

SERVICE MANUAL



Models

Indoor unit	Outdoor unit
RD-60FA	ROD-60FA
RD-60UA	ROD-60UA

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SPECIFICATIONS

TYPE	Cooling	Colling & Heating
INDOOR UNIT	RD-60FA	RD-60UA
OUTDOOR UNIT	ROD-60FA	ROD-60UA
COOLING CAPACITY (kW)	16.5	16.5
HEATING CAPACITY (kW)	-----	19.5

ELECTRICAL SPECIFICATIONS

POWER SUPPLY (V)		400	
FREQUENCY (Hz)		50	
RUNNING CURRENT (A)	COOLING	10	10.2
	HEATING	-----	9.8
INPUT (kW)	COOLING	5.93	6.06
	HEATING	-----	5.54
EER (kW/kW)	COOLING	2.78	2.72
	HEATING	-----	3.52
MOISTURE REMOVAL (ℓ/hr)		4.0	
AIR CIRCULATION - Hi (m³/hr)		3,500	

COMPRESSOR

TYPE	Hermetic type, 2 poles, 3-phase, Induction motor, Scroll		
DISCRIMINATION	BN65YEAMT		
REFRIGERANT R410 (g)	3,500	3,700	

FAN MOTOR

POWER SUPPLY (V)		400
INDOOR UNIT	DISCRIMINATION	MFA-60NTFS
	HI-SPEED (r.p.m.)	1,290
	MED-SPEED (r.p.m.)	1,110
	LO-SPEED (r.p.m.)	920
OUTDOOR UNIT	DISCRIMINATION	MFB-30PTT
	HI-SPEED (r.p.m.)	780

DIMENSIONS

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

INDOOR UNIT	NET / GROSS (kg)	50 / 55	
OUTDOOR UNIT	NET / GROSS (kg)	114 / 121	118 / 125

REFRIGERANT CHARGE (R410A)

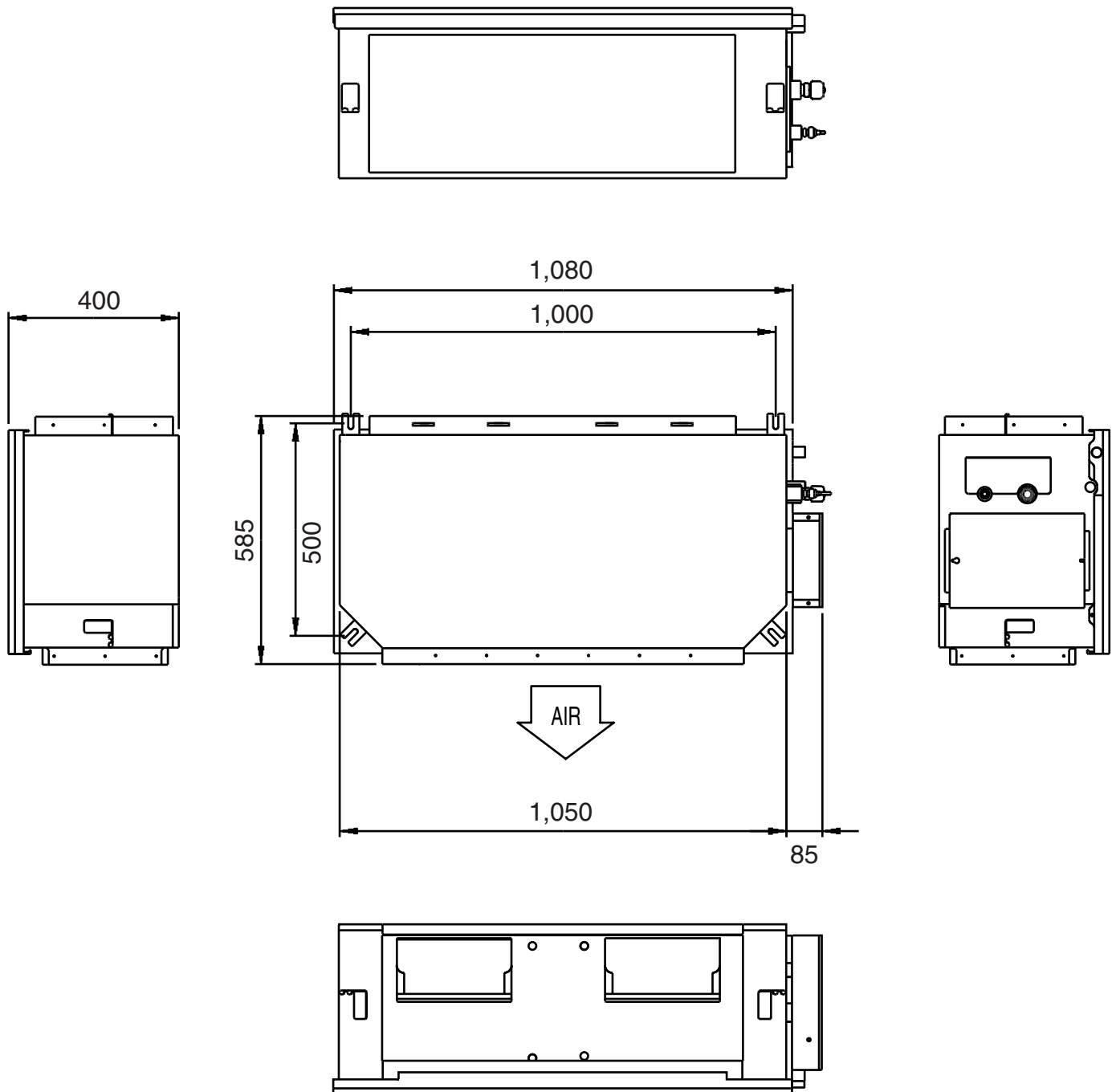
FULL CHARGE AMOUNT	PIPE LENGTH	20.0 m	3,500 g	3,700 g
		30.0 m	3,800 g	4,100 g
		40.0 m	4,100 g	4,500 g
		50.0 m	4,400 g	4,900
ADDITIONAL CHARGE			30 g / m	40 g / m
CHARGELESS			20 m	20 m
MAX PIPE LENGTH			50 m	50 m
MAX ELEVATION			30 m	30 m

OUTLINE AND DIMENSIONS

(Unit : mm)

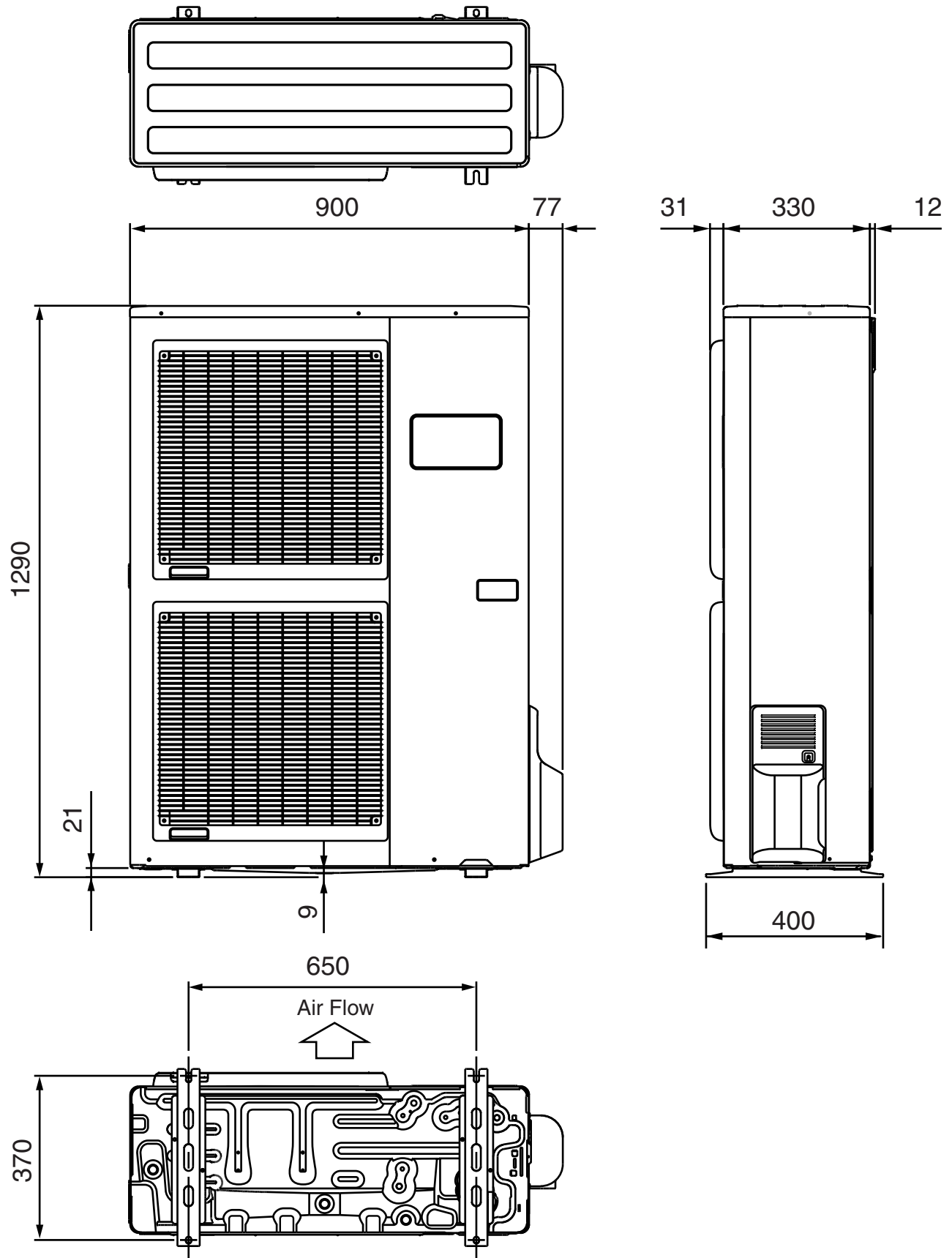
INDOOR UNIT

Models : RD-60FA
RD-60UA



OUTDOOR UNIT (Unit : mm)

Models : ROD-60FA
ROD-60UA

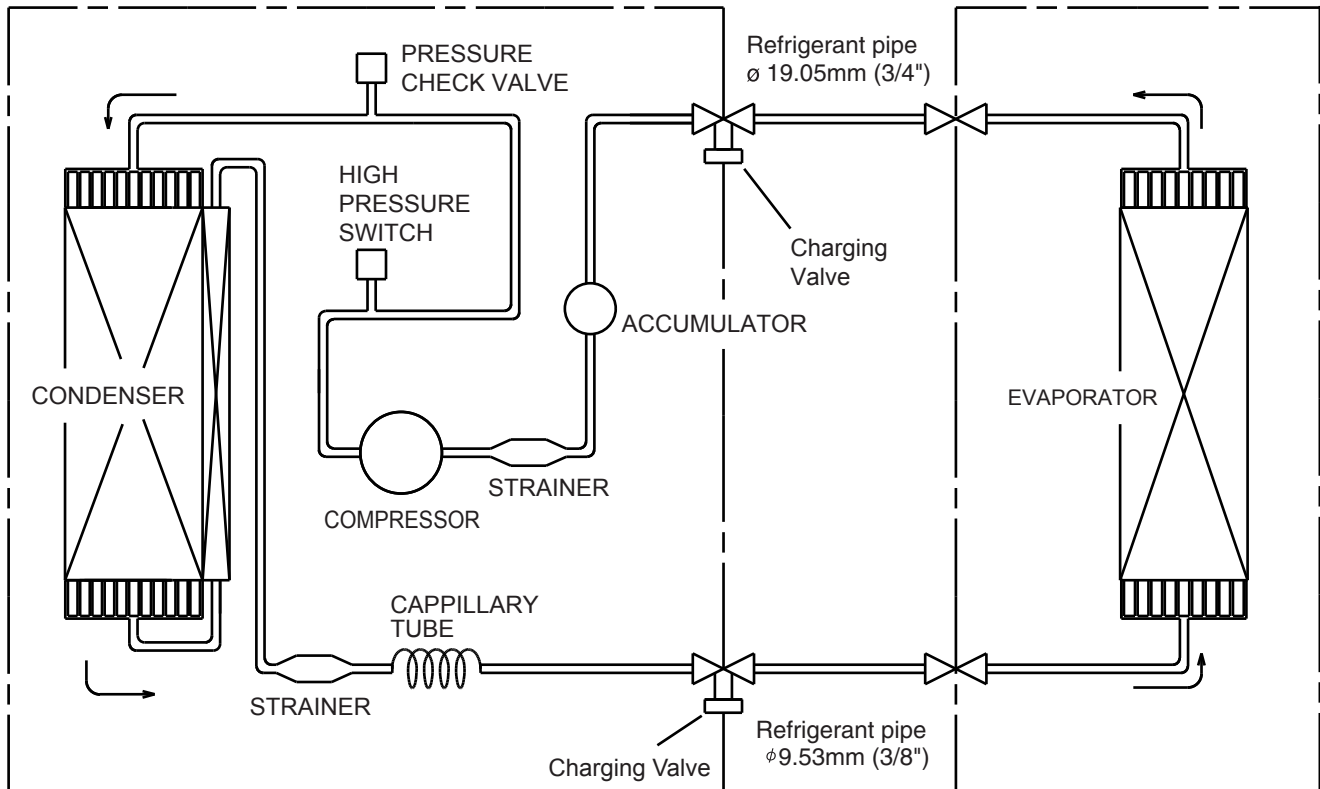


REFRIGERANT SYSTEM DIAGRAM

Models : RD-60FA / ROD-60FA

OUTDOOR UNIT

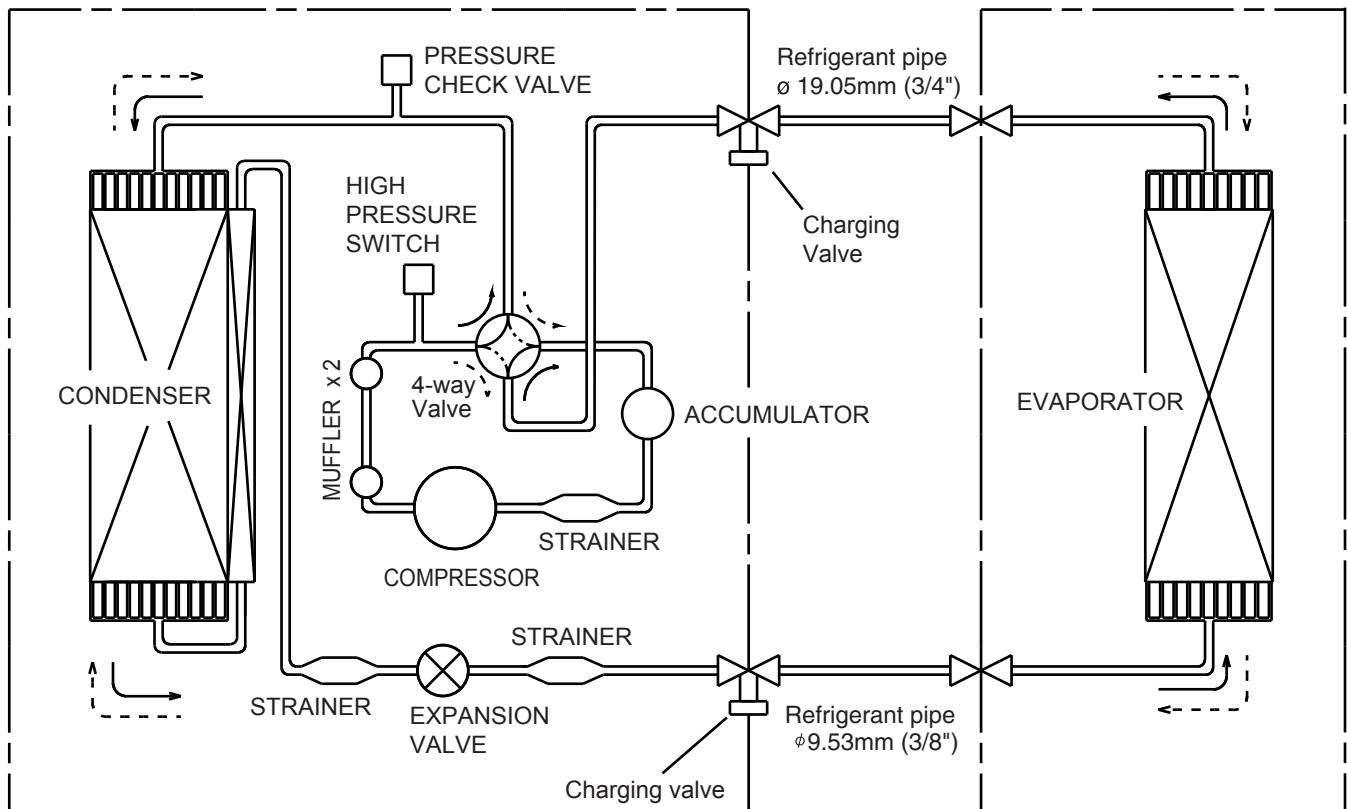
INDOOR UNIT



Models : RD-60UA / ROD-60UA

OUTDOOR UNIT

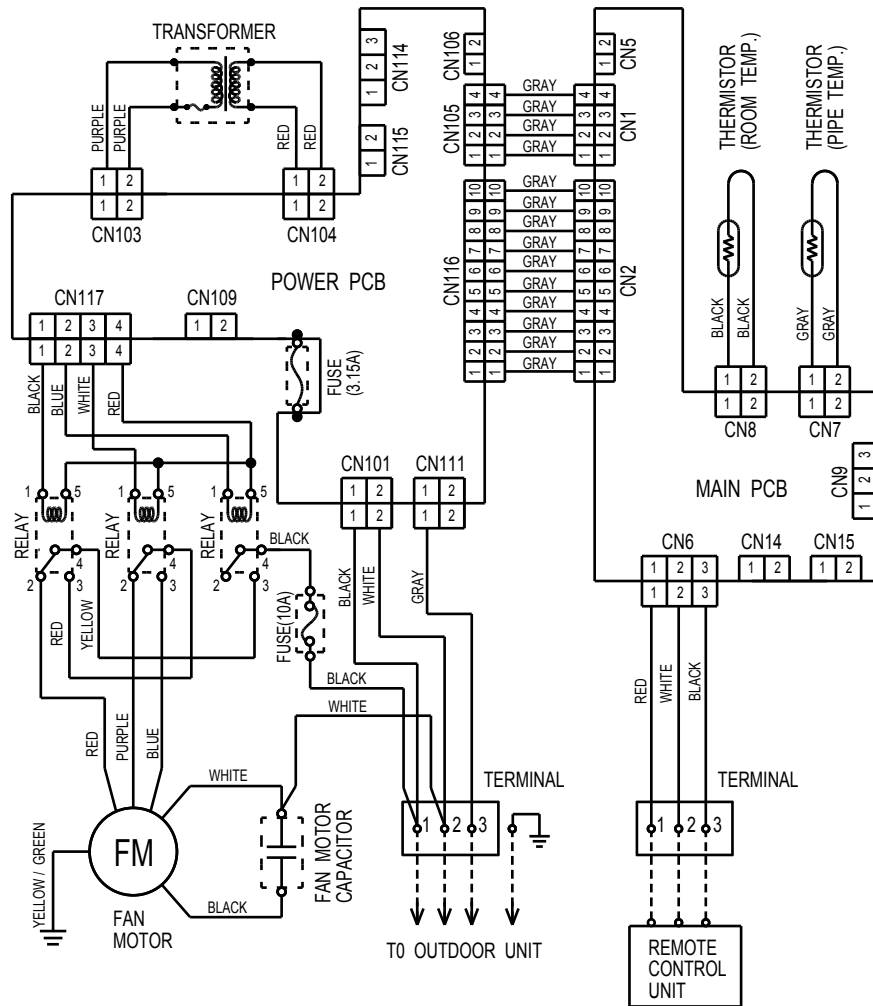
INDOOR UNIT



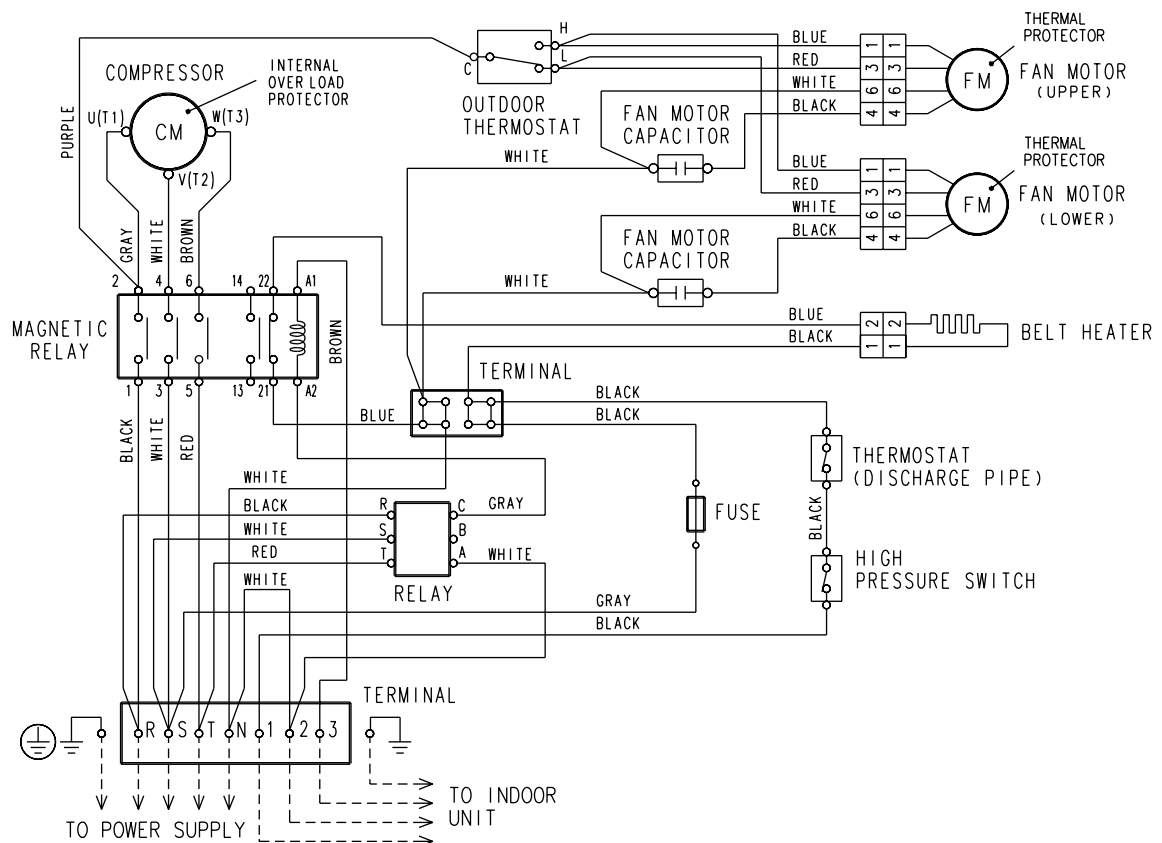
→ : COOL
 ---> : HEAT

CIRCUIT DIAGRAM

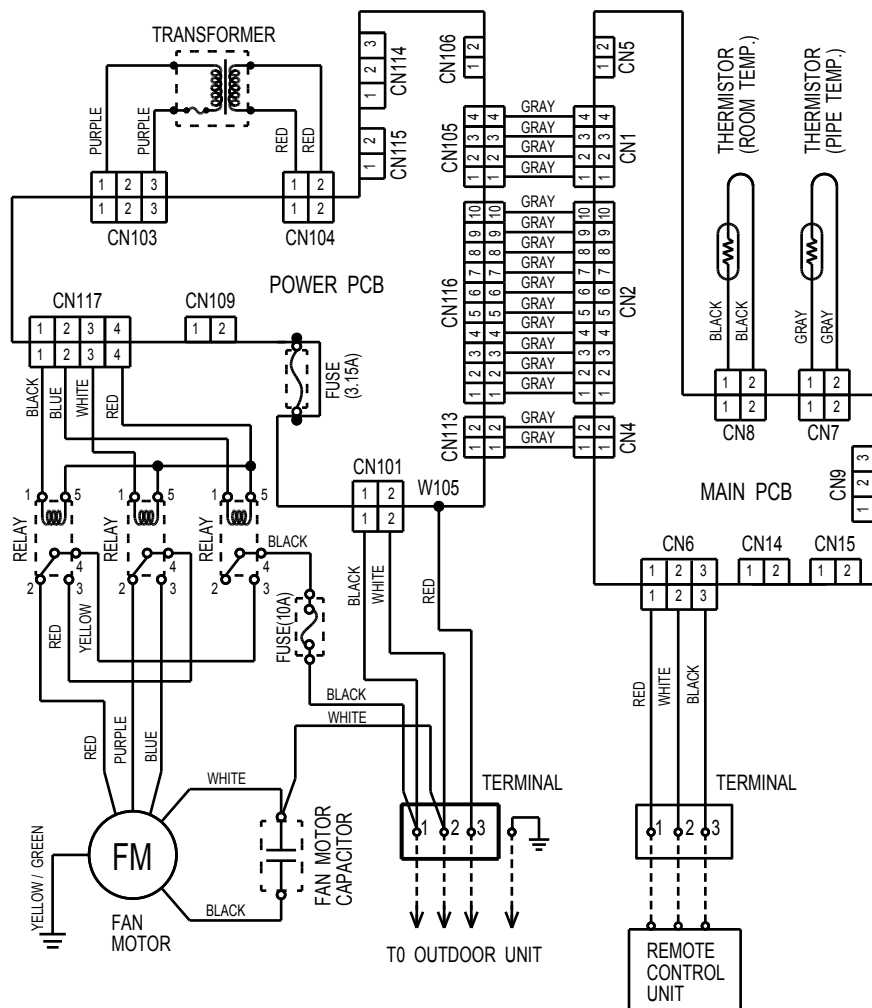
Model : RD-60FA



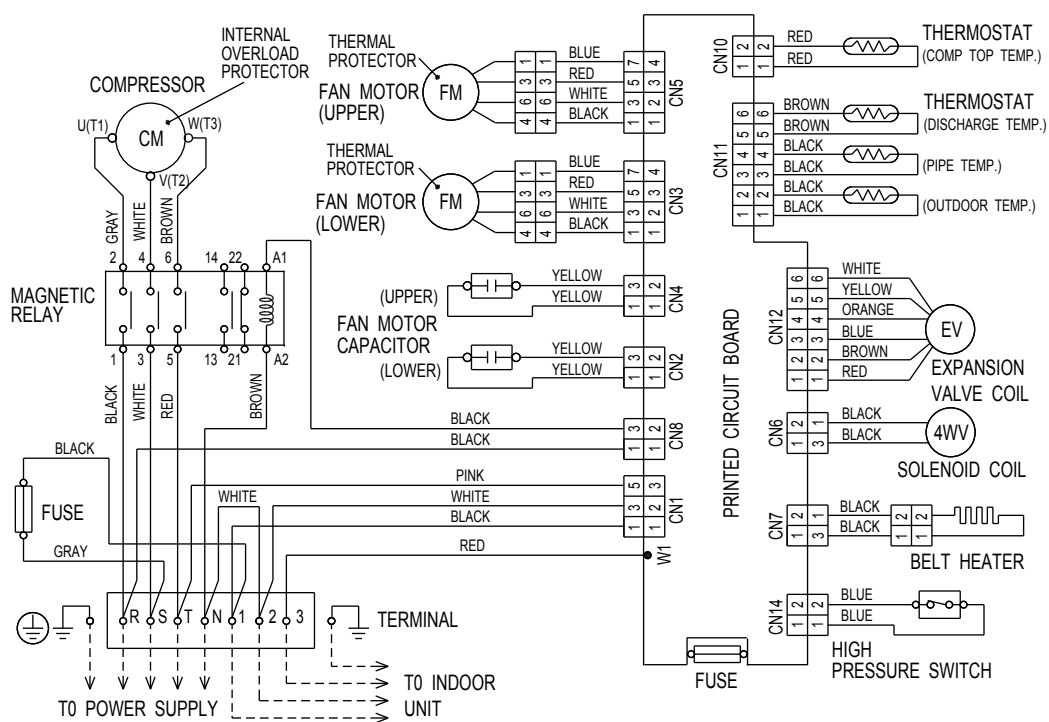
Model : ROD-60FA



Model : RD-60UA



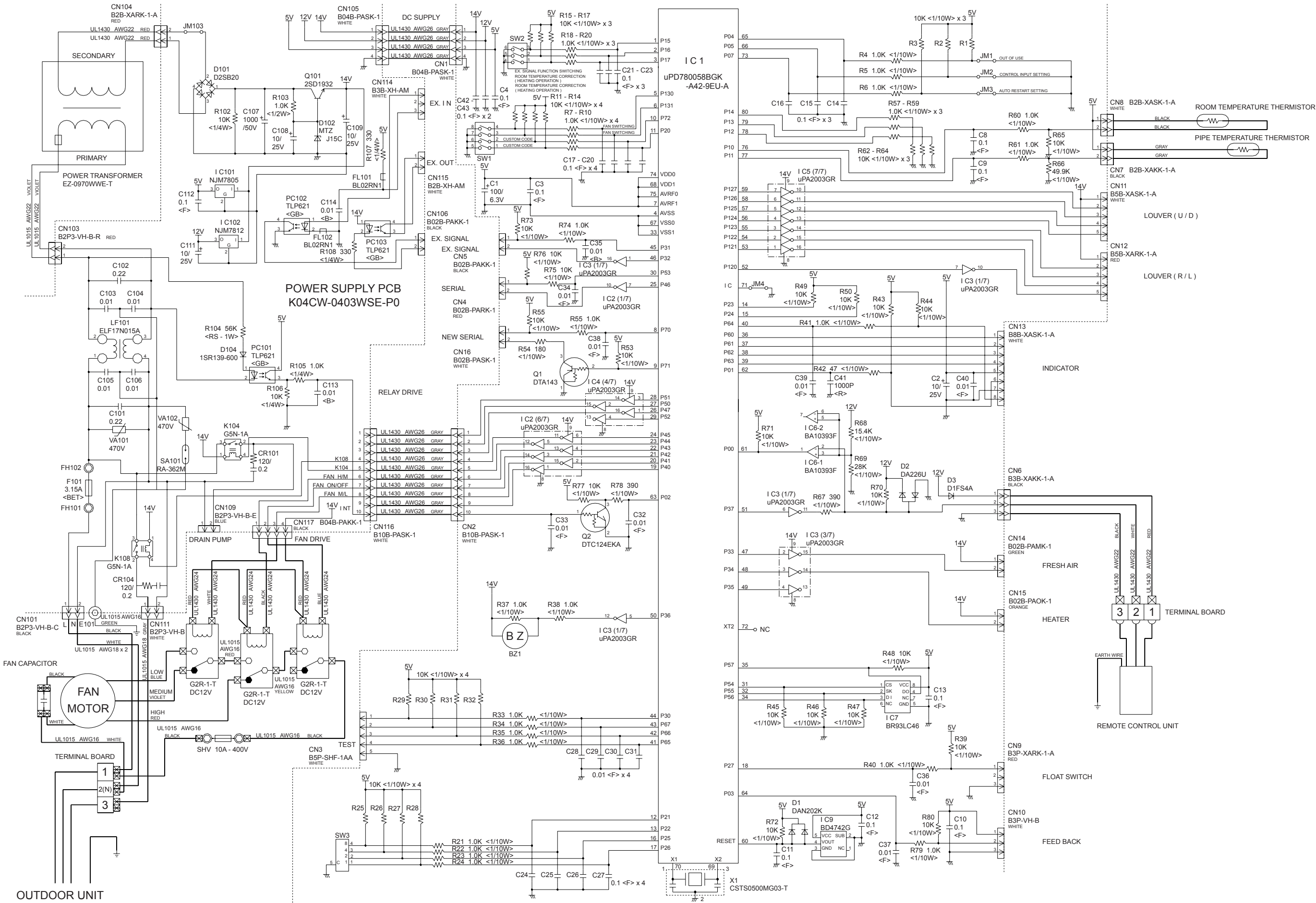
Model : ROD-60UA



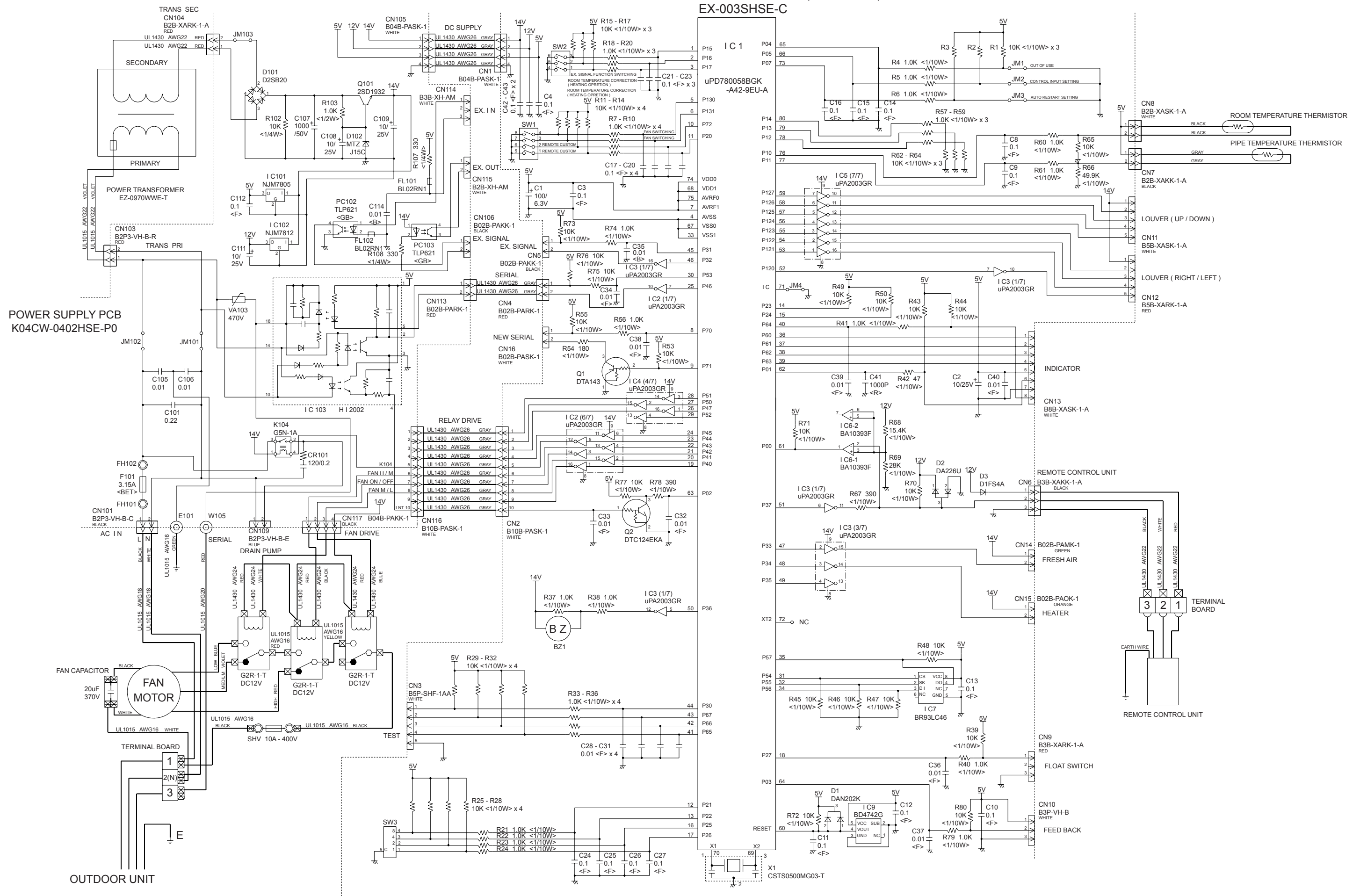
INDOOR PCB CIRCUIT DIAGRAM

Model : RD-60FA

CONTROLLER PCB ASSEMBLY (MAIN PCB)
EZ-00304WSE-C

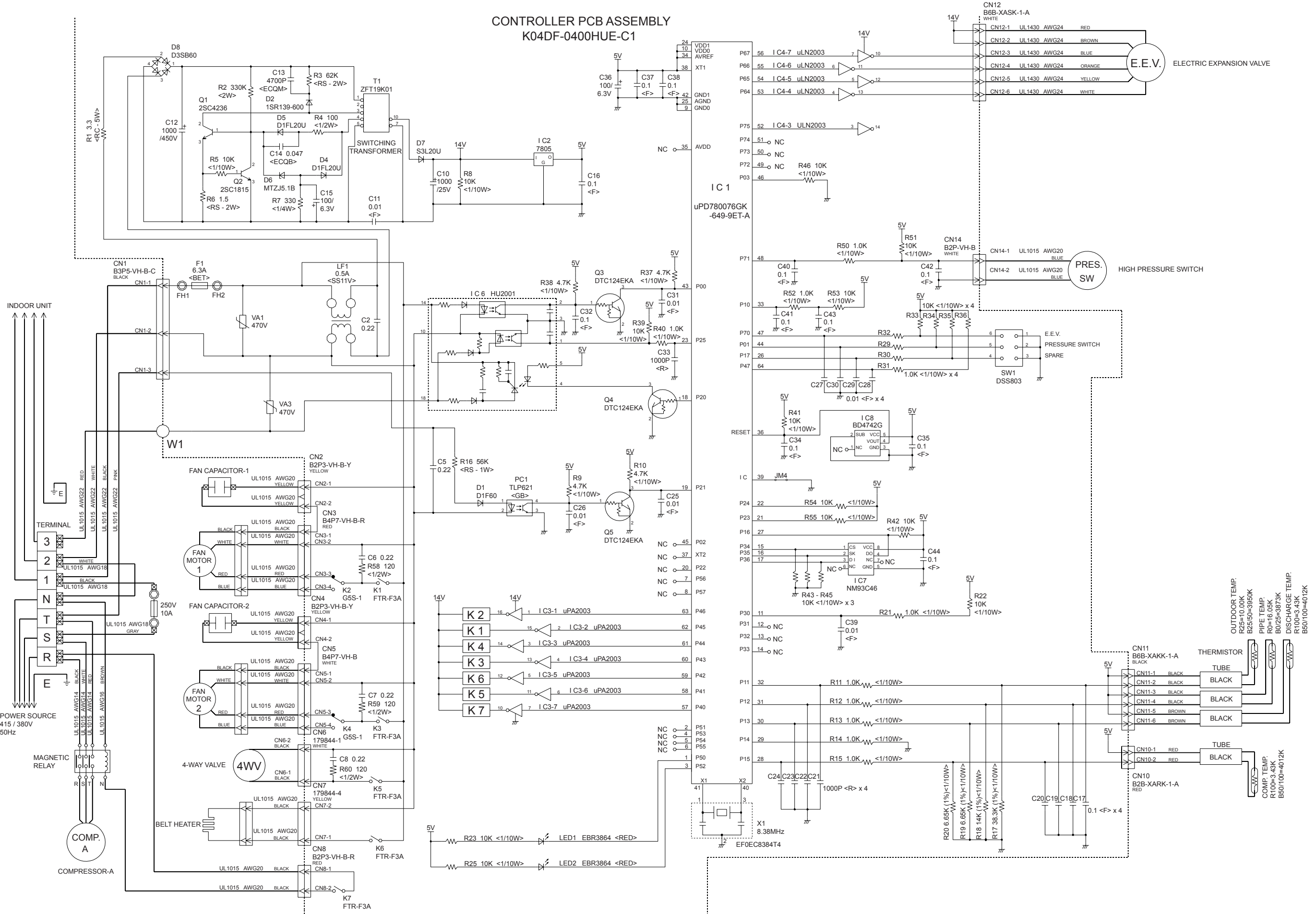


Model : RD-60UA



OUTDOOR PCB CIRCUIT DIAGRAM

Model : ROD-60UA

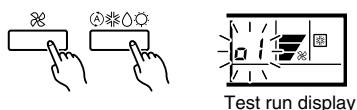


ERROR DISPLAY

CAUTION

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

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



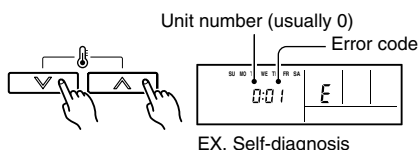
- (3) Press the start/stop button to stop the test run.

[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

- (1) Stop the air conditioner operation.
- (2) Press the set temperature buttons Δ / ∇ simultaneously for 5 seconds or more to start the self-diagnosis.
Refer to the following tables for the description of each error code.



- (3) Press the set temperature buttons Δ / ∇ 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 open
07	Outdoor heat exchanger temperature sensor short-circuited
08	Power source connection error
09	Float switch operated
0A	Outdoor temperature sensor open
0b	Outdoor temperature sensor short-circuited

Error code	Error contents
0c	Discharge pipe temperature sensor or compressor temperature sensor open
0d	Discharge pipe temperature sensor or compressor temperature sensor short-circuited
0E	Outdoor high pressure abnormal
0F	Discharge pipe temperature or compressor temperature abnormal
11	Model abnormal
12	Indoor fan abnormal
13	Outdoor signal abnormal
14	Outdoor EEPROM abnormal

2. OUTDOOR UNIT LEDS

Heat & Cool model (reverse cycle) only

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

LED layout



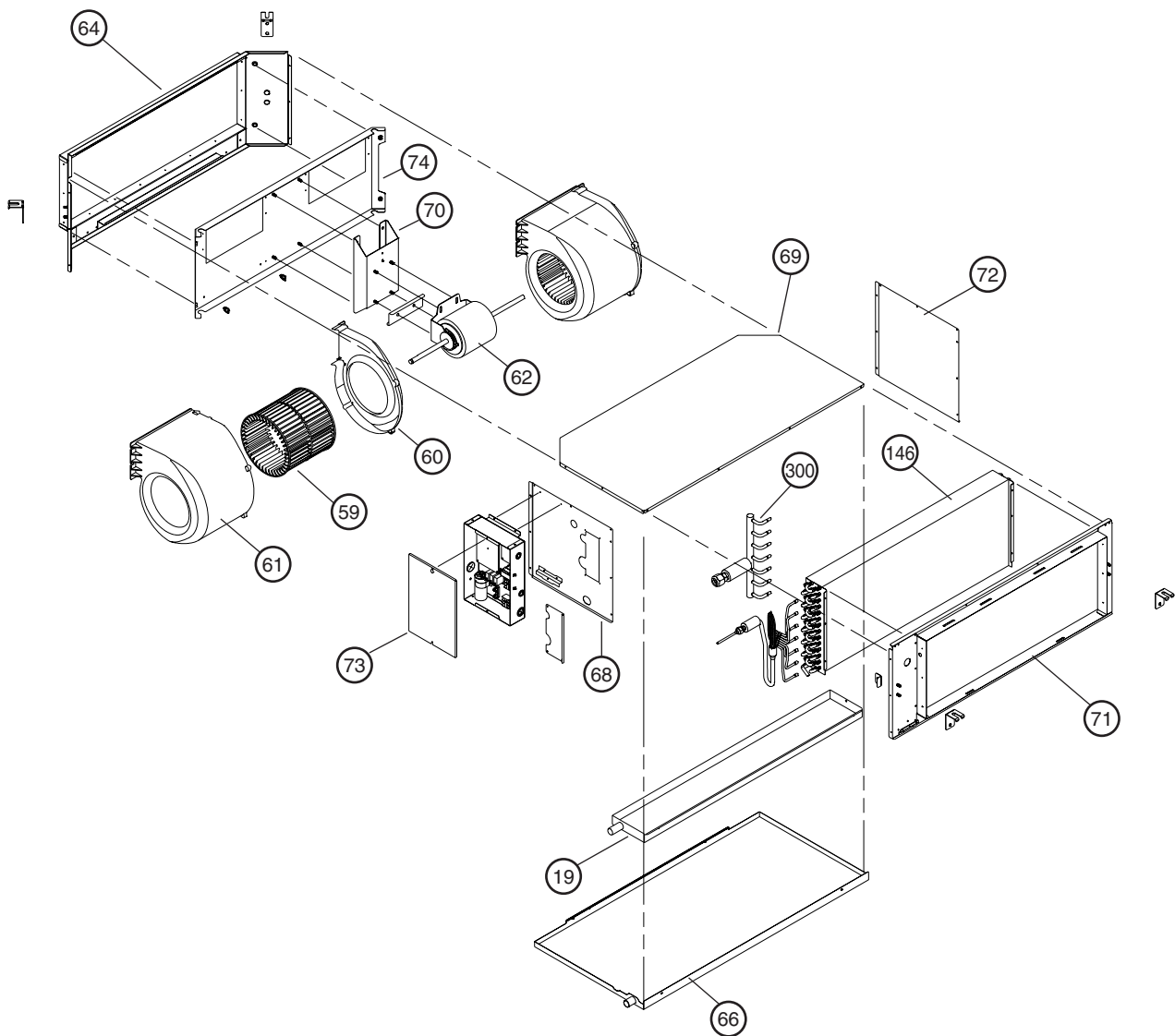
LED1	LED2	Error contents
flash	flash	Model abnormal or EEPROM abnormal
1 flash	Lighting	Power source connection error
2 flash	Lighting	Discharge temp. sensor error
3 flash	Lighting	Heat exchanger temp. sensor error
4 flash	Lighting	Outdoor temp. sensor error
5 flash	Lighting	Communication signal error
6 flash	Lighting	Indoor unit error
7 flash	Lighting	Discharge temp. abnormal
8 flash	Lighting	High pressure abnormal
9 flash	Lighting	Compressor temp. abnormal
10 flash	Lighting	Compressor temp. sensor error
Dislighting		No error. Protect operation

When the fault is cleared, the LED lamp goes off.

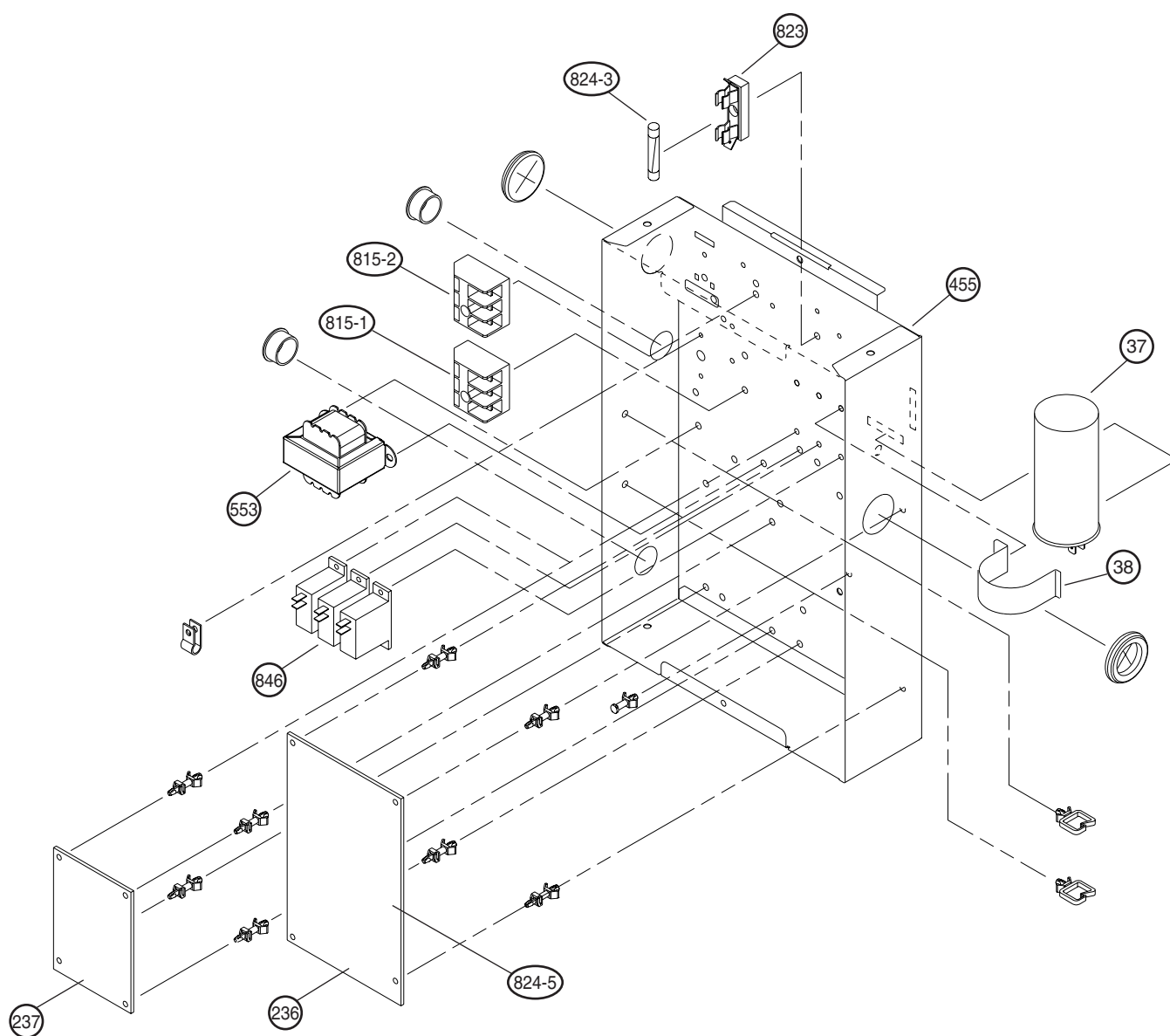
However, for discharge pipe temperature abnormal and high pressure abnormal, the LED lamp lights continuously for 24 hours, as long as the power is not turned off.

DISASSEMBLY ILLUSTRATION (Indoor Unit)

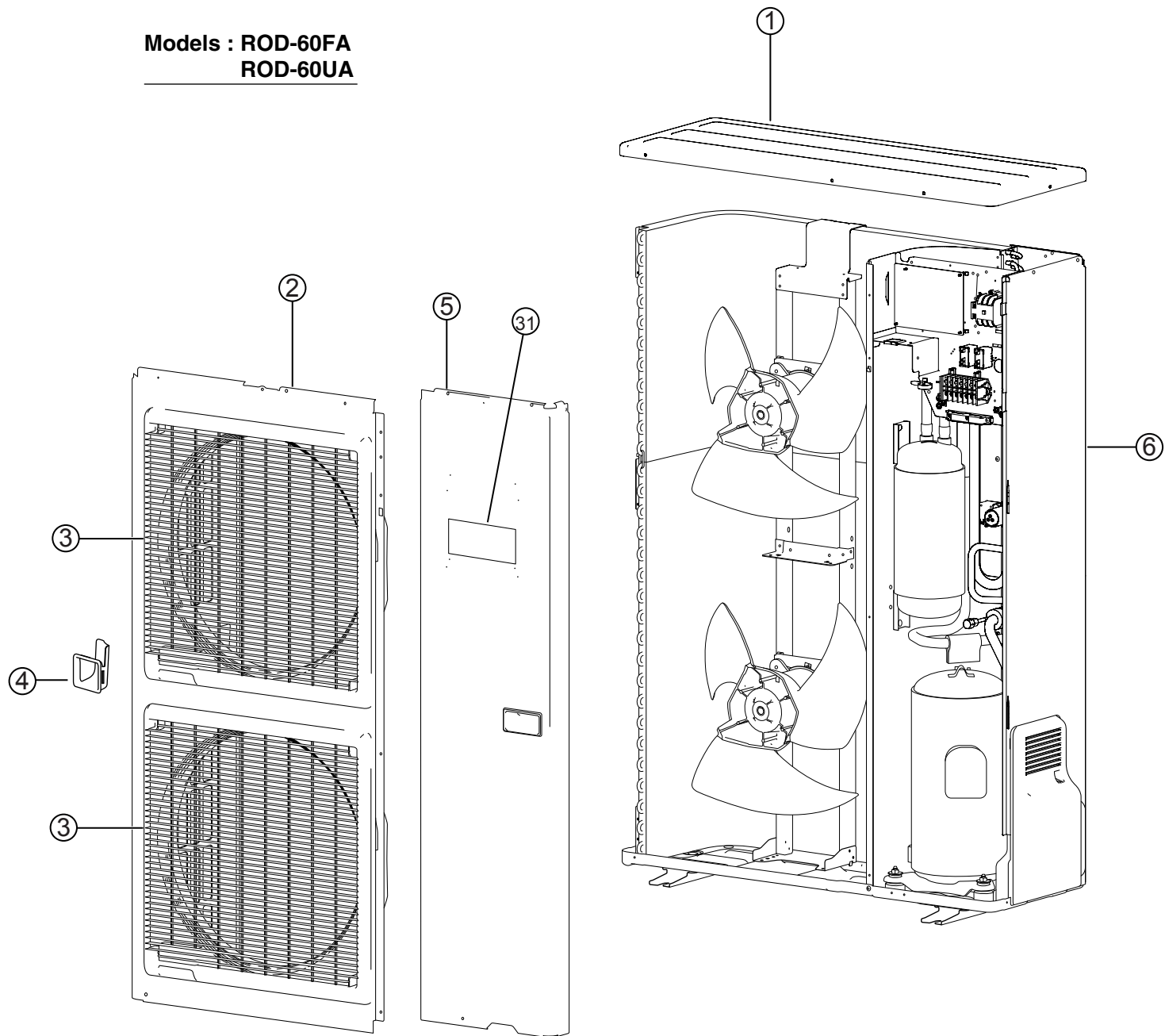
Models : RD-60FA
RD-60UA



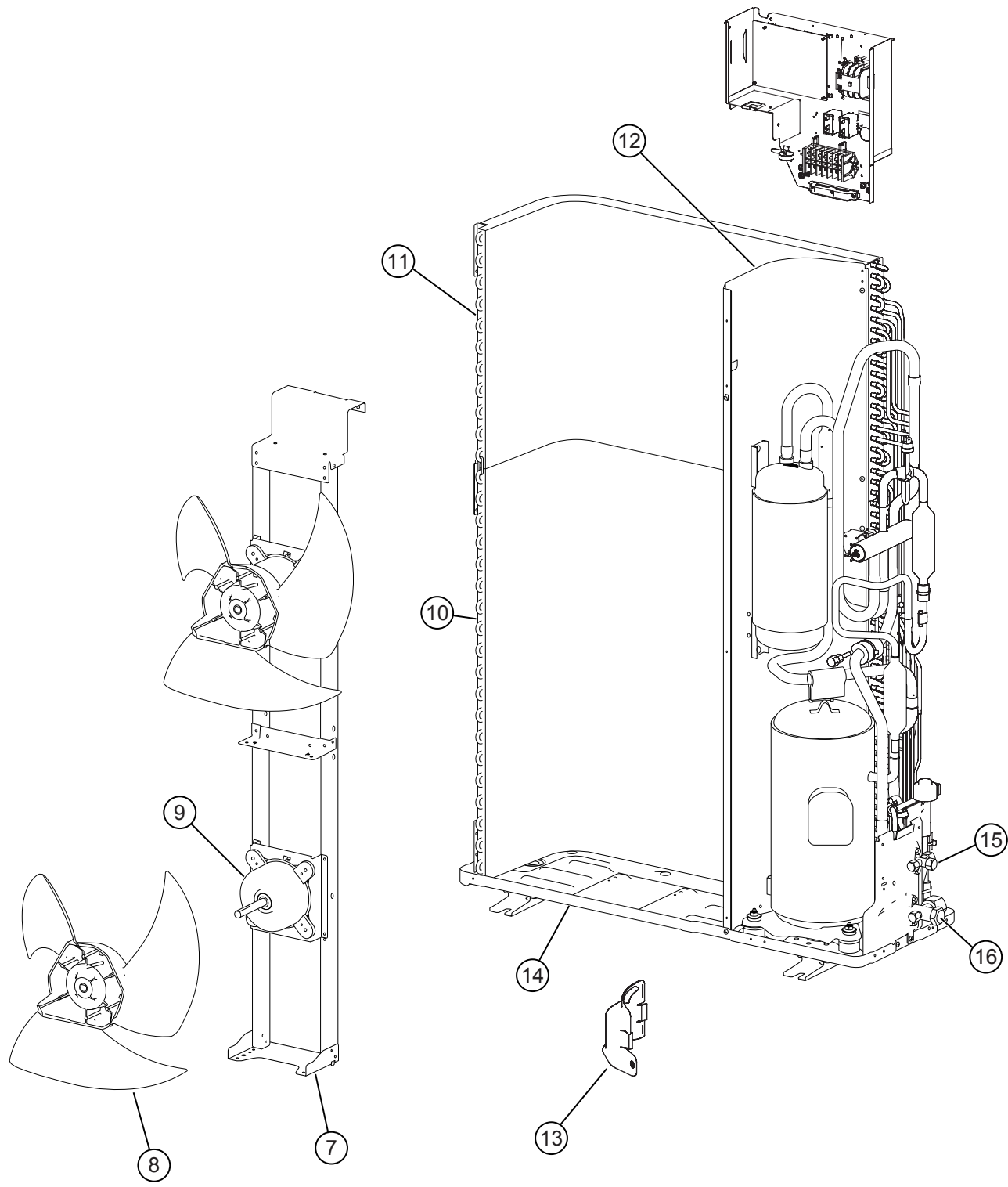
**Models : RD-60FA
RD-60UA**

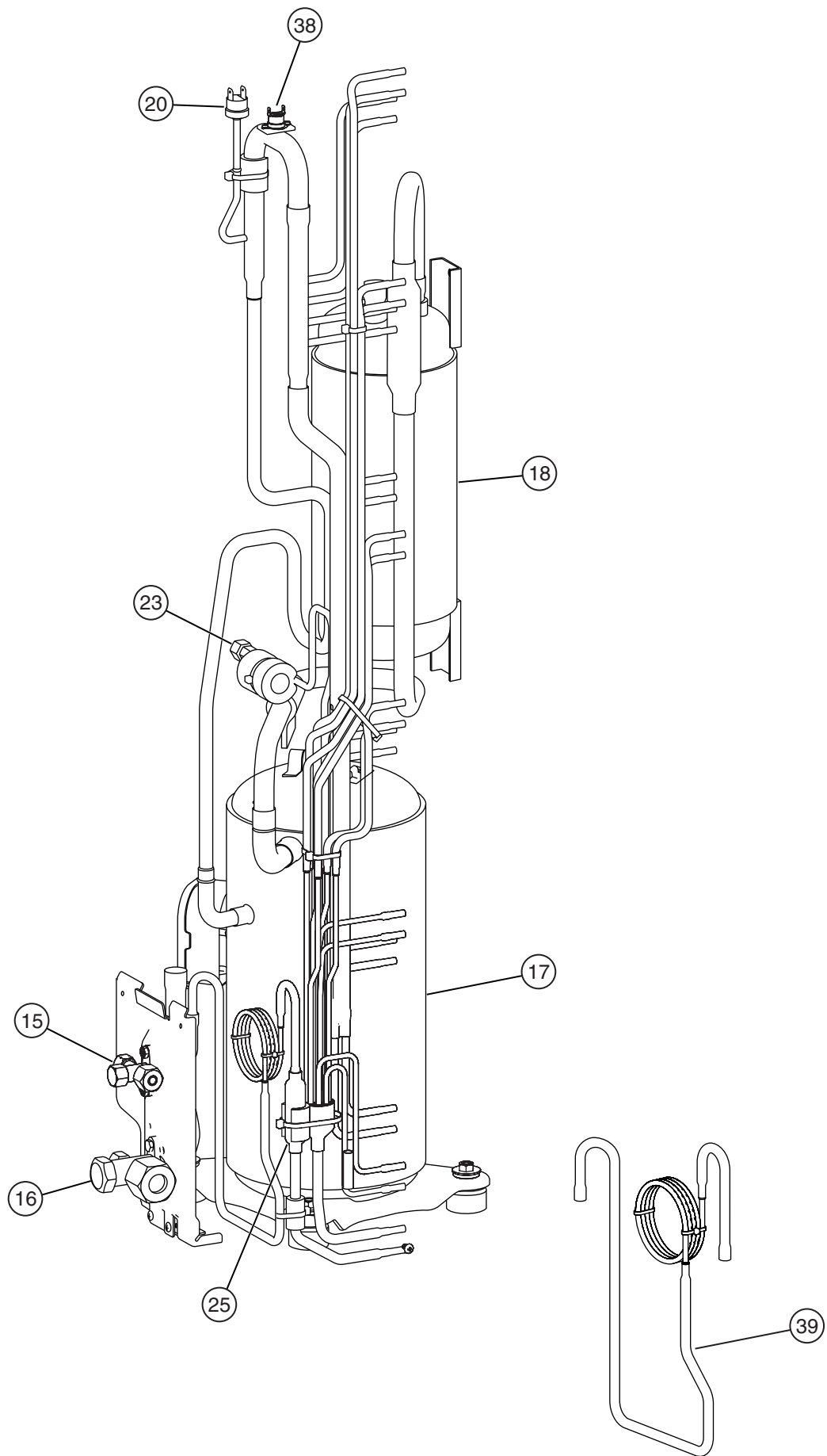


**Models : ROD-60FA
ROD-60UA**

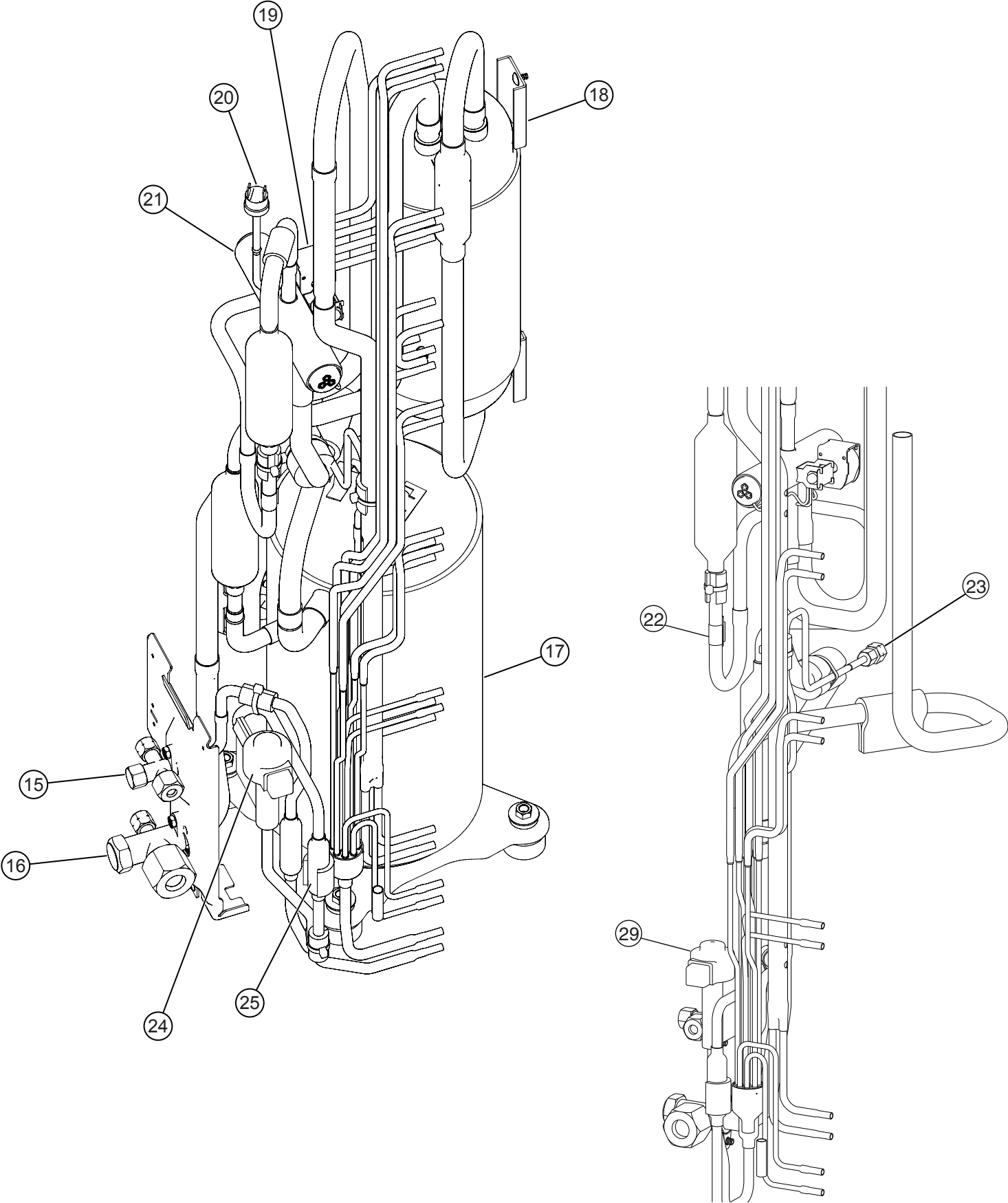


Models : ROD-60FA
 ROD-60UA

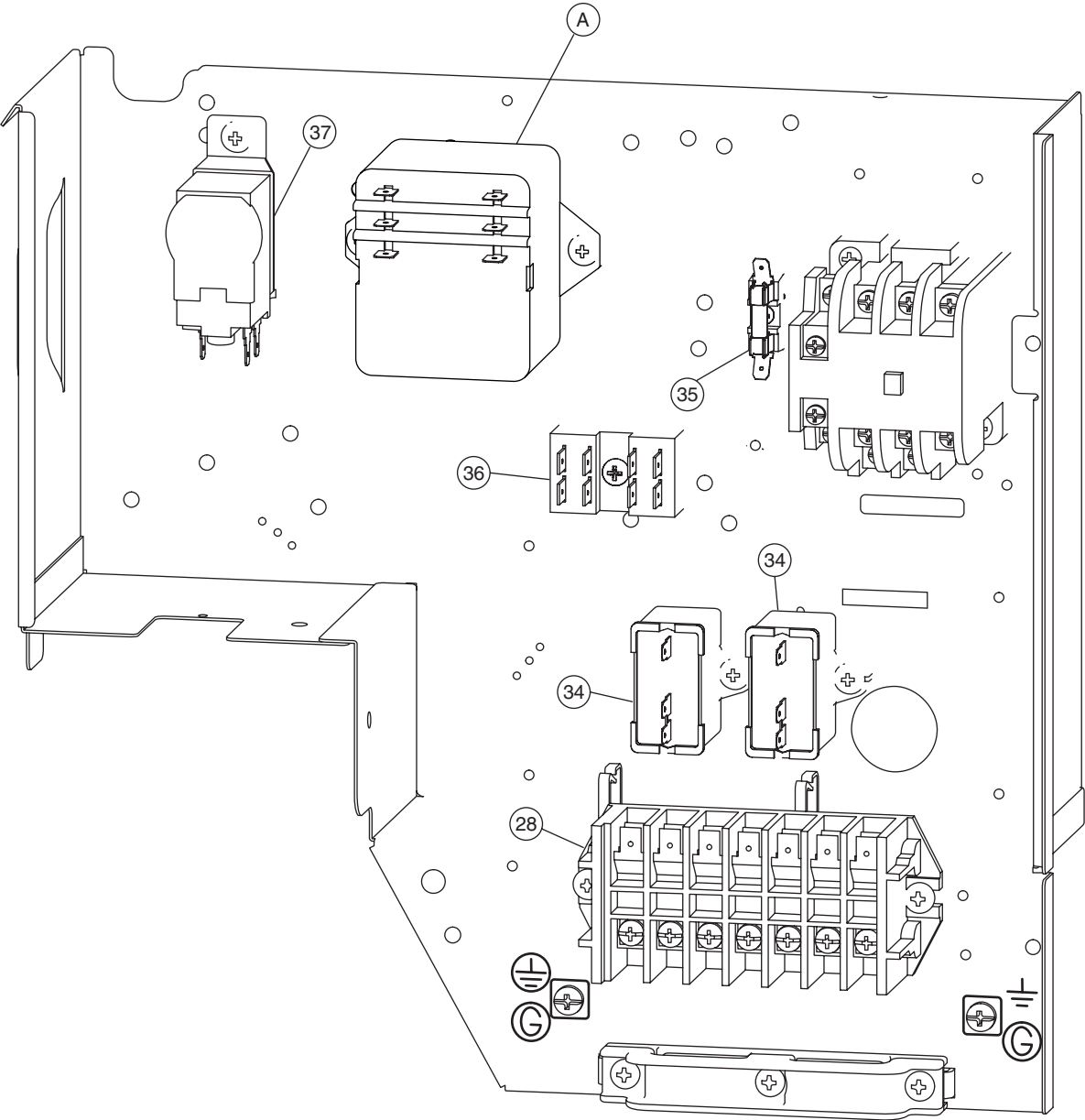




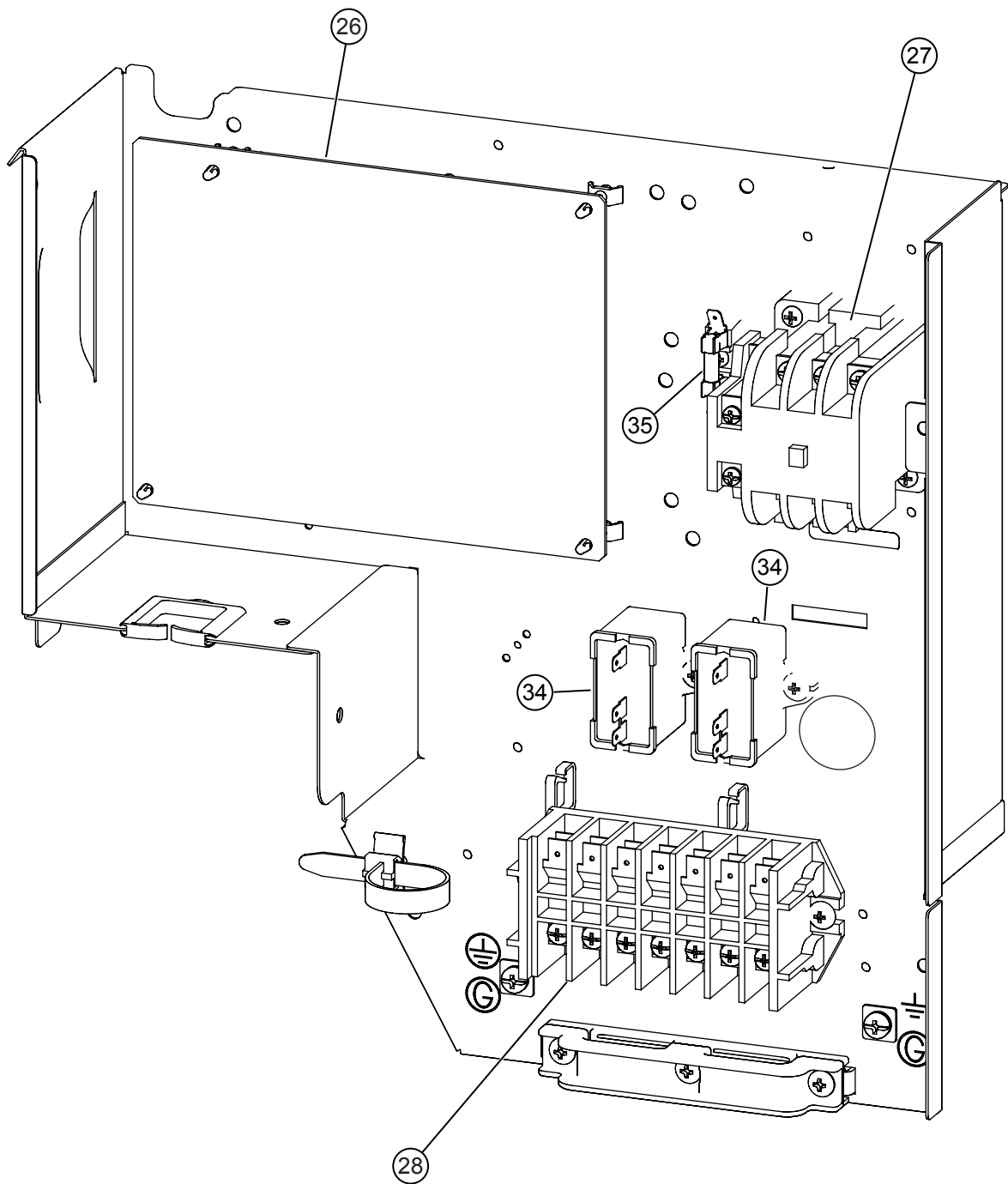
Model : ROD-60UA



Model : ROD-60FA



Model : ROD-60UA



PARTS LIST (Indoor unit)

Ref. No.	Description	Parts No.		Ord. Q'ty
		RD-60FA	RD-60UA	
19	Drain Pan Assy	9372579015	9372579015	
37	Capacitor, Plastic	9900269111	9900269111	
38	Capacitor Clamp	9308114006	9308114006	
59	Sirocco Fan	9372059012	9372059012	
60	Casing B	9372058015	9372058015	
61	Casing A	9372057018	9372057018	
62	Motor, Induct	9601688013	9601688013	
64	Kit (Panel Front Sub Assy)	9372637012	9372637012	
66	Drain Pan Sub Assy	9372582015	9372582015	
68	Kit (Panel Right Sub Assy)	9372916018	9372916018	
69	Plate Top Sub Assy	9372576014	9372576014	
70	Bracket Motor Assy	9372037003	9372037003	
71	Kit (Panel Rear Sub Assy)	9372636015	9372636015	
72	Kit (Panel Left Sub Assy)	9372581018	9372581018	
73	Cover Box	9372061008	9372061008	
74	Panel Fan Assy	9372035009	9372035009	
146	Evaporator Assy	9372585030	9372585030	
236	Power Supply PCB Assy	9705668041	9705668041	
237	Controller PCB Assy	9705246027	9705246010	
		(EZ-00304WSE-C)	(EZ-003SHSE-C)	
300	Distributor Assy	9371325088	9371325088	
455	Control Box Assy	9372536001	9372536001	
553	Transformer (Power)	9704129017	9704129017	
815-1	Terminal 3P	9306489045	9306489045	
815-2	Terminal 3P	9703345012	9703345012	
823	Fuse Holder	0501454012	0501454012	
824-3	Fuse	0600222512	0600222512	
824-5	Fuse	0600315023	0600315023	
846	Relay	9702100018	9702100018	
---	Thermo. Spring -A	313728262708	313728262708	
---	Pipe Thermistor	9703297113	9703297113	
---	Room Thermistor	9703299216	9703299216	
---	Remote Controller Assy	9372266021	9372266014	

Outdoor unit

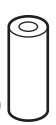
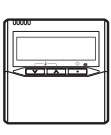
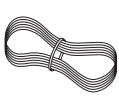
Ref. No.	Description	Parts No.
		ROD-60FA
1	Top Panel Sub Assy	9374417018
2	Front Panel X	9374094028
3	Fan Guard	9374330010
4	Grip Side	9374173013
5	Service Panel Sub Assy	9374415014
6	Right Panel Sub Assy	9374416011
7	Motor Bracket Sub Assy	9374418015
8	Propeller Fan Assy	9366378013
9	Motor Induct	9601671060
10	Condenser A Assy	9374433025
11	Condenser B Assy	9374434022
12	Sepa Wall X	9374135011
13	Cap Foot	9374345014
14	Base Assy	9374166022
15	3-Way Valve Assy	9372205044
16	3-Way Valve Assy	9372205099
17	Compressor Assy	9374250011
18	Accumulator Assy	9371615011
20	Pressure Switch	9900276010
23	Check Valve Assy	9374274017
25	Strainer Assy	9372524015
28	Terminal 7P	9363276039
31	Emblem-Rear	9361328006
34	Capacitor (Fan)	9900270049
35	Fuse	0600222529
36	Terminal 2P	9701971015
37	Outdoor Thermostat	9900275013
38	Thermostat Overheat	9354061002
39	Capillary Assy	9372197301
A	Relay	9900287016

Ref. No.	Description	Parts No.
		ROD-60UA
1	Top Panel Sub Assy	9374417018
2	Front Panel X	9374094028
3	Fan Guard	9374330010
4	Grip Side	9374173013
5	Service Panel Sub Assy	9374415014
6	Right Panel Sub Assy	9374416011
7	Motor Bracket Sub Assy	9374418015
8	Propeller Fan Assy	9366378013
9	Motor Induct	9601671060
10	Condenser A Assy	9374433018
11	Condenser B Assy	9374434015
12	Sepa Wall X	9374135011
13	Cap Foot	9374345014
14	Base Assy	9374166022
15	3-Way Valve Assy	9372205044
16	3-Way Valve Assy	9372205099
17	Compressor Assy	9374250011
18	Accumulator Assy	9371615011
19	Solenoid	9900165055
20	Pressure Switch	9900186012
21	4-Way Valve	9970035012
22	Thermistor (Dischage)	9900277017
23	Check Valve Assy	9374274017
24	Coil (Expansion Valve)	9900190026
25	Strainer Assy	9372524015
26	Controller PCB Assy	9705677012
27	Magnetic Relay	9900227012
28	Terminal 7P	9363276039
29	Expansion Valve	9900170028
31	Emblem-Rear	9361328006
34	Capacitor (Fan)	9900270049
35	Fuse	0600222529
---	Thermistor Assy	9900274016
---	Drain Cap	313166024302
---	Drain Pipe	9303029022

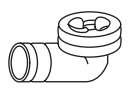
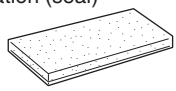
STANDARD ACCESSORIES

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

INDOOR UNIT ACCESSORIES

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
Remote controller cord 	1	For connecting the remote controller

OUTDOOR UNIT ACCESSORIES

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).
- Remote sensor : UTD-RS100 (P/N 9072619004)
- External control set : UTD-ECS5A (P/N 9077359004)

