

SPLIT TYPE AIR CONDITIONER DUCT type (50Hz)

SERVICE MANUAL



Models

Indoor unit	Outdoor unit
ART45LUAK	AOT45LJAYL
ART45LUAK	AOT45LJBYL
ART54LUAK	AOT54LJAYL
ART54LUAK	AOT54LJBYL
ARTC54LATU	AOT54LJBYL

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SPECIFICATIONS

ELECTRICAL DATA

TYPE	Cooling & Heating	Colling & Heating	
INDOOR UNIT	ART45LUAK	ART54LUAK ARTC54LATU	
OUTDOOR UNIT	AOT45LJAYL AOT45LJBYL	AOT54LJAYL AOT54LJBYL	
COOLING CAPACITY rated / max	12.5 kW / 14.0 kW	14.5 kW / 15.3 kW	
HEATING CAPACITY rated / max	14.0 kW / 18.0 kW	16.0 kW / 20.0 kW	
POWER SUPPLY	240 V - (220 V)	240 V - (220 V)	
FREQUENCY	50 Hz	50 Hz	
RUNNING CURRENT rated / max	Cooling	18.1 A / 22.5 A	23.8 A / 25.9 A
	Heating	16.0 A / 22.5 A	19.8 A / 25.9 A
INPUT rated / max	Cooling	4.30 kW / 5.35 kW	5.70 kW / 6.15 kW
	Heating	3.80 kW / 5.35 kW	4.70 kW / 6.15 kW
EER rated	Cooling	2.91 kW/kW	2.54 kW/kW
	Heating	3.68 kW/kW	3.40 kW/kW
MOISTURE REMOVAL	3.0 L/hr	4.0 L/hr	
AIR CIRCULATION HIGH	3,500 m3/hr	3,500 m3/hr	
MAXIMUM CURRENT	A	A	

FAN MOTOR

INDOOR UNIT	Discrimination	MFA-60NTFS
	High speed	1,300 r.p.m.
	Middle speed	1,150 r.p.m.
	Low speed	990 r.p.m.
OUTDOOR UNIT	Discrimination	MFE-60PO
	Upper fan	850 r.p.m.
	Lower fan	750 r.p.m.

DIMENSIONS

INDOOR UNIT	H x W x D	400 x 1,050 x 500 mm
OUTDOOR UNIT	H x W x D	1,290 x 900 x 330 mm

WEIGHT

INDOOR UNIT	Net / Gross	50 kg / 55 kg
OUTDOOR UNIT	Net / Gross	105 kg / 112 kg

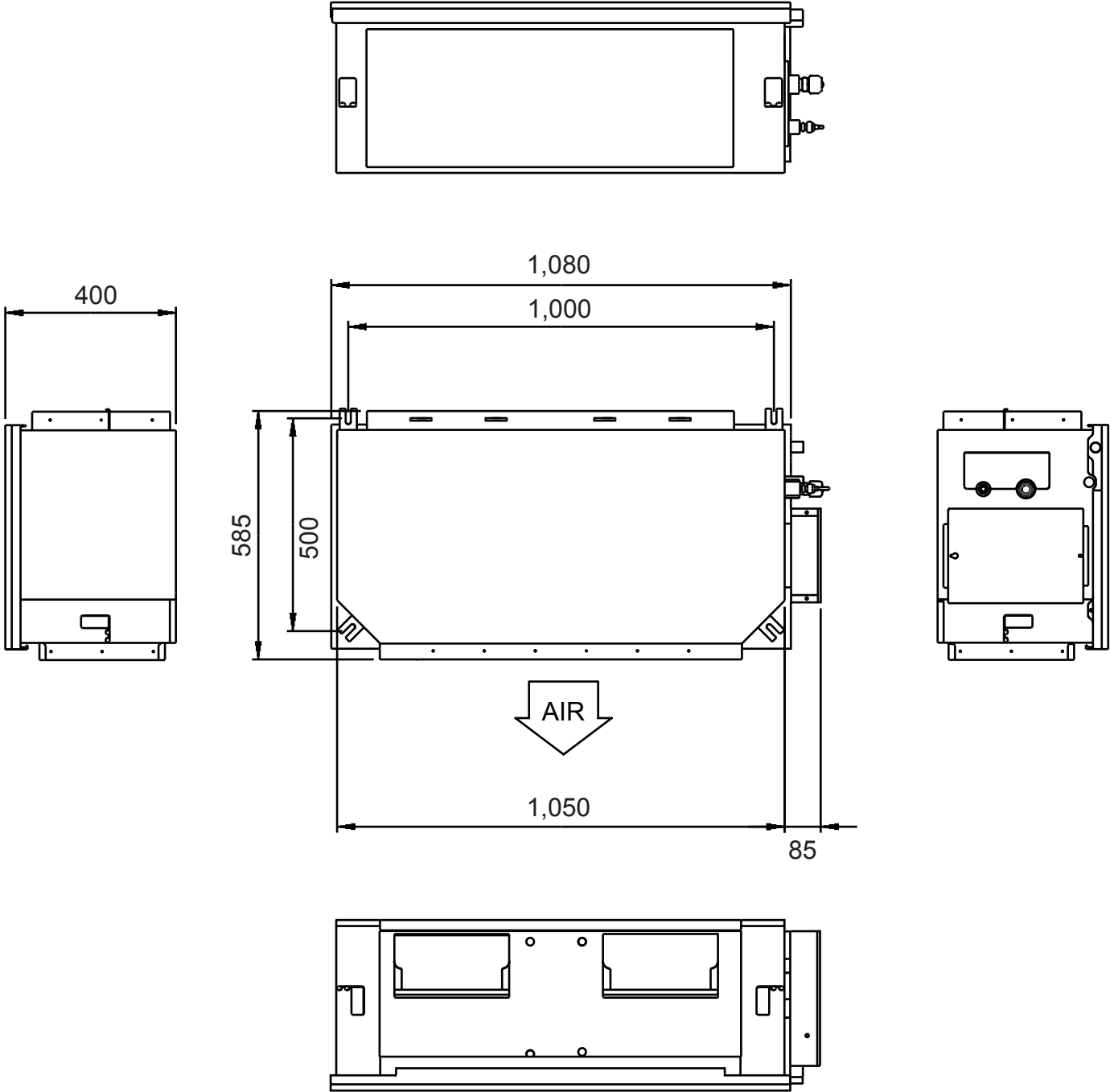
COMPRESSOR AND REFRIGERANT

TYPE	Hermetic type, 6 poles, 3-phase, Induction motor, DC Scroll		
DISCRIMINATION	ANB33FCMMT		
WEIGHT (with oil)	. kg		
STANDARD REFRIGERANT	3,400 g		
REFRIGERANT TYPE	R410A		
FULL CHARGE	PIPE LENGTH	20 m	3,400 g
		40 m	4,200 g
		60 m	5,000 g
		70 m	5,400 g
ADDITIONAL CHARGE	40 g/m		
CHARGELESS	20 m		
MAX PIPE LENGTH	70 m		
MAX ELEVATION	30 m		

OUTLINE AND DIMENSIONS

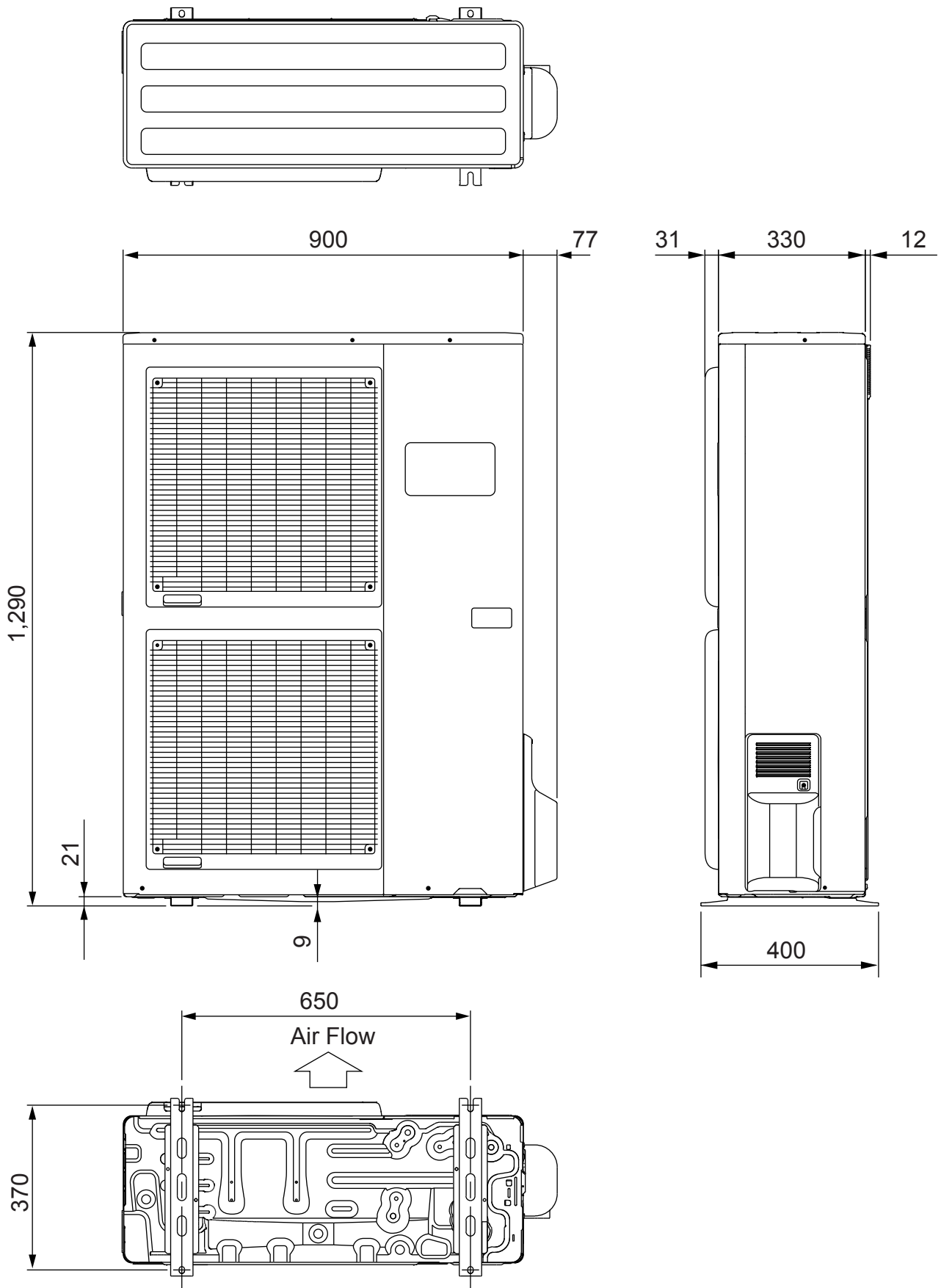
INDOOR UNIT

(Unit : mm)

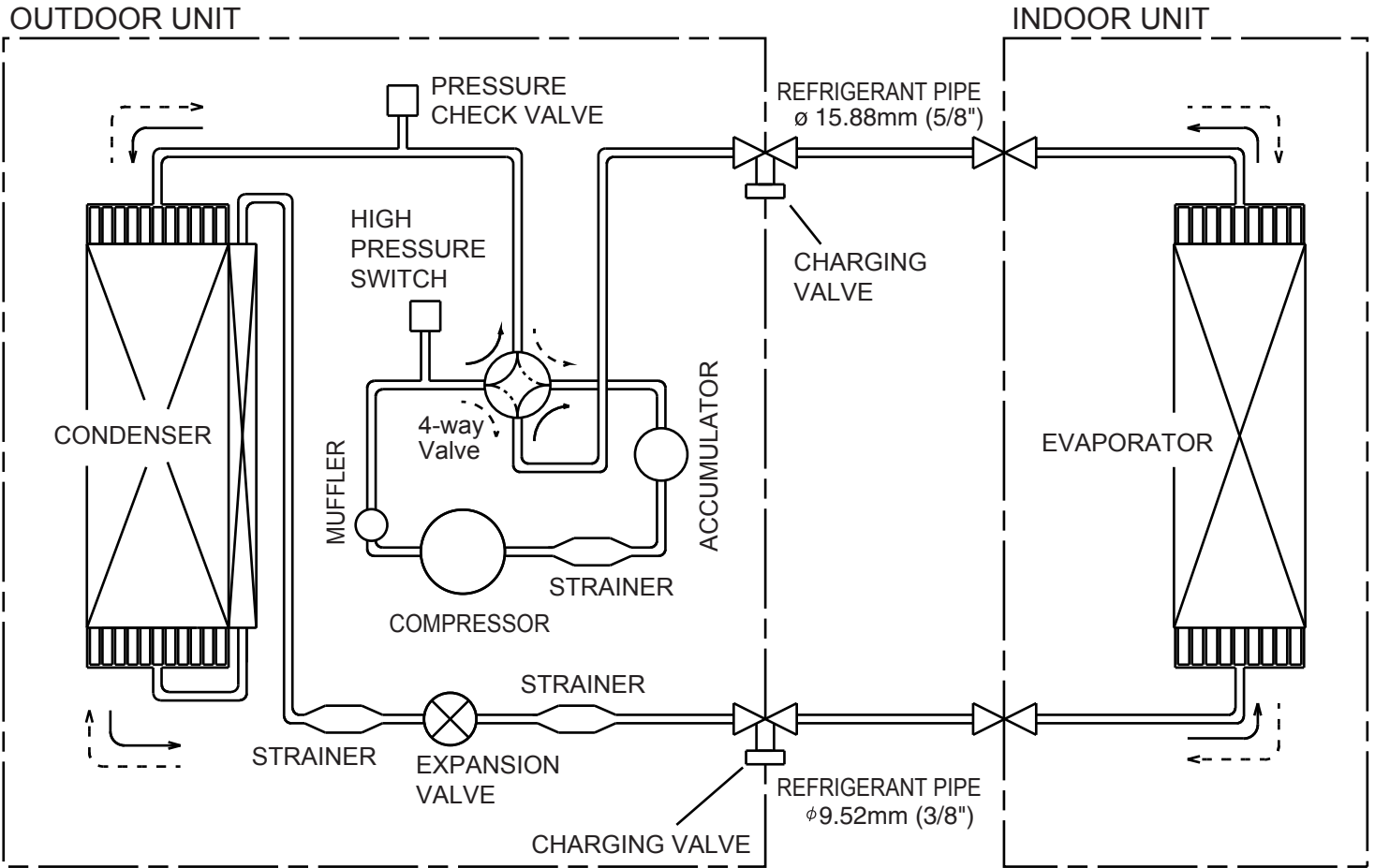


OUTDOOR UNIT

(Unit : mm)

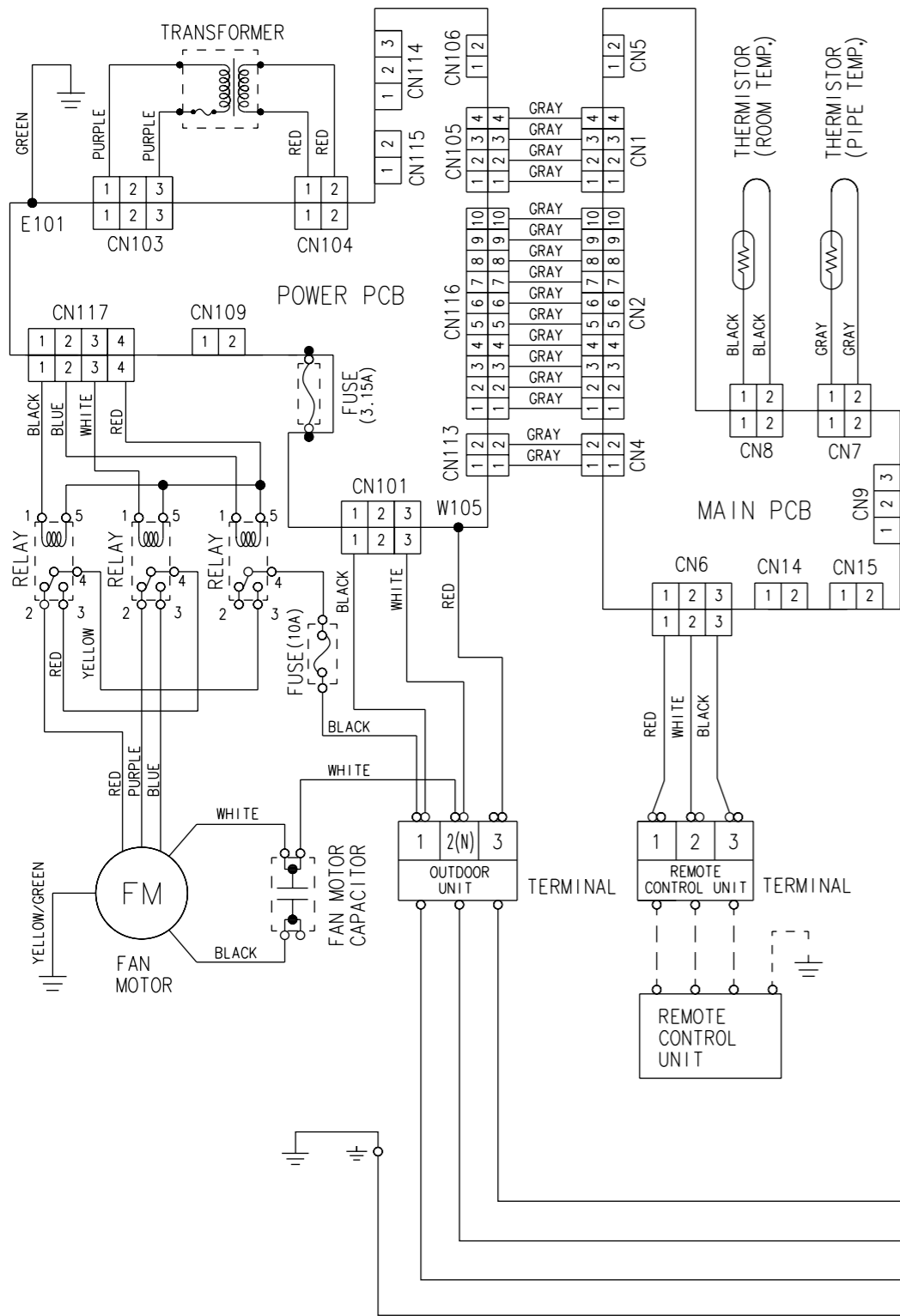


REFRIGERANT SYSTEM DIAGRAM

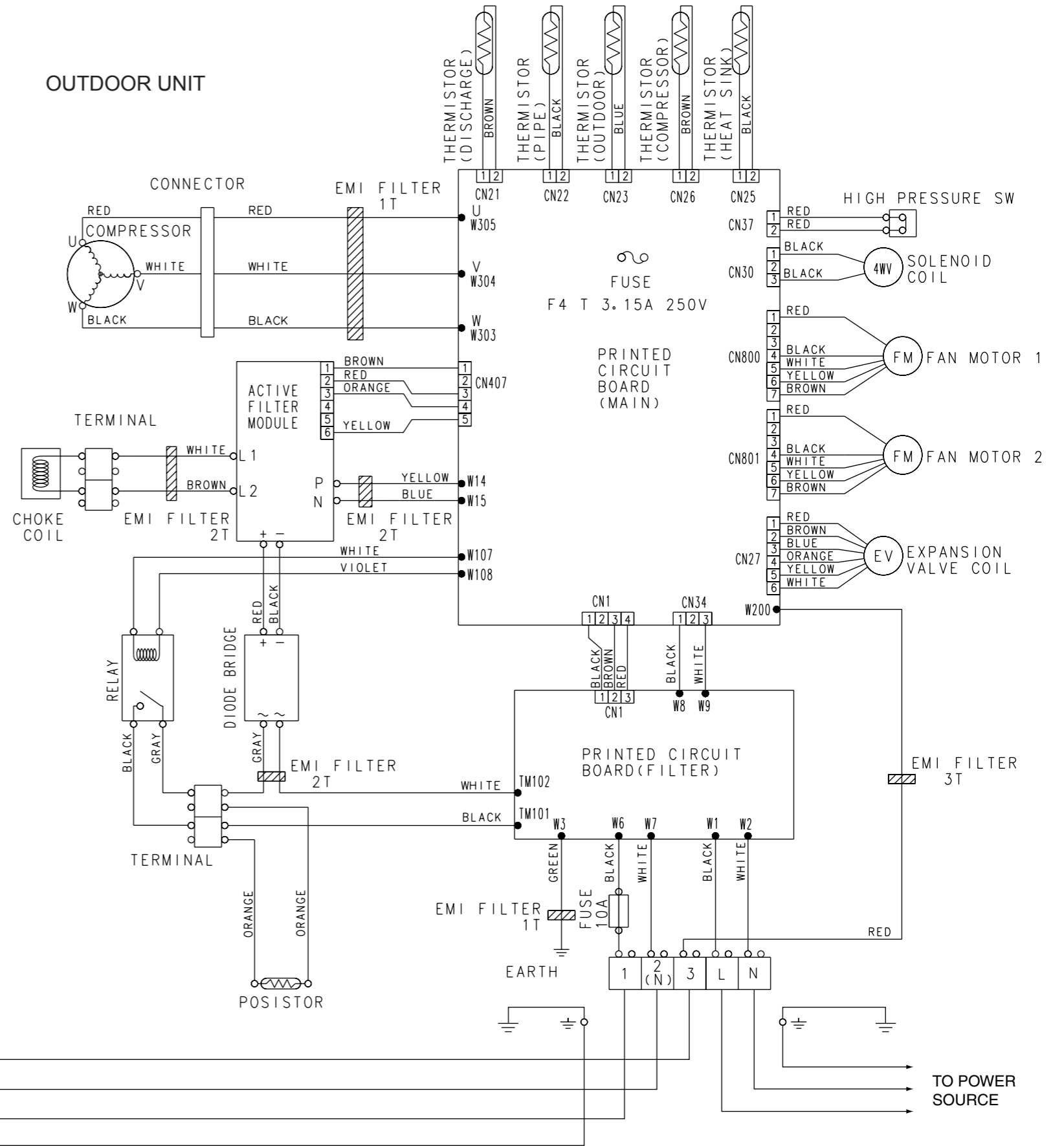


CIRCUIT DIAGRAM

INDOOR UNIT

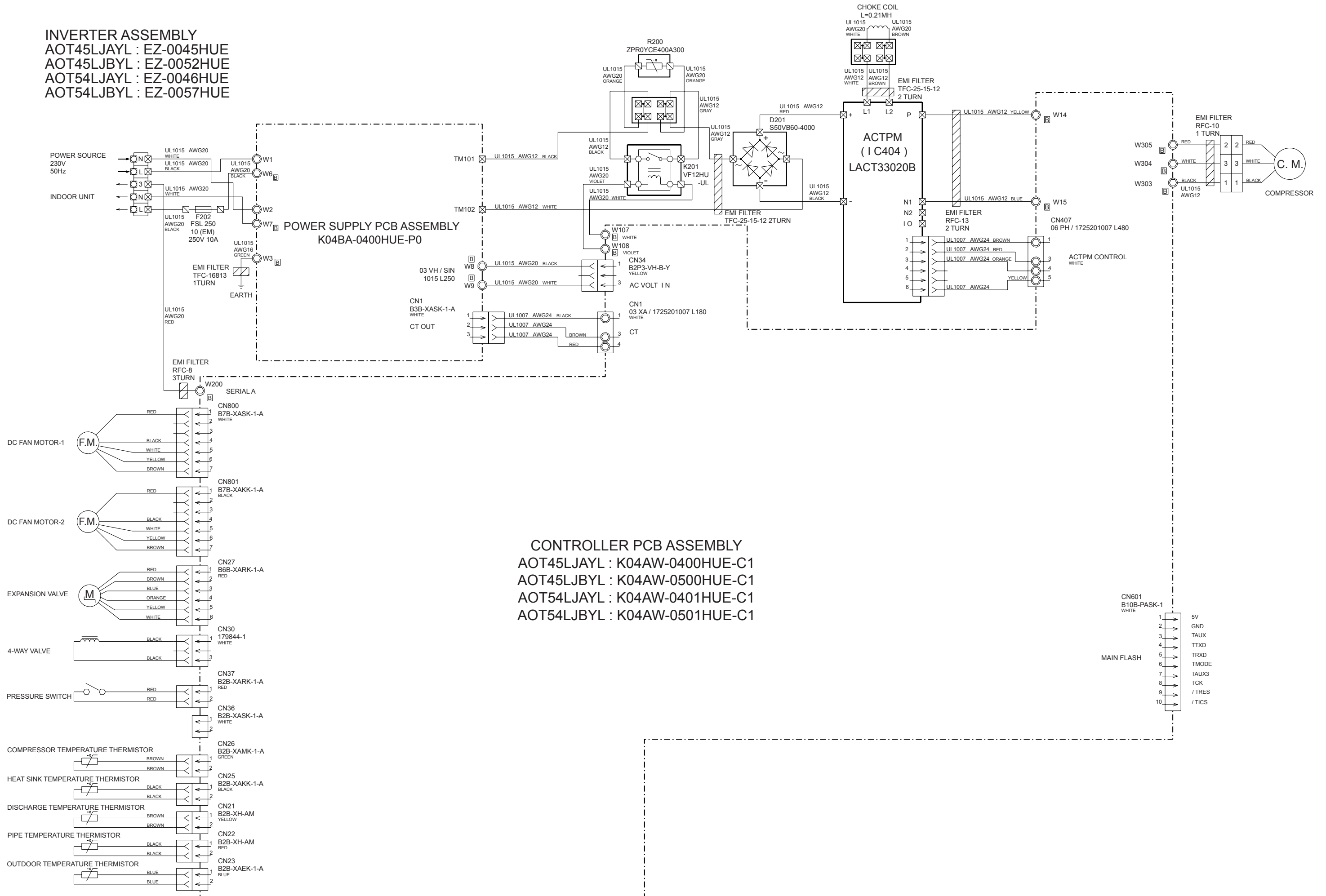


OUTDOOR UNIT

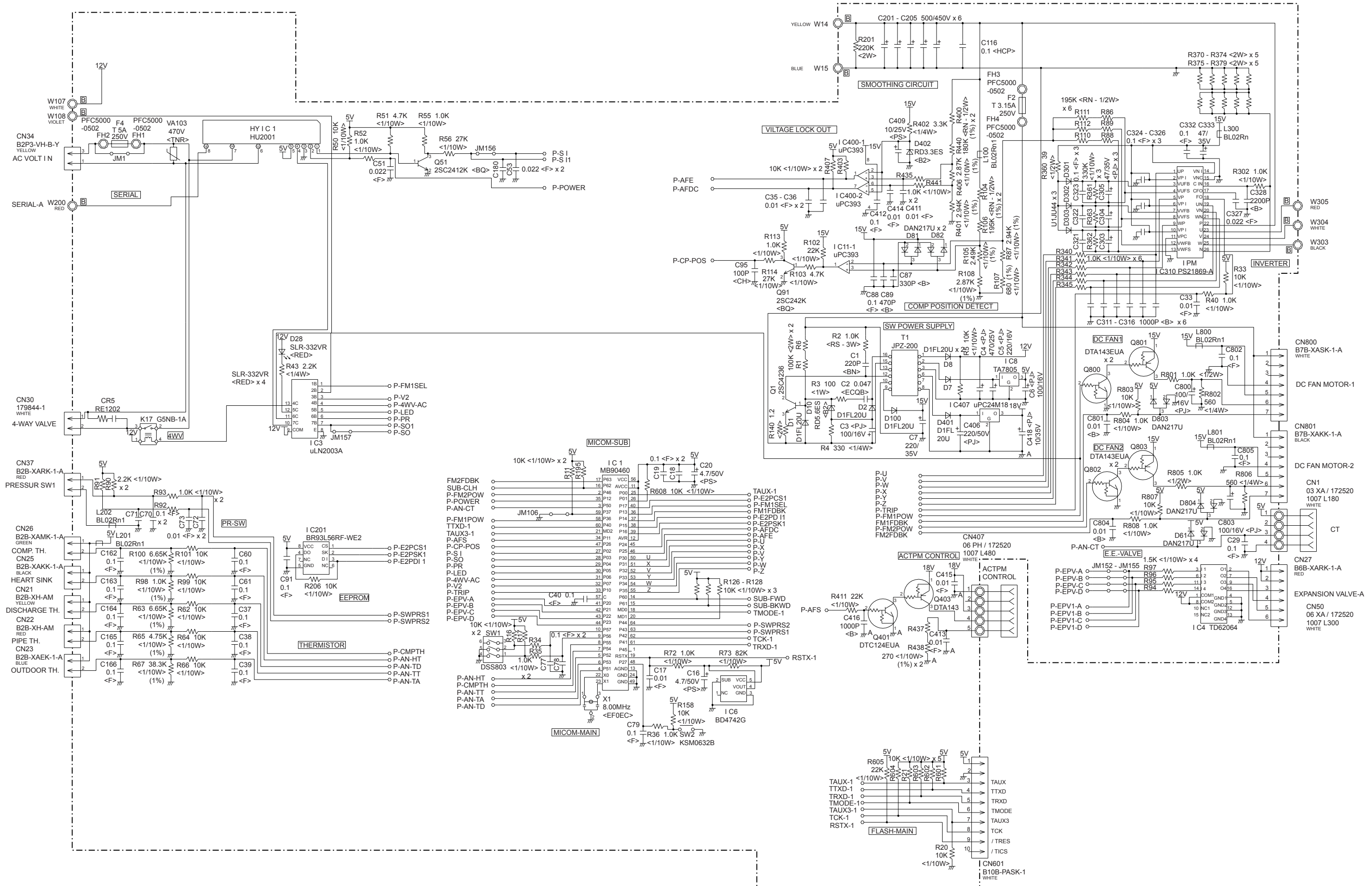


OUTDOOR PCB CIRCUIT DIAGRAM

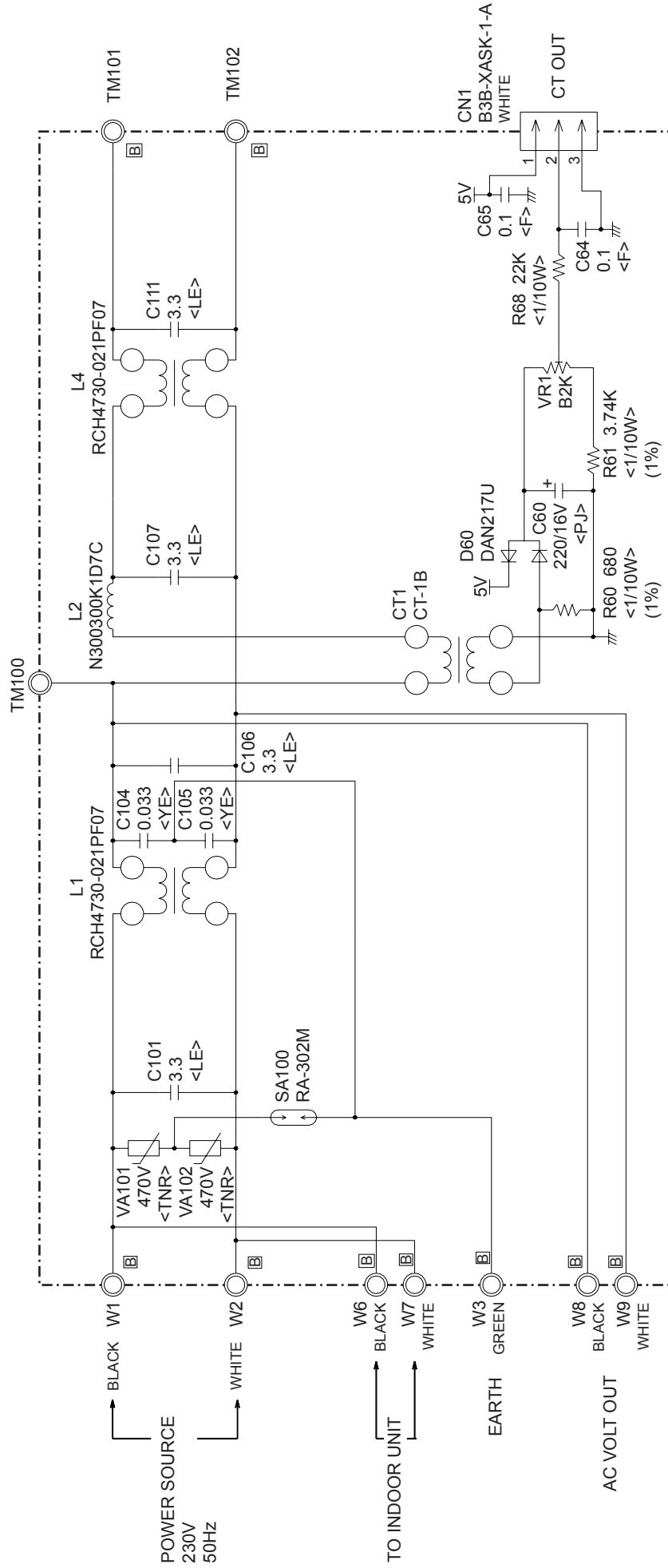
INVERTER ASSEMBLY
 AOT45LJAYL : EZ-0045HUE
 AOT45LJBYL : EZ-0052HUE
 AOT54LJAYL : EZ-0046HUE
 AOT54LJBYL : EZ-0057HUE



CONTROLLER PCB ASSEMBLY
 AOT45LJAYL : K04AW-0400HUE-C1
 AOT45LJBYL : K04AW-0500HUE-C1
 AOT54LJAYL : K04AW-0401HUE-C1
 AOT54LJBYL : K04AW-0501HUE-C1



POWER SUPPLY PCB ASSEMBLY
K04BA-0400HUE-P0

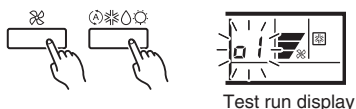


ERROR CONTENTS

CAUTION

Supply power to the crankcase heater for at least 12 hours before the start of operation in winter.

- Stop the air conditioner operation.
- Press the master control button and the fan control button simultaneously for 2 seconds or more to start the test run.



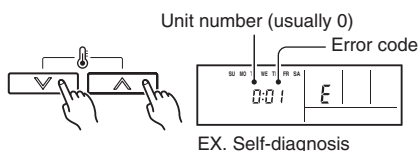
- Press the start/stop button to stop the test run.

[SELF-DIAGNOSIS]

When the error indication "E:EE" is displayed, follow the following items to perform the self-diagnosis. "E:EE" indicates an error has occurred.

1. REMOTE CONTROLLER DISPLAY

- Stop the air conditioner operation.
- Press the set temperature buttons \wedge / \vee simultaneously for 5 seconds or more to start the self-diagnosis.
Refer to the following tables for the description of each error code.



- Press the set temperature buttons \wedge / \vee simultaneously for 5 seconds or more to stop the self-diagnosis.

Error code	Error contents
00	Communication error (indoor unit ↔ remote controller)
01	Communication error (indoor unit ↔ outdoor unit)
02	Room temperature sensor open
03	Room temperature sensor short-circuited
04	Indoor heat exchanger temperature sensor open
05	Indoor heat exchanger temperature sensor short-circuited
06	Outdoor heat exchanger temperature sensor
08	Power source connection error
09	Float switch operated
0A	Outdoor temperature sensor
0c	Discharge pipe temperature sensor

Error code	Error contents
11	Model abnormal
12	Indoor fan abnormal
13	Outdoor signal abnormal
14	Outdoor EEPROM abnormal
15	Compressor temperature sensor
16	Pressure switch abnormal
17	IPM error
1A	Compressor cannot operate
1b	Outdoor fan abnormal

2. OUTDOOR UNIT LEDS

Heat & Cool model (reverse cycle) only

When a malfunction occurs in the outdoor unit, the LED on the circuit board door unit, the LED on the circuit board light to indicate the error. Refer to the following table for the description of each error according to the LED.

LED1	Error contents
1 flash	Communication error (Indoor unit → Outdoor unit)
2 flash	Discharge pipe temperature sensor
3 flash	Outdoor heat exchanger temperature sensor
4 flash	Outdoor temperature sensor
7 flash	Compressor temperature sensor
8 flash	Heatsink temperature sensor
9 flash	Pressure switch abnormal
12 flash	IPM error
13 flash	Compressor rotor position cannot detect
14 flash	Compressor cannot operate
15 flash	Outdoor fan abnormal (upper fan)
16 flash	Outdoor fan abnormal (lower fan)
5 sec. ON/ 1 sec. OFF repeated	Protect operation
lighting	No error

PUMP DOWN (Refrigerant collecting operation)

Perform the following procedures to collect the refrigerant when moving the indoor unit or the outdoor unit.

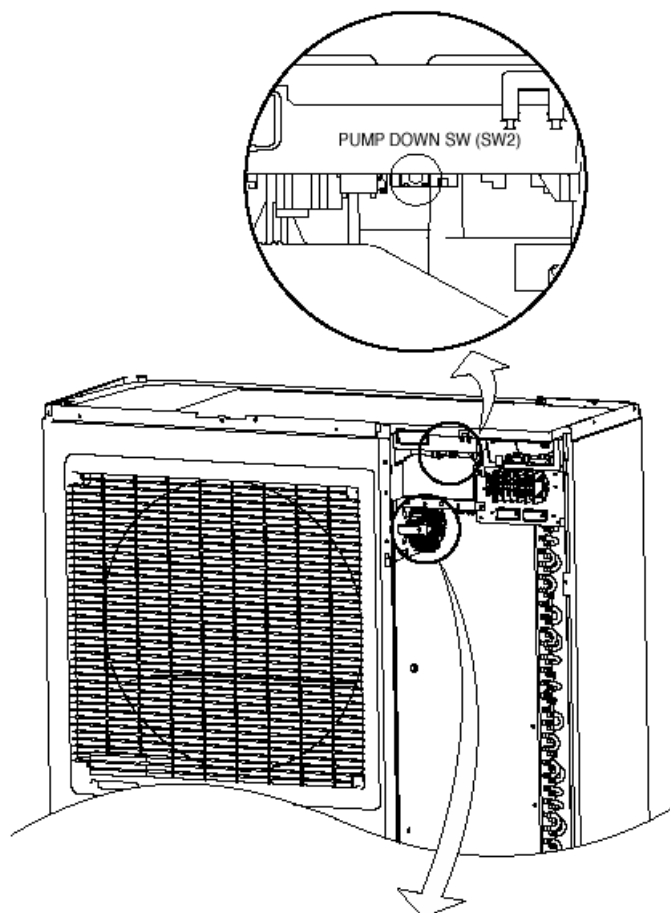
(1) Press the push-button switch (SW2) on the circuit board once. The LED on the circuit board starts flashing (one second ON/ one second OFF). This indicates the start of PUMP DOWN operation.

When the switch is pressed while the compressor is in operation, PUMP DOWN operation starts automatically.

When the switch is pressed while the compressor is in stop, the compressor starts to operate automatically, and then move on to PUMP DOWN operation.

(2) PUMP DOWN operation continues for about 1 minute. When PUMP DOWN operation is completed, the compressor stops automatically. Then close the 2-way valve and 3-way valve within 1 minute.

(3) Turn the power off.

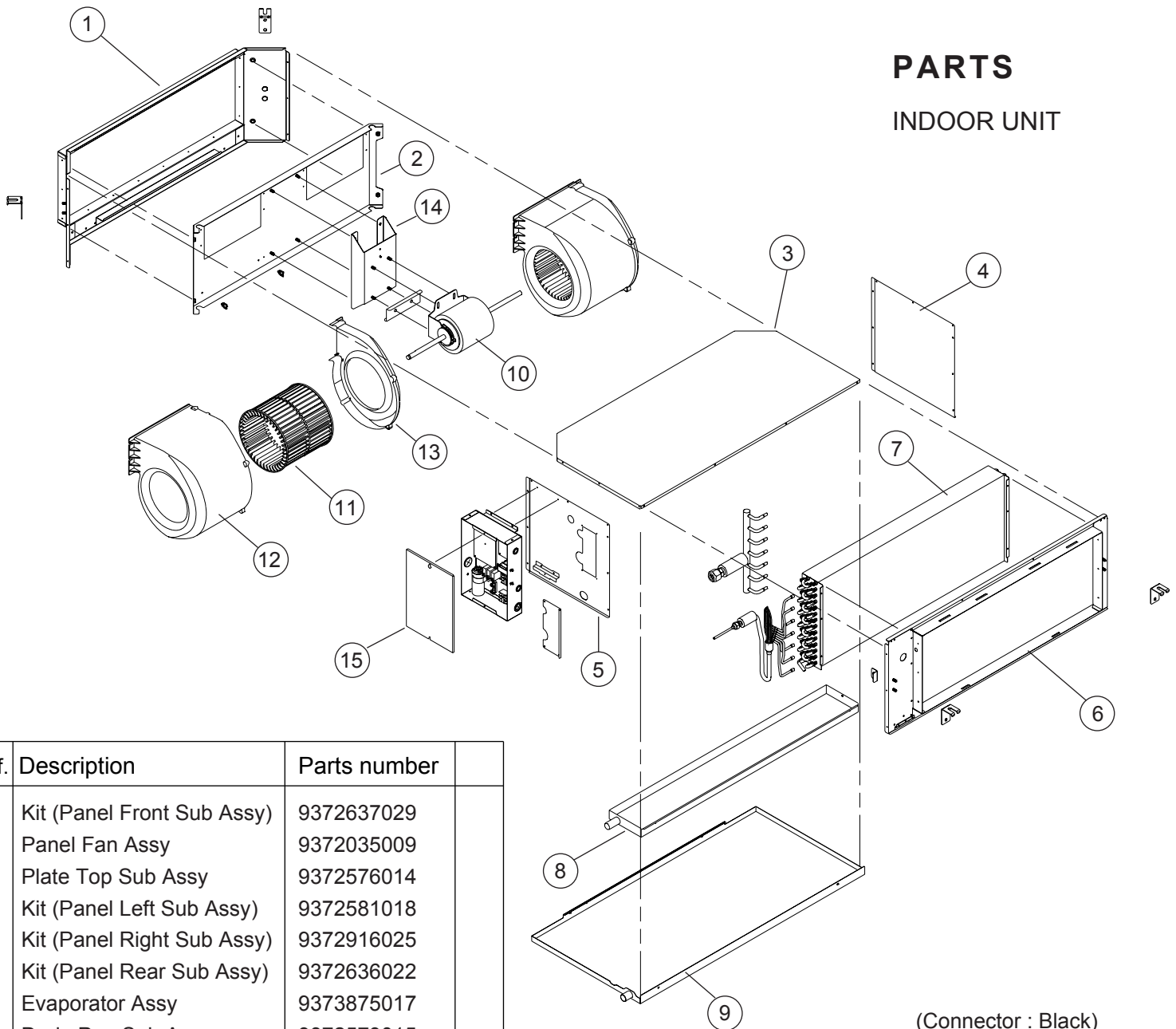


 **DANGER**

**This part (Choke coil) generates high voltages.
Never touch this part.**

PARTS

INDOOR UNIT

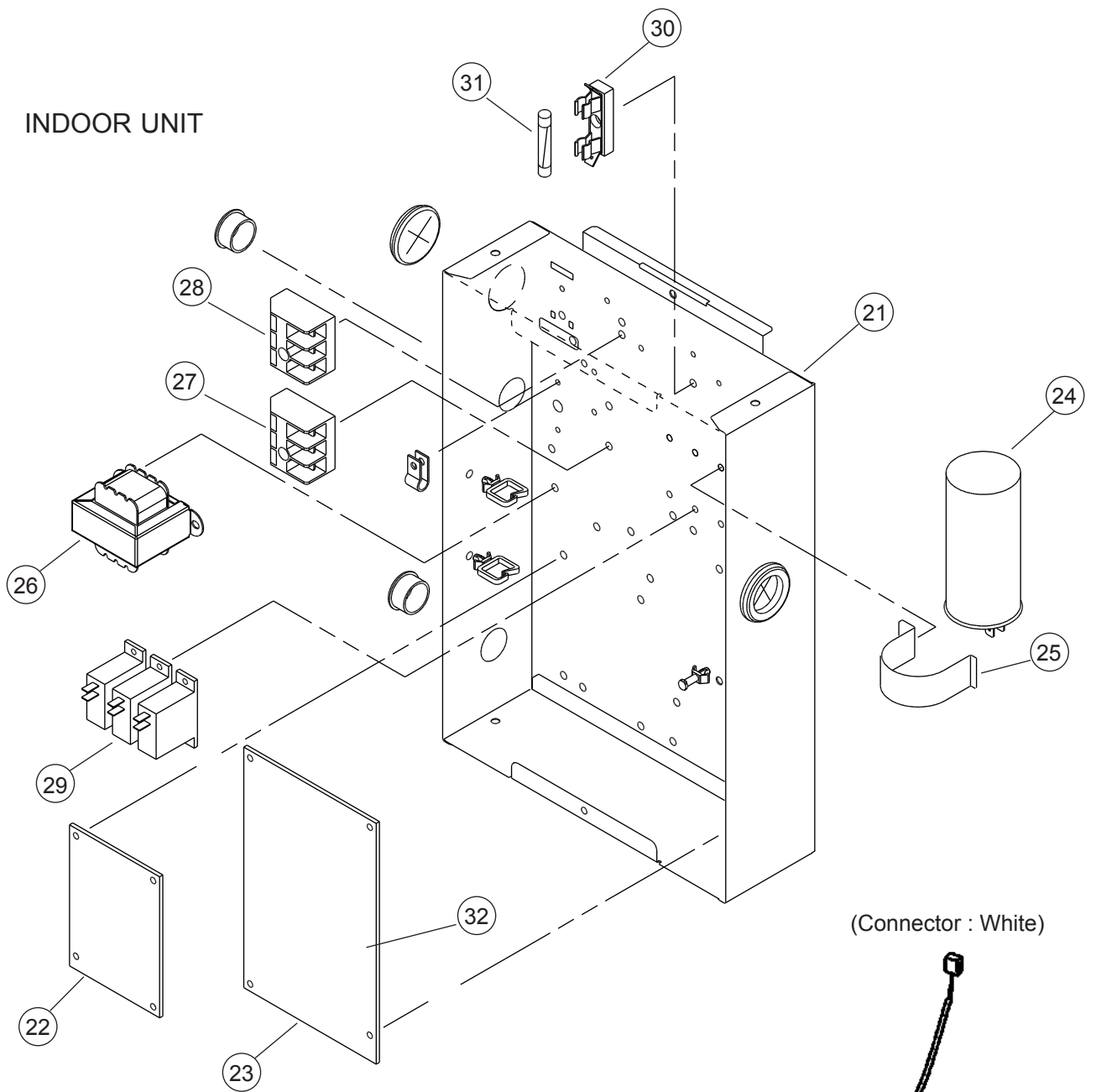


Ref.	Description	Parts number
1	Kit (Panel Front Sub Assy)	9372637029
2	Panel Fan Assy	9372035009
3	Plate Top Sub Assy	9372576014
4	Kit (Panel Left Sub Assy)	9372581018
5	Kit (Panel Right Sub Assy)	9372916025
6	Kit (Panel Rear Sub Assy)	9372636022
7	Evaporator Assy	9373875017
8	Drain Pan Sub Assy	9372579015
9	Drain Pan Sub Assy	9372582015
10	Fan Motor	9601688013
11	Sirocco Fan	9372059012
12	Casing A	9372057018
13	Casing B	9372058015
14	Bracket Motor Assy	9372037003
15	Cover Box	9372061008
16	Pipe Thermistor	9703297113
--	Kit (Panel Mainte Sub Assy)	9372055007
--	Hook	9372055007
--	Bracket (Thermostat)	9367369010
--	Cap (Power)	9352173011
--	Thermo. Spring A	313728262708
--	Remote Control	9372266038

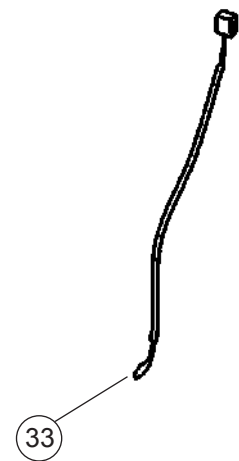
(Connector : Black)



INDOOR UNIT



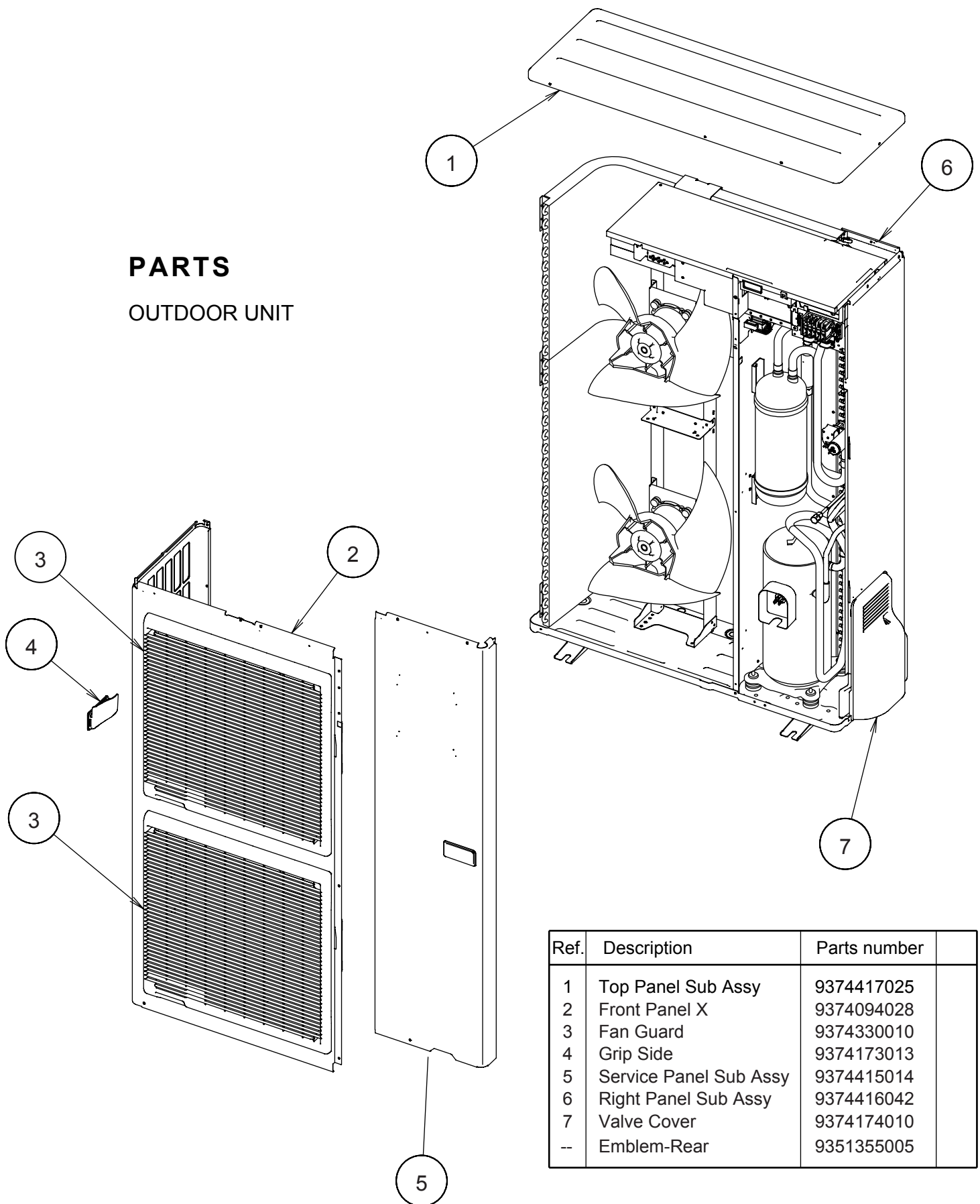
(Connector : White)



Ref.	Description	Parts number
21	Control Box Assy	9374854028
22	Controller PCB Assy (ART45)	9705246119
22	Controller PCB Assy (ART54)	9705246102
22	Controller PCB Assy (ARTC54)	9705246171
23	Power Supply PCB Assy	9705668058
24	Capacitor	9900269111
25	Capacitor Clamp	9308114006
26	Transformer (Power)	9704129017
27	Terminal 3P	9306489045
28	Terminal 3P	9703345012
29	Relay	9900294014
30	Fuse Holder	0501454012
31	Fuse	0600384029
32	Fuse	0600222512
33	Room Thermistor	9703299216

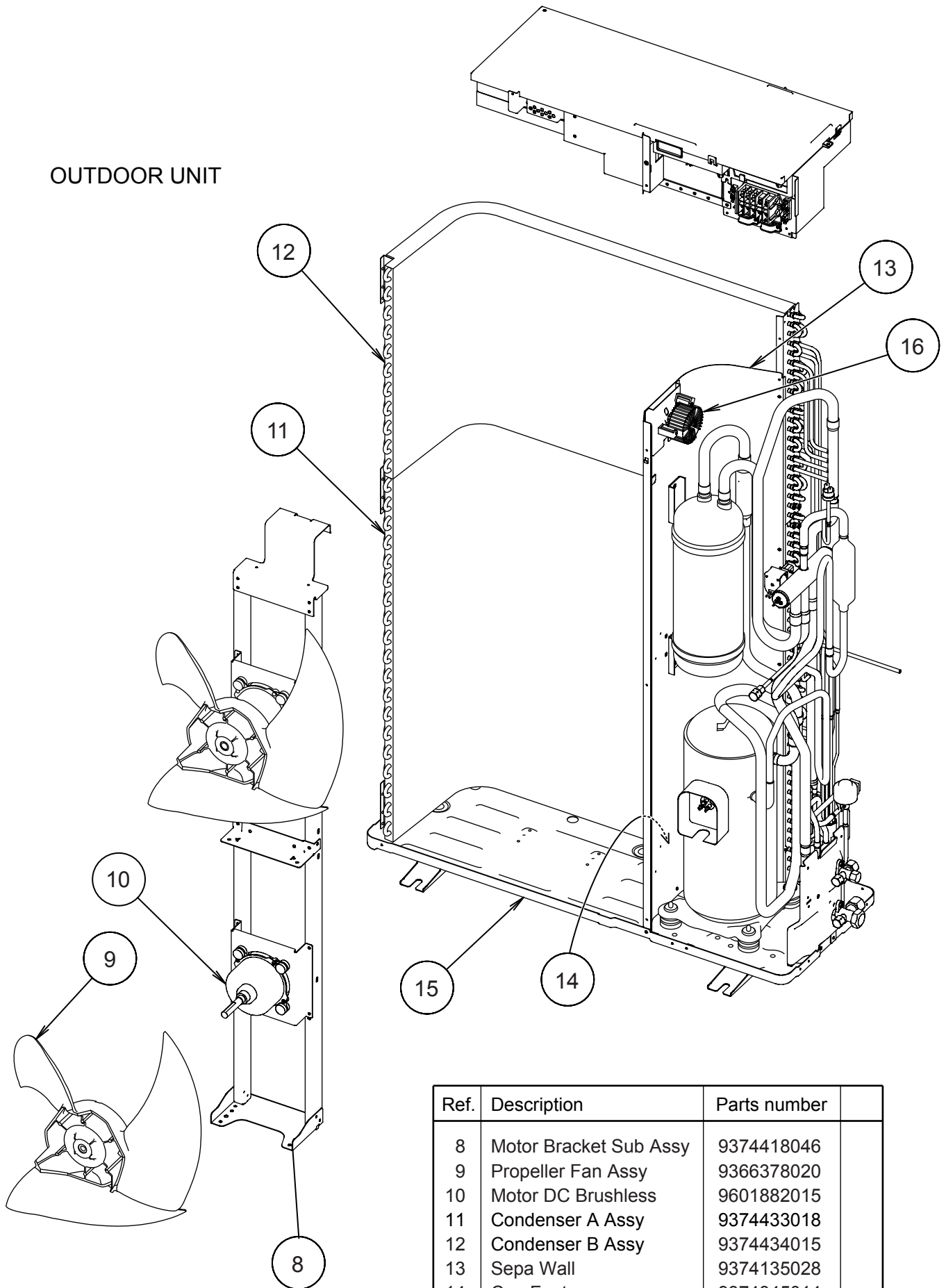
PARTS

OUTDOOR UNIT



Ref.	Description	Parts number
1	Top Panel Sub Assy	9374417025
2	Front Panel X	9374094028
3	Fan Guard	9374330010
4	Grip Side	9374173013
5	Service Panel Sub Assy	9374415014
6	Right Panel Sub Assy	9374416042
7	Valve Cover	9374174010
--	Emblem-Rear	9351355005

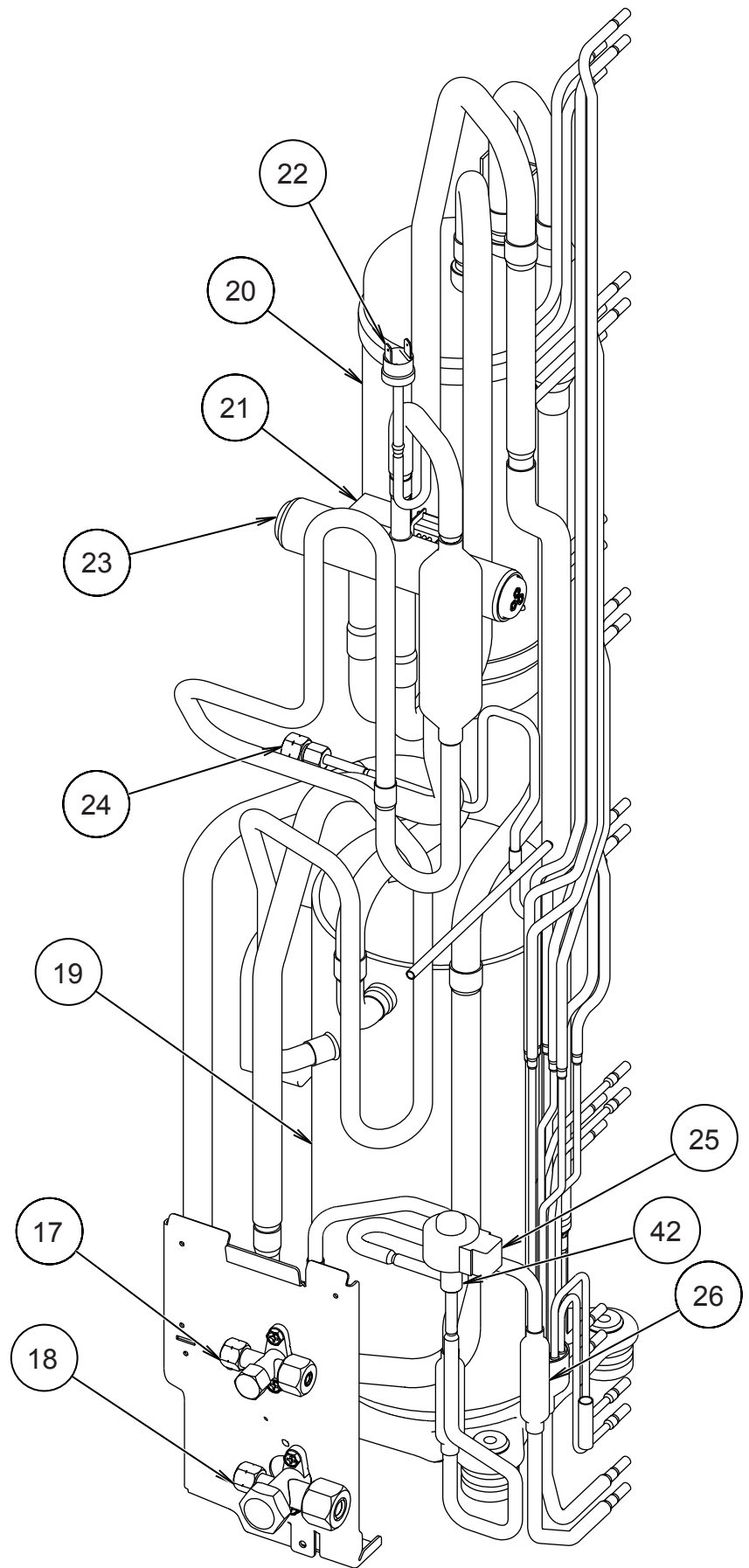
OUTDOOR UNIT



Ref.	Description	Parts number
8	Motor Bracket Sub Assy	9374418046
9	Propeller Fan Assy	9366378020
10	Motor DC Brushless	9601882015
11	Condenser A Assy	9374433018
12	Condenser B Assy	9374434015
13	Sepa Wall	9374135028
14	Cap Foot	9374345014
15	Base Assy	9374166060
16	Coil, Choke	9705877016

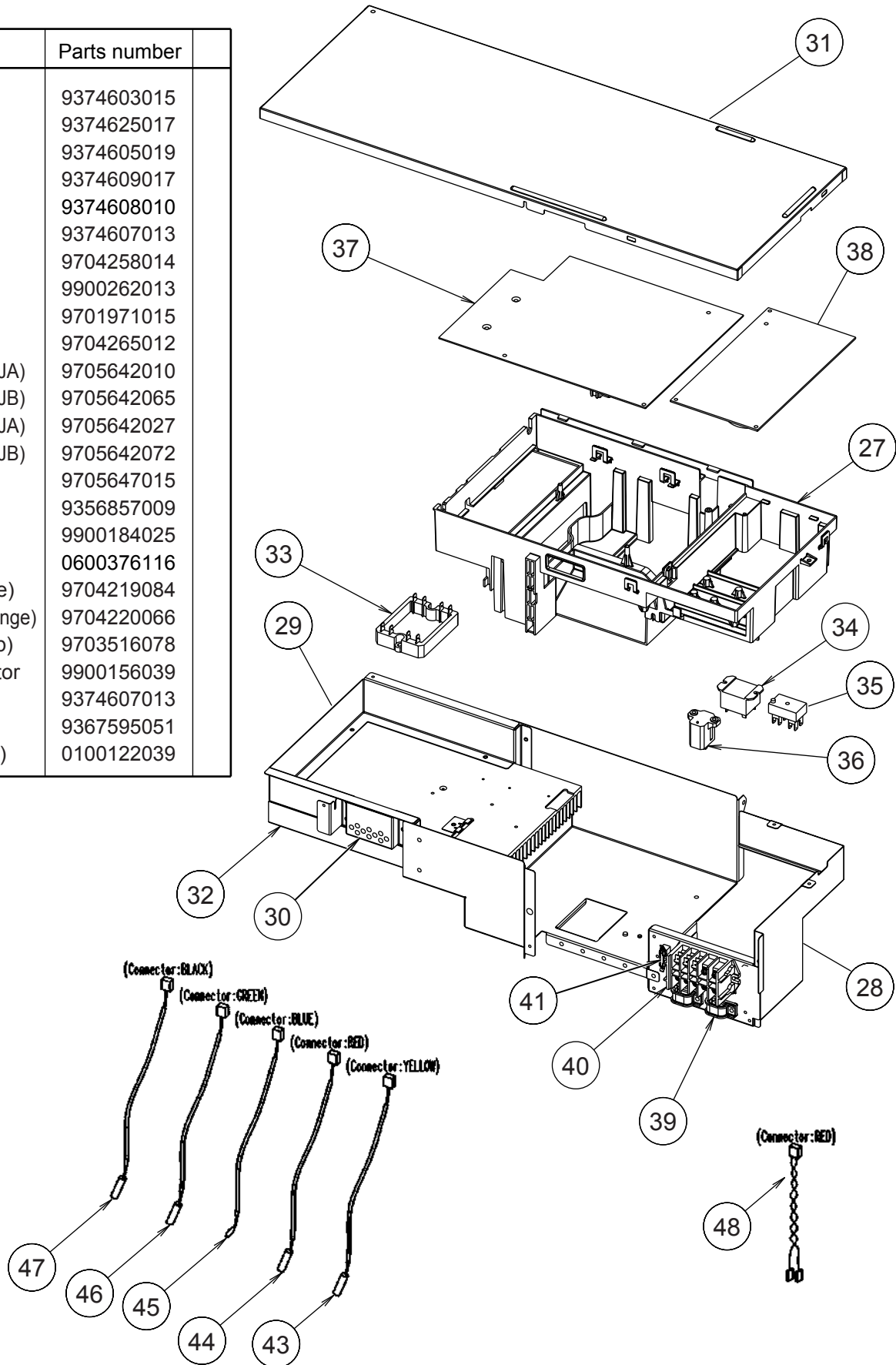
OUTDOOR UNIT

Ref.	Description	Parts number
17	3-Way Valve Assy	9372205044
18	3-Way Valve Assy	9372205075
19	Compressor Assy	9374653010
20	Accumulator Assy	9371615011
21	Solenoid	9900165055
22	Pressure Switch	9900186012
23	4-Way Valve	9970035029
24	Check Valve Assy	9374274017
25	Coil (Expansion Valve)	9900190033
26	Strainer Assy	9372524015
42	Expansion Valve	9900170028



OUTDOOR UNIT






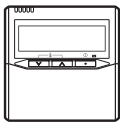

Ref.	Description	Parts number
27	Inverter Box A	9374603015
28	Inverter Box B	9374625017
29	Inverter Box C	9374605019
30	Inverter Box Duct	9374609017
31	Inverter Box Cover	9374608010
32	Heat Sink A	9374607013
33	Act-Module	9704258014
34	Relay	9900262013
35	Terminal	9701971015
36	Posistor	9704265012
37	Inverter PCB Assy (45LJA)	9705642010
37	Inverter PCB Assy (45LJB)	9705642065
37	Inverter PCB Assy (54LJA)	9705642027
37	Inverter PCB Assy (54LJB)	9705642072
38	Power PCB Assy	9705647015
39	Clamp (Cord)	9356857009
40	Terminal	9900184025
41	Fuse	0600376116
43	Thermistor (Discharge)	9704219084
44	Thermistor (Heat Exchange)	9704220066
45	Thermistor (Out Temp)	9703516078
46	Compressor Thermistor	9900156039
47	Heat Sink Thermistor	9374607013
48	Wire (Pressure SW)	9367595051
--	Diode, Power (Bridge)	0100122039



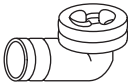

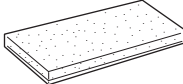
STANDARD ACCESSORIES

The following installation parts are furnished.
Use them as required.

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	
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 	1	For fixing the remote controller cord
Remote controller 	1	
Tapping screw (flush heads) 	2	For installing the remote controller

OUTDOOR UNIT

Name and Shape	Q'ty	Application
Drain pipe 	1	For outdoor unit drain piping work (May not be supplied, depending on the model.)
Drain cap 	2	
Insulation (seal) 	1	For filling in a gap at the entrance of connection cords.

OPTIONAL PARTS

The following options are available.

- Long-life filter : UTD-LF60KA (P/N 9017230004).
- Simple remote controller : UTB-YPB (P/N 9077582006)
- Remote sensor : UTD-RS100 (P/N 9072619004)
- External control set : UTD-ECS5A (P/N 9077359004)

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