

SERVICE MANUAL

Indoor unit	Outdoor unit
RDA40RATU	ROA40RAT
RDA50RATU	ROA50RATV

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SPECIFICATIONS

ELECTRICAL DATA

TYPE		Cooling and heating	
INDOOR UNIT		RDA40RATU	RDA50RATU
OUTDOOR UNIT		ROA40RAT	ROA50RATV
COOLING CAPACITY	T3 (cool)	9.00 kW	10.5 kW
	T1 (cool)	10.10 kW	12.3 kW
HEATING CAPACITY	H1 (heat)	10.5 kW	13.8 kW
POWER SOURCE		Single phase, 220 V	Three phase, 3W, 220 V
FREQUENCY		60 Hz	60 Hz
RUNNING CURRENT	T3 (cool)	24.0 A	17.4 A
	T1 (cool)	21.0 A	16.1 A
	H1 (heat)	16.5 A	15.7 A
INPUT WATTS	T3 (cool)	5.20 kW	6.05 kW
	T1 (cool)	4.56 kW	5.35 kW
	H1 (heat)	3.55 kW	5.20 kW
E.E.R.	T3 (cool)	1.73 kW/kW	1.74 kW/kW
	T1 (cool)	2.21 kW/kW	2.30 kW/kW
	H1 (heat)	2.96 kW/kW	2.65 kW/kW
MOISTURE REMOVAL	T3 (cool)	1.8 L/hr	2.2 L/hr
	T1 (cool)	3.1 L/hr	4.8 L/hr
AIR CIRCULATION (High)		2,000 m3/hr	2,200 m3/hr

* Condition T3 : Indoor DB 29°C/WB 19°C, Outdoor DB 46°C/WB 24°C

Condition T1 : Indoor DB 27°C/WB 19°C, Outdoor DB 35°C/WB 24°C

Condition H1 : Indoor DB 20°C/WB -°C, Outdoor DB 7°C/WB 6°C

FAN MOTOR

POWER SOURCE		220 V	
INDOOR UNIT	DISCRIMINATION	MFA-45AST	
	HI-SPEED	1,230 r.p.m.	1,320 r.p.m.
	MED-SPEED	1,140 r.p.m.	1,240 r.p.m.
	LO-SPEED	1,050 r.p.m.	1,160 r.p.m.
OUTDOOR UNIT	DISCRIMINATION	MFB-362FT	
	HI-SPEED	750 r.p.m.	770 r.p.m.

NOISE LEVEL

INDOOR UNIT	HI-SPEED	60.0 dB	62.0 dB
	MED-SPEED	57.0 dB	59.0 dB
	LO-SPEED	54.0 dB	56.0 dB
OUTDOOR UNIT	Cooling	58.0 dB	57.0 dB
	Heating	59.0 dB	58.0 dB

COMPRESSOR AND REFRIGERANT

TYPE	Hermetic type, 2 poles, Single phase, Induction motor (PSC)		Hermetic type, 2 poles, 3 phase, Induction motor
DISCRIMINATION	ZR40K3-PFV-501		ZR54KC-TF5-599
WEIGHT (with oil)	27.2 kg		36.0 kg
REFRIGERANT TYPE	R-22		R-22
PRECHARGED REFRIGERANT	3,000 g		3,500 g
FULL CHARGE	Pipe length 20 m	3,000 g	3,500 g
	50 m	4,200 g	4,700 g
ADDITIONAL CHARGE	40 g/m		40 g/m

DIMENSIONS

INDOOR UNIT	H x W x D	270 x 1,210 x 700 mm
OUTDOOR UNIT	H x W x D	1,152 x 940 x 370 mm

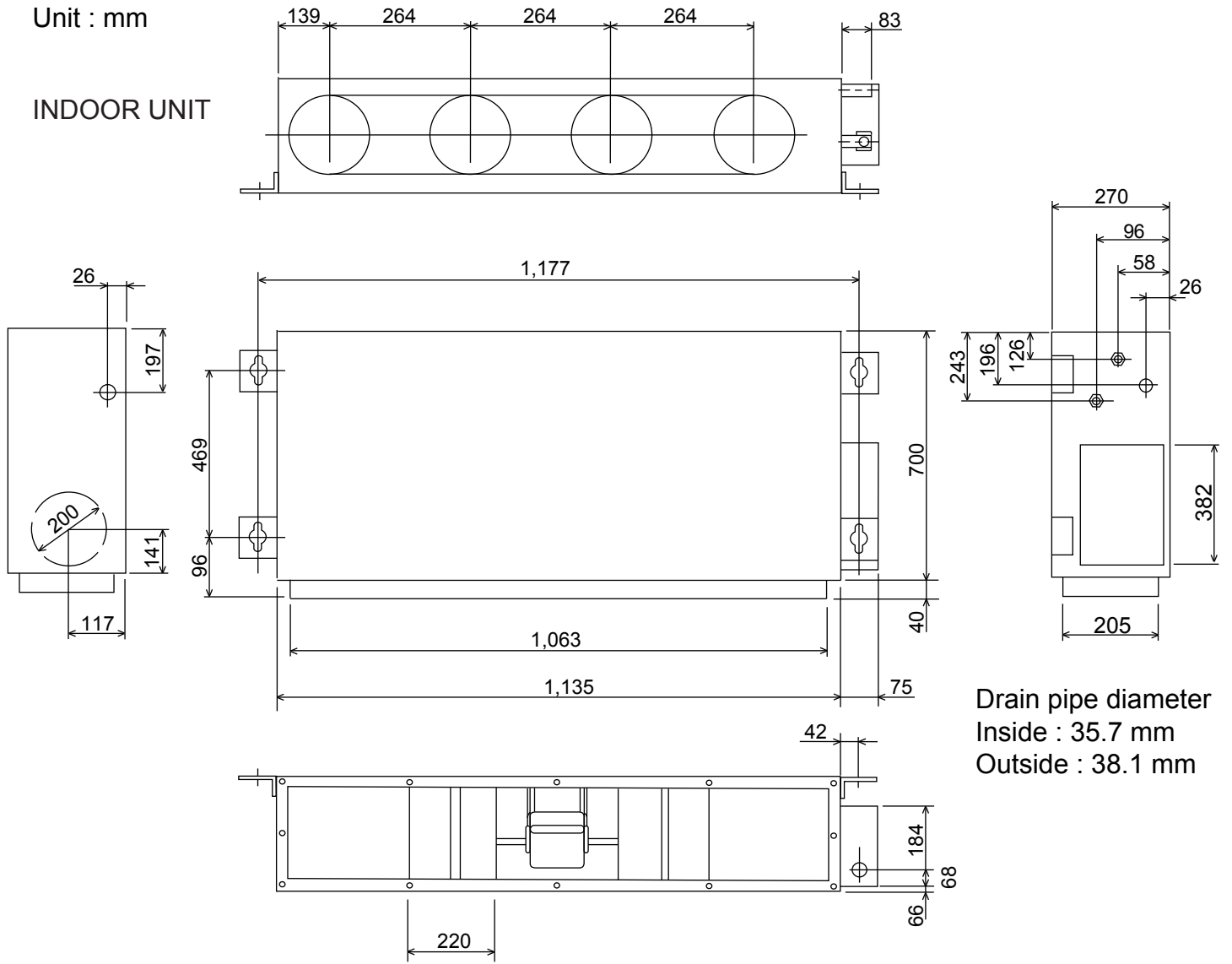
WEIGHT

INDOOR UNIT	Shipping / Net	60 kg / 45 kg
OUTDOOR UNIT	Shipping / Net	108 kg / 94 kg
		122 kg / 108 kg

DIMENSIONS

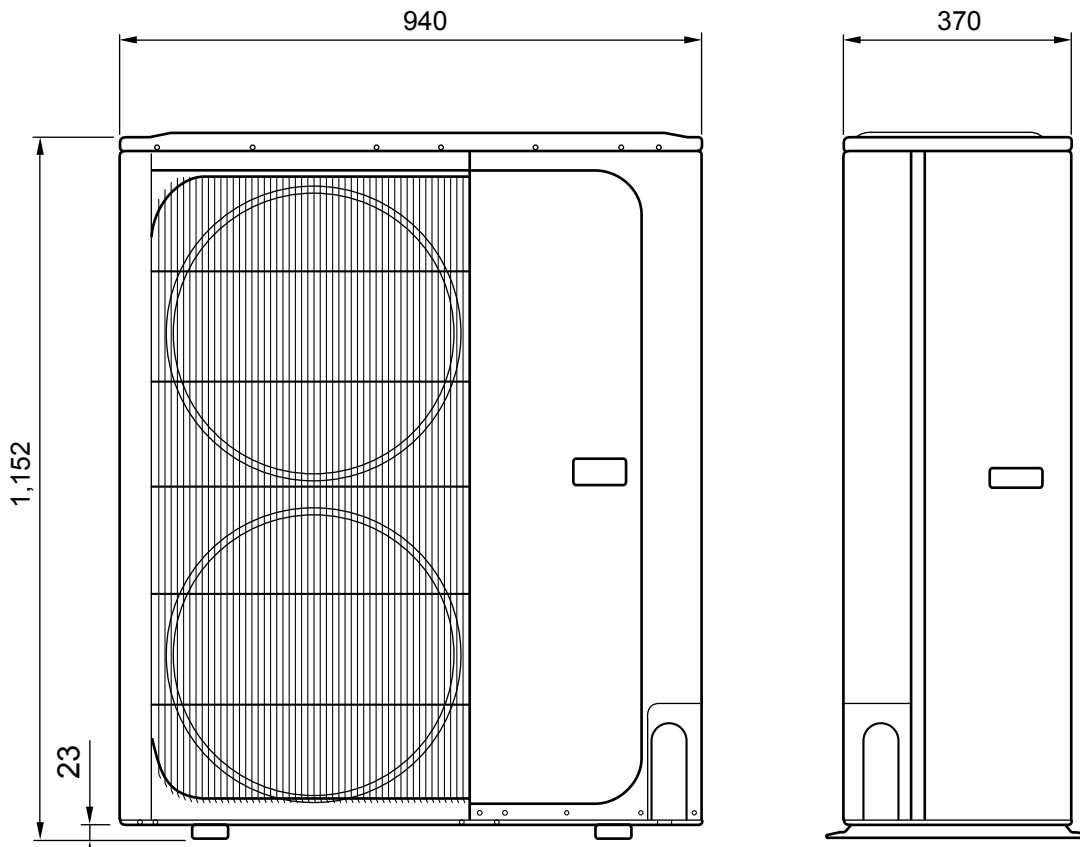
Unit : mm

INDOOR UNIT

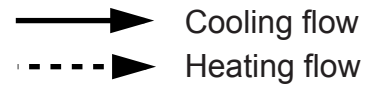


Drain pipe diameter
 Inside : 35.7 mm
 Outside : 38.1 mm

OUTDOOR UNIT



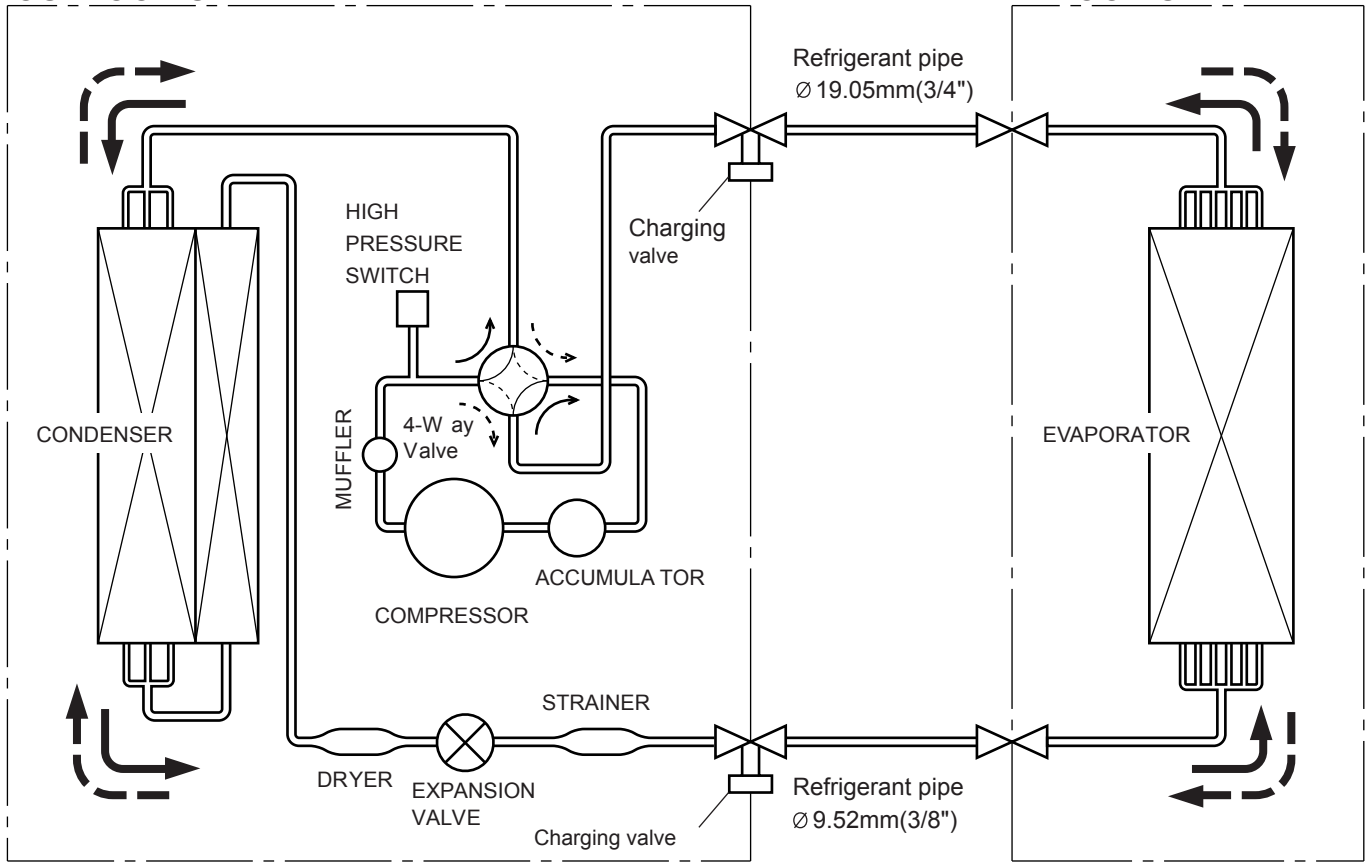
REFRIGERANT SYSTEM DIAGRAM



40

OUTDOOR UNIT

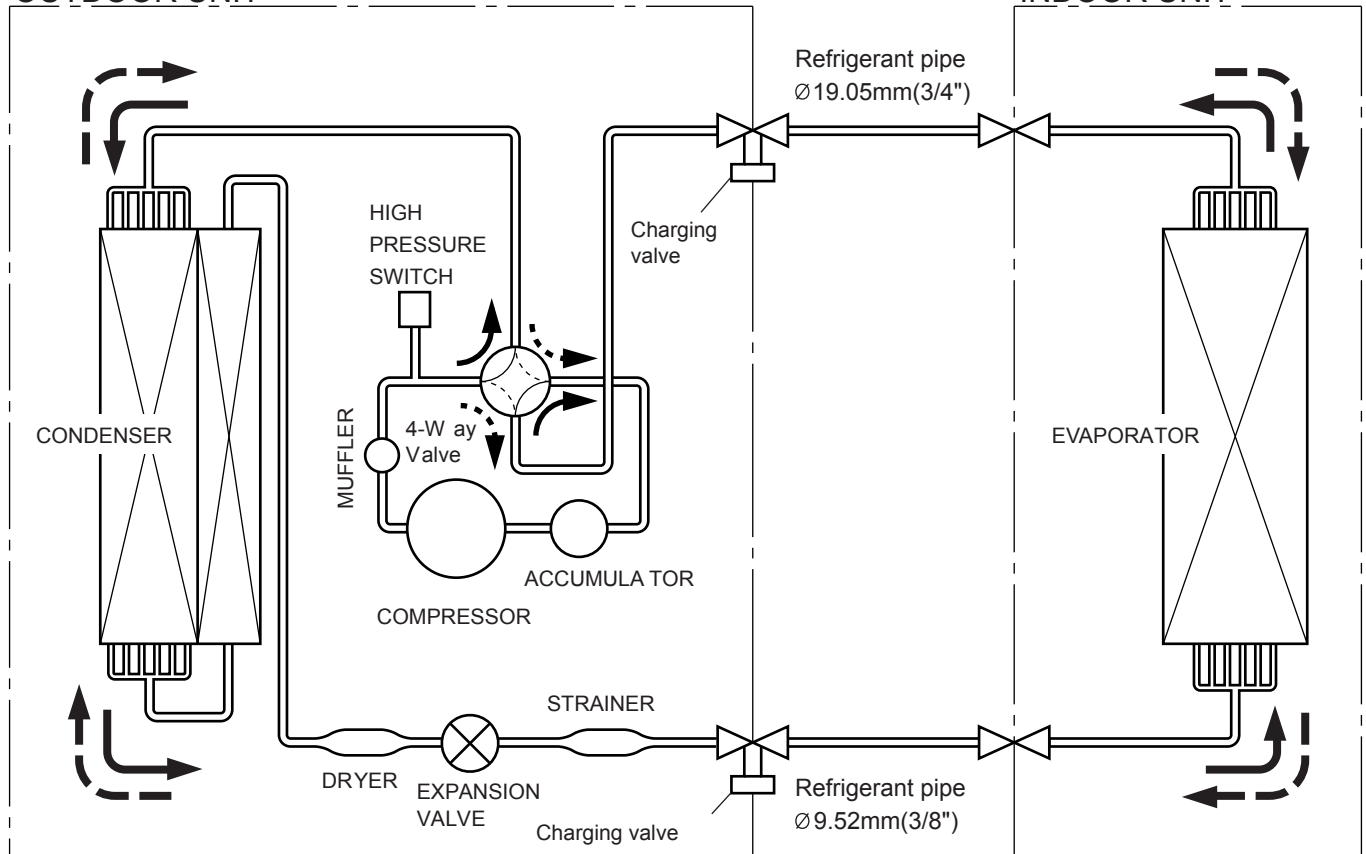
INDOOR UNIT



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OUTDOOR UNIT

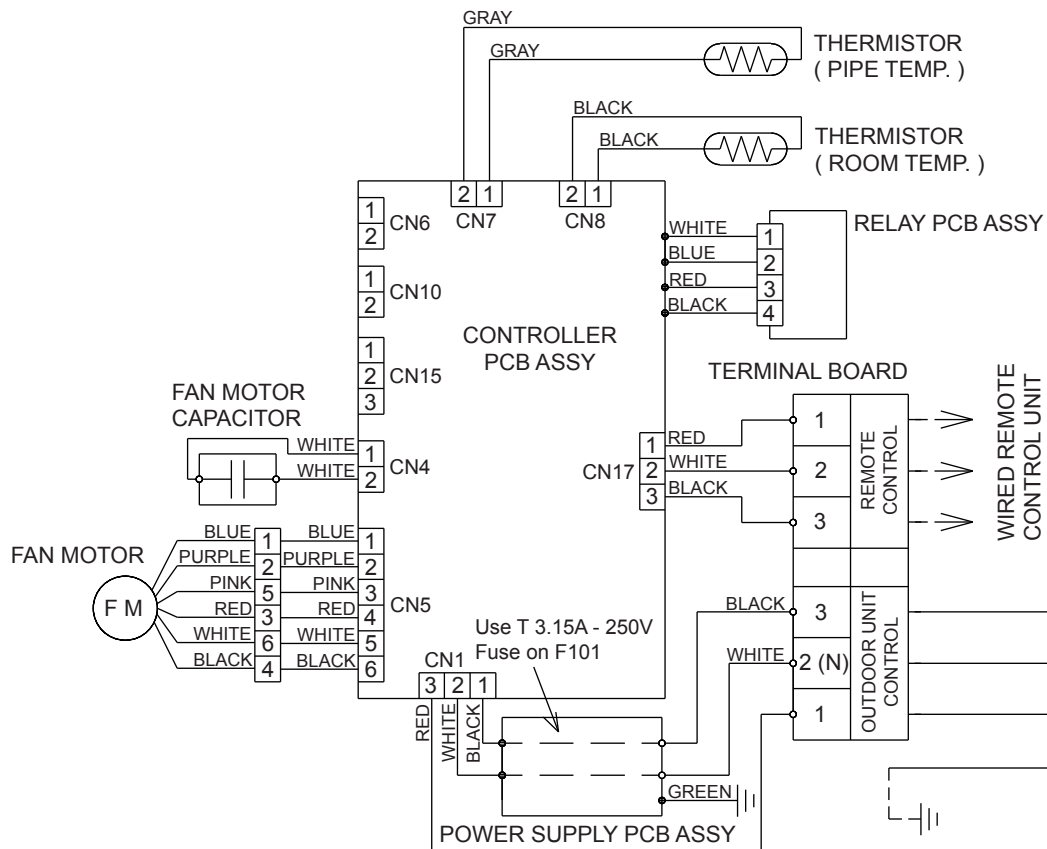
INDOOR UNIT



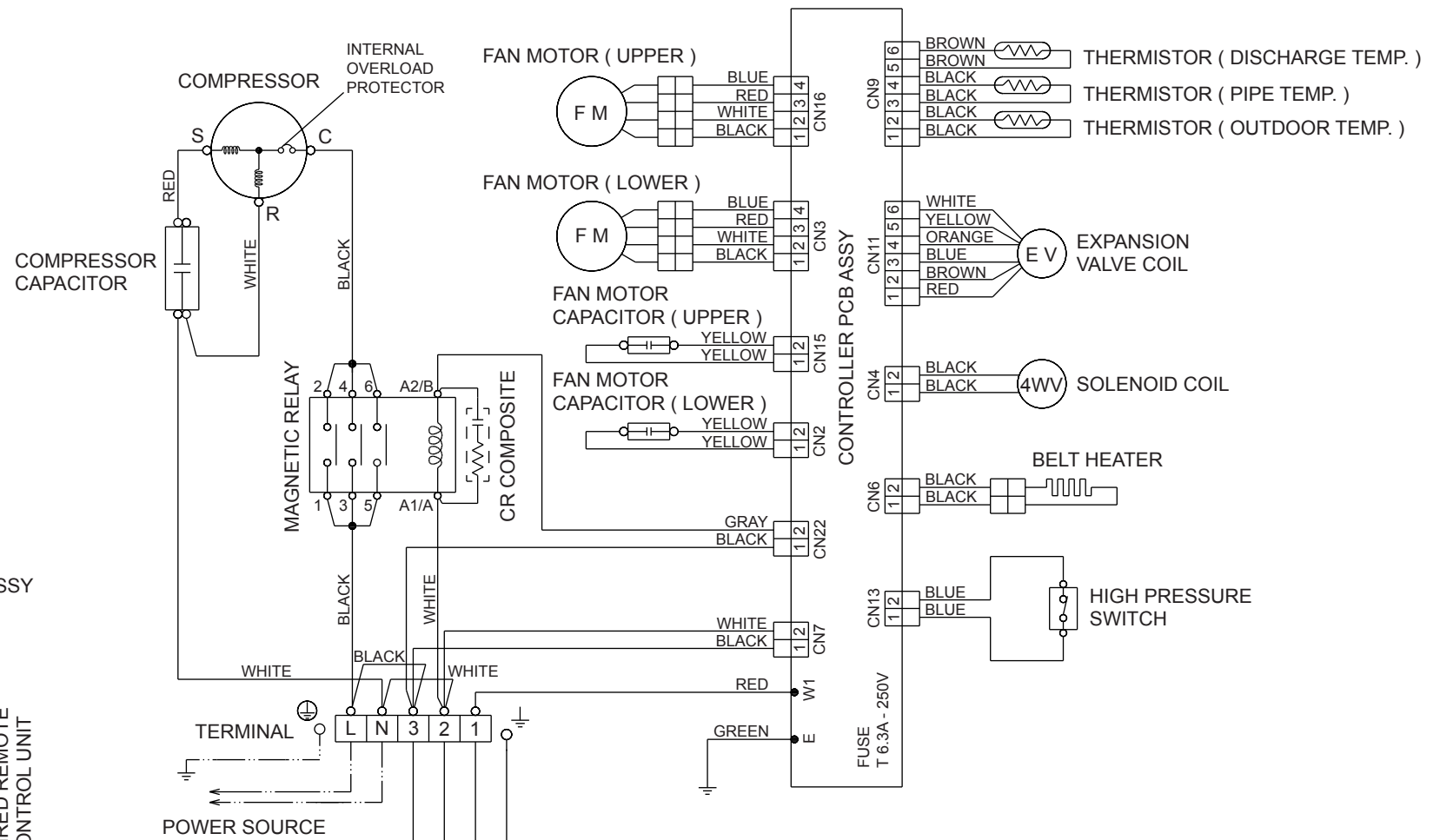
CIRCUIT DIAGRAM

RDA40RATU / ROA40RAT

INDOOR UNIT

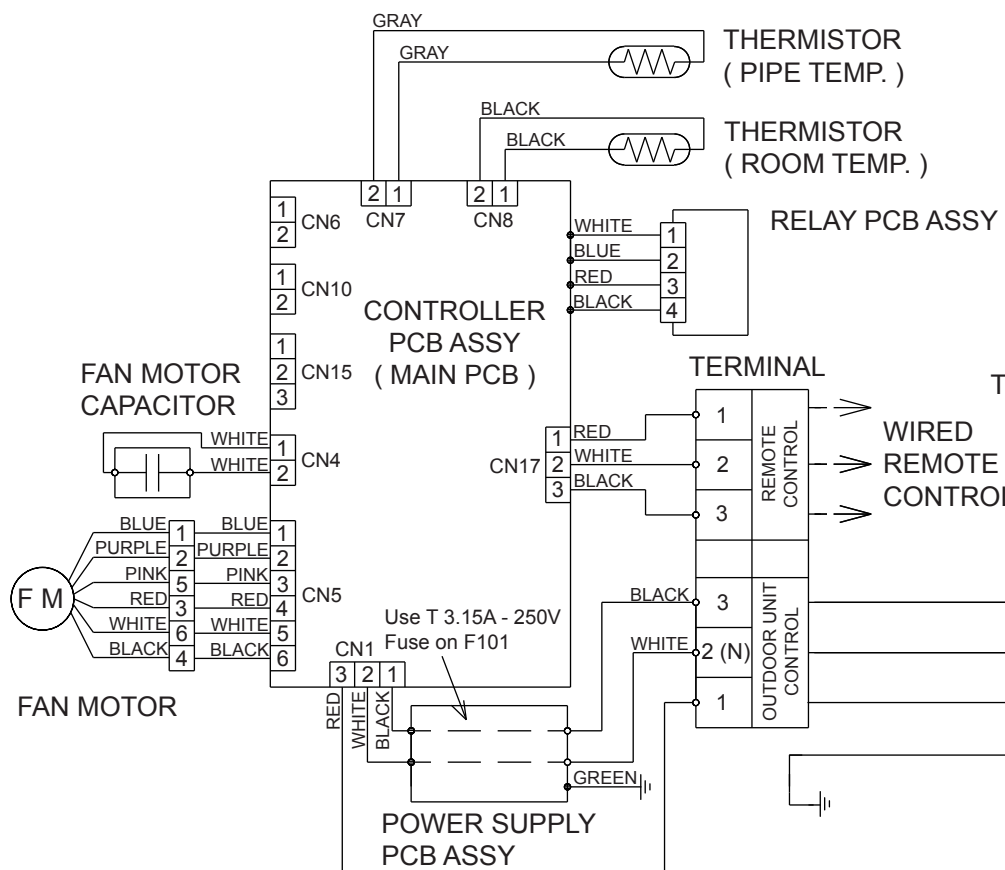


OUTDOOR UNIT

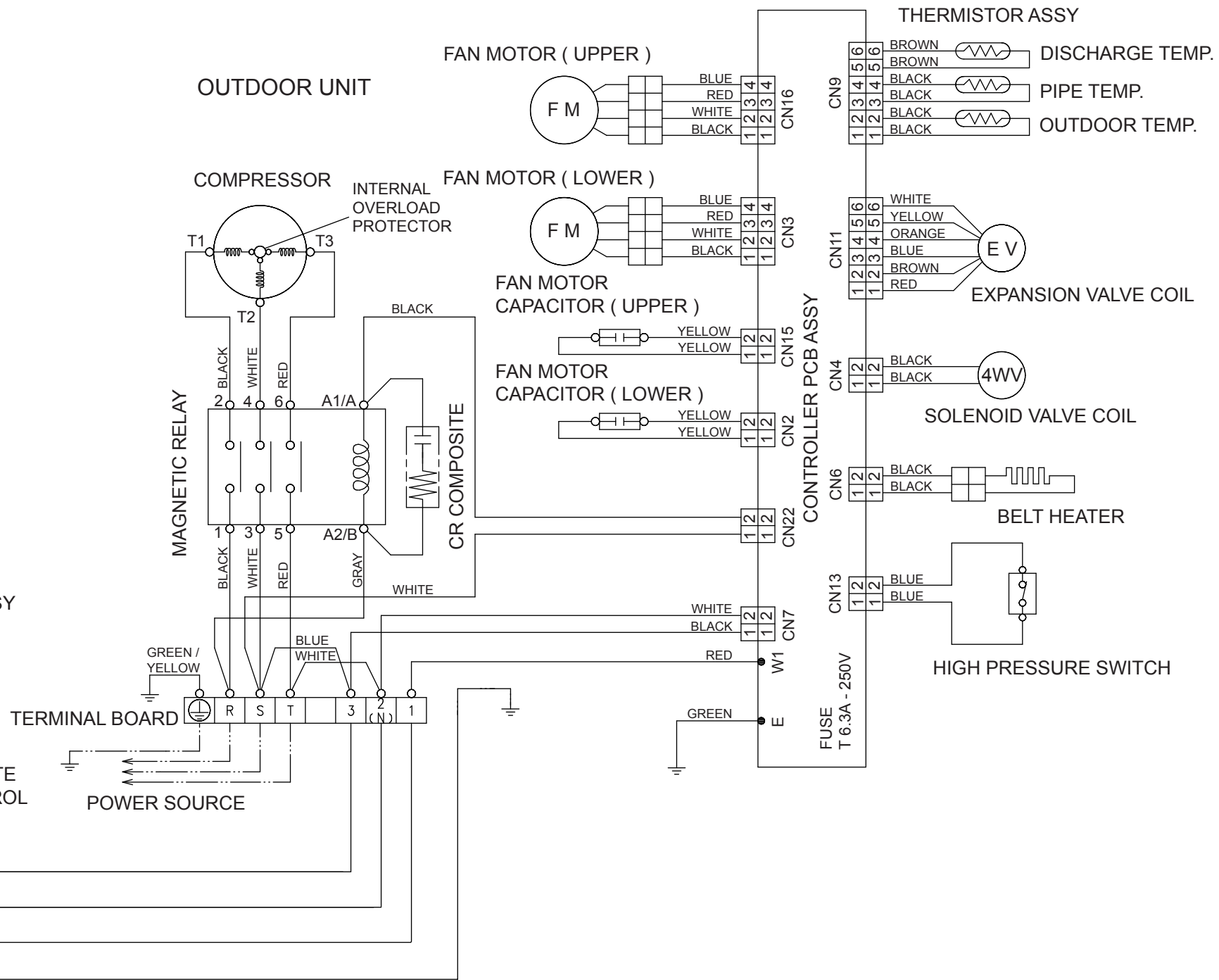


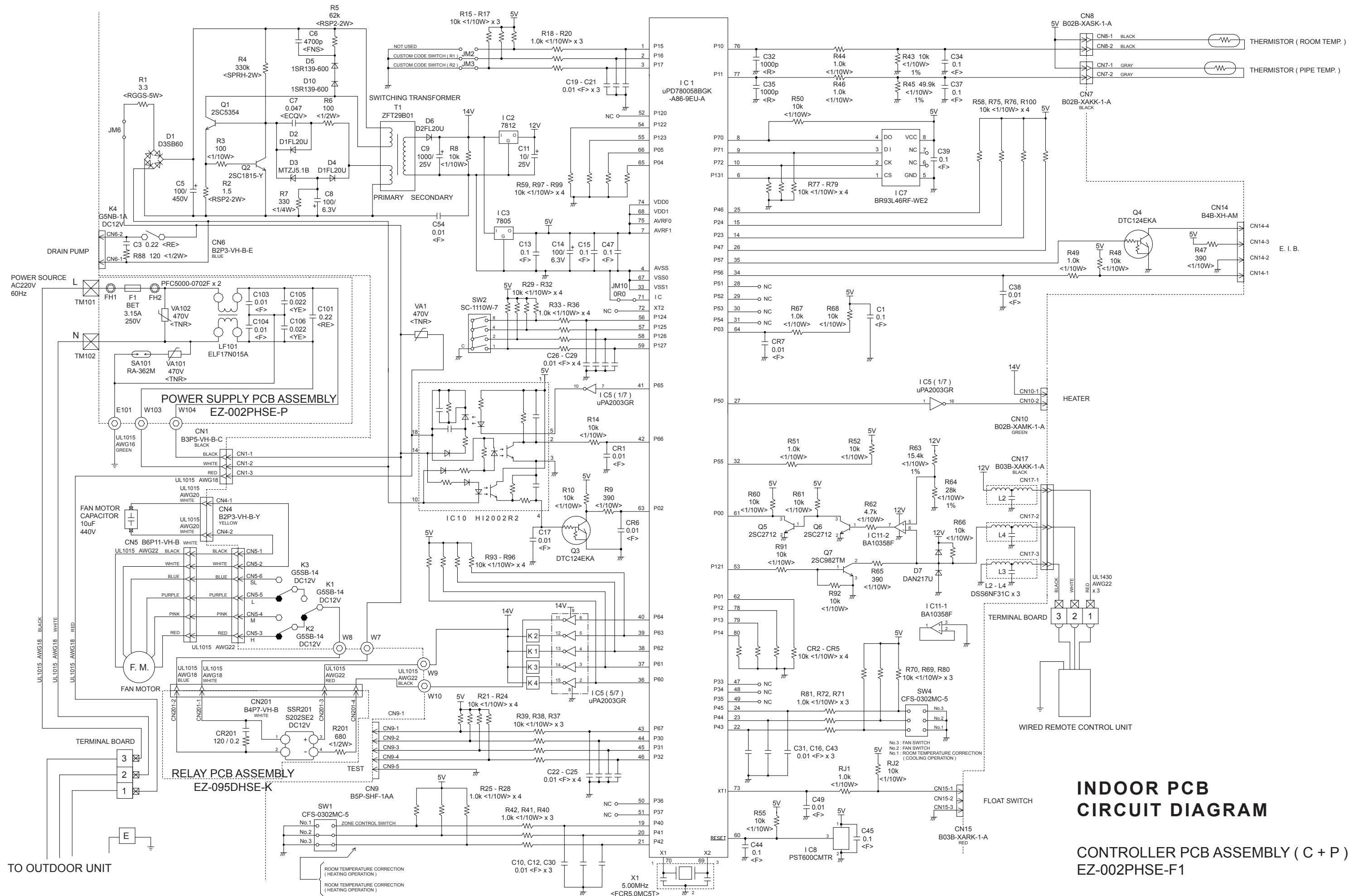
RDA50RATU / ROA50RATV

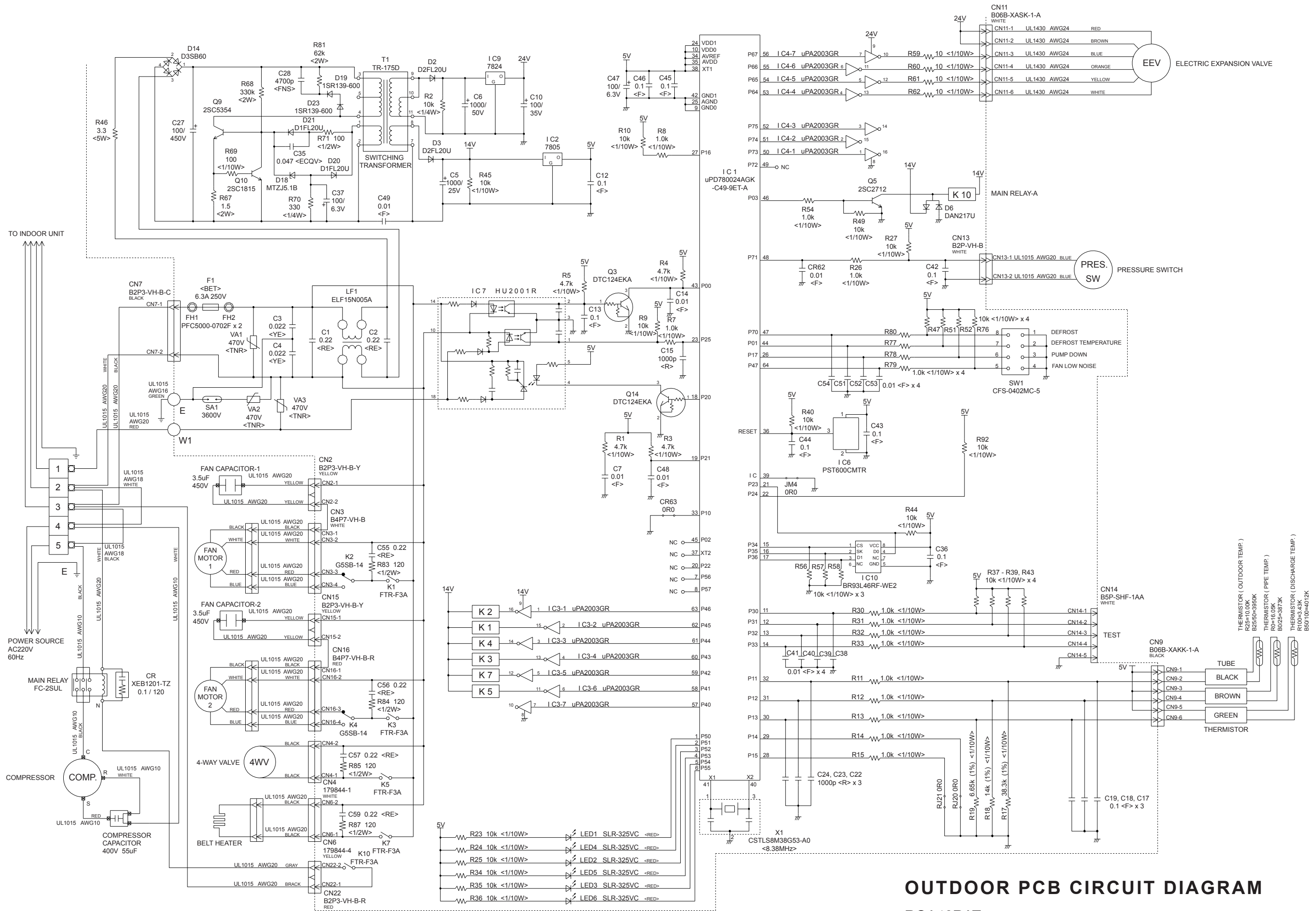
INDOOR UNIT



OUTDOOR UNIT

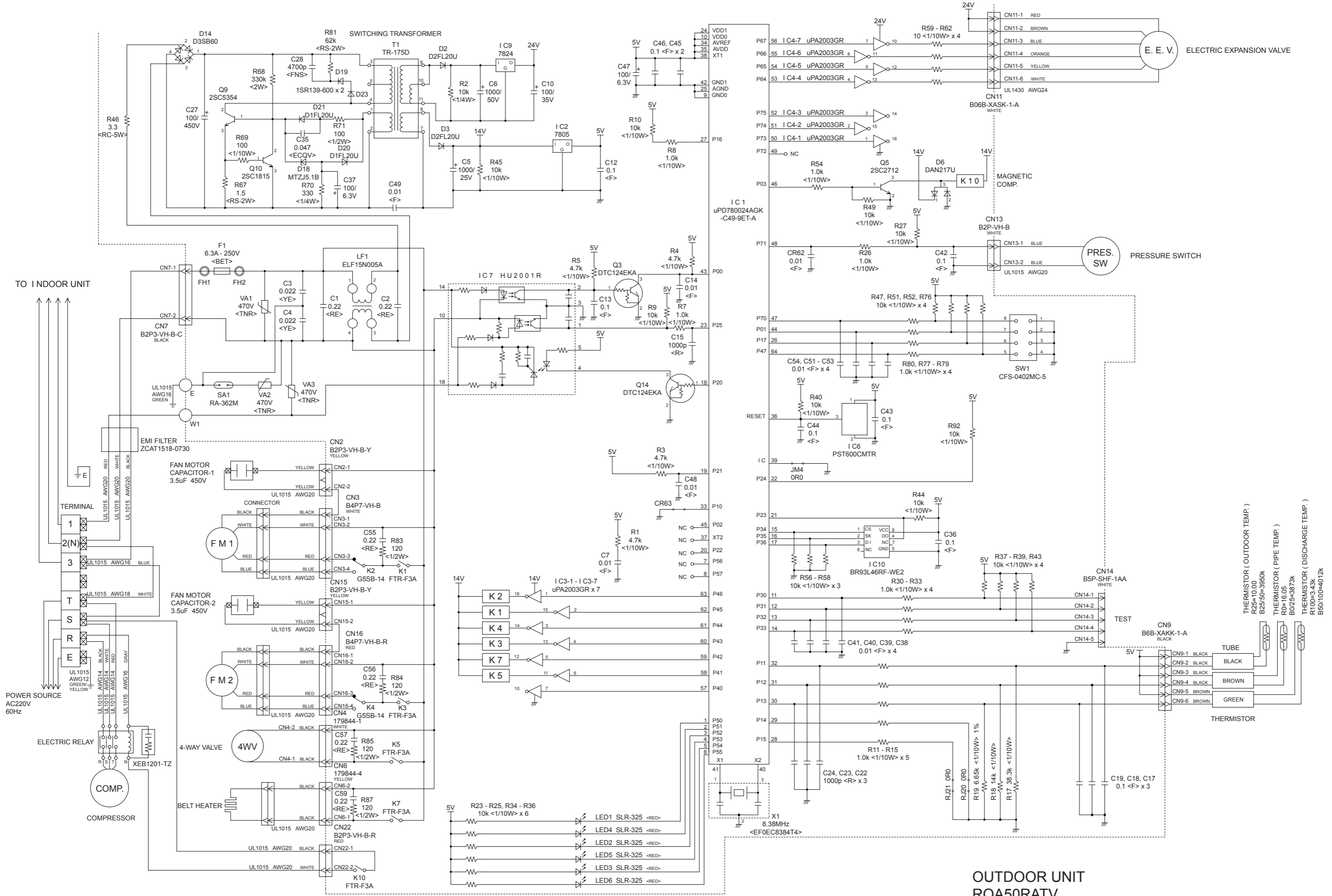






OUTDOOR PCB CIRCUIT DIAGRAM

ROA40RAT
 CONTROLLER PCB ASSEMBLY
 EZ-003FHUE-C

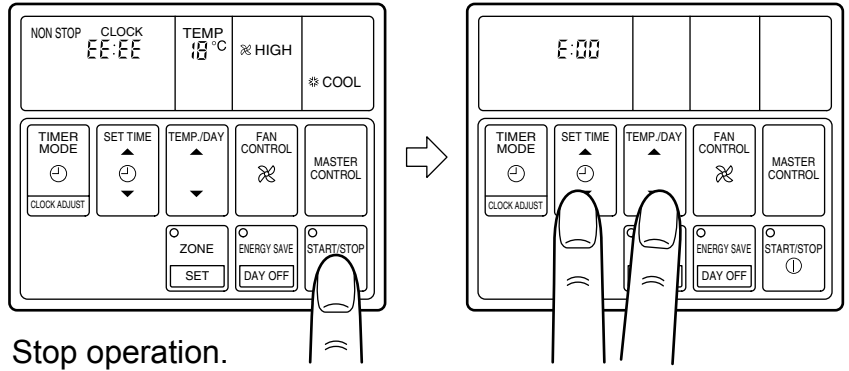


OUTDOOR UNIT
 ROA50RATV
 CONTROLLER PCB ASSEMBLY
 EZ-003GHUE-C

ERROR DETECTION

REMOTE CONTROL

If EE:EE blinks in the current time display, there is an error inside the unit.
 When, press the down-arrow buttons of SET TIME and TEMP./DAY simultaneously for three seconds.
 The self diagnosis check will start and the error contents will be displayed.



Stop operation.

Display	Error contents
E:00	Communication error (indoor unit ↔ remote controller)
E:01	Communication error (indoor unit ↔ outdoor unit)
E:02	Room thermistor open
E:03	Room thermistor short-circuited
E:04	Indoor heat exchanger thermistor open
E:05	Indoor heat exchanger thermistor short-circuited
E:06	Outdoor heat exchanger thermistor open
E:07	Outdoor heat exchanger thermistor short-circuited
E:08	Power source connection error
E:09	Float switch operated
E:0A	Outdoor thermistor open
E:0B	Outdoor thermistor short-circuited
E:0C	Discharge pipe thermistor open
E:0D	Discharge pipe thermistor short-circuited
E:0E	Outdoor high pressure abnormal
E:0F	Discharge pipe temperature abnormal
E:11	Model abnormal
E:12	Indoor fan abnormal
E:13	Outdoor signal abnormal
E:14	Outdoor EEPROM abnormal

OUTDOOR UNIT

LEDs on PCB show the error as follows.

Error contents	LED1	LED2	LED3	LED4	LED5	LED6
Signal abnormal	—	—	X	○	X	X
Indoor unit abnormal	—	—	X	X	○	X
Discharge pipe temperature abnormal	—	—	X	X	X	○
Outdoor heat exchanger temperature abnormal	—	—	X	X	○	○
Outdoor temperature abnormal	—	—	X	○	X	○
Power source connection error	—	—	○	X	X	X
EEPROM abnormal	—	—	○	○	○	○
	◎	◎	◎	◎	◎	◎
Outdoor high pressure abnormal	○	—	—	—	—	—
Discharge pipe temperature abnormal	—	○	—	—	—	—

○ : 0.5s on / 0.5s off (slow flash)

◎ : 0.1s on / 0.1s off (fast flash)

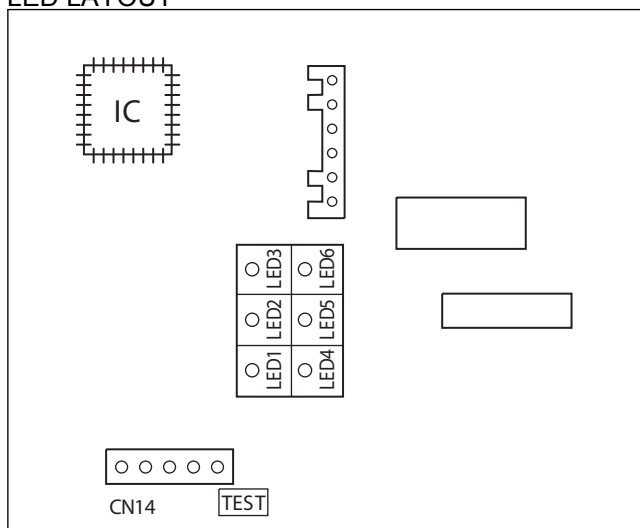
X : Off

— : Indefinite

When the fault is cleared, the LED goes off.

However, for discharge pipe temperature abnormal and high pressure abnormal, the LED lights continuously for 24 hours, as long as the power is not turned off.

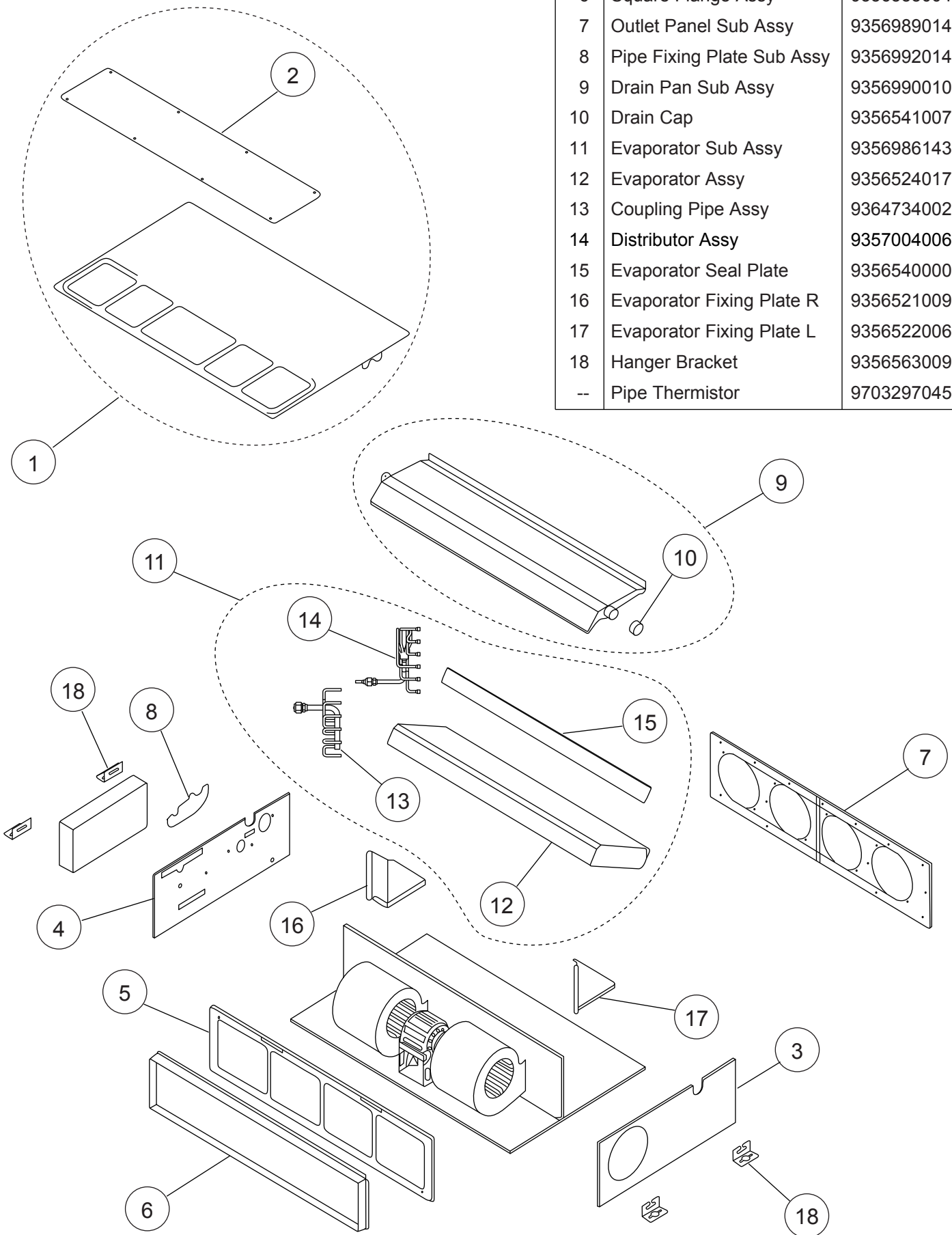
LED LAYOUT



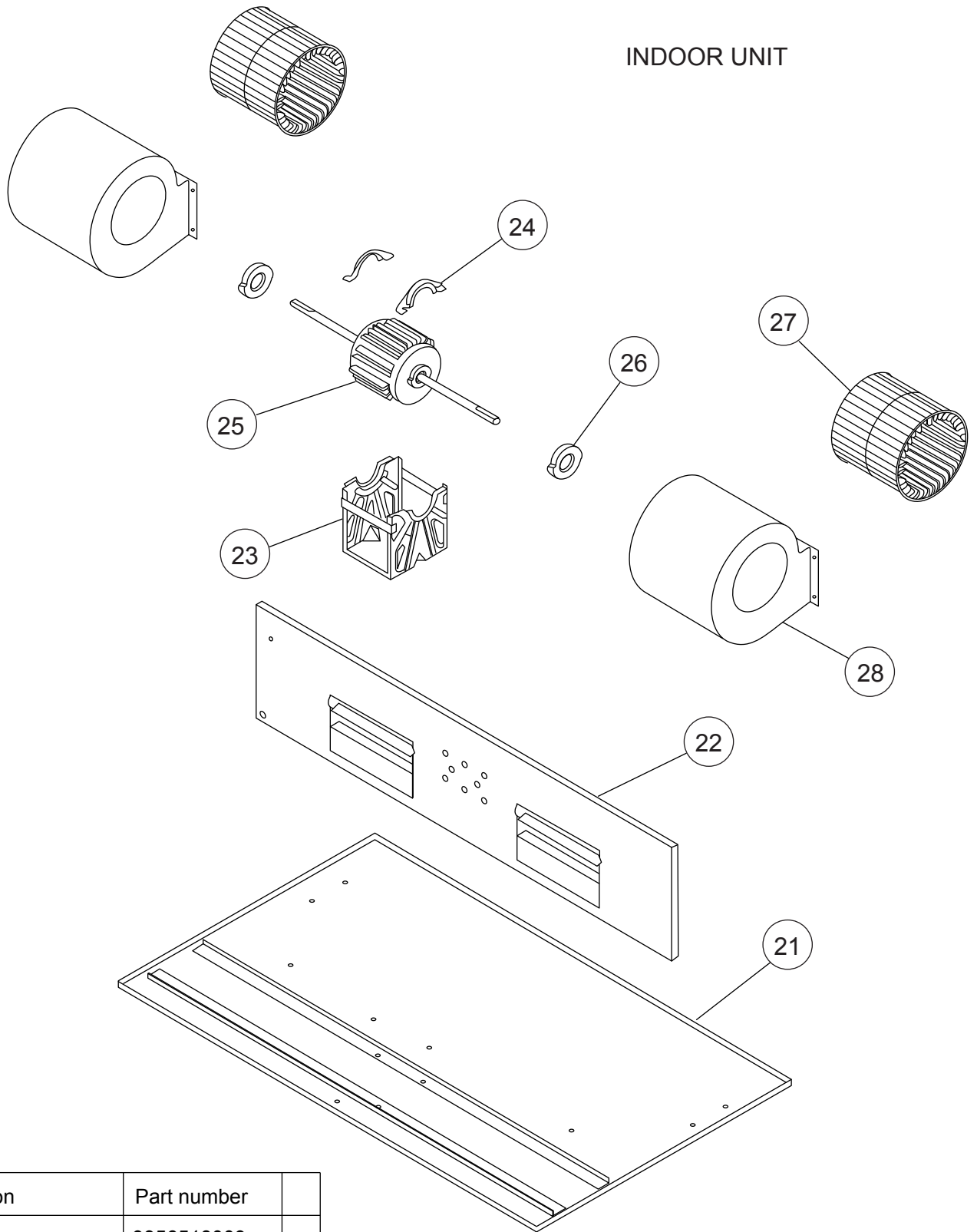
PARTS

INDOOR UNIT

Ref.	Description	Part number
1	Top Plate Sub Assy	9356991017
2	Intake Seal Plate	9356553000
3	Cabinet Left Sub Assy	9356988017
4	Cabinet Right Sub Assy	9356987010
5	Intake Panel	9356537000
6	Square Flange Assy	9356555004
7	Outlet Panel Sub Assy	9356989014
8	Pipe Fixing Plate Sub Assy	9356992014
9	Drain Pan Sub Assy	9356990010
10	Drain Cap	9356541007
11	Evaporator Sub Assy	9356986143
12	Evaporator Assy	9356524017
13	Coupling Pipe Assy	9364734002
14	Distributor Assy	9357004006
15	Evaporator Seal Plate	9356540000
16	Evaporator Fixing Plate R	9356521009
17	Evaporator Fixing Plate L	9356522006
18	Hanger Bracket	9356563009
--	Pipe Thermistor	9703297045

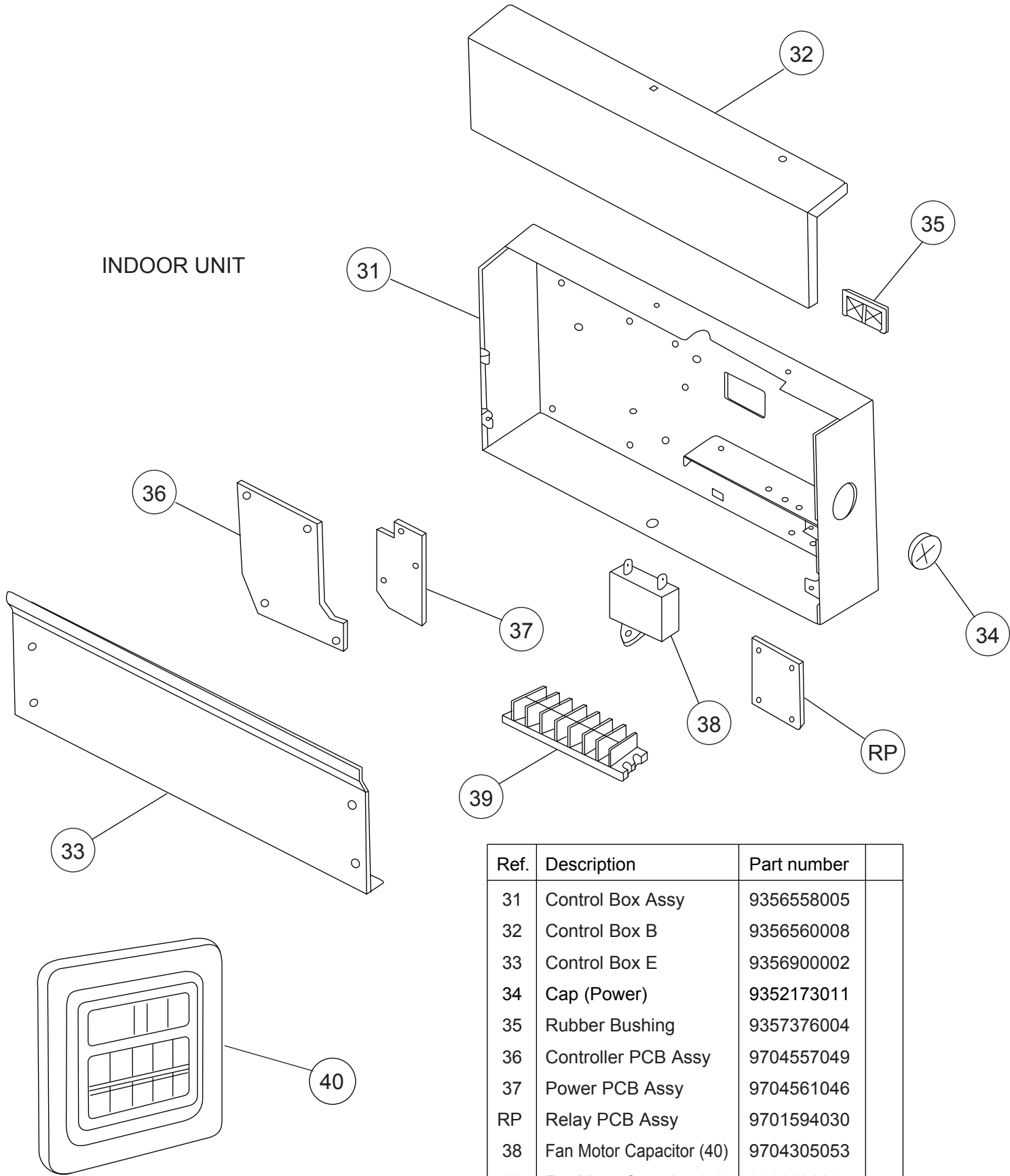


INDOOR UNIT



Ref.	Description	Part number
21	Base Assy	9356518009
22	Separate Wall Assy	9356985016
23	Motor Fixing Table Assy	9356533002
24	Motor Fixture	9356536003
25	Fan Motor Assy	9600830048
26	Rubber	313659068604
27	Sirocco Fan Assy	9356531022
28	Casing Assy	9356527001
--	Room Thermistor	9703299056

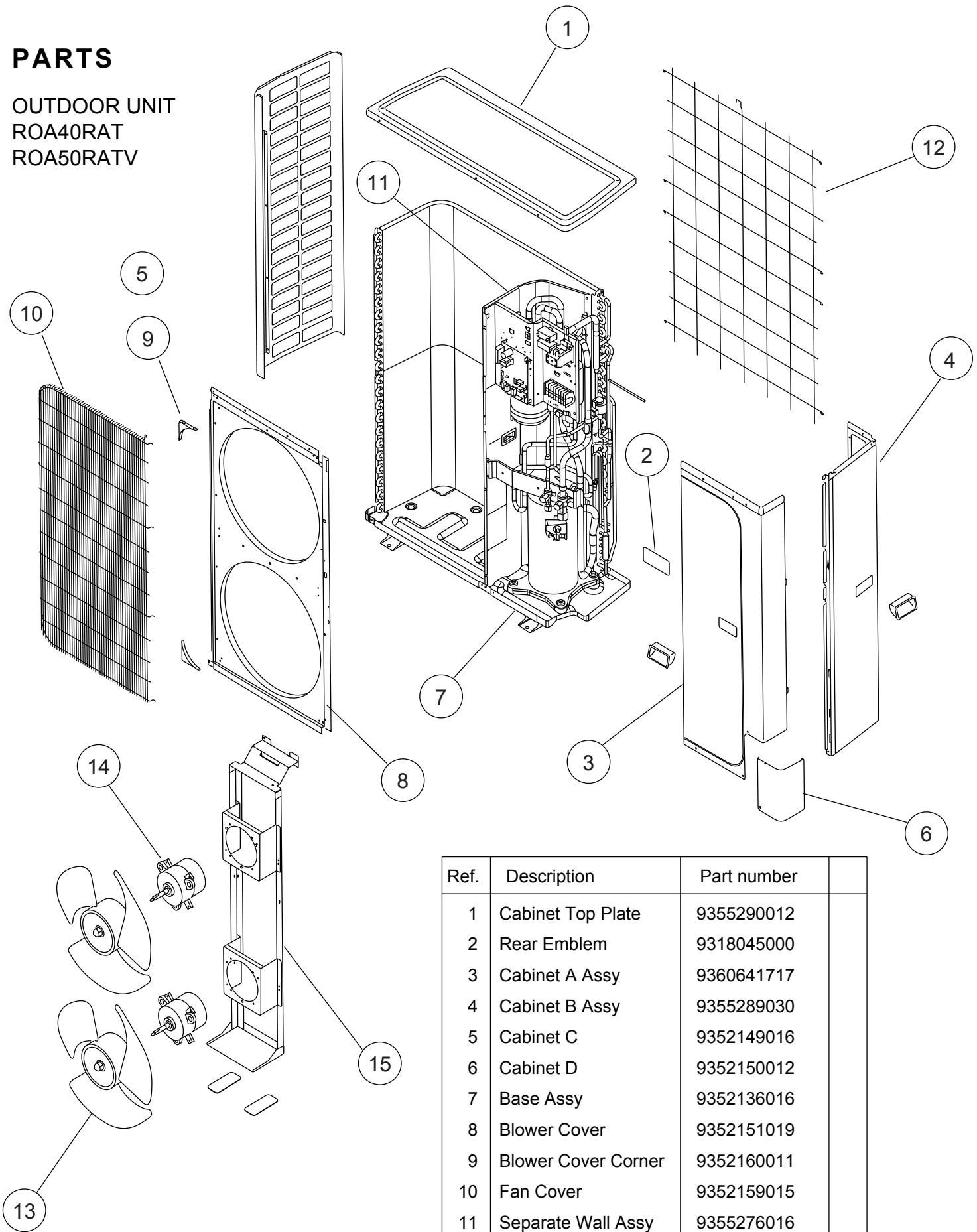
INDOOR UNIT



Ref.	Description	Part number
31	Control Box Assy	9356558005
32	Control Box B	9356560008
33	Control Box E	9356900002
34	Cap (Power)	9352173011
35	Rubber Bushing	9357376004
36	Controller PCB Assy	9704557049
37	Power PCB Assy	9704561046
RP	Relay PCB Assy	9701594030
38	Fan Motor Capacitor (40)	9704305053
38	Fan Motor Capacitor (50)	9900396015
39	Terminal 7P	9703403019
40	Remote Control	9371438030

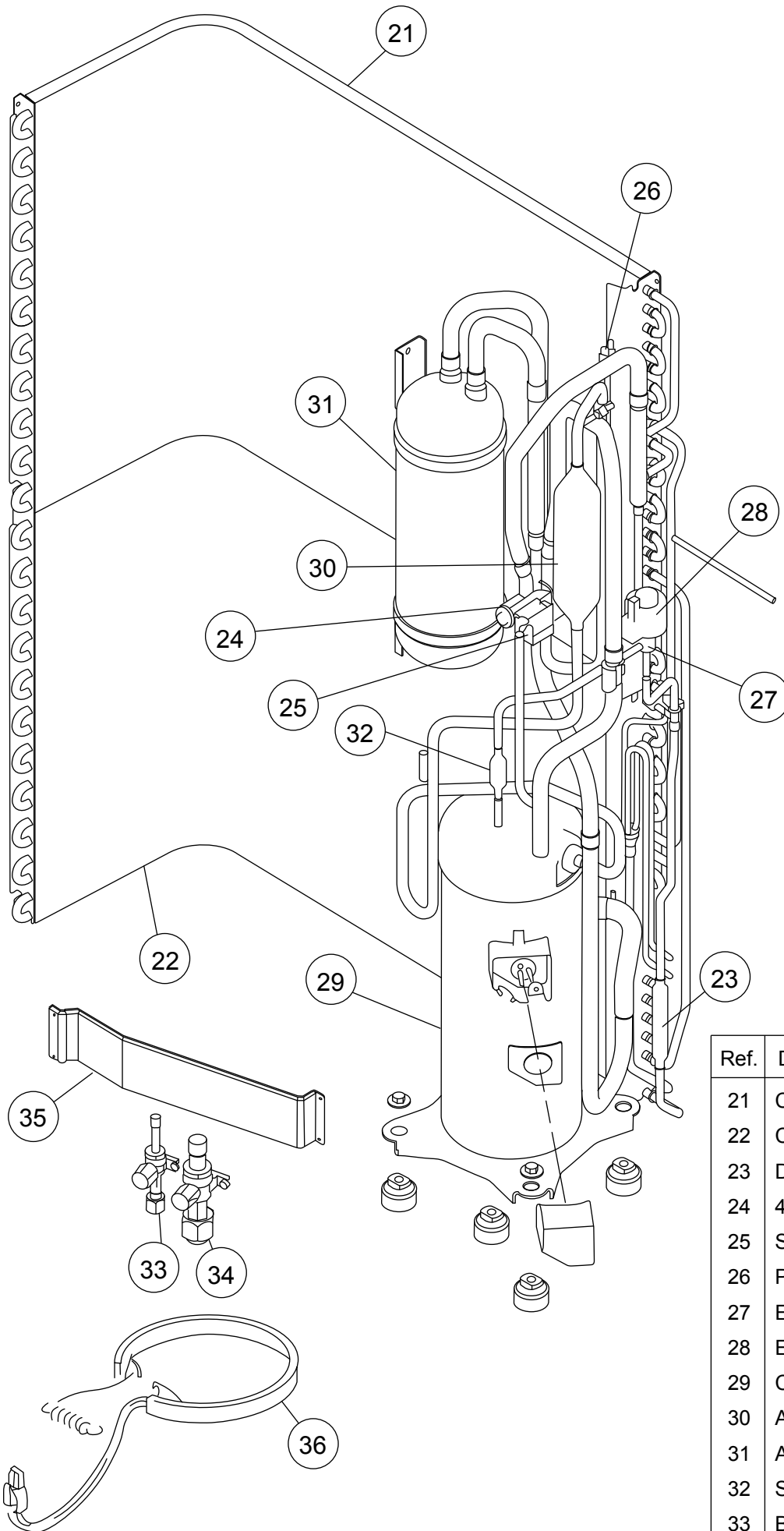
PARTS

OUTDOOR UNIT
ROA40RAT
ROA50RATV



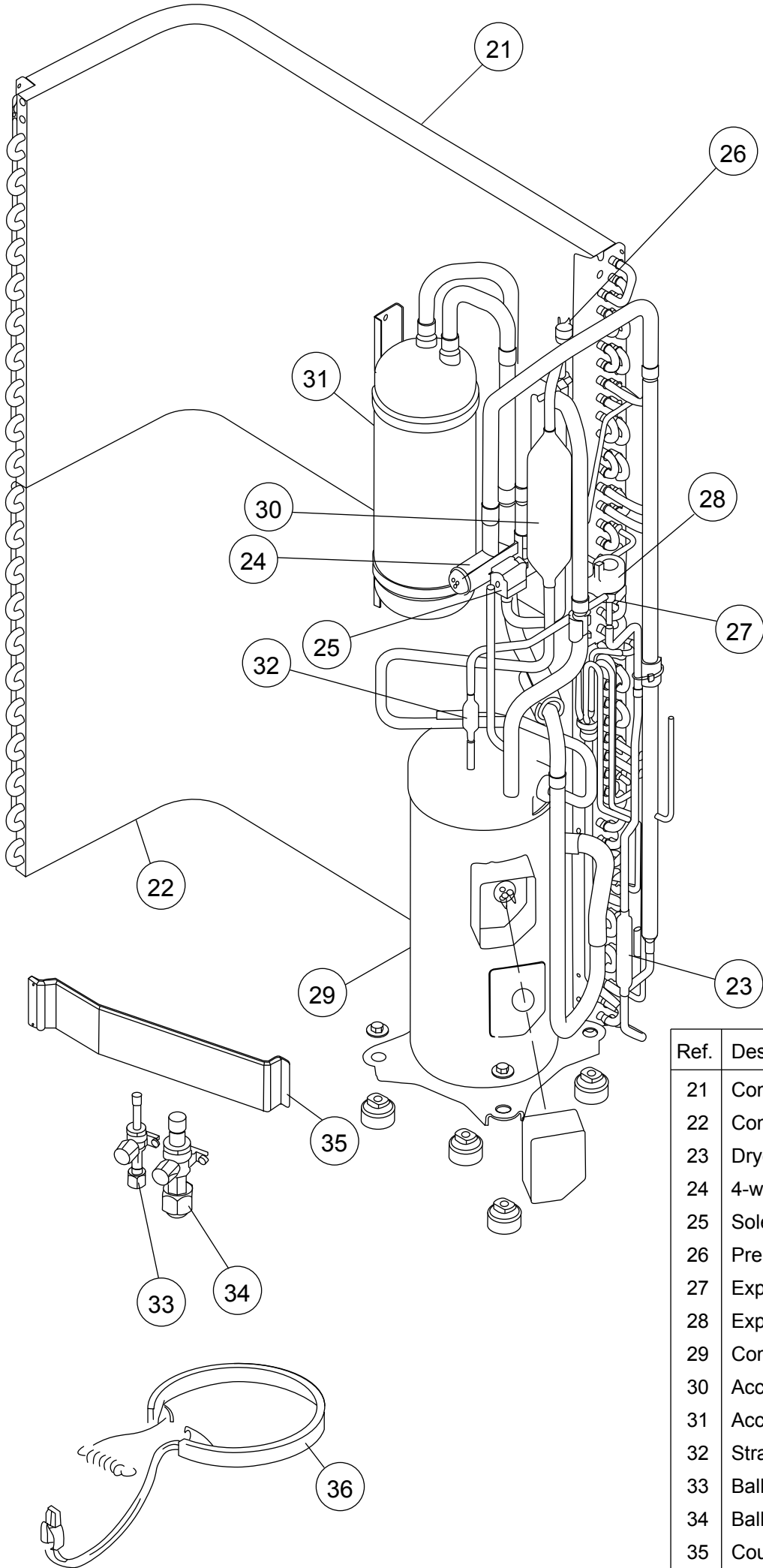
Ref.	Description	Part number
1	Cabinet Top Plate	9355290012
2	Rear Emblem	9318045000
3	Cabinet A Assy	9360641717
4	Cabinet B Assy	9355289030
5	Cabinet C	9352149016
6	Cabinet D	9352150012
7	Base Assy	9352136016
8	Blower Cover	9352151019
9	Blower Cover Corner	9352160011
10	Fan Cover	9352159015
11	Separate Wall Assy	9355276016
12	Protection Net	9375611002
13	Propeller Fan Assy	9366378013
14	Fan Motor Assy	9600832028
15	Bracket (Motor) Assy	9368108007

OUTDOOR UNIT
ROA40RAT



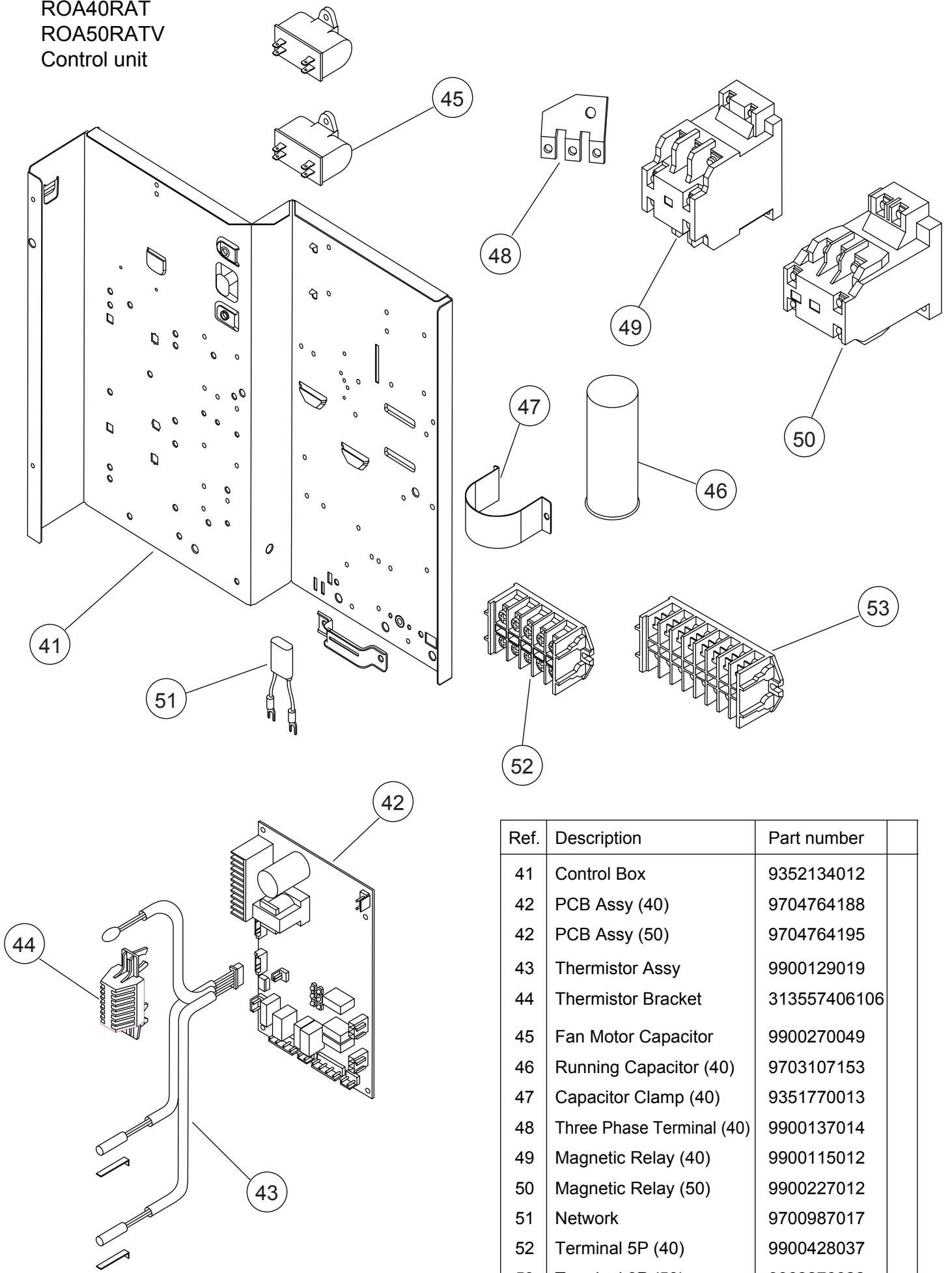
Ref.	Description	Part number
21	Condenser A Assy	9353023001
22	Condenser B Assy	9353024008
23	Dryer	9368111014
24	4-way Valve	9900164010
25	Solenoid Coil	9900165024
26	Pressure Switch	9704045003
27	Expansion Valve	9900170011
28	Expansion Valve Coil	9900172015
29	Compressor Assy	9370863000
30	Accumulator	9350363018
31	Accumulator B	9371615011
32	Strainer Assy	9354139008
33	Ball Valve A Assy	9372478042
34	Ball Valve B Assy	9372478059
35	Coupler Bracket Assy	9355281010
36	Belt Heater A	9361140066

OUTDOOR UNIT
ROA50RATV



Ref.	Description	Part number
21	Condenser A Assy	9355338011
22	Condenser B Assy	9353363008
23	Dryer	9368111014
24	4-way Valve	9970035029
25	Solenoid Coil	9900165024
26	Pressure Switch	9704045003
27	Expansion Valve	9900170028
28	Expansion Valve Coil	9900172015
29	Compressor Assy	9371396057
30	Accumulator	9350363018
31	Accumulator B	9371615011
32	Strainer Assy	9354139008
33	Ball Valve A Assy	9372478042
34	Ball Valve B Assy	9372478059
35	Coupler Bracket Assy	9355281010
36	Belt Heater A	9361140042

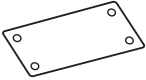




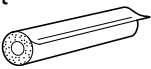
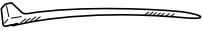




OUTDOOR UNIT
ROA40RAT
ROA50RATV
Control unit






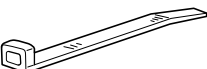

Ref.	Description	Part number
41	Control Box	9352134012
42	PCB Assy (40)	9704764188
42	PCB Assy (50)	9704764195
43	Thermistor Assy	9900129019
44	Thermistor Bracket	313557406106
45	Fan Motor Capacitor	9900270049
46	Running Capacitor (40)	9703107153
47	Capacitor Clamp (40)	9351770013
48	Three Phase Terminal (40)	9900137014
49	Magnetic Relay (40)	9900115012
50	Magnetic Relay (50)	9900227012
51	Network	9700987017
52	Terminal 5P (40)	9900428037
53	Terminal 8P (50)	9363276022

ACCESSORIES

INDOOR UNIT

Name and Shape	Q'ty	Application	Part number
Installation template 	1	For positioning the indoor unit	9357036007
Hanger 	4	For suspending the indoor unit from ceiling	9356563009
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling	313005446653
Special nut B (small flange) 	4		313005446759
Coupler heat insulation (large) 	1	For indoor side pipe joint (large pipe)	9378173569
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)	9378173521
Nylon fastener 	1	For fixing the drain hose	312300787605
Remote control 	1		9371438030
Remote control cord clamp 	10	For installing the remote control unit cord	313714181904
Tapping screw (flush heads) 	10	For installing the remote control unit cord clamp	0700235016
Drain hose insulation 	1	Insulates the drain hose and vinyl hose connection	313806217708

OUTDOOR UNIT

Name and Shape	Q'ty	Application	Part number
Power cap 	1	For power cord installation	9352173011
Edge cover 	1	For wiring conduit installation hole edge protection	9352436000
Tapping screw 	2	<ul style="list-style-type: none"> • For cabinet A and cabinet D mounting (1) • Spare (1) 	0700238017
Binder 	1	For power cord binding	313035356905
Putty 	1	For sealing	303020200114

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