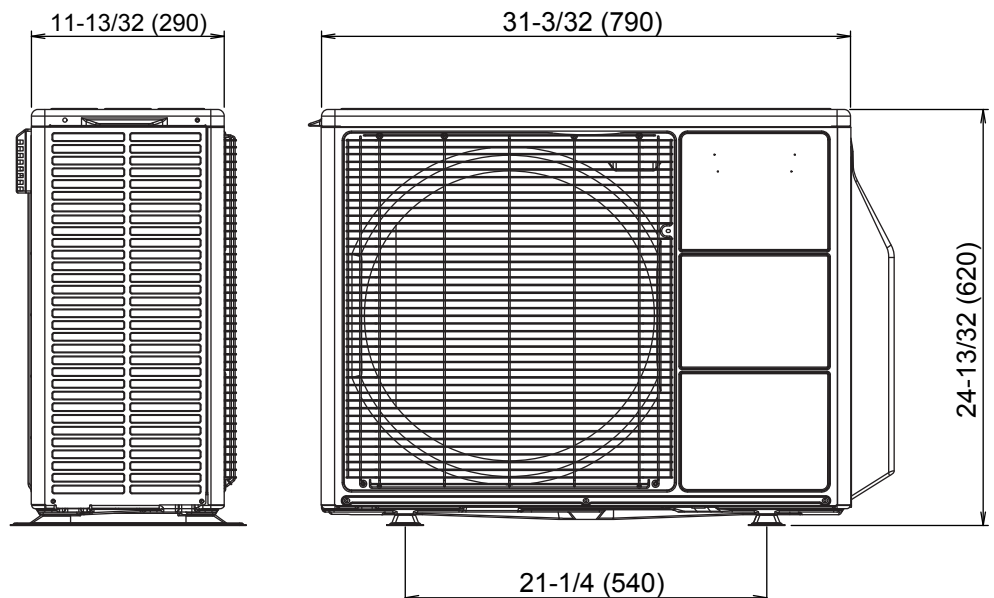


INDOOR UNIT

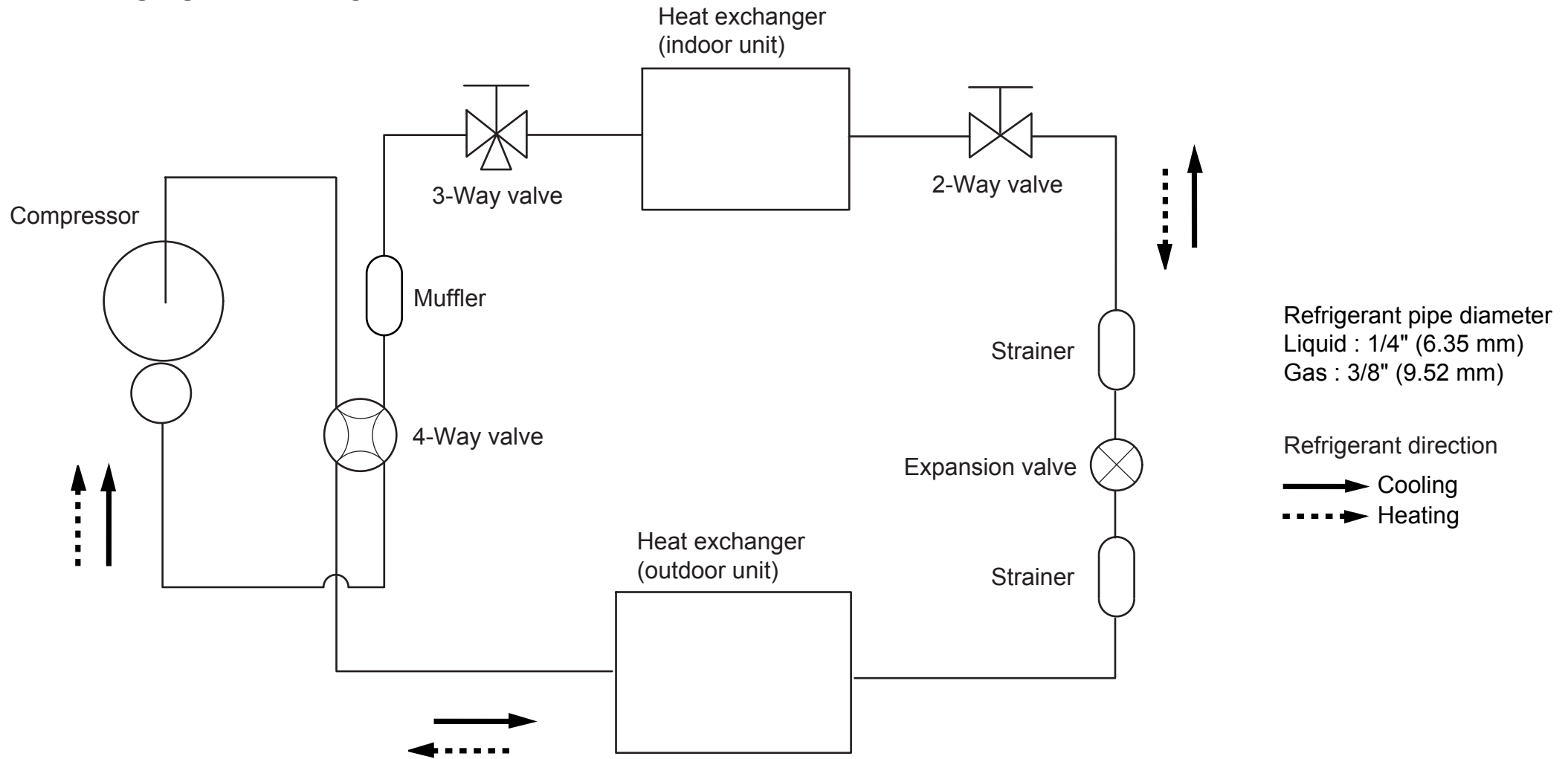


Liquid pipe diameter : 1/4 inch (6.35 mm)
Gas pipe diameter : 3/8 inch (9.52 mm)

OUTDOOR UNIT



REFRIGERANT SYSTEM DIAGRAM

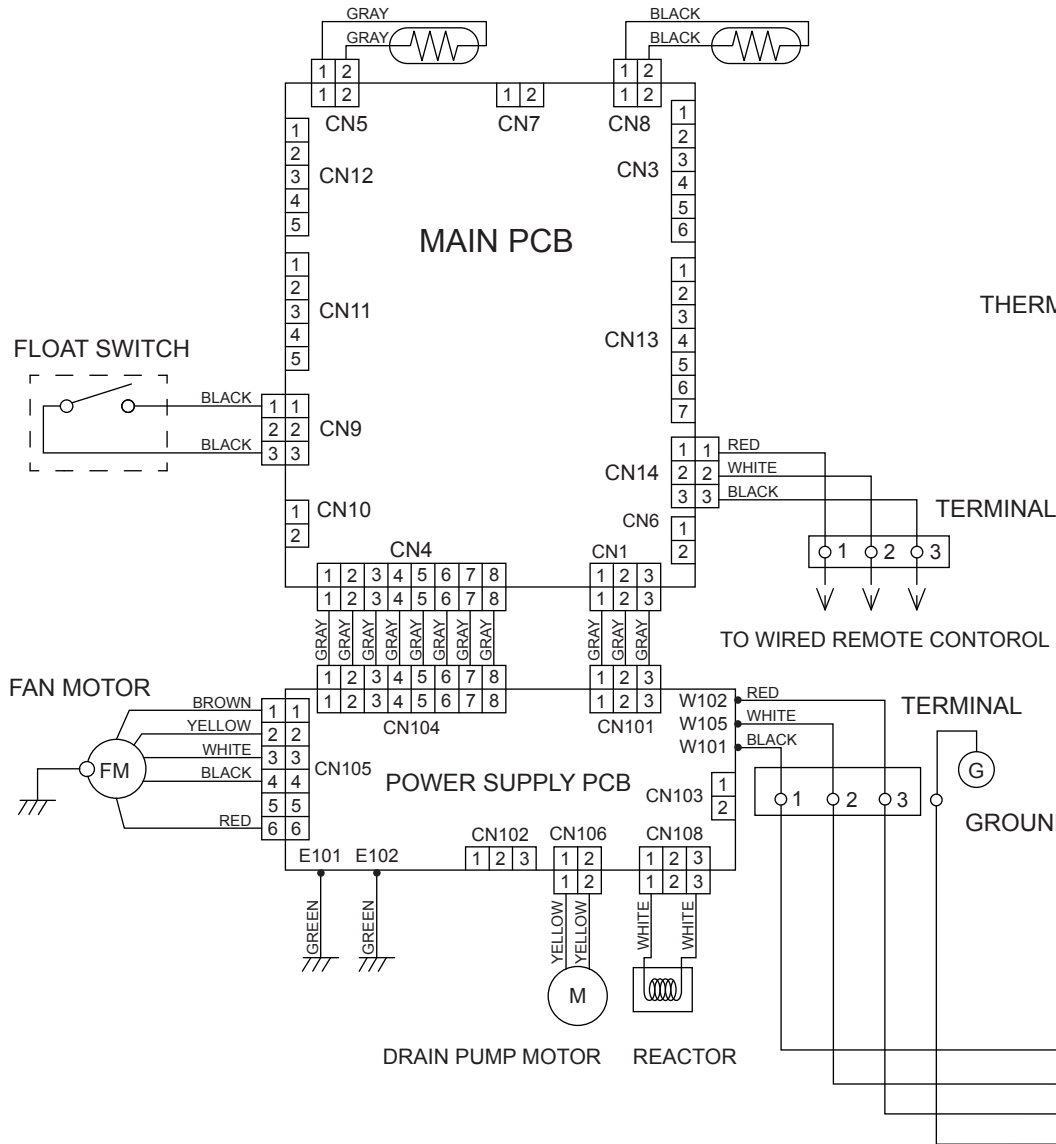


CIRCUIT DIAGRAM

INDOOR UNIT

THERMISTOR
(PIPE TEMP.)

THERMISTOR
(ROOM TEMP.)

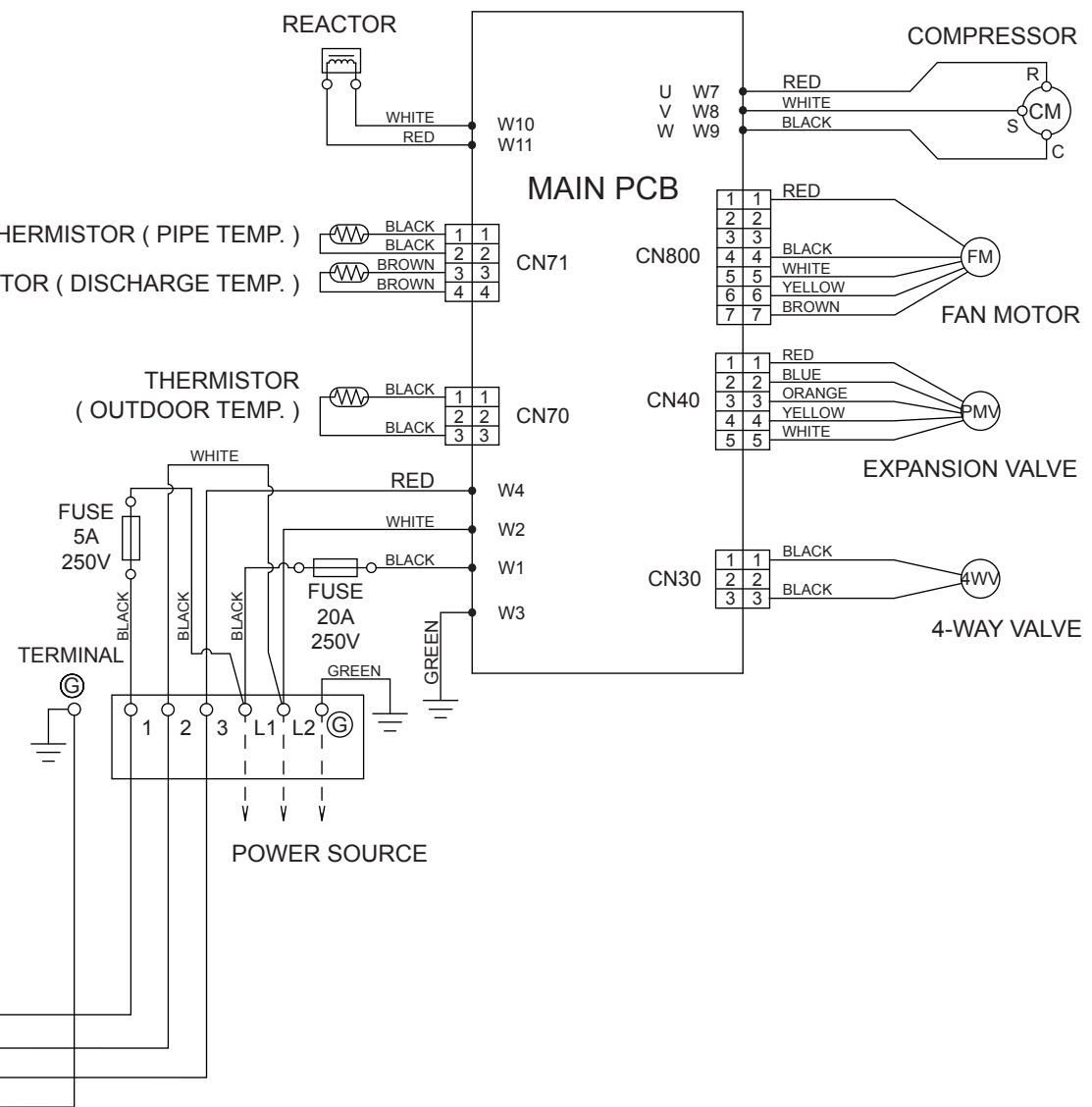


OUTDOOR UNIT

THERMISTOR (PIPE TEMP.)

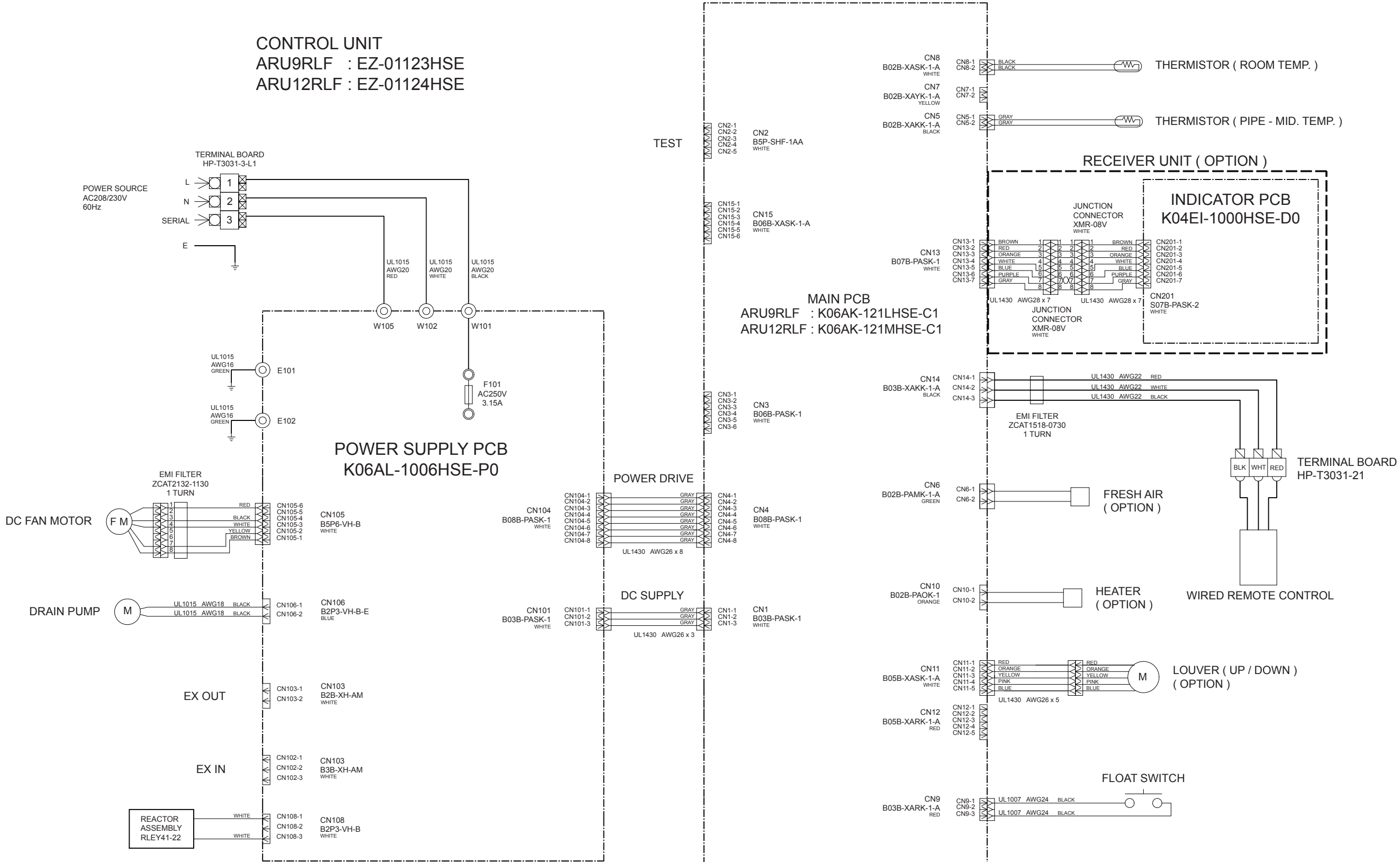
THERMISTOR (DISCHARGE TEMP.)

THERMISTOR
(OUTDOOR TEMP.)

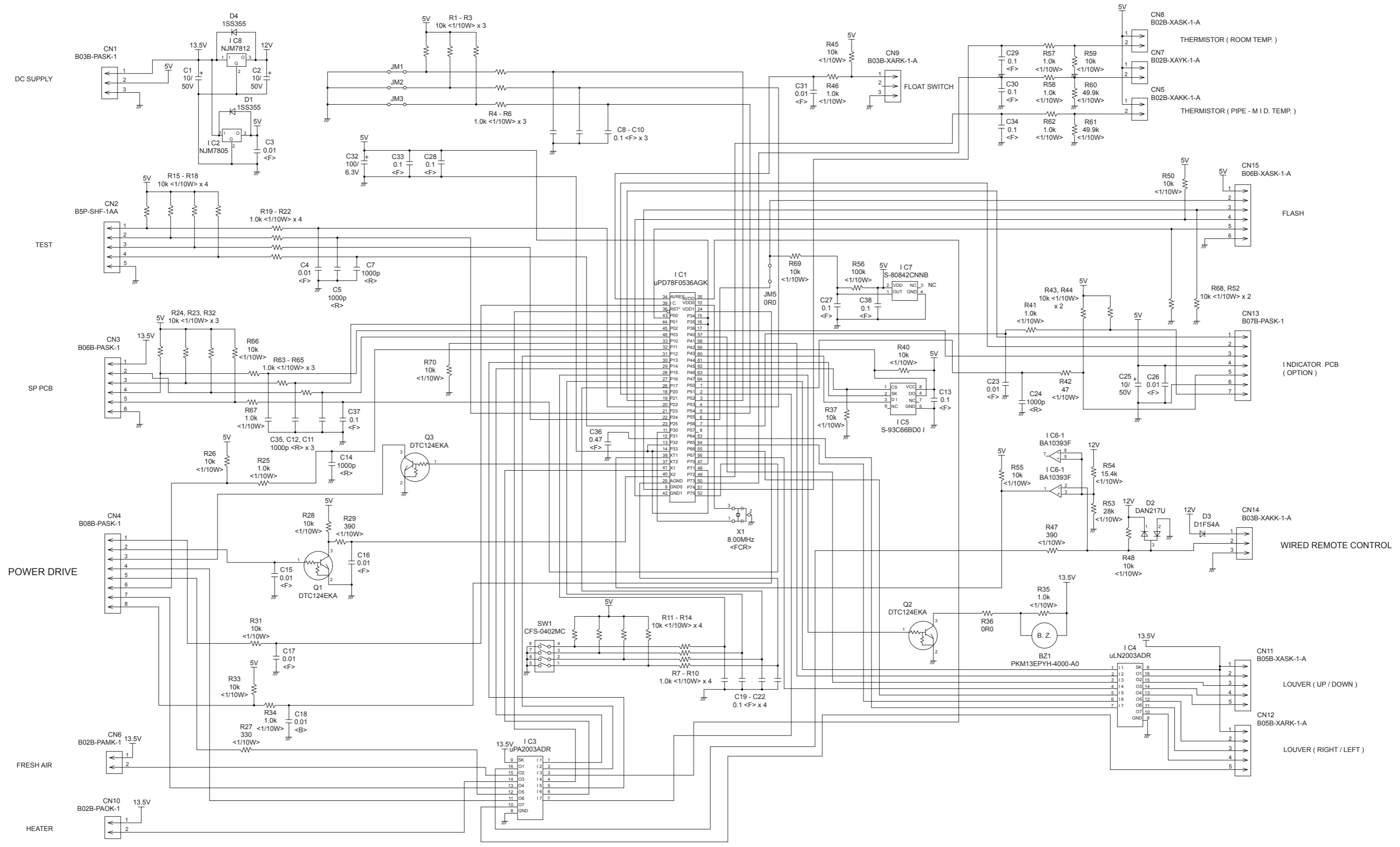


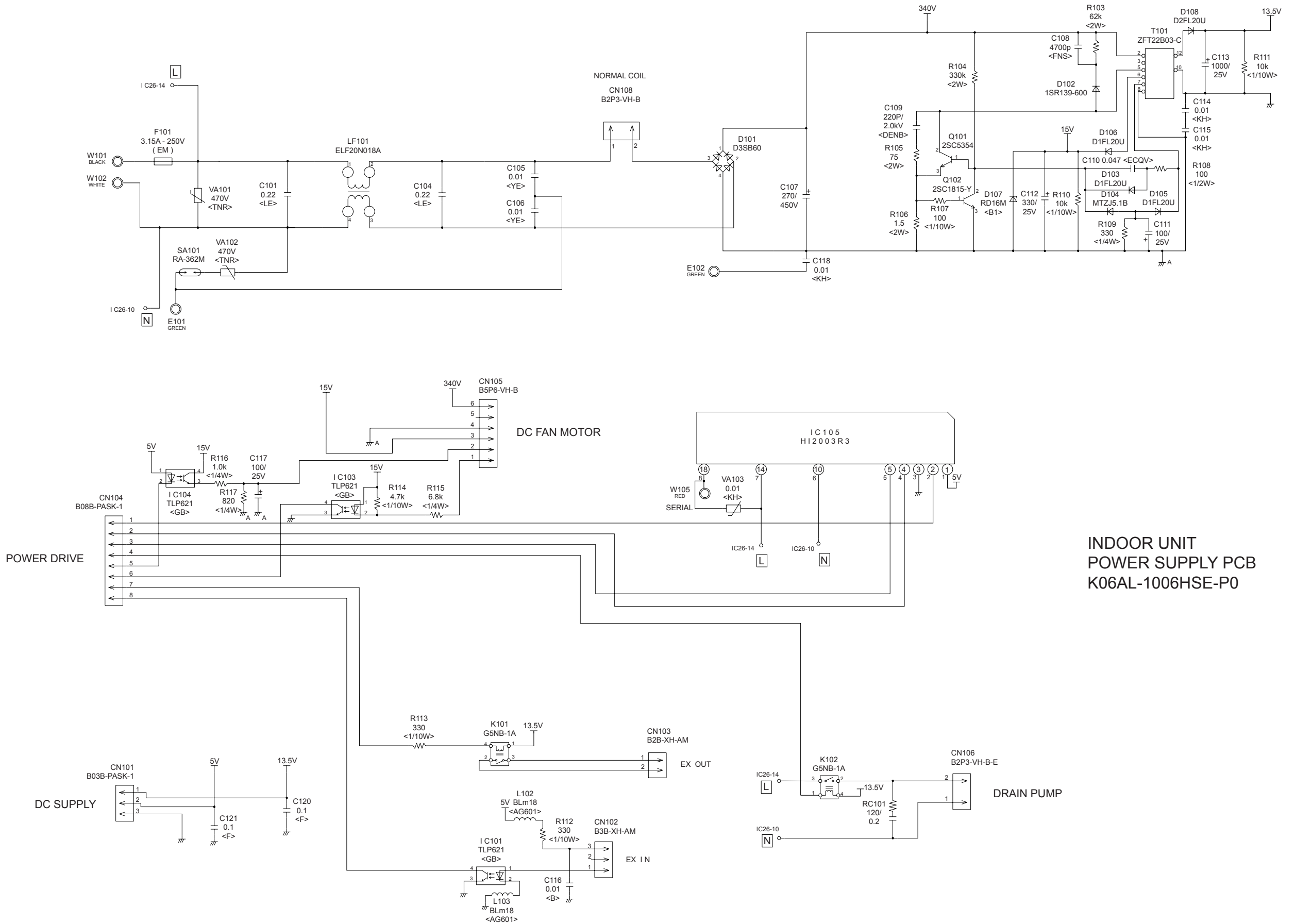
INDOOR PCB CIRCUIT DIAGRAM

CONTROL UNIT
 ARU9RLF : EZ-01123HSE
 ARU12RLF : EZ-01124HSE



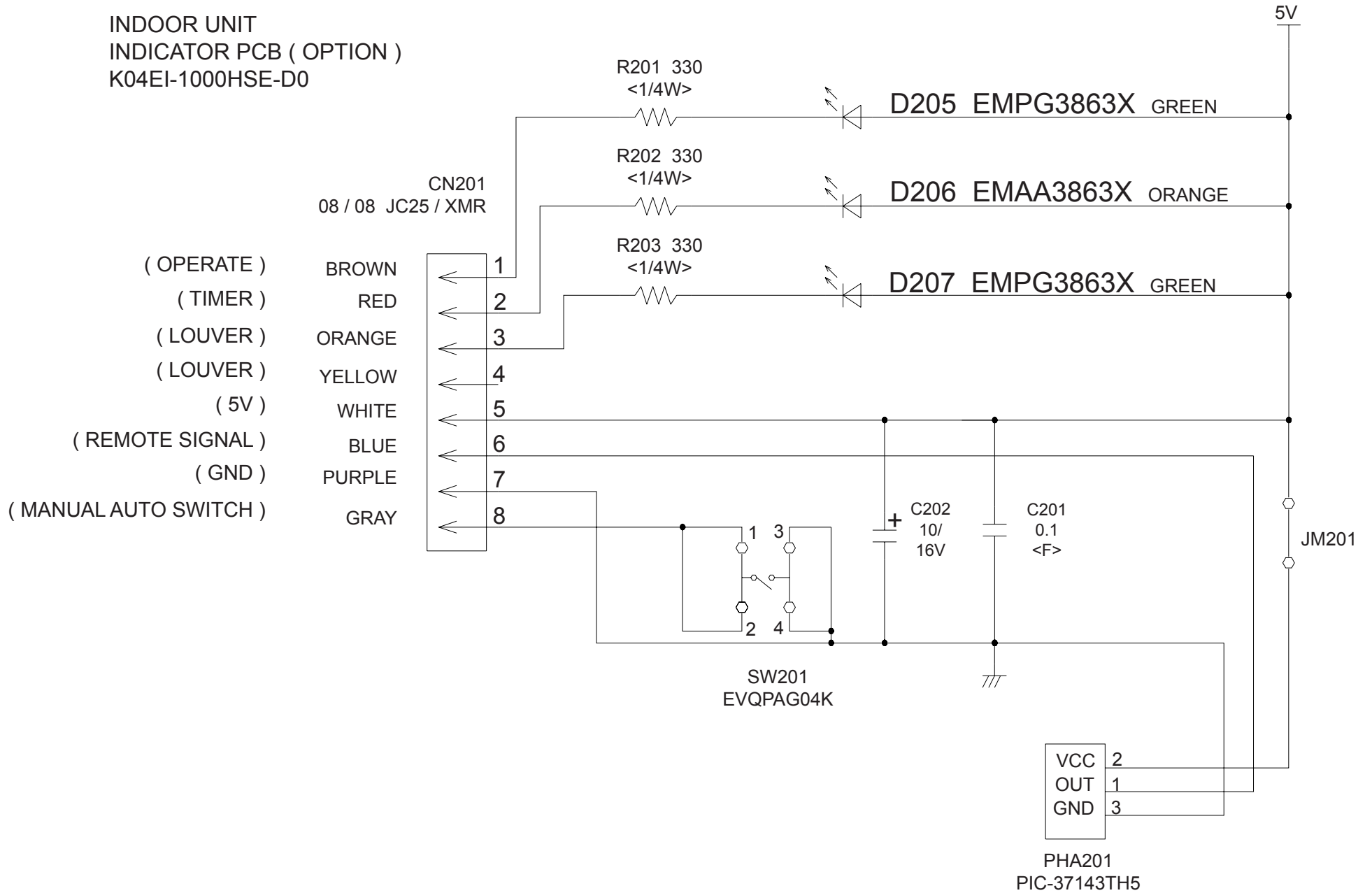
INDOOR UNIT
 MAIN PCB
 ARU9RLF : K06AK-121LHSE-C1
 ARU12RLF : K06AK-121MHSE-C1





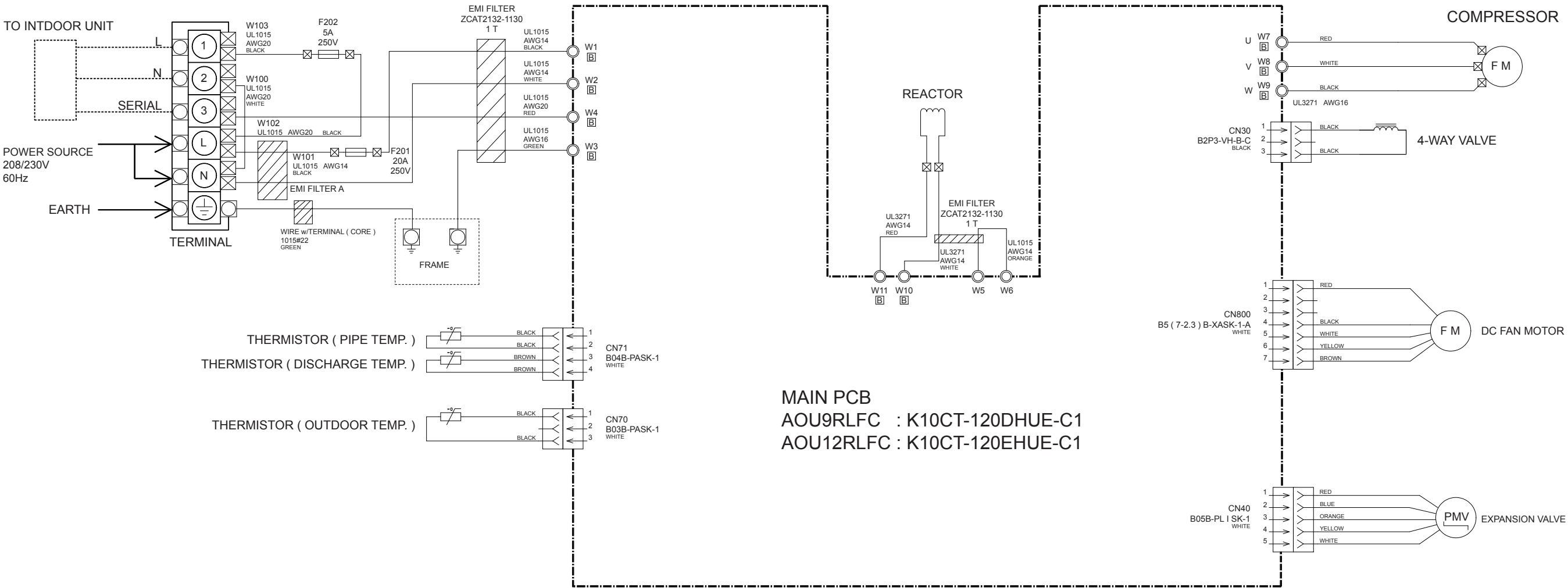
INDOOR UNIT
POWER SUPPLY PCB
K06AL-1006HSE-P0

INDOOR UNIT
 INDICATOR PCB (OPTION)
 K04EI-1000HSE-D0

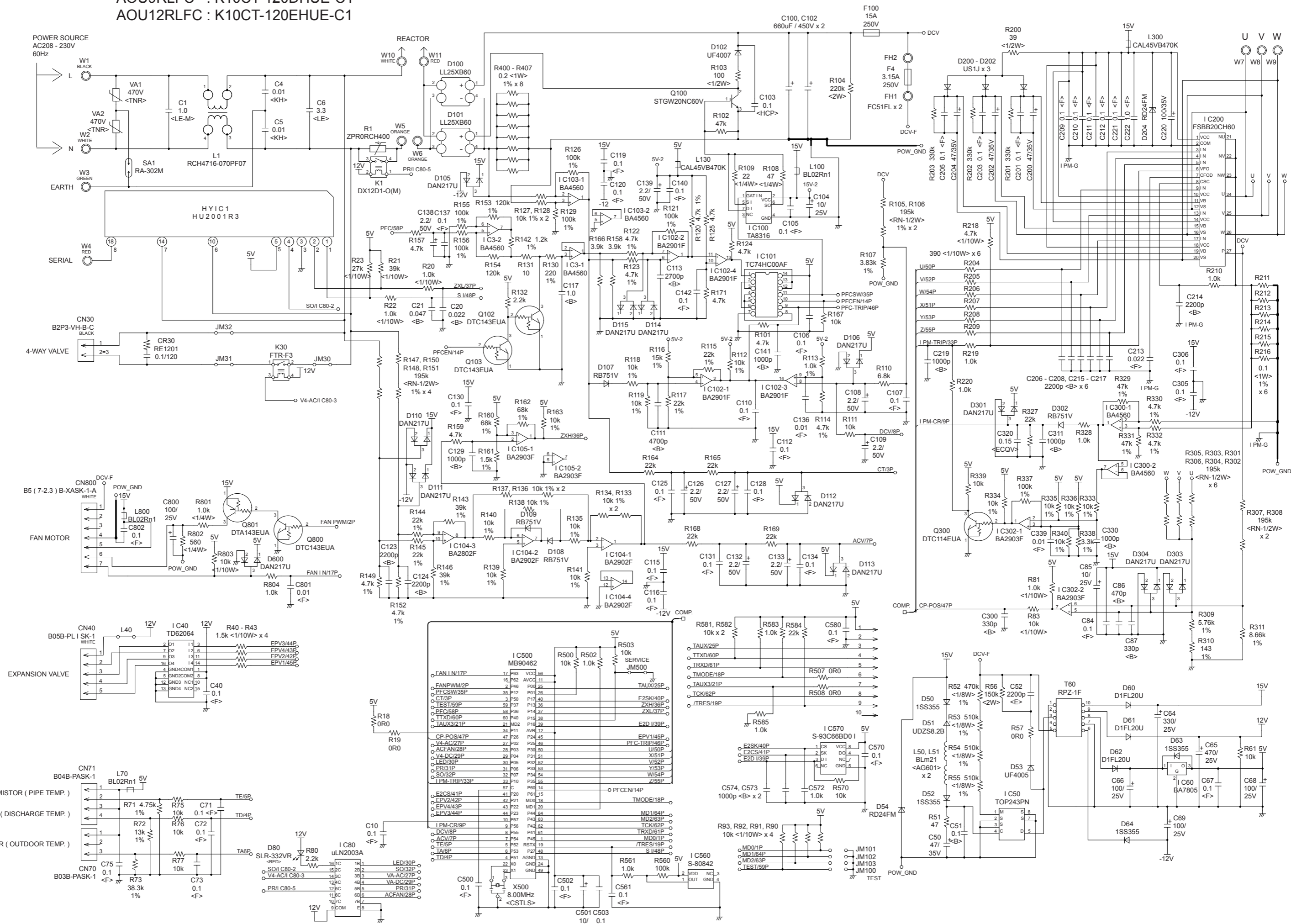


OUTDOOR PCB CIRCUIT DIAGRAM

INVERTER ASSEMBLY
 AOU9RLFC : EZ-01223HUE
 AOU12RLFC : EZ-01224HUE



OUTDOOR UNIT
 MAIN PCB
 AOU9RLF : K10CT-120DHUE-C1
 AOU12RLF : K10CT-120EHUE-C1



ERROR DETECTION

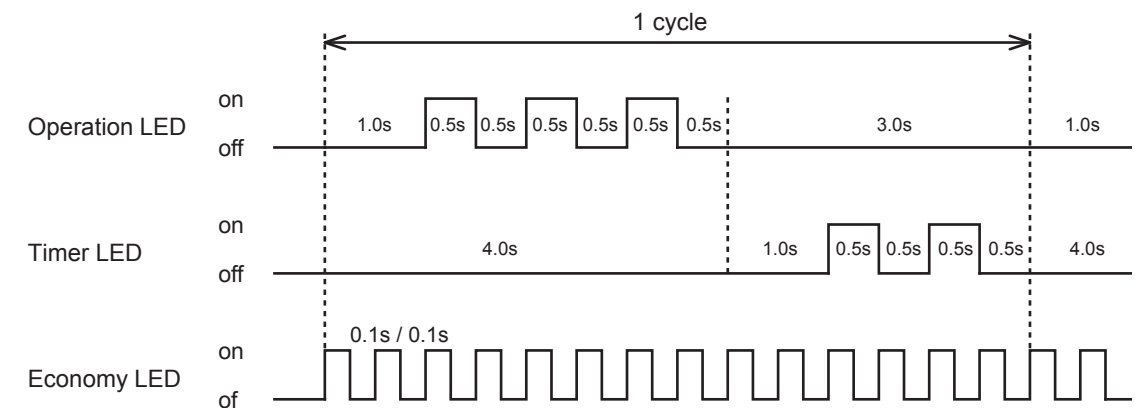
INDOOR UNIT

Error Contents	Operation LED	Timer LED	Economy LED
Serial Communication Error	1 times flash	1 times flash	Continuous flash
Wired Remote Controller Communication Error	1 times flash	2 times flash	Continuous flash
Check Run Unfinished	1 times flash	5 times flash	Continuous flash
Number of Wires and Pipes Error	2 times flash	1 times flash	Continuous flash
Indoor Unit Capacity Error	2 times flash	2 times flash	Continuous flash
Connected Combination Error	2 times flash	3 times flash	Continuous flash
Number of Indoor Units Error Number of Branch boxes Error	2 times flash	4 times flash	Continuous flash
Indoor Unit Model Information Error EEPROM Access Abnormal	3 times flash	2 times flash	Continuous flash
Manual Auto Switch Error	3 times flash	5 times flash	Continuous flash
Indoor Room Thermistor Error	4 times flash	1 times flash	Continuous flash
Indoor Heat Ex. Thermistor Error	4 times flash	2 times flash	Continuous flash
Indoor Unit Fan Motor Error	5 times flash	1 times flash	Continuous flash
Drainage Error	5 times flash	3 times flash	Continuous flash
Outdoor Unit Model Information Error	6 times flash	2 times flash	Continuous flash
Inverter Error	6 times flash	3 times flash	Continuous flash
A. F. Voltage Error	6 times flash	4 times flash	Continuous flash
I.P.M. Error	6 times flash	5 times flash	Continuous flash
Display P.C.B. Communication Error	6 times flash	10 times flash	Continuous flash
Discharge Thermistor Error	7 times flash	1 times flash	Continuous flash
Compressor Thermistor Error	7 times flash	2 times flash	Continuous flash
Heat Ex. Liquid Outlet Thermistor Error	7 times flash	3 times flash	Continuous flash
Outdoor Thermistor Error	7 times flash	4 times flash	Continuous flash
Suction Gas Thermistor Error	7 times flash	5 times flash	Continuous flash
Heat Sink Thermistor Error	7 times flash	7 times flash	Continuous flash

Error Contents	Operation LED	Timer LED	Economy LED
Sub-Cool Heat Ex. Gas Inlet Thermistor Error Sub-Cool Heat Ex. Gas Outlet Thermistor Error	8 times flash	2 times flash	Continuous flash
Liquid Pipe Thermistor Error	8 times flash	3 times flash	Continuous flash
Current Sensor Error	8 times flash	4 times flash	Continuous flash
Discharge Pressure Sensor Error Suction Pressure Sensor Error High Pressure Switch Error	8 times flash	6 times flash	Continuous flash
Over Current Error	9 times flash	4 times flash	Continuous flash
Compressor Control Error	9 times flash	5 times flash	Continuous flash
Outdoor Unit Fan Motor Error	9 times flash	7 times flash	Continuous flash
4 Way Valve Error	9 times flash	9 times flash	Continuous flash
Discharge Temp. Error	10 times flash	1 times flash	Continuous flash
Compressor Temp. Error	10 times flash	3 times flash	Continuous flash
Low Pressure Error	10 times flash	5 times flash	Continuous flash
Branch Boxes Error	13 times flash	2 times flash	Continuous flash

Flashing pattern example

Indoor unit main PCB error
(Operation LED : 3 times, Timer LED : 2 times)

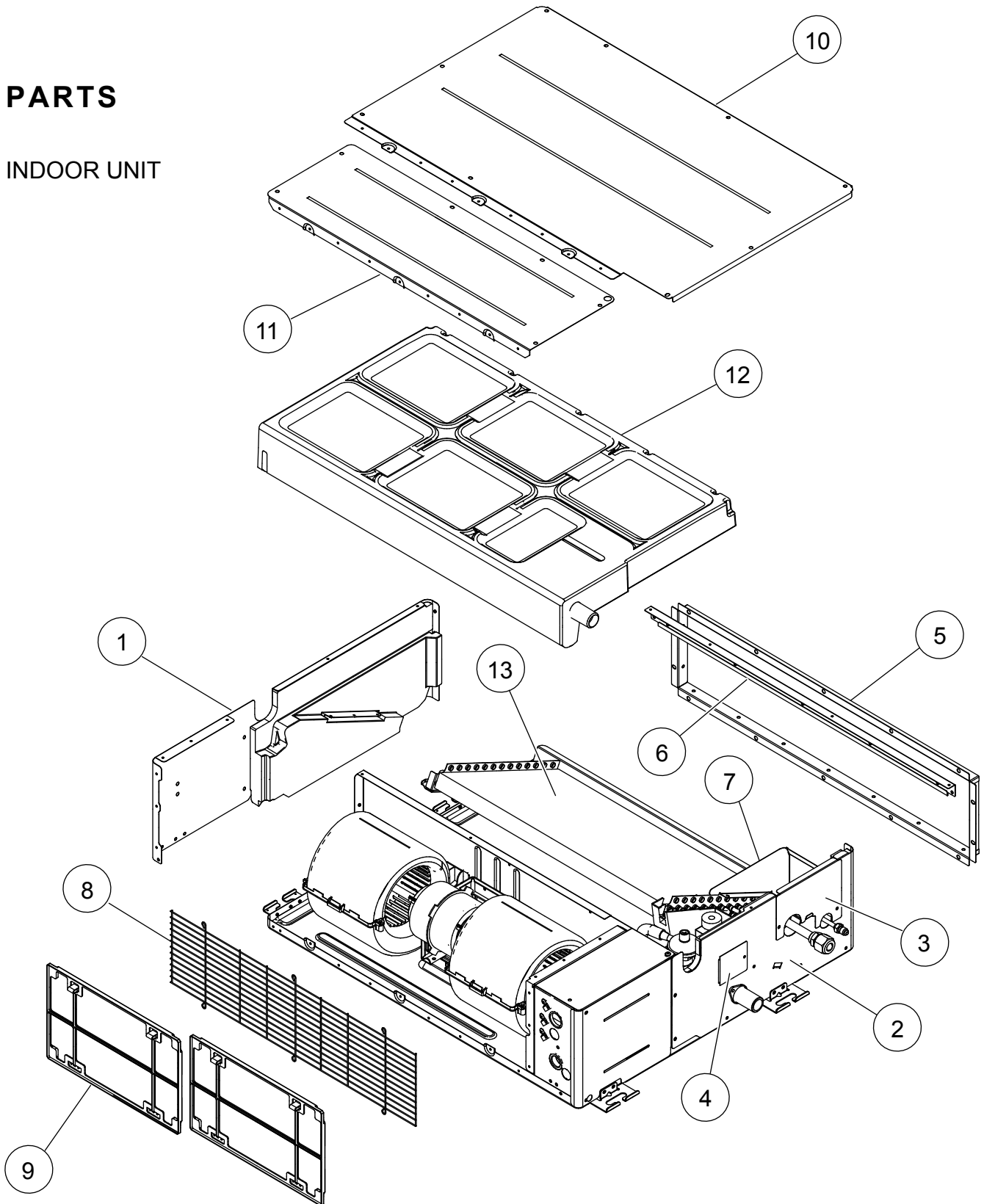


OUTDOOR UNIT

LED	ERROR
on	Discharge temperature abnormal
0.5 second on / 0.5 second off	IPM overcurrent protection
0.1 second on / 0.1 second off	Thermistor abnormal
2.0 second on / 2.0 second off	CT abnormal
0.1 second on / 2.0 second off	Compressor location abnormal
5.0 second on / 5.0 second off	Fan abnormal

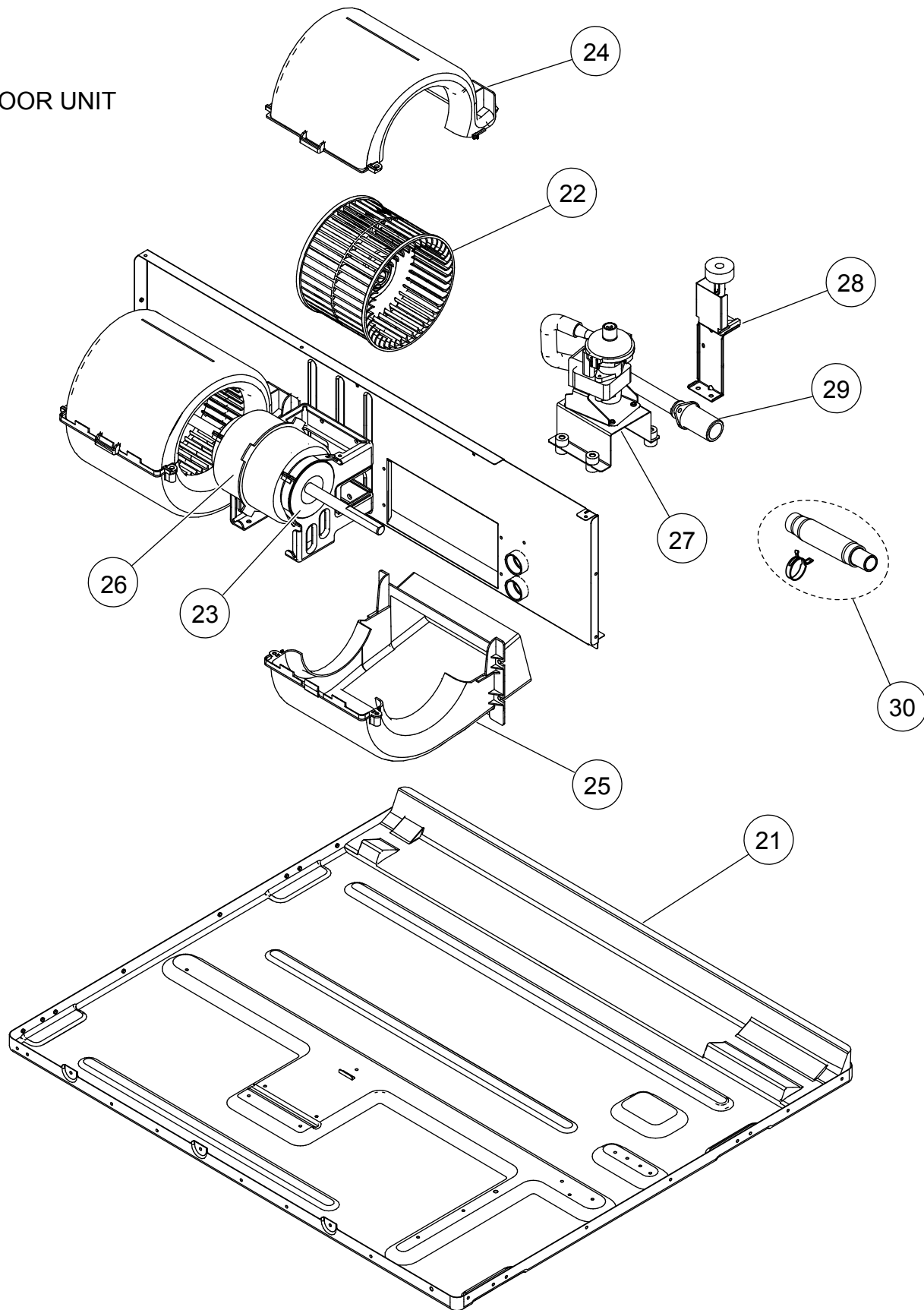
PARTS

INDOOR UNIT



Ref	Description	Parts number	Ref	Description	Parts number
1	Side Panel R Sub Assy	9379906012	8	Fan Guard (2 Fan)	9380589006
2	Side Panel L Sub Assy	9379907019	9	Air Filter	9379574006
3	Pipe Panel Sub Assy	9379900003	10	Main Panel (2 Fan)	9380602002
4	Panel (Window) Sub Assy	9379915007	11	Cabinet Panel (2 Fan)	9380597001
5	Outlet Frame Assy	9380042006	12	Drain Pan Sub Assy	9379901048
6	Front Panel (2 Fan)	9380594000	13	Evaporater Total Assy	9380682042
7	Valve Cover Sub Assy	9379576017			

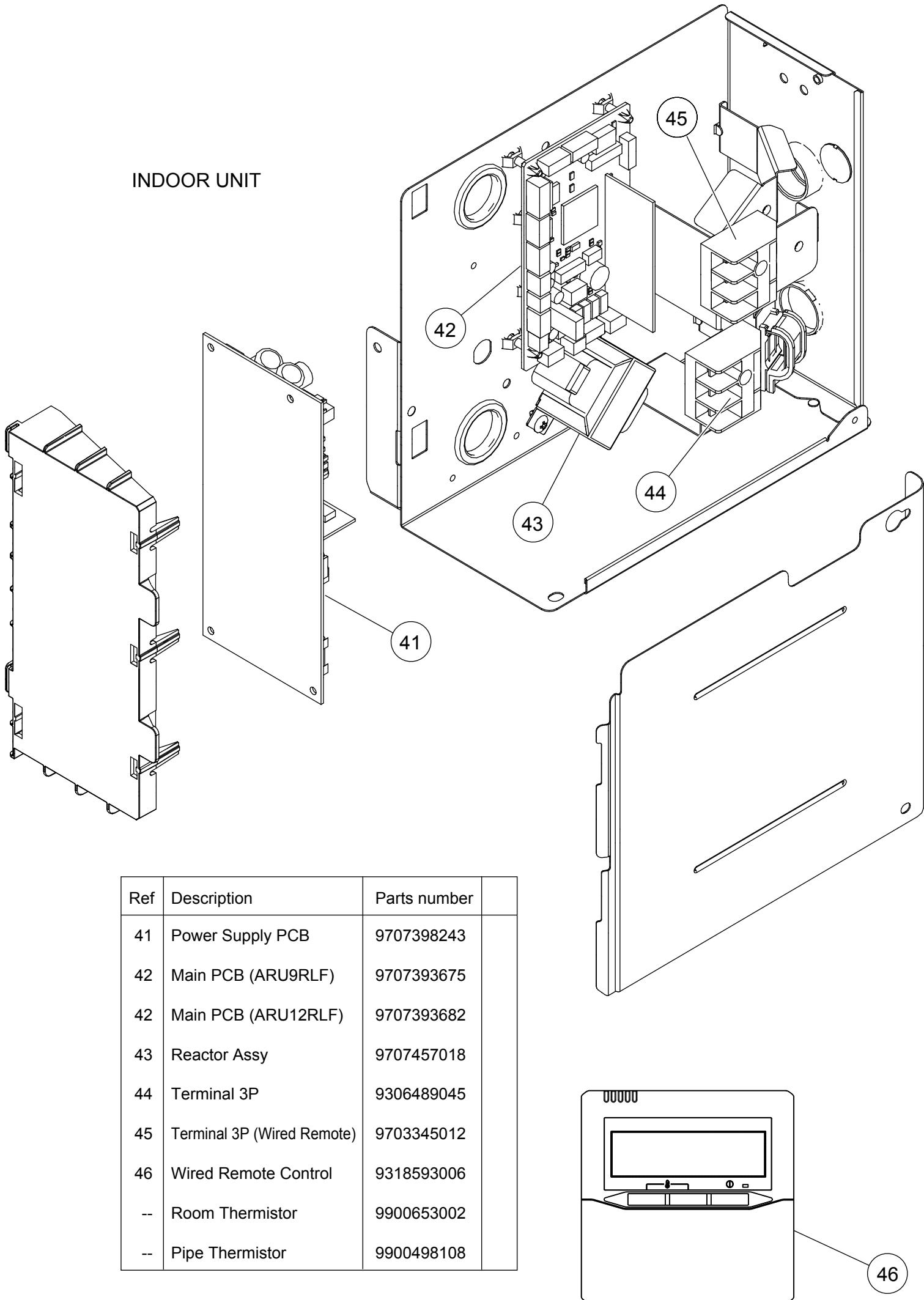
INDOOR UNIT



Ref	Description	Parts number
21	Top Panel Sub Assy	9379908030
22	Sirroco Fan Assy	9379570015
23	Rubber (Vibration Proof)	9379644006
24	Casing B	9379572002
25	Casing U	9379571005

Ref	Description	Parts number
26	Fan Motor Assy	9602967025
27	Drain Pump Sub Assy	9379914024
28	Float Switch Sub Assy	9378593022
29	Drain Hose Assy	9379913003
30	Hose Sub Assy	9378450141

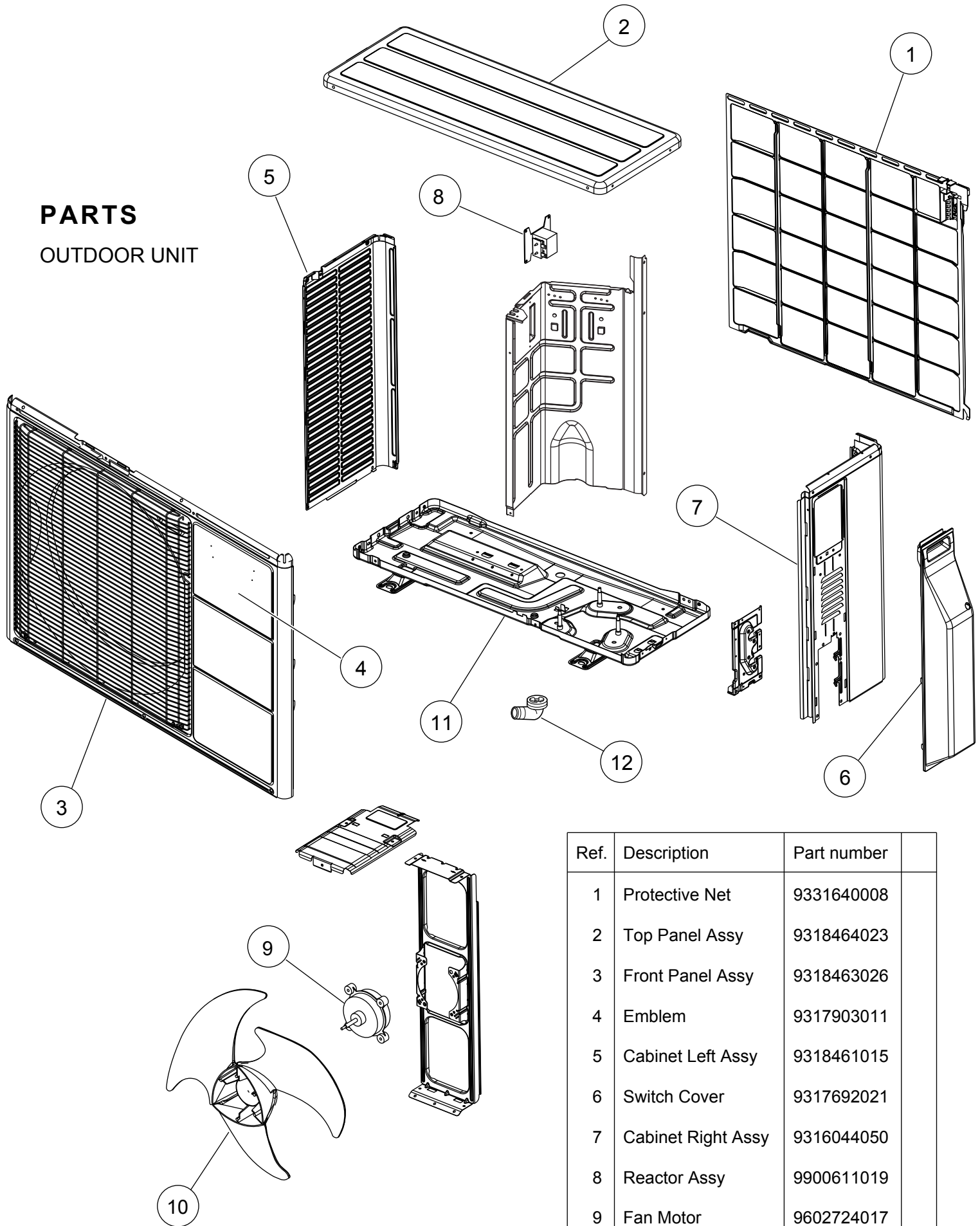
INDOOR UNIT



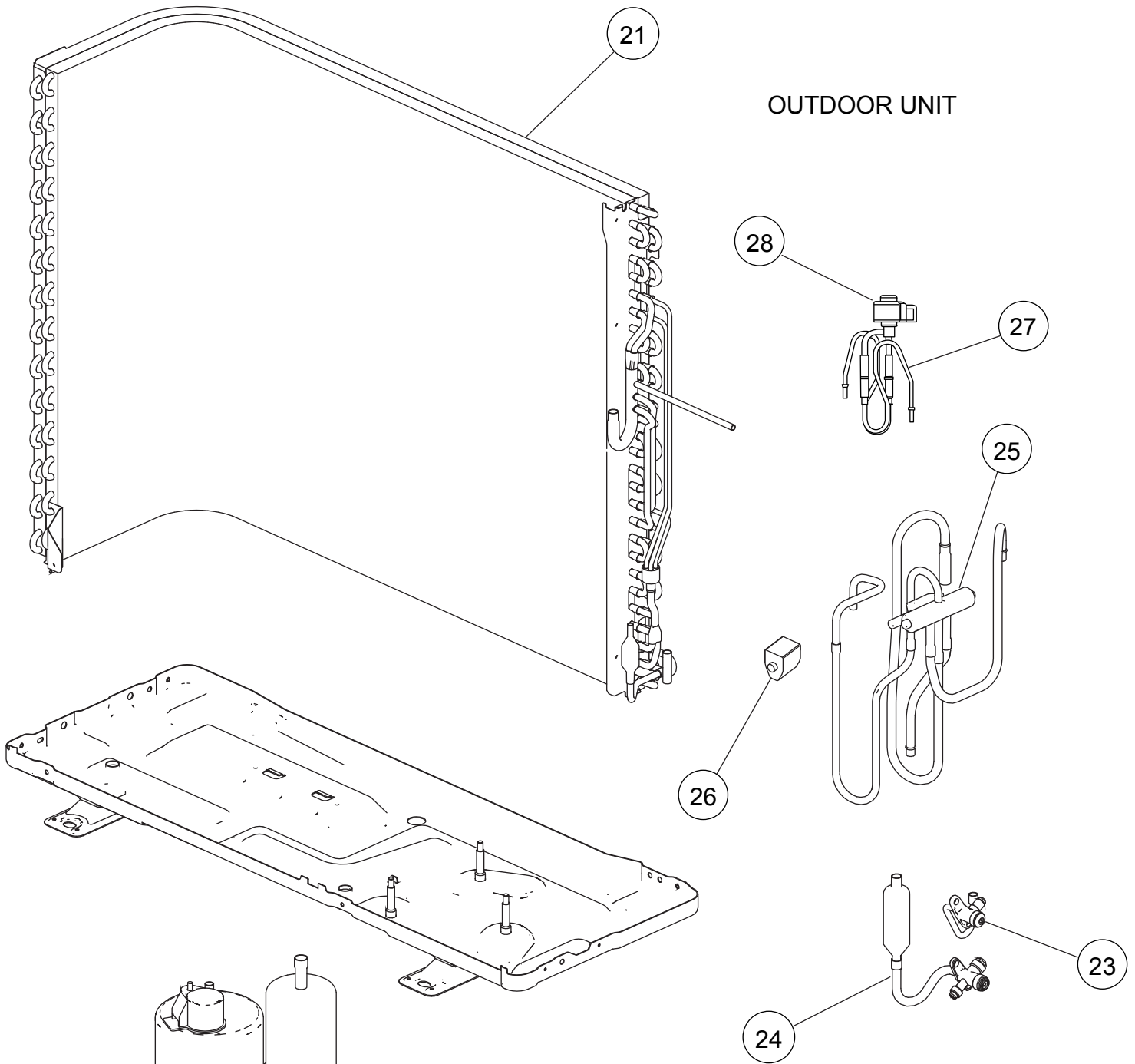
Ref	Description	Parts number
41	Power Supply PCB	9707398243
42	Main PCB (ARU9RLF)	9707393675
42	Main PCB (ARU12RLF)	9707393682
43	Reactor Assy	9707457018
44	Terminal 3P	9306489045
45	Terminal 3P (Wired Remote)	9703345012
46	Wired Remote Control	9318593006
--	Room Thermistor	9900653002
--	Pipe Thermistor	9900498108

PARTS

OUTDOOR UNIT

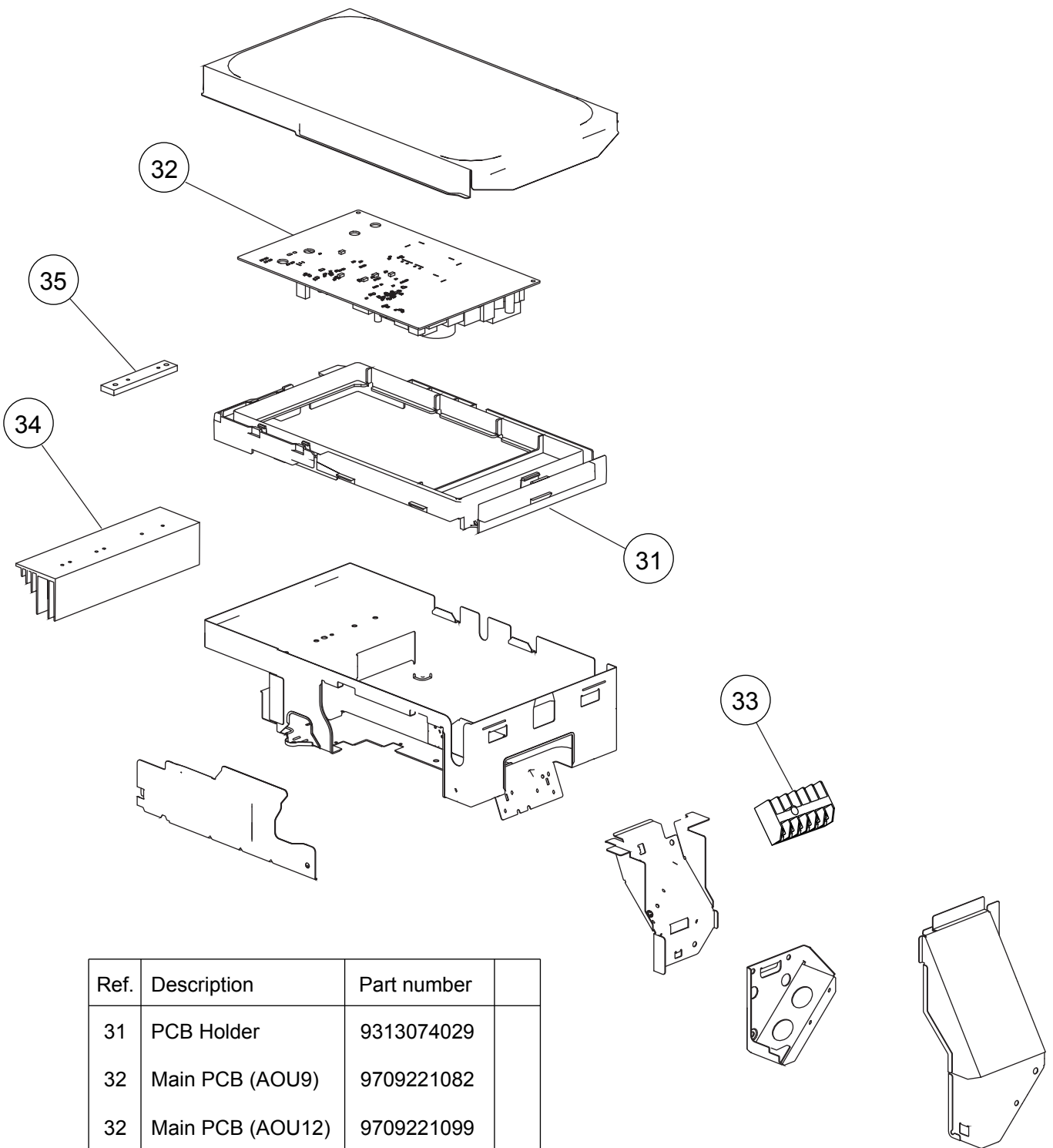


Ref.	Description	Part number
1	Protective Net	9331640008
2	Top Panel Assy	9318464023
3	Front Panel Assy	9318463026
4	Emblem	9317903011
5	Cabinet Left Assy	9318461015
6	Switch Cover	9317692021
7	Cabinet Right Assy	9316044050
8	Reactor Assy	9900611019
9	Fan Motor	9602724017
10	Propeller Fan	9313808013
11	Base Assy	9316885066
12	Drain Assy	9303029022



Ref.	Description	Part number
21	Condenser Total Assy	9317089135
22	Compressor Assy	9317117005
23	2-way Valve Assy	9332371000
24	3-way Valve Sub Assy	9317109000
25	4-way Valve Assy	9317110020
26	Solenoid	9970110047
27	Pulse Motor Valve Assy	9332368000
28	Expansion Valve Coil	9970095030

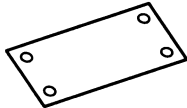




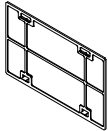
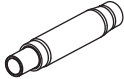





OUTDOOR UNIT



Ref.	Description	Part number
31	PCB Holder	9313074029
32	Main PCB (AOU9)	9709221082
32	Main PCB (AOU12)	9709221099
33	Terminal	9900016081
34	Heatsink A	9314410017
35	Heatsink B	9314090011
--	Outdoor Thermistor	9900544010
--	Thermistor Assy	9900614027

ACCESSORIES

INDOOR UNIT

Name and Shape	Q'ty	Application
Installation template 	1	For positioning the indoor unit
Washer 	8	For installing indoor unit
Coupler heat insulation (Large) 	1	For indoor side pipe joint (Large pipe)
Coupler heat insulation (Small) 	1	For indoor side pipe joint (Small pipe)
Binder 	Medium 3	For power supply and remote control cable binding.
	Large 4	For fixing the coupler heat insulation.
Filter (Small) 	2	
Drain hose 	1	For installing drain pipe 3/4 in. (O.D. 1-1/16 in.)
Hose band 	1	For installing drain hose
Drain hose insulation B 	1	Insulates the drain hose
Wired remote control 	1	
Remote control cable 	1	For connecting the remote control
Tapping screw (M4 × 16 mm) 	2	For installing the remote control

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