

**SPLIT TYPE  
AIR CONDITIONER**

**DUCT type (50Hz)**

# SERVICE MANUAL



## Models

**Indoor unit**

**Outdoor unit**

ARY30LUAN

AOY30LNAWL

ARY36LUAN

AOY36LNAWL

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# SPECIFICATIONS

TYPE	COOLING & HEATING	
INDOOR UNIT	ARY30LUAN	ARY36LUAN
OUTDOOR UNIT	AOY30LNAWL	AOY36LNAWL
COOLING CAPACITY	8.5 kW	10.0 kW
HEATING CAPACITY	10.0 kW	11.2 kW

## ELECTRICAL DATA

POWER SOURCE		230V 50Hz	230V 50Hz
RUNNING CURRENT	COOLING	13.0 A	17.9 A
	HEATING	11.7 A	13.9 A
INPUT WATTS	COOLING	2.96 kW	4.08 kW
	HEATING	2.68 kW	3.18 kW
E.E.R.	COOLING	2.87 kW/kW	2.45 kW/kW
	HEATING	3.73 kW/kW	3.52 kW/kW
STARTING CURRENT		15 A	15 A
MOISTURE REMOVAL		2.5 L/hr	3.0 L/hr
AIR CIRCULATION HIGH		2,200 m <sup>3</sup> /hr	2,200 m <sup>3</sup> /hr

## COMPRESSOR

TYPE	Total enclosed type, 4 poles, 3 phase, Inverter, Twin Rotary	
DISCRIMINATION	5KD240XAD21	
REFRIGERANT	R410A	2,100 g

## FAN MOTOR

INDOOR UNIT	DISCRIMINATION	MFA-45PTAT
	HIGH SPEED	1,250 r.p.m.
	MED SPEED	1,150 r.p.m.
	LOW SPEED	1,050 r.p.m.
OUTDOOR UNIT	DISCRIMINATION	MFE-60PO
	COOL	850 r.p.m.
	HEAT	900 r.p.m.

## DIMENSIONS

INDOOR UNIT	H x W x D	270 x 1,135 x 700 mm
OUTDOOR UNIT	H x W x D	830 x 900 x 330 mm

## WEIGHT

INDOOR UNIT	GROSS / NET	50 / 43 kg
OUTDOOR UNIT	GROSS / NET	70 / 62 kg

## NOISE LEVEL

INDOOR UNIT ( cool / heat )	HIGH SPEED	43.0 dB / 43.0 dB
	MED SPEED	41.0 dB / 41.0 dB
	LOW SPEED	39.0 dB / 39.0 dB
OUTDOOR UNIT ( cool / heat )	53 dB / 55 dB	54 dB / 55 dB

Note : Static pressure : 30Pa

Duct length : Inlet 1m, Outlet 2m

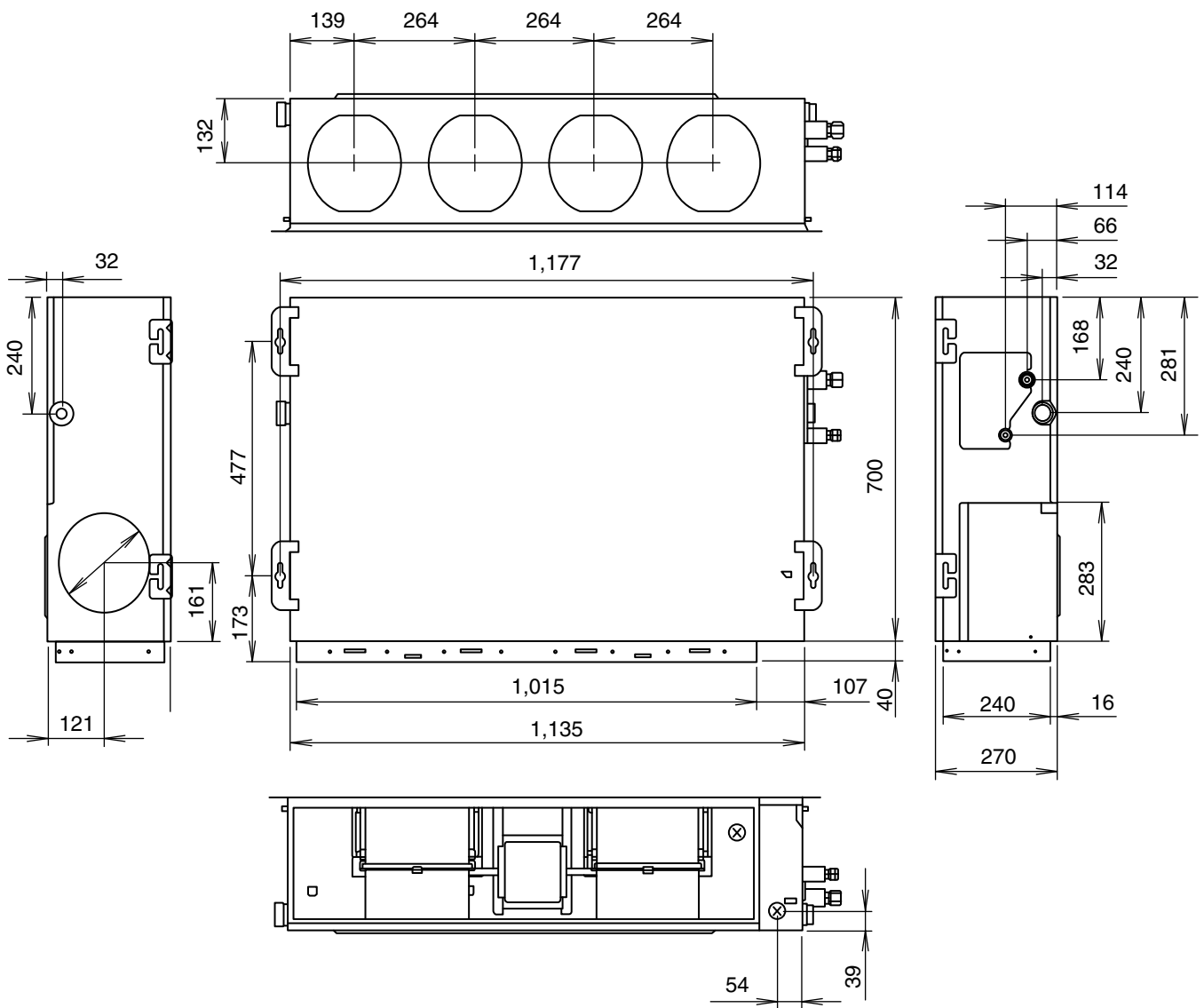
## REFRIGERANT CHARGE (R410A)

MAX PIPE LENGTH	50 m		
MAX PIPE HEIGHT	30 m		
FULL CHARGE AMOUNT	Pipe Length	20 m	2,100 g
		30 m	2,500 g
		40 m	2,900 g
		50 m	3,300 g
ADDITIONAL REFRIGERANT	40 g / m		

# DIMENSIONS

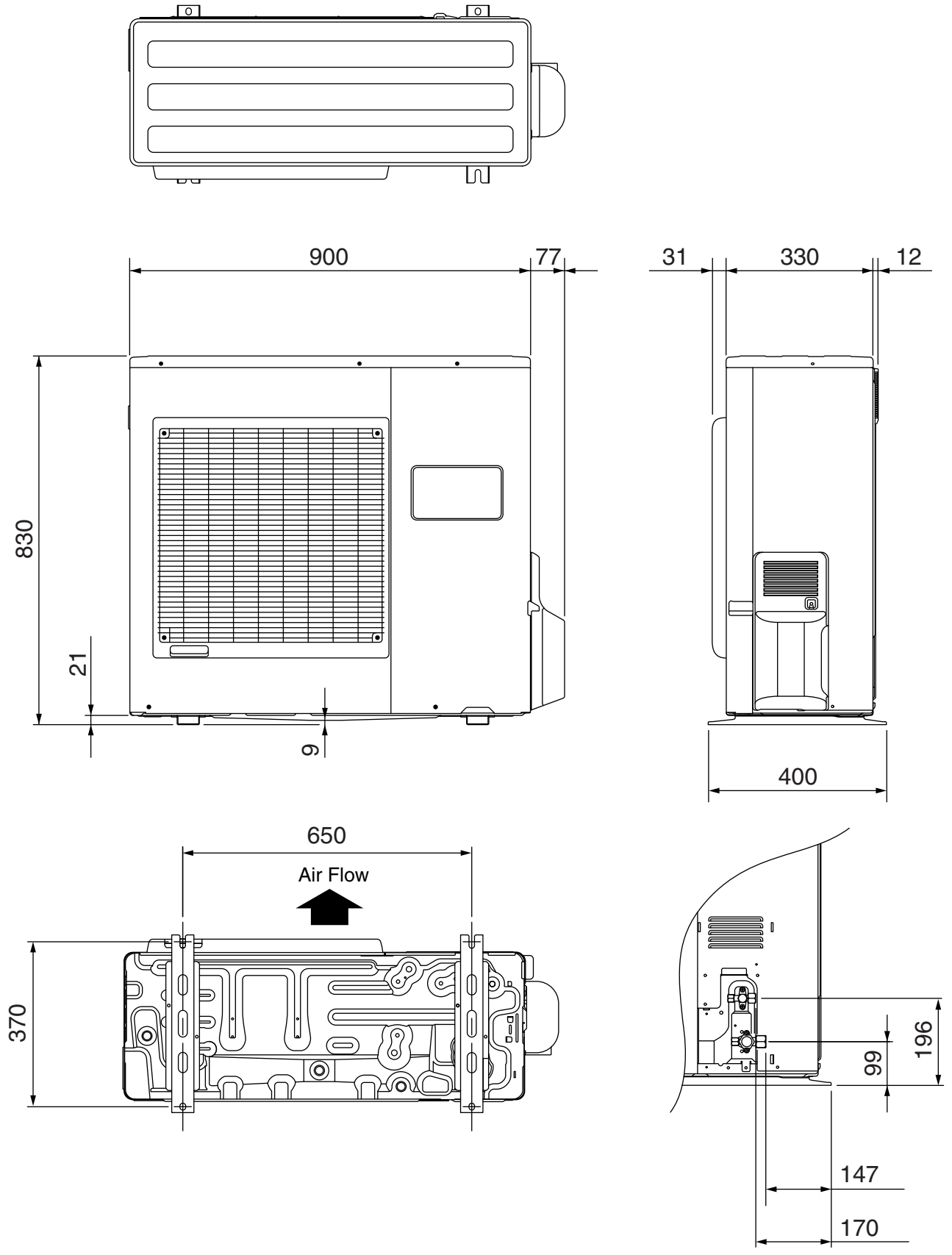
## INDOOR UNIT

(Unit : mm)

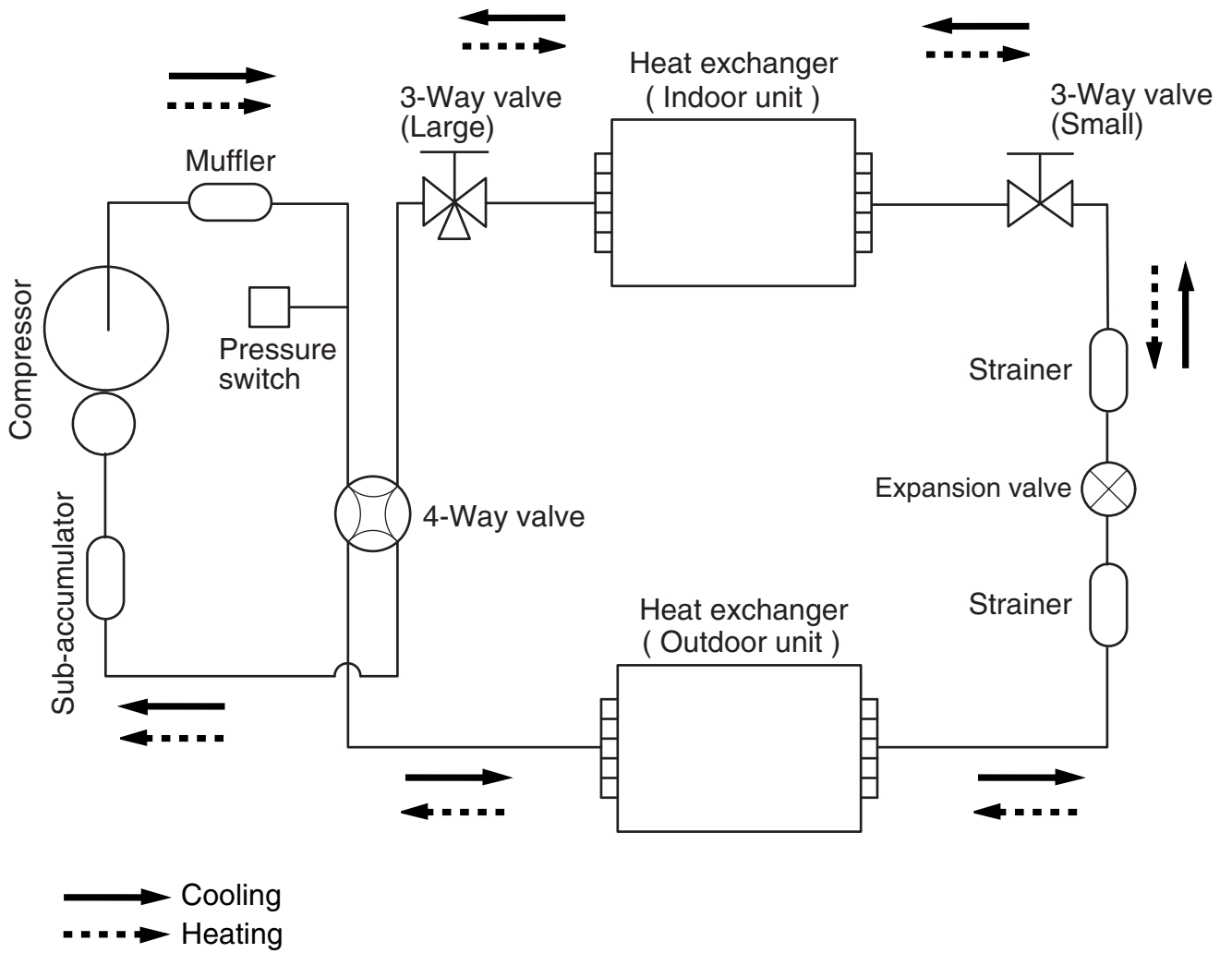


# OUTDOOR UNIT

(Unit : mm)



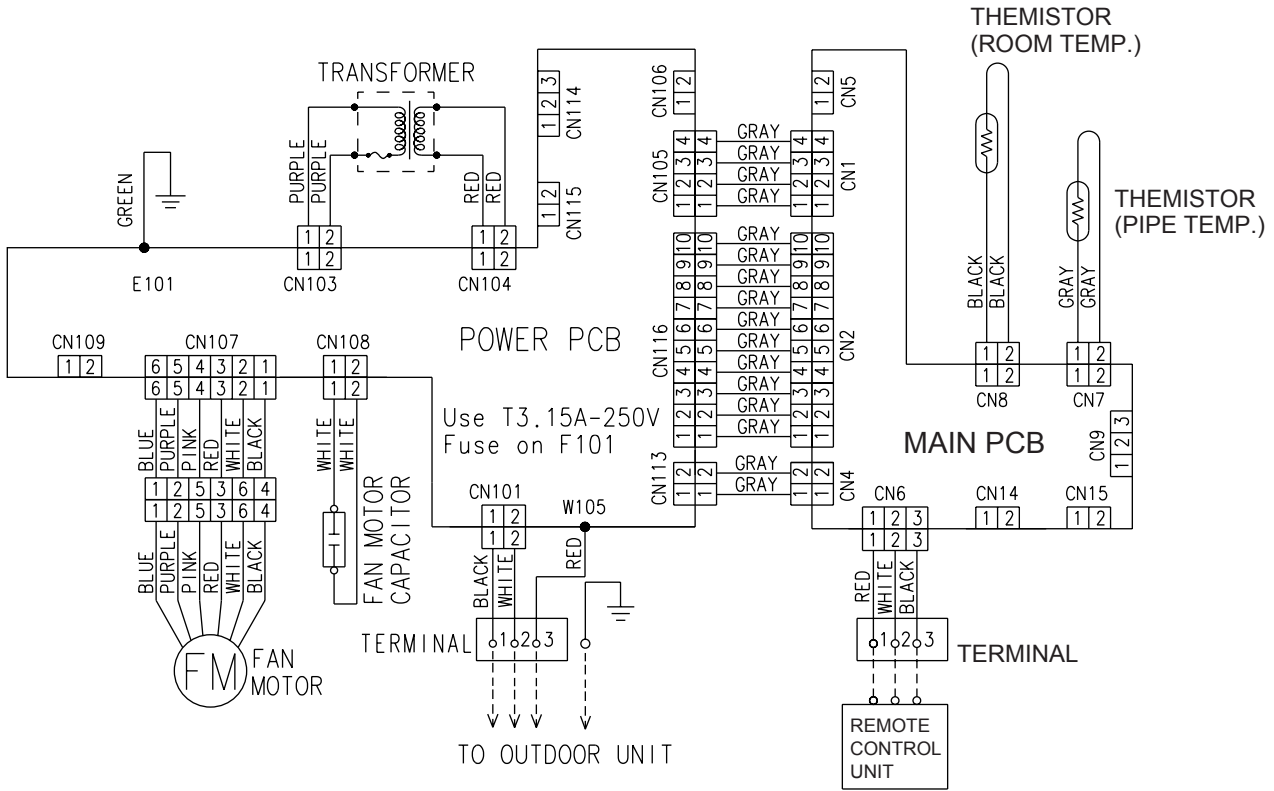
# REFRIGERANT SYSTEM DIAGRAM



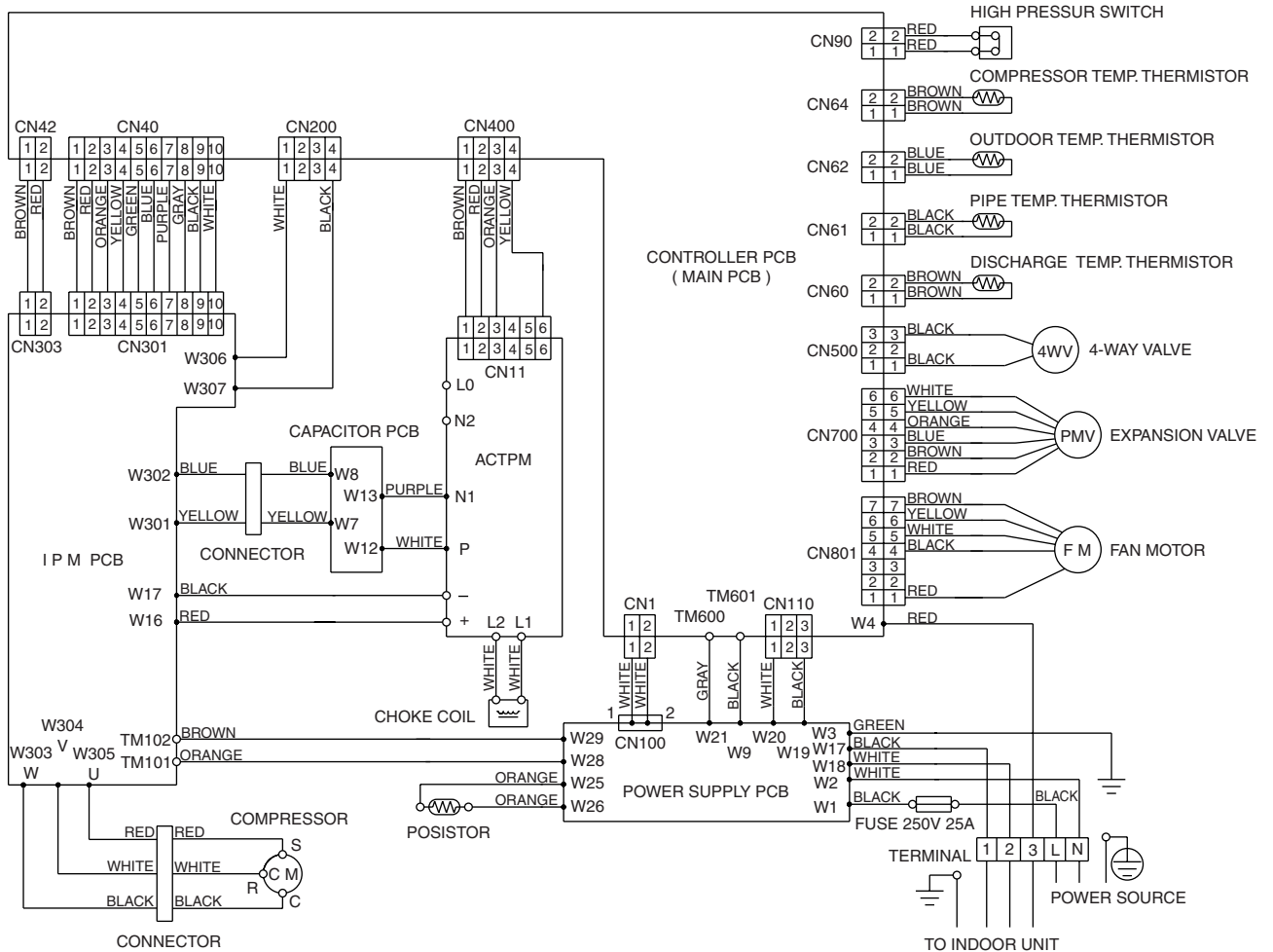
Refrigerant pipe diameter  
 Liquid : 3/8" (9.52 mm)  
 Gas : 5/8" (15.88 mm)

# CIRCUIT DIAGRAM

## INDOOR UNIT



## OUTDOOR UNIT



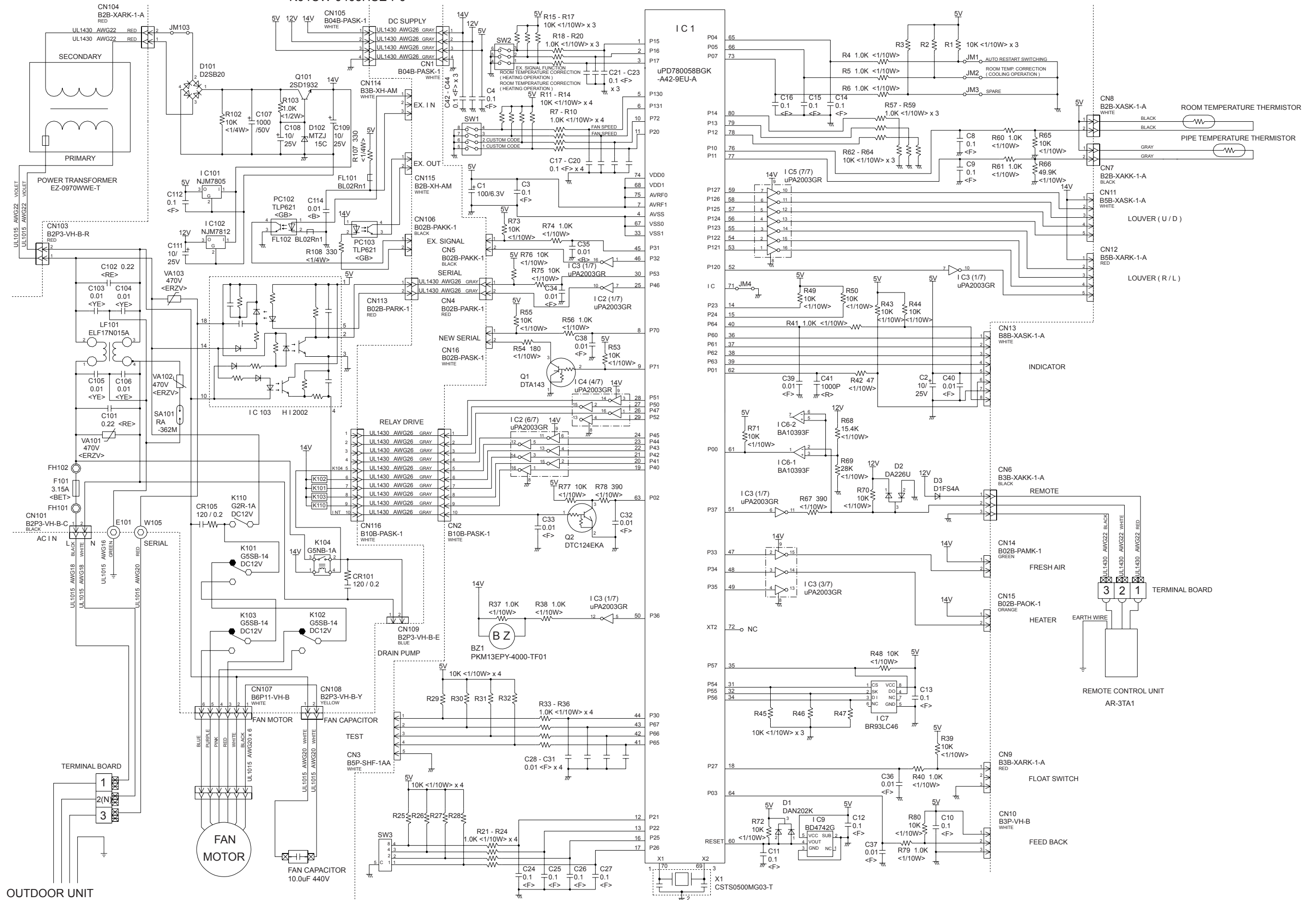
# INDOOR PCB CIRCUIT DIAGRAM

CONTROLLER PCB ASSEMBLY

ARY30LUAN : K03BZ-0501HSE-C1

ARY36LUAN : K03BZ-0502HSE-C1

POWER SUPPLY PCB  
K04CW-0405HSE-P0



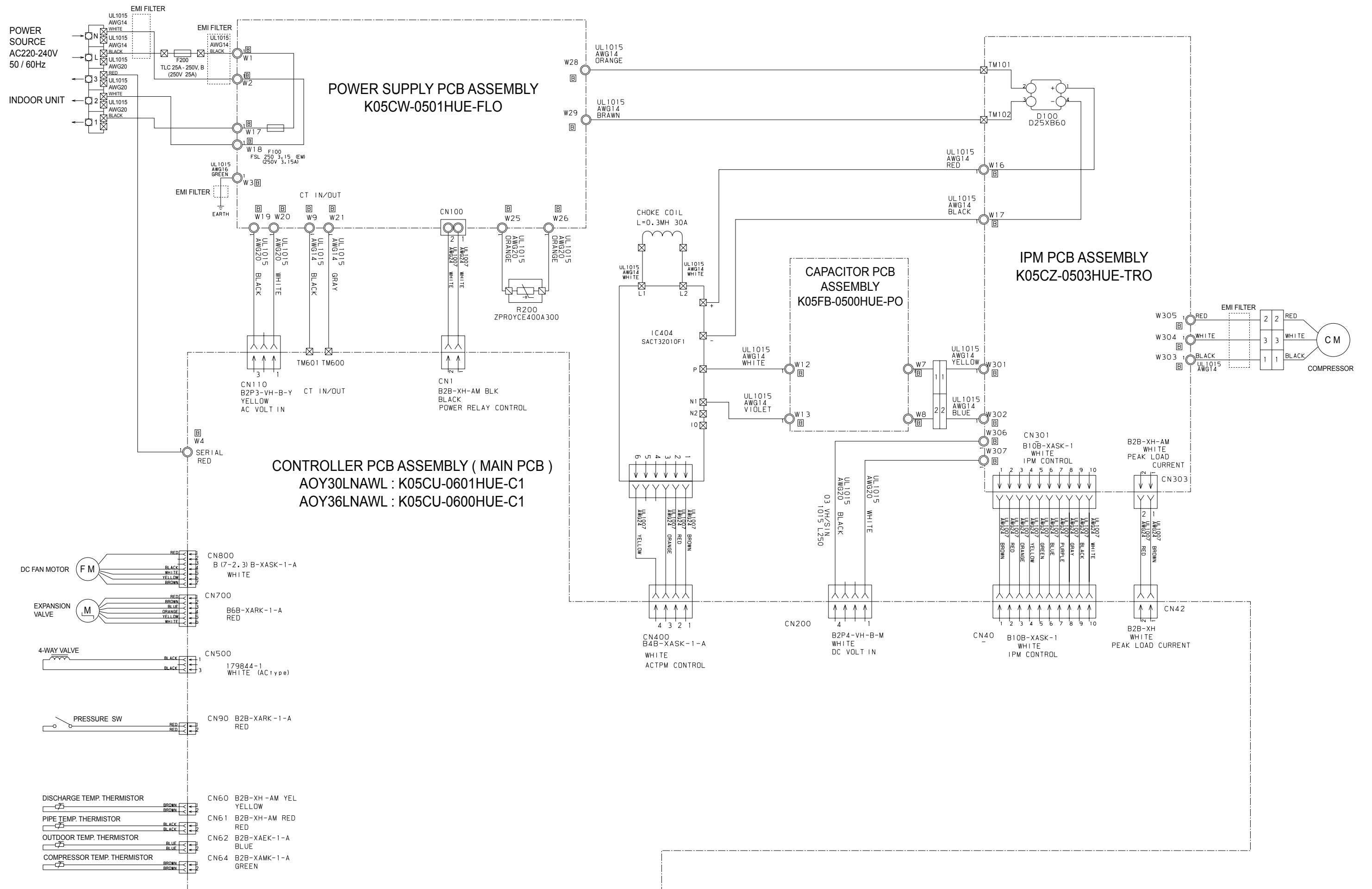
OUTDOOR UNIT

# OUTDOOR PCB CIRCUIT DIAGRAM

INVERTER ASSEMBLY

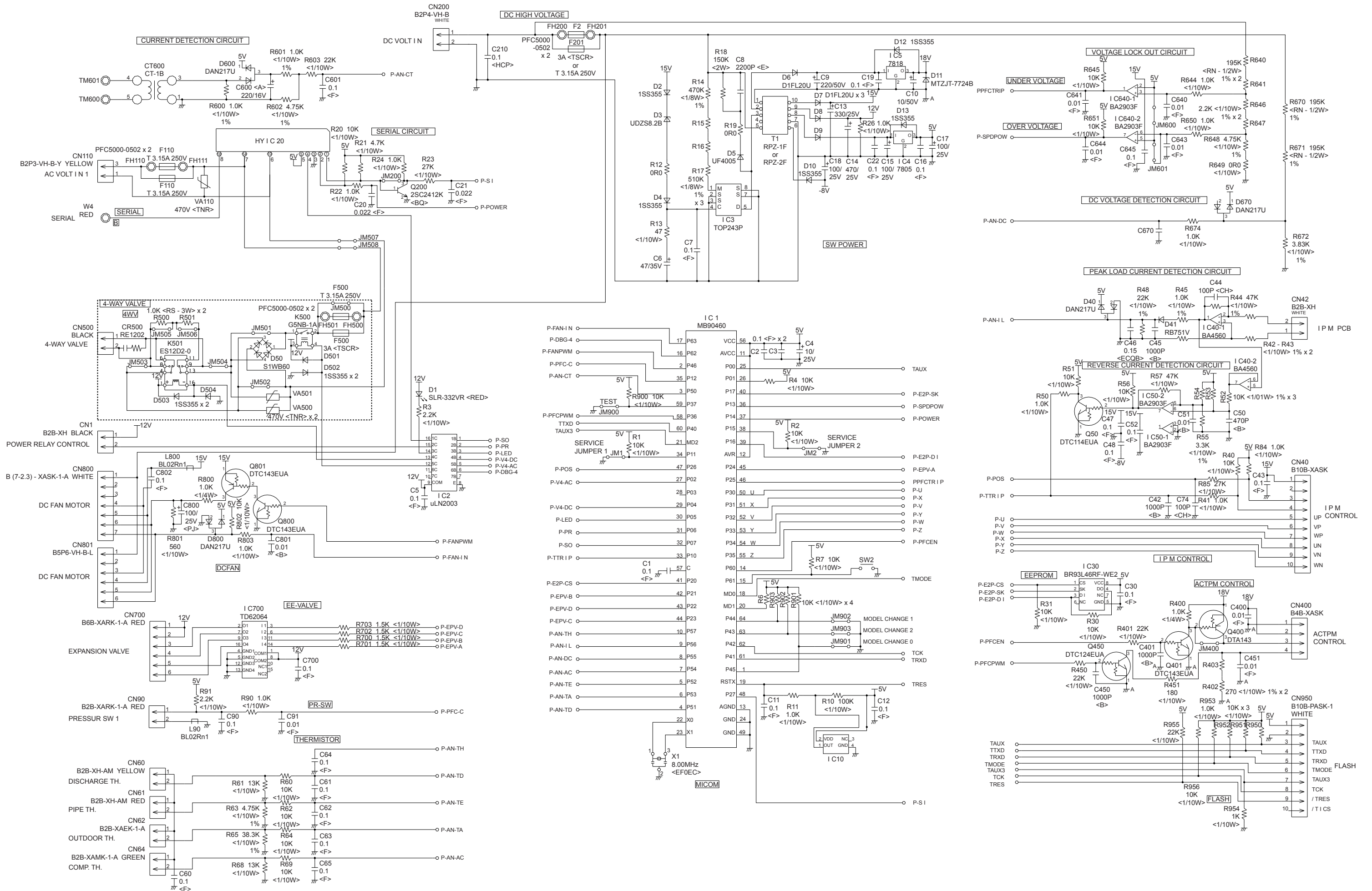
AOY30LNAWL : EZ-006PHUE

AOY36LNAWL : EZ-006MHUE

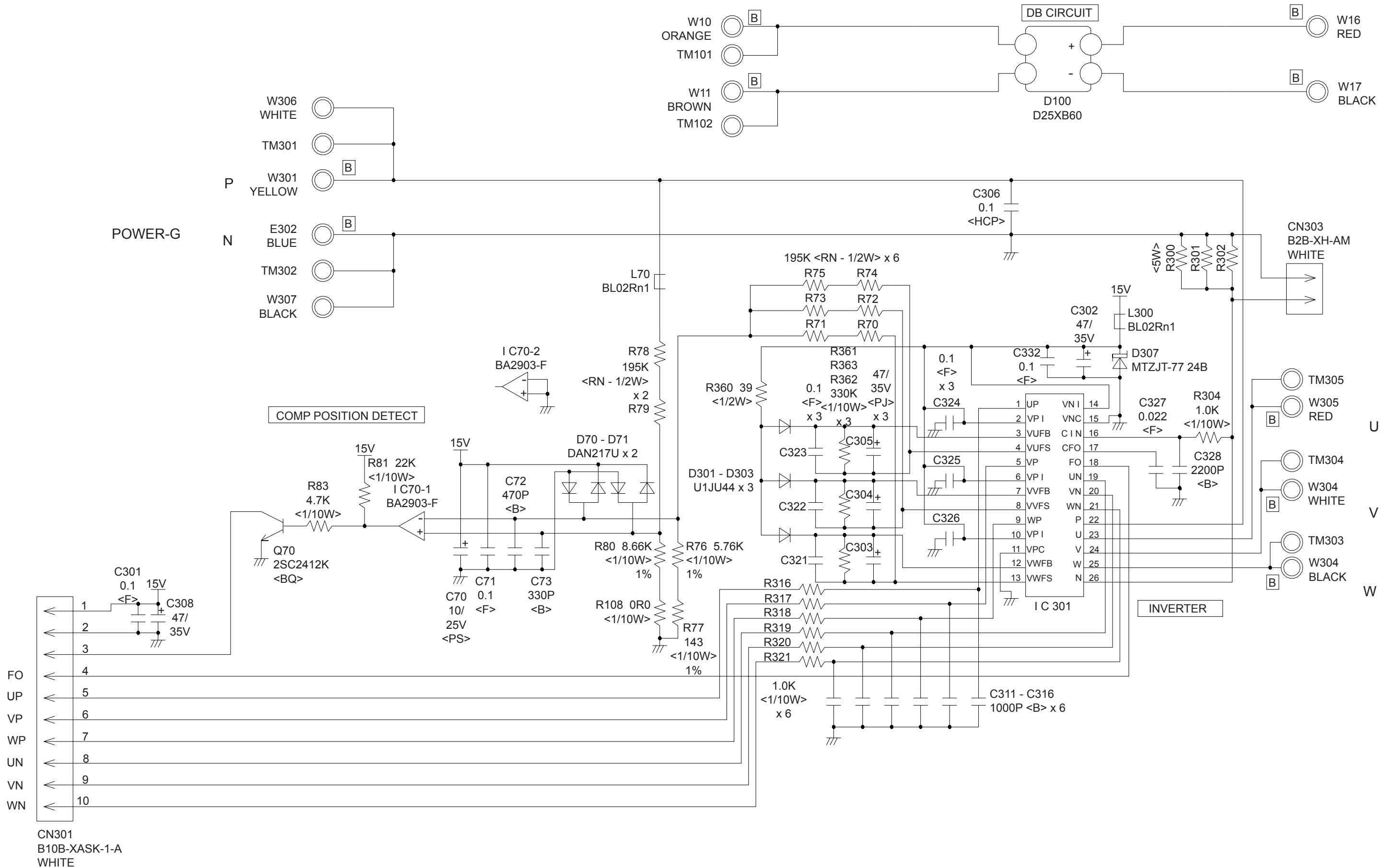




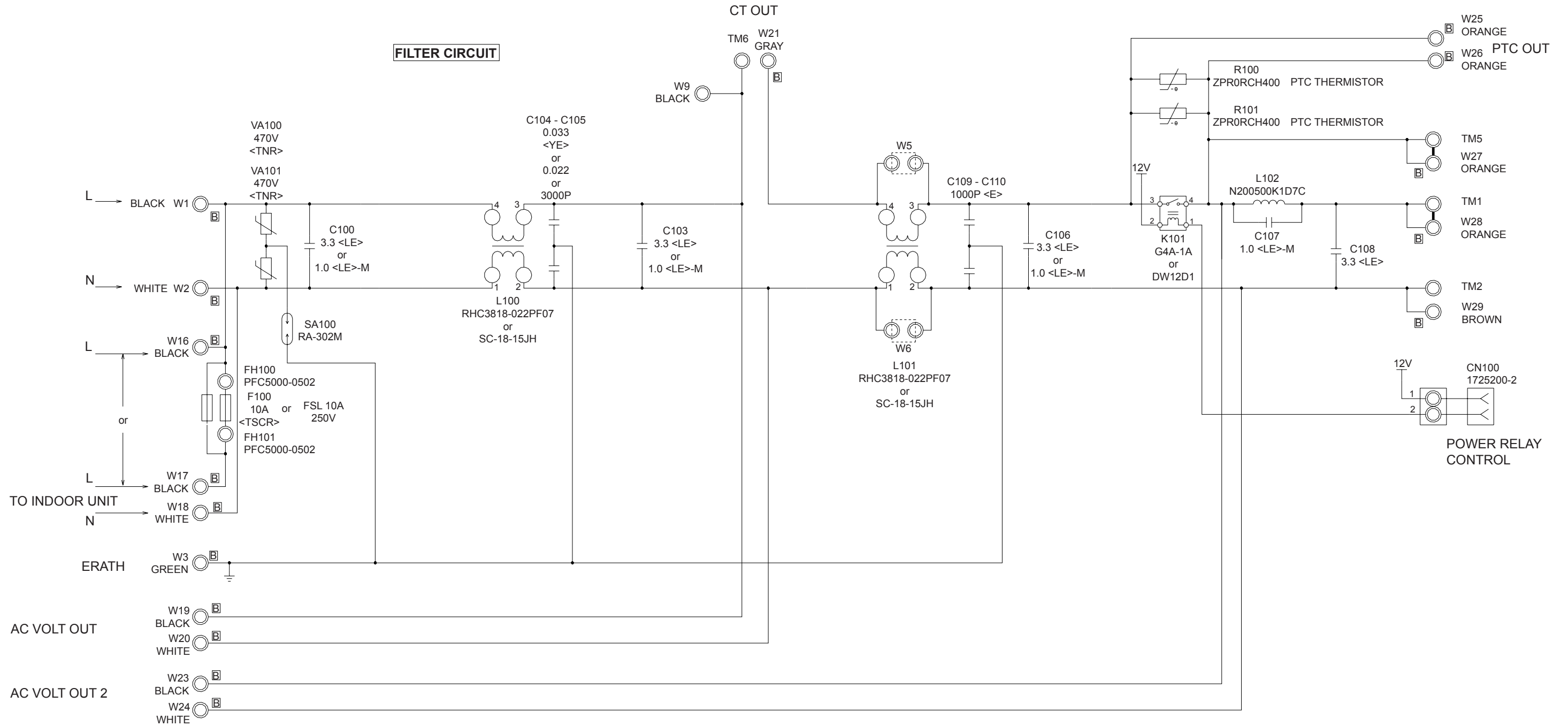
CONTROLLER PCB ASSY  
 AOY30LNAWL : K05CU-0601HUE-C1  
 AOY36LNAWL : K05CU-0600HUE-C1



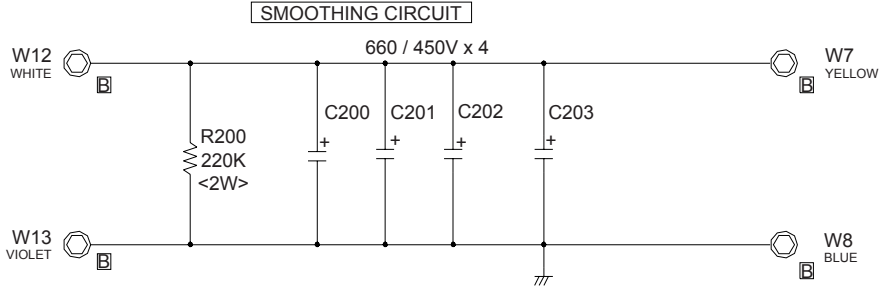
TRANSISTOR PCB ASSEMBLY ( I P M )  
K05CZ-0503HUE-TR0



POWER SUPPLY PCB ASSEMBLY  
K05CW-0501HUE-FL0



CAPACITOR PCB ASSY  
K05FB-0500HUE-P0

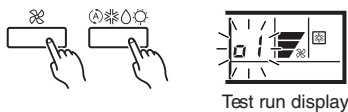


# ERROR CONTENTS (indoor unit)

**⚠ 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.



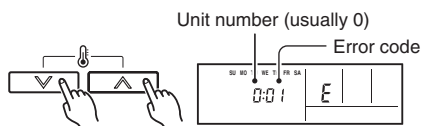
- (3) Press the start/stop button to stop the test run.

## [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.

## REMOTE CONTROLLER DISPLAY

- (1) Stop the air conditioner operation.
- (2) 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.



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

Error code	Error contents
<b>00</b>	Communication error (Indoor unit ↔ remote controller)
<b>01</b>	Communication error (Indoor unit ↔ outdoor unit)
<b>02</b>	Room temperature sensor open
<b>03</b>	Room temperature sensor short-circuited
<b>04</b>	Indoor heat exchanger temperature sensor open
<b>05</b>	Indoor heat exchanger temperature sensor short-circuited
<b>06</b>	Outdoor heat exchanger temperature sensor
<b>08</b>	Power source connection error
<b>09</b>	Float switch operated
<b>0A</b>	Outdoor temperature sensor
<b>0c</b>	Discharge pipe temperature sensor
<b>0E</b>	Outdoor high pressure abnormal
<b>11</b>	Model abnormal
<b>12</b>	Indoor fan abnormal
<b>13</b>	Outdoor signal abnormal
<b>14</b>	Outdoor EEPROM abnormal
<b>15</b>	Compressor temperature sensor
<b>16</b>	Pressure switch error
<b>17</b>	IPM error
<b>18</b>	CT error
<b>19</b>	Active filter module (AFM) error
<b>1A</b>	Compressor does not operate
<b>1b</b>	Outdoor unit fan error
<b>1c</b>	Communication error (inverter → multicontroller)
<b>1d</b>	2 way valve sensor error
<b>1E</b>	Expansion valve error
<b>1F</b>	Connection indoor unit error

# ERROR CONTENTS (outdoor unit)

## ⚠ CAUTION

Always turn on the power 12 hours prior to the start of the operation in order to ensure compressor protection

1. Make a TEST RUN in accordance with the installation instruction sheet for the indoor unit.

## 2. OUTDOOR UNIT LEDS

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

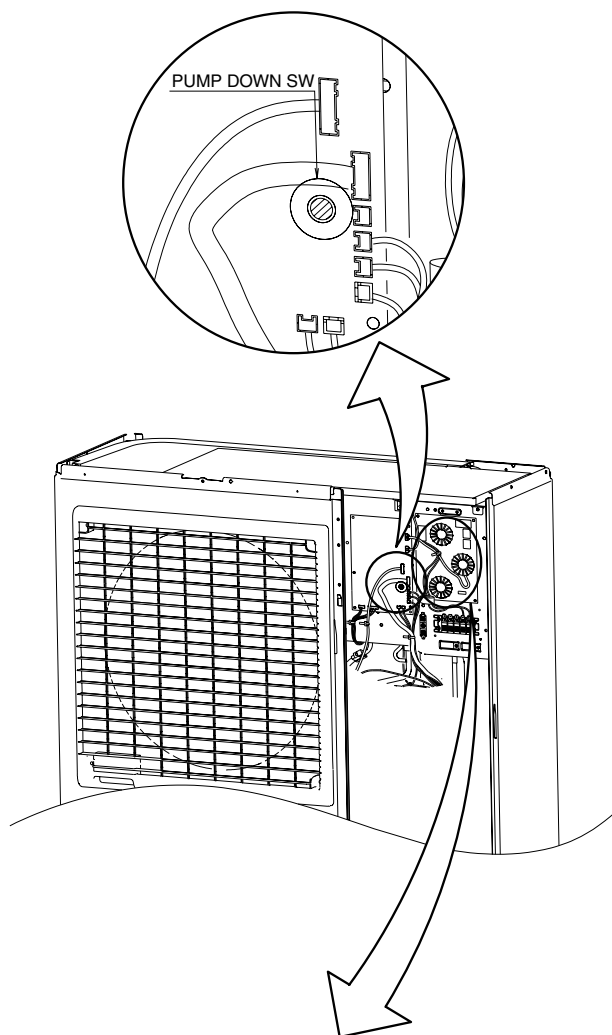
LED	ERROR CONTENTS
FLASH (0.1sec ON/0.1sec OFF)	Temperature sensor error
FLASH (0.5sec ON/0.5sec OFF)	IPM protection
FLASH (2sec ON/2sec OFF)	Current trans. error
FLASH (5sec ON/5sec OFF)	Outdoor fan error
FLASH (0.1sec ON/2sec OFF)	Compressor rotor position cannot be detected
FLASH (5sec ON/0.1sec OFF)	ACTPM error
Lighting	Overheat discharge temperature protection

## SPECIAL INSTALLATION SETTING

### 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 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 immediately.
- (3) Turn the power off.

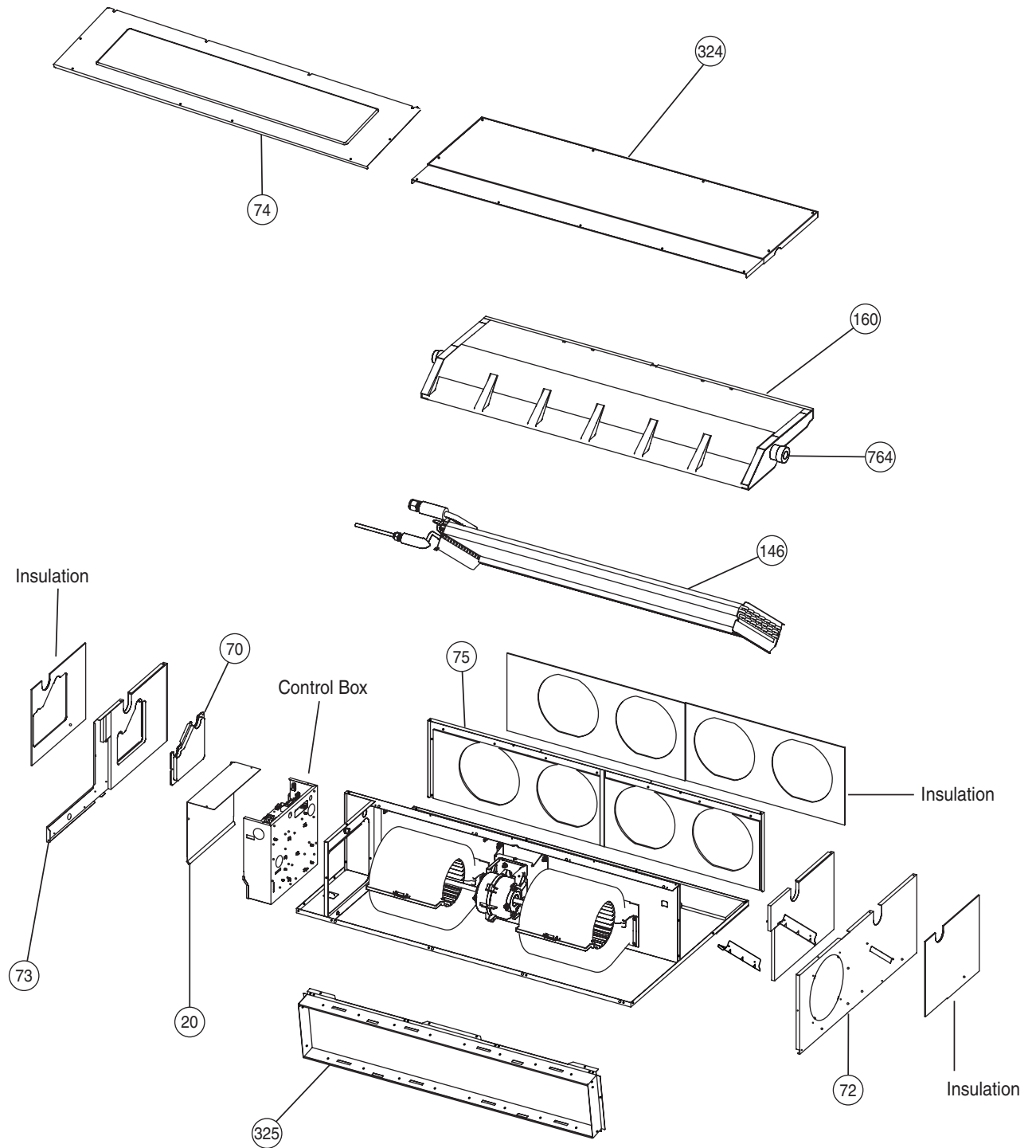


## ⚠ DANGER

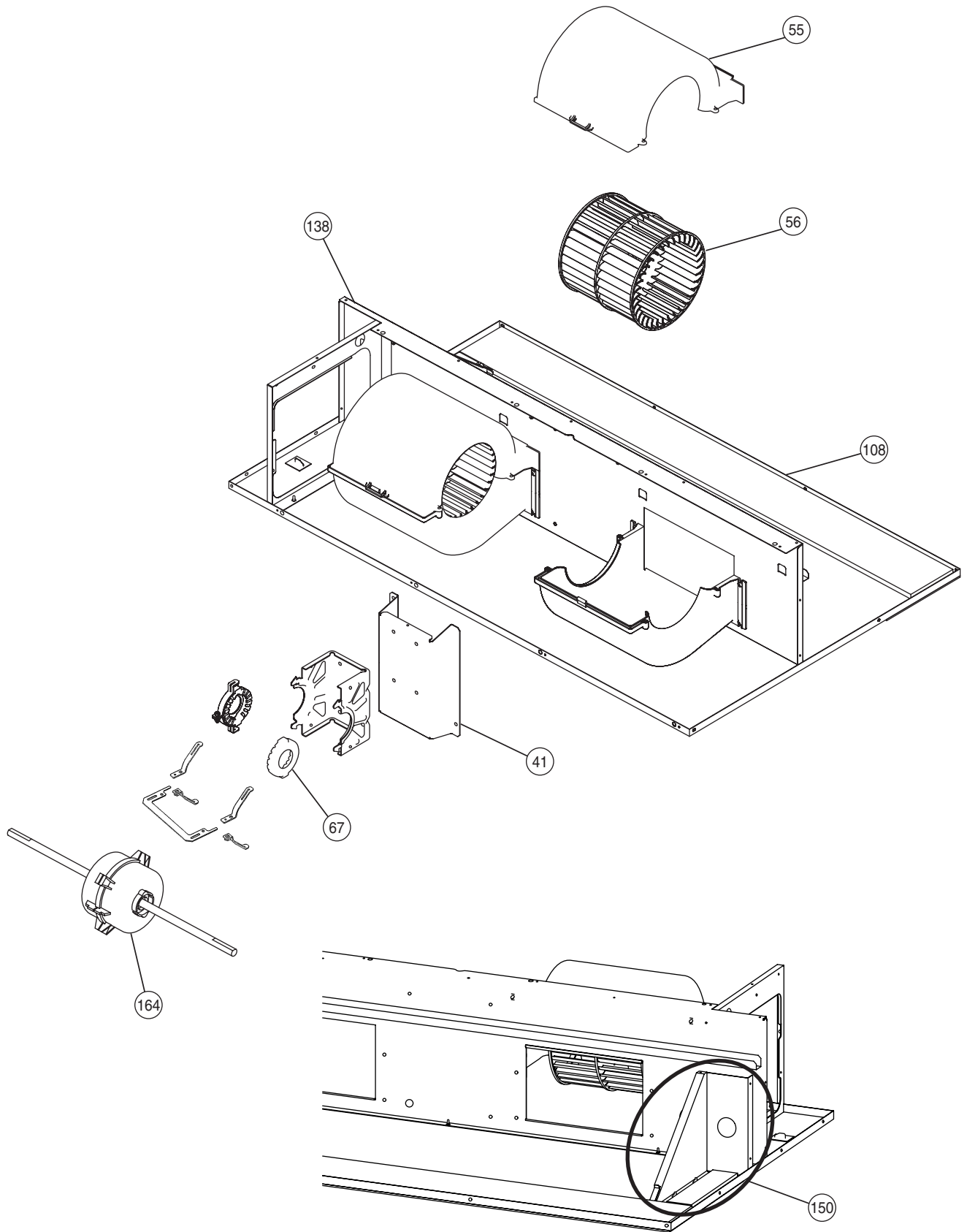
This part (Choke coil) generates high voltages. Never touch this part.

# DISASSEMBLY ILLUSTRATION

## INDOOR UNIT

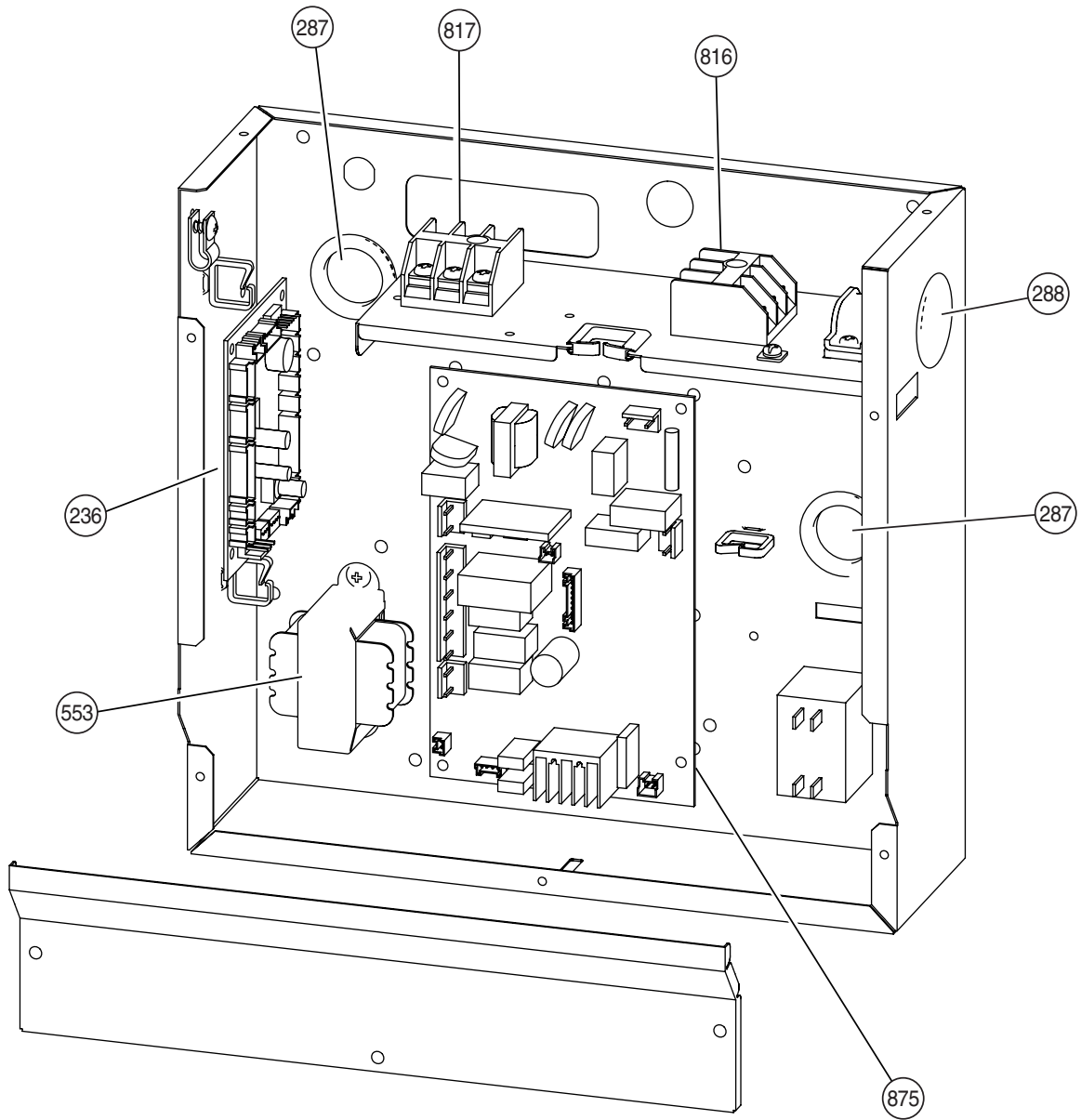


# INDOOR UNIT

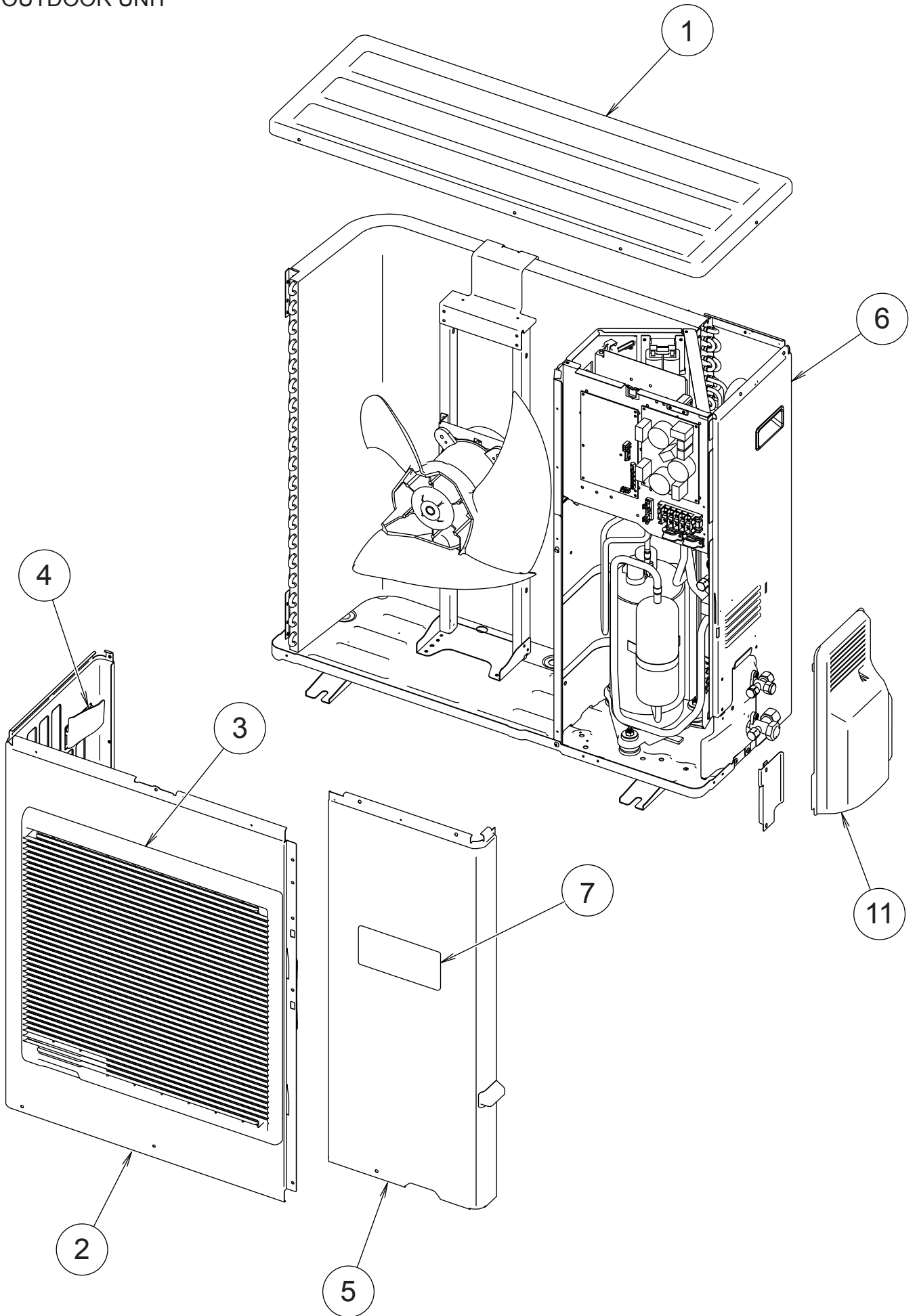




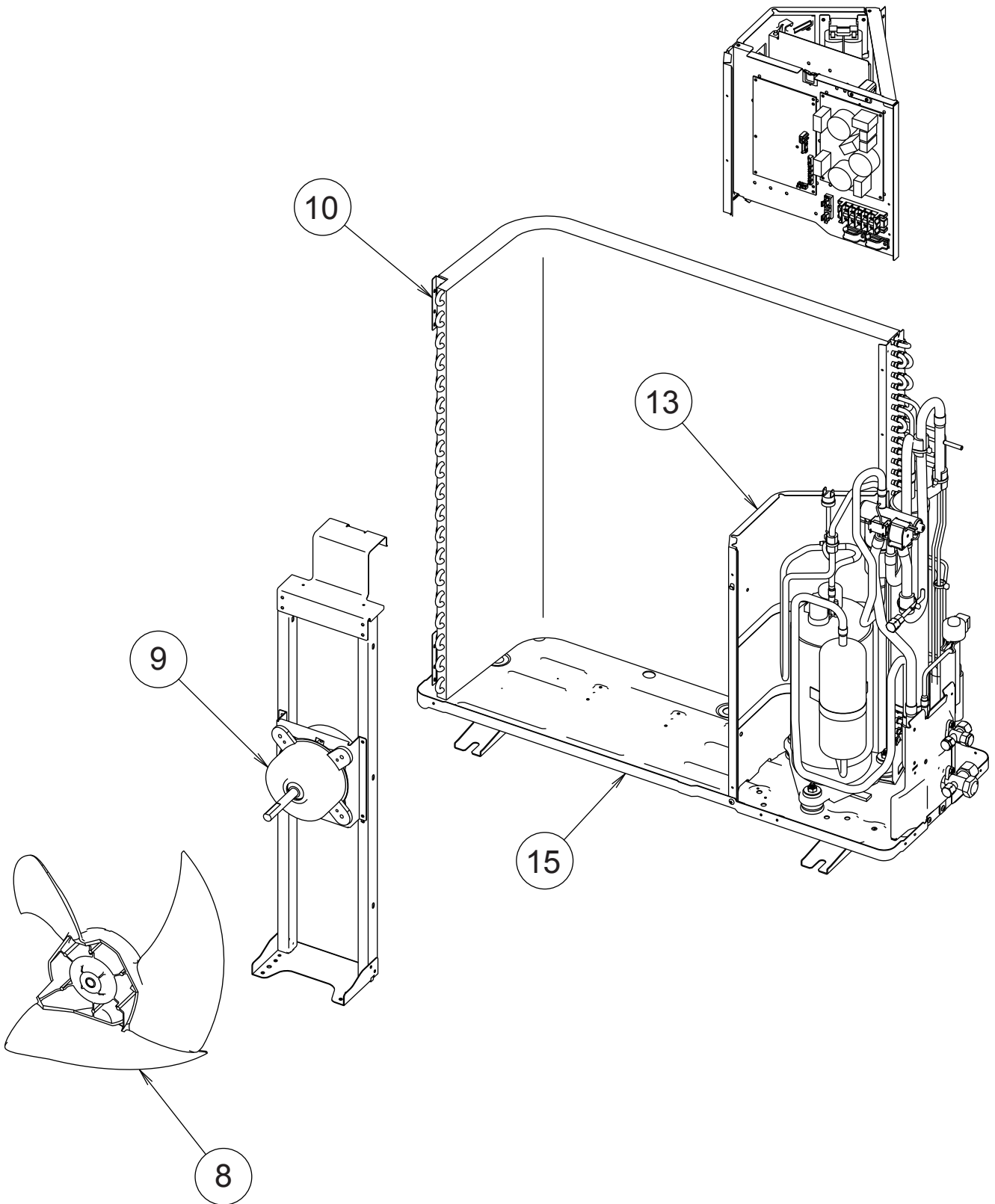
# INDOOR UNIT



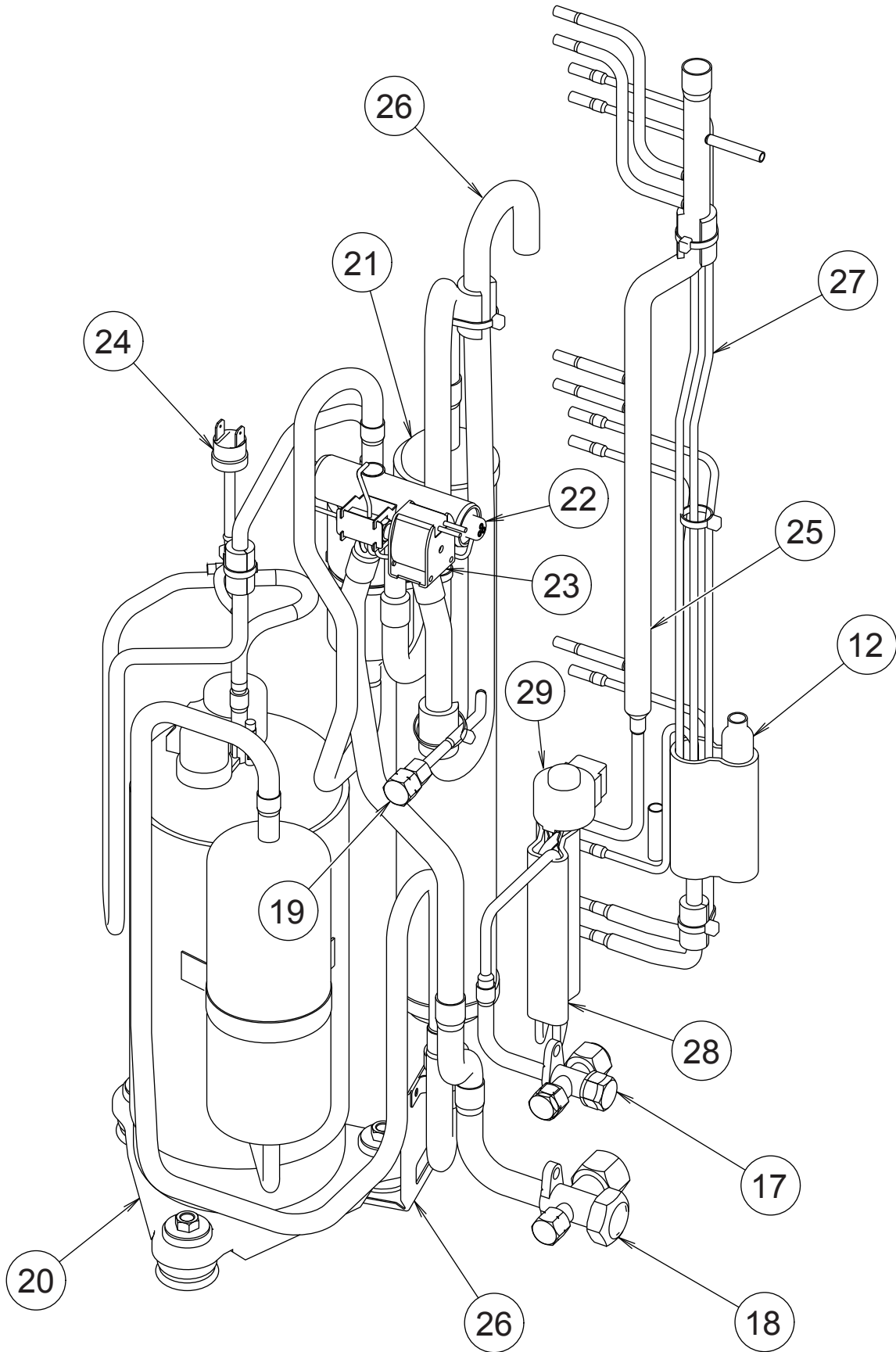
OUTDOOR UNIT



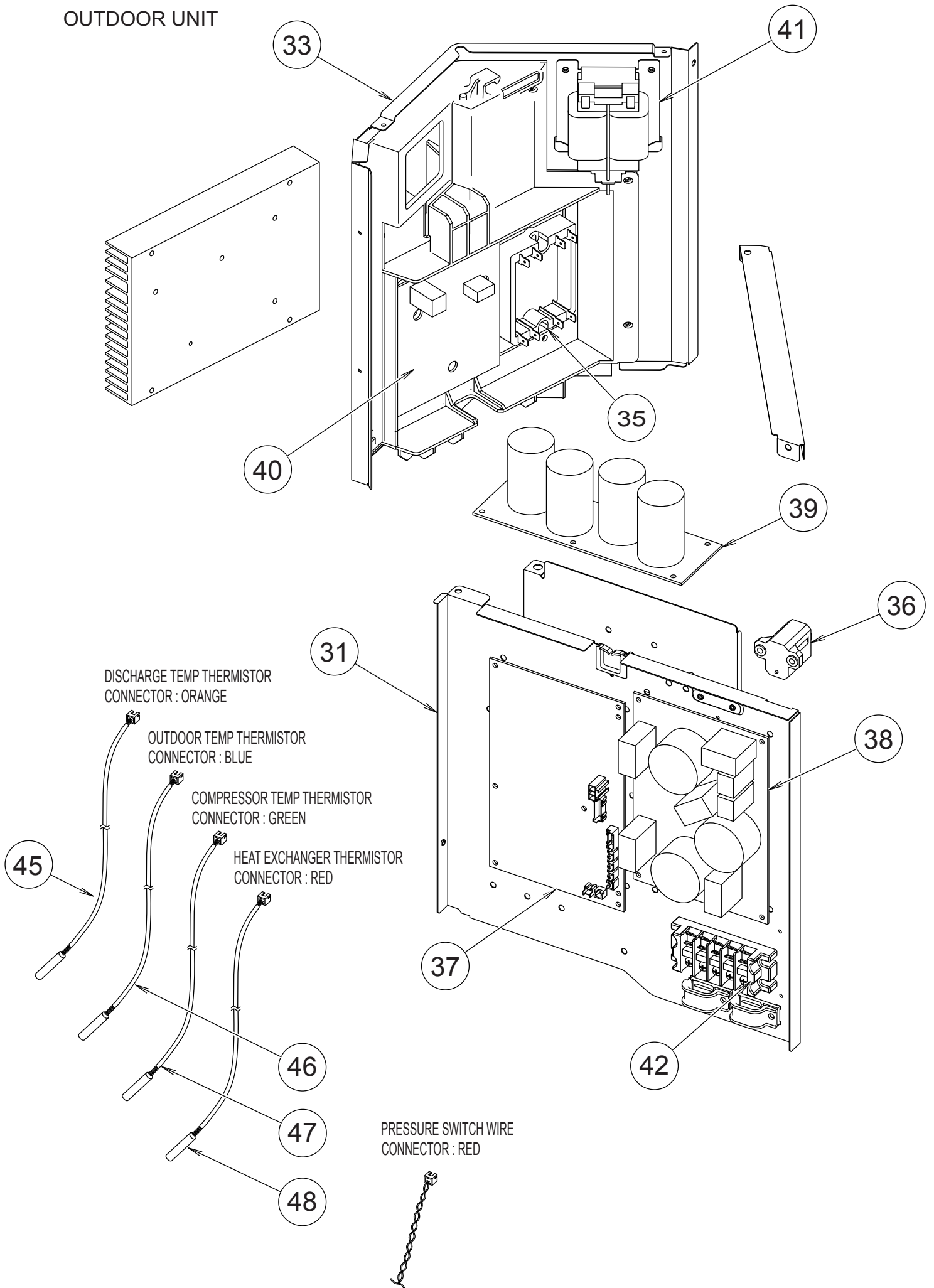
# OUTDOOR UNIT



OUTDOOR UNIT



OUTDOOR UNIT



# PARTS LIST

## INDOOR UNIT

Ref. No.	Description	Part No.		Ord. Q'ty
		ARY30LUAN	ARY36LUAN	
20	Control Cover-A Sub Assy	9374516018	9374516018	
41	Bracket Motor Assy	9374230013	9374230013	
55	Casing B	9374234011	9374234011	
56	Sirocco Fan Assy	9356531022	9356531022	
67	Rubber	313659068604	313659068604	
70	Bracket (pipe) Sub Assy	9374209019	9374209019	
72	Cabinet-L Sub Assy	9374509010	9374509010	
73	Cabinet-R Sub Assy	9374508013	9374508013	
74	Intake Cover Sub Assy	9374512010	9374512010	
75	Outlet Panel Sub Assy	9374510016	9374510016	
108	Base Sub Assy	9374504015	9374504015	
138	Separate Wall Assy	9374228010	9374228010	
146	Evaporator Assy	9374518012	9374518012	
150	Bracket (Eva. )-R	9374207015	9374207015	
160	Drain Pan Sub Assy	9374513017	9374513017	
164	Motor, Induction	9600830093	9600830093	
236	Controller PCB Assy	9705246133 (K03BZ-0501HSE-C1)	9705246140 (K03BZ-0502HSE-C1)	
287	Cap (Power)	9352173011	9352173011	
288	One Touch Bush	9374407019	9374407019	
324	Main Panel Sub Assy	9374511013	9374511013	
325	Intake Frame Assy	9374216017	9374216017	
553	Transformer (Power)	9704129017	9704129017	
764	Drain Cap	9356541007	9356541007	
816	Terminal-3P	9703345012	9703345012	
817	Terminal-3P	9306489045	9306489045	
875	Power Supply PCB Assy	9705668065	9705668065	
----	Thermistor Spring-A	313728262708	313728262708	
----	Room Temperature Thermistor	9703299025	9703299025	
----	Pipe Temperature Thermistor	9703297021	9703297021	
----	Remote Control Unit Assy	9372266014	9372266014	
----	Motor Band-A Assy	9374647019	9374647019	
----	Bracket (Eva. )-L	9374208012	9374208012	

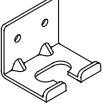




OUTDOOR UNIT

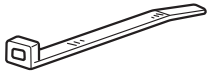


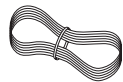
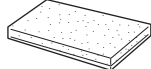
Ref. No.	Description	Part No.		Ord. Q'ty
		AOY30LNAWL	AOY36LNAWL	
1	Top Panel Sub Assy	9374417032	9374417032	
2	Front Panel	9374094066	9374094066	
3	Fan Guard	9374330010	9374330010	
4	Grip Side	9374173013	9374173013	
5	Service Panel Sub Assy	9374415052	9374415052	
6	Right Panel Sub Assy	9374416127	9374416127	
7	Emblem Rear	9351355005	9351355005	
8	Propeller Fan Assy	9366378020	9366378020	
9	Motor, DC Brushless	9601882015	9601882015	
10	Condenser A Assy	9374433056	9374433056	
11	Valve Cover	9374174010	9374174010	
12	Strainer Assy	9372524015	9372524015	
13	Separate Wall	9374413133	9374413133	
15	Base Assy	9374166138	9374166138	
17	3-Way Valve Assy	9372205044	9372205044	
18	3-Way Valve Assy	9372205075	9372205075	
19	Check Joint Assy	9372802038	9372802038	
20	Compressor Assy	9372558126	9372558126	
21	Accumulator	9385005006	9385005006	
22	4-Way Valve	9900164010	9900164010	
23	Solenoid	9900165079	9900165079	
24	Pressure Switch	9900186012	9900186012	
25	Inlet Pipe (Cond) A Assy	9373461067	9373461067	
26	Accumulator Support Assy	313986353804	313986353804	
27	Outlet Pipe (Cond) A Assy	9374266104	9374266104	
28	Expansion Valve Assy	9370947144	9370947144	
29	Coil (Expansion Valve)	9900057039	9900057039	
31	PCB Case Assy	9375316013	9375316013	
33	Inverter Case	9375314019	9375314019	
35	ACTPM	9703457012	9703457012	
36	Thermistor	9704265012	9704265012	
37	Controller PCB Assy	9707121179	9707121162	
38	Power Supply PCB Assy	9707128062	9707128062	
39	Capacitor PCB Assy	9707257014	9707257014	
40	TR PCB Assy (IPM)	9707125085	9707125085	
41	Choke Coil	9900366018	9900366018	
42	Terminal	9900203023	9900203023	
45	Discharge Temp Thermistor	9704219114	9704219114	
46	Thermistor (Outdoor Temp)	9900378028	9900378028	
47	Compressor Temp Thermistor	9900156022	9900156022	
48	Heat Exchanger Thermistor	9900374013	9900374013	

# STANDARD ACCESSORIES

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

## INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application
Hanger 	4	For suspending the indoor unit from ceiling
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 (large pipe)
Coupler heat insulation (small) 	1	For indoor side pipe joint (small pipe)

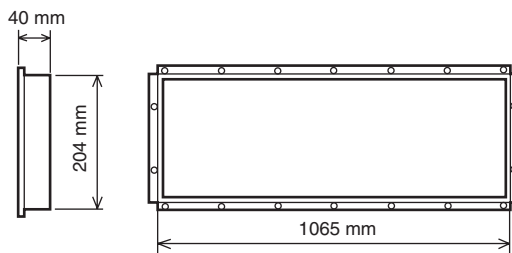
Name and Shape	Q'ty	Application
Binder 	1 (large)	For fixing the drain hose
	1 (small)	For fixing the remote controller cord
Remote controller 	1	
Tapping screw (flush heads) 	2	For installing the remote controller
Remote controller cord 	1	For connecting the remote controller
Drain hose insulation 	1	Insulates the drain hose and vinyl hose

## OPTIONAL PARTS

When connecting the square duct and round duct, use the optional square flange or round flange and flexible duct.

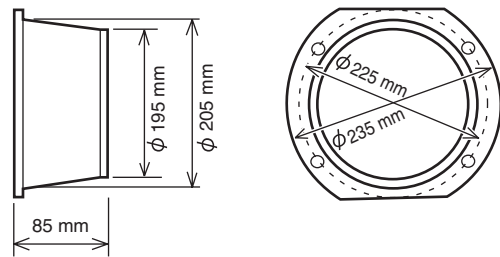
### Square flange

Model name : UTD-SF045T (P/N 9098180007)



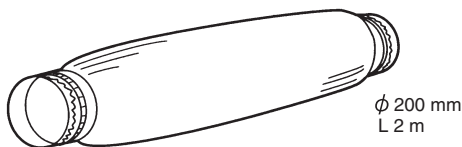
### Round flange

Model name : UTD-RF204 (P/N 9093160004)



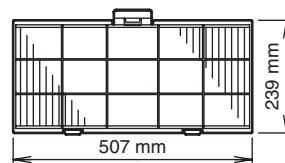
### Flexible duct

Model name : UTD-RD202 (P/N 9074165004)



### Long-life filter

Model name : UTD-LF25NA (P/N9079892004)



### Simple remote controller

Model name : UTB-YPB (P/N9077582006)

### Remote sensor

Model name : UTD-RS100 (P/N9072619004)



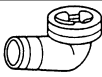


**⚠ WARNING**

- ① For the air conditioner to operate satisfactorily, install it as outlined in this installation instruction sheet.
- ② Connect the indoor unit and outdoor unit with the room air conditioner piping and cords available standards parts. This installation instruction sheet describes the correct connections using the installation set available from our standard parts.
- ③ Installation work must be performed in accordance with national wiring standards by authorized personnel only.
- ④ Also, do not use an extension cord.
- ⑤ Do not turn on the power until all installation work is complete.
- ⑥ Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation.
- ⑦ There is not extra refrigerant in the outdoor unit for air purging.
- ⑧ Use a vacuum pump for R410A exclusively.
- ⑨ Using the same vacuum pump for different refrigerants may damage the vacuum pump or the unit.
- ⑩ Use a clean gauge manifold and charging hose for R410A exclusively.
- ⑪ If refrigerant leaks while work is being carried out, ventilate the area. If the refrigerant comes in contact with a flame, it produces a toxic gas.

- Be careful not to scratch the air conditioner when handling it.
- After installation, explain correct operation to the customer, using the operating manual.
- Let the customer keep this installation instruction sheet because it is used when the air conditioner is serviced or moved.

## STANDARD PARTS

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

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

## CONNECTION PIPE REQUIREMENT

**⚠ CAUTION**

The maximum lengths of this product are shown in the following table. If the units are further apart than this, correct operation can not be guaranteed.

Model Type	Diameter		Pipe length		Maximum height (between indoor and outdoor)
	Liquid	Gas	MAX.	MIN.	
30,000 BTU/h class	9.52 mm (3/8 in.)	15.88 mm (5/8 in.)	50 m	5 m	30 m
36,000 BTU/h class					
45,000 BTU/h class					
54,000 BTU/h class			70 m		

- Use pipe with water-resistant heat insulation.

**⚠ CAUTION**

Install heat insulation around both the gas and liquid pipes. Failure to do so may cause water leaks.  
Use heat insulation with heat resistance above 120 °C. (Reverse cycle model only)  
In addition, if the humidity level at the installation location of the refrigerant piping is expected to exceed 70%, install heat insulation around the refrigerant piping. If the expected humidity level is 70-80%, use heat insulation that is 15 mm or thicker and if the expected humidity exceeds 80%, use heat insulation that is 20 mm or thicker.  
If heat insulation is used that is not as thick as specified, condensation may form on the surface of the insulation.  
In addition, use heat insulation with heat conductivity of 0.045 W/(mK) or less (at 20 °C).

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