

# SPLIT TYPE AIR CONDITIONER (50Hz) DUCT type

# SERVICE MANUAL



## Models

Indoor unit

Outdoor unit

ARY60FUAK

AOY60FMAYT

ARY60UUAK

AOY60UMAYT

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# SPECIFICATIONS

TYPE		Cooling	Colling & Heating
INDOOR UNIT		ARY60FUAK	ARY60UUAK
OUTDOOR UNIT		AOY60FMAYT	AOY60UMAYT
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	( $\text{L/hr}$ )	4.0	
AIR CIRCULATION - Hi	( $\text{m}^3/\text{hr}$ )	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)

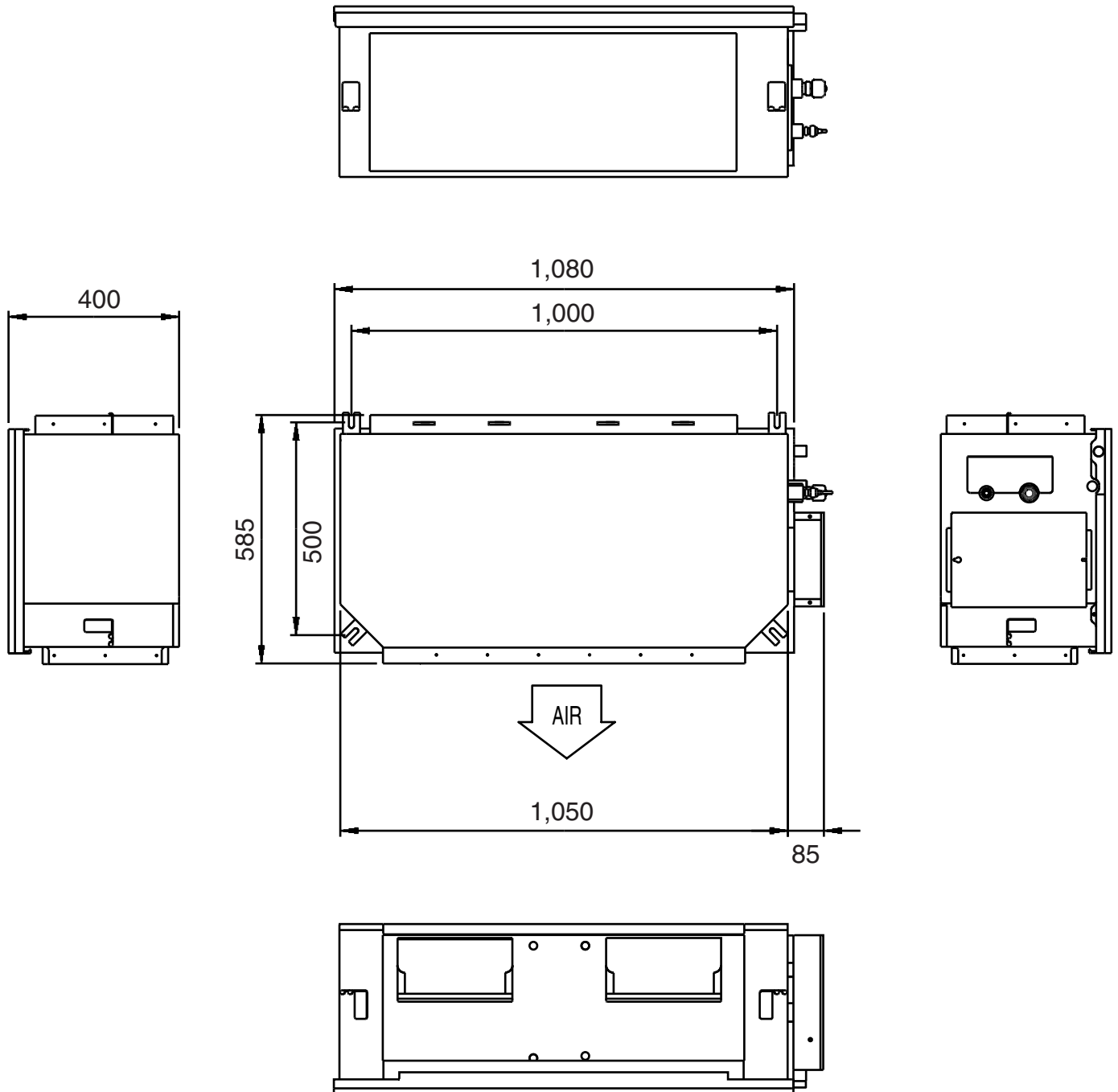
FULL CHARGE AMOUNT	PIPE LENGTH	20.0 m	3,500 g	3,700 g
		30.0 m	3,800 g	4,100 g
		40.0 m	4,100 g	4,500 g
		50.0 m	4,400 g	4,900 g
ADDITIONAL CHARGE			30 g / m	40 g / m
CHARGELESS			20 m	20 m
MAX PIPE LENGTH			50 m	50 m
MAX ELEVATION			30 m	30 m

# OUTLINE AND DIMENSIONS

(Unit : mm)

## INDOOR UNIT

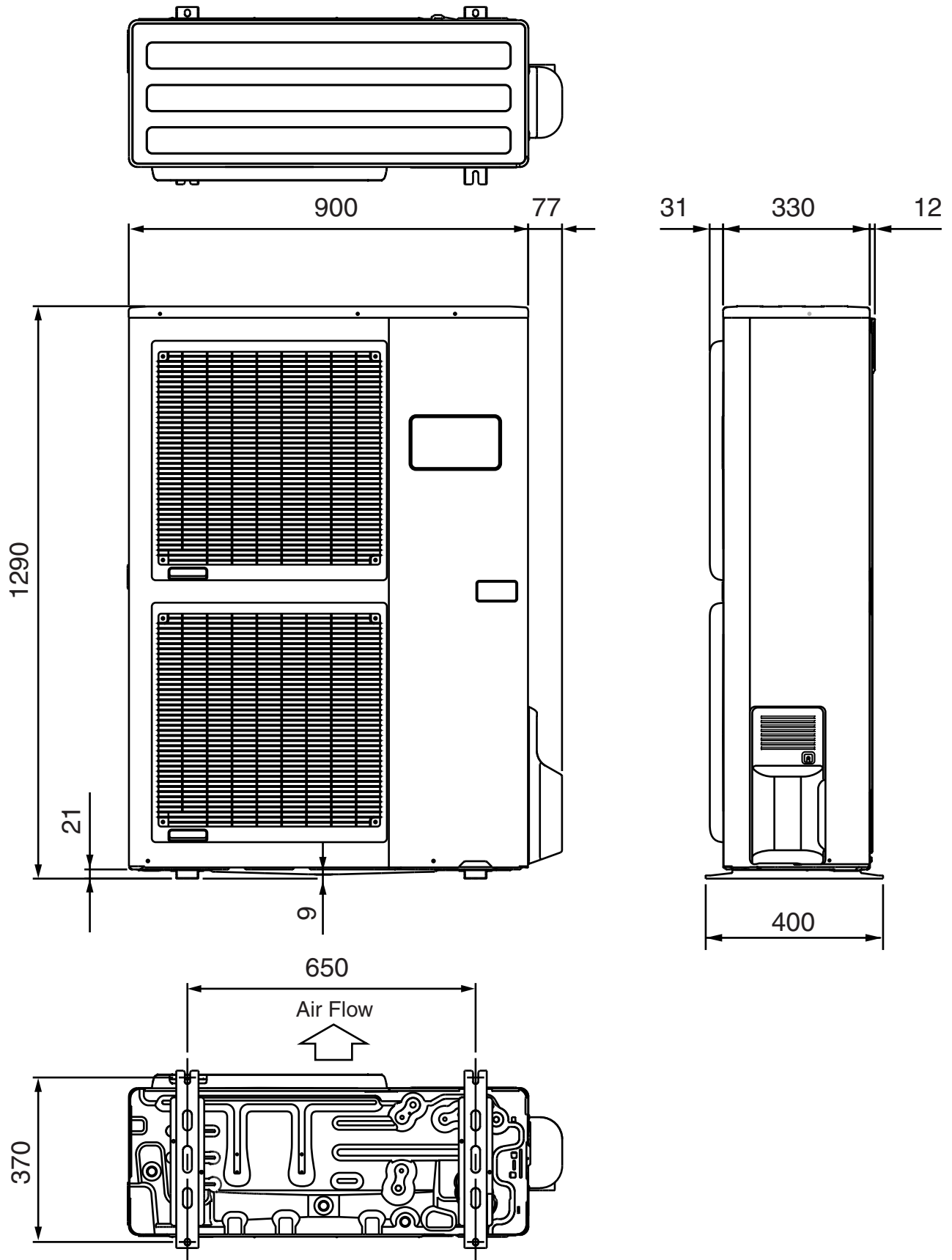
Models : ARY60FUAK  
ARY60UUAKE



**OUTDOOR UNIT (Unit : mm)**

**Models : AOY60FMAYT  
AOY60UMAYT**

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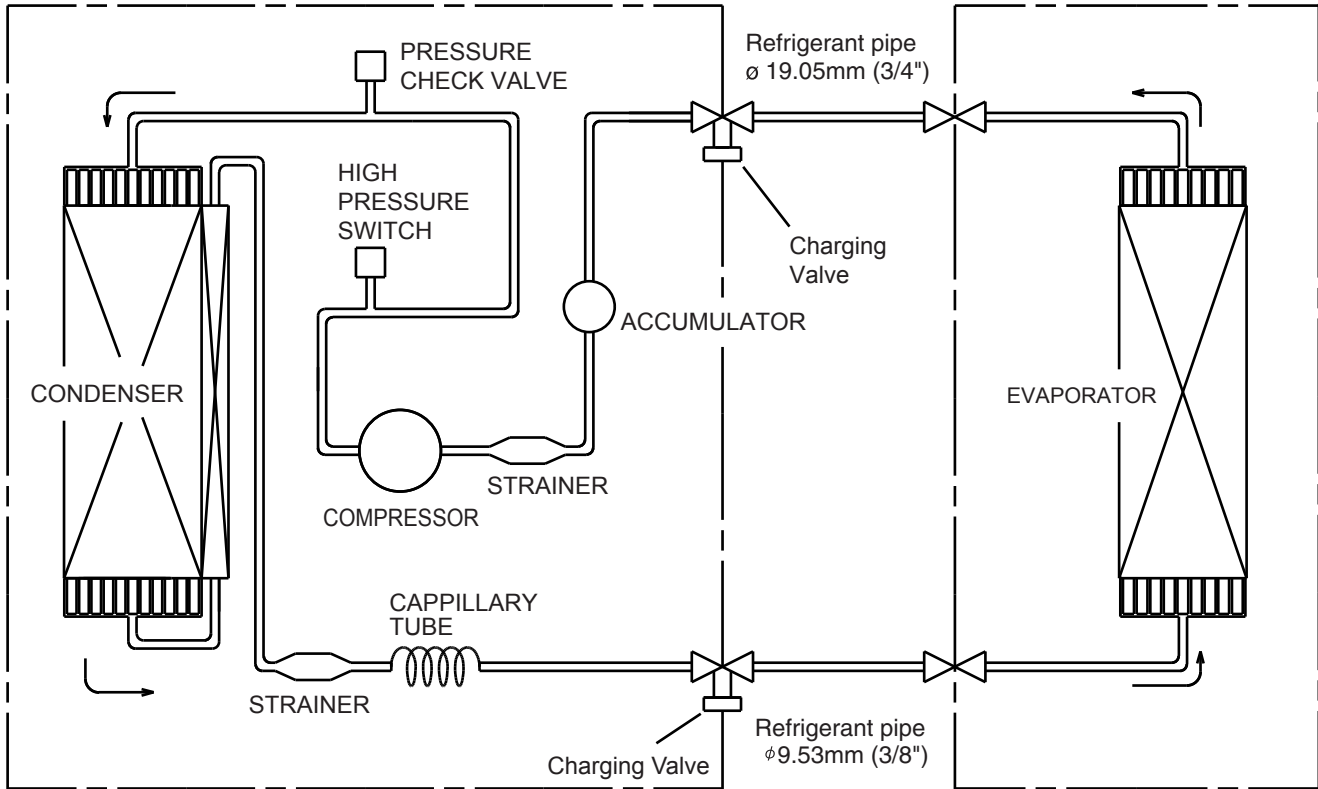


# REFRIGERANT SYSTEM DIAGRAM

Model : ARY60FUAK / AOY60FMAYT

## OUTDOOR UNIT

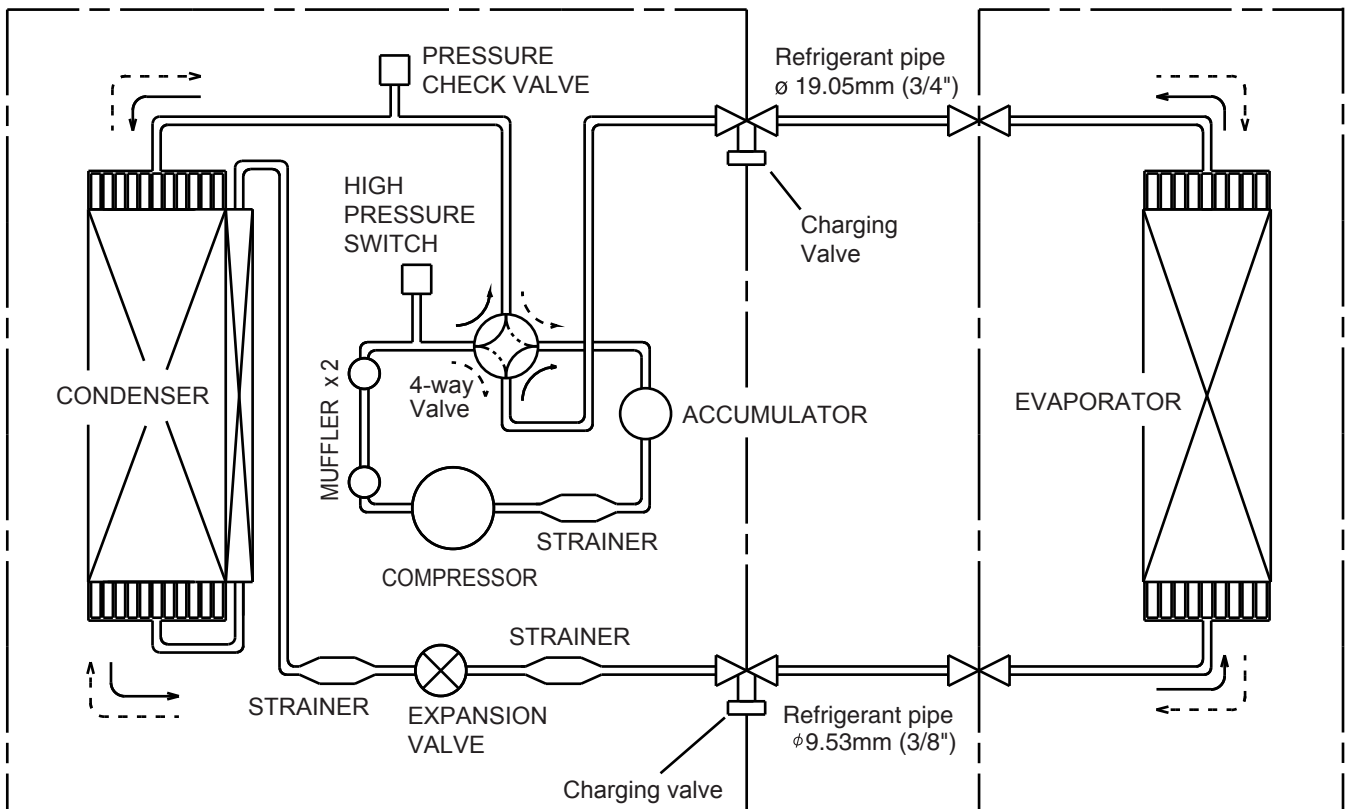
## INDOOR UNIT



Model : ARY60UUAK / AOY60UMAYT

## OUTDOOR UNIT

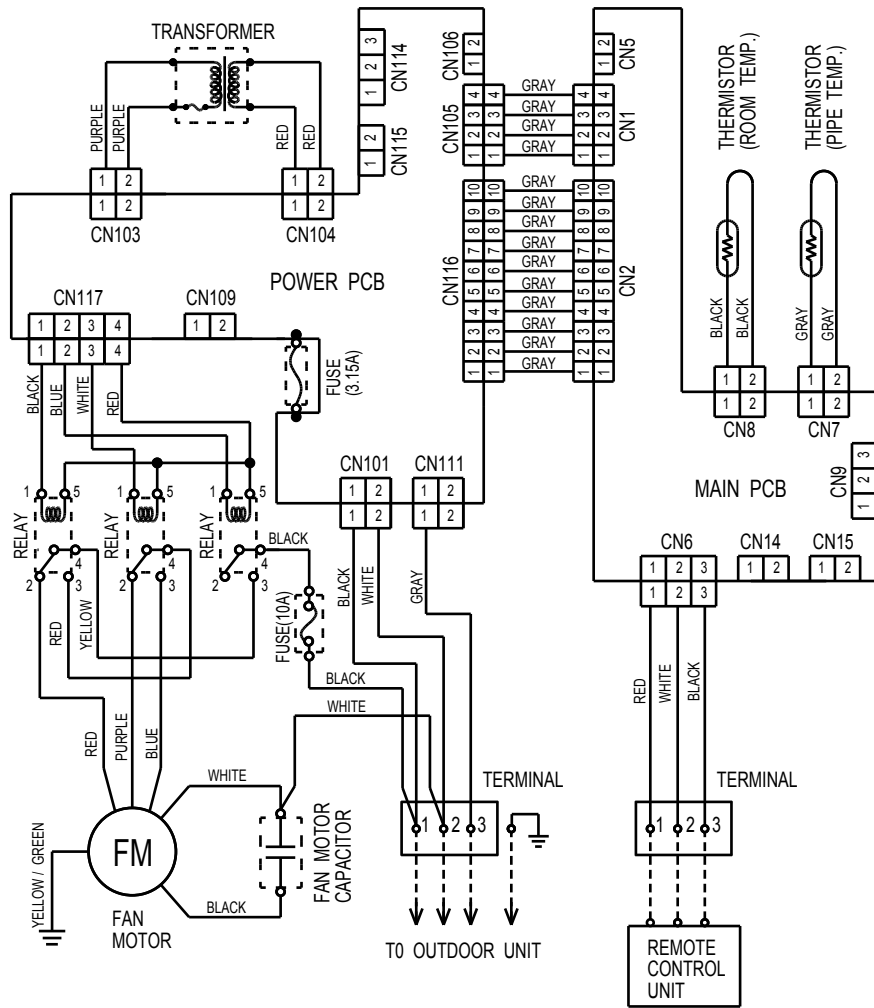
## INDOOR UNIT



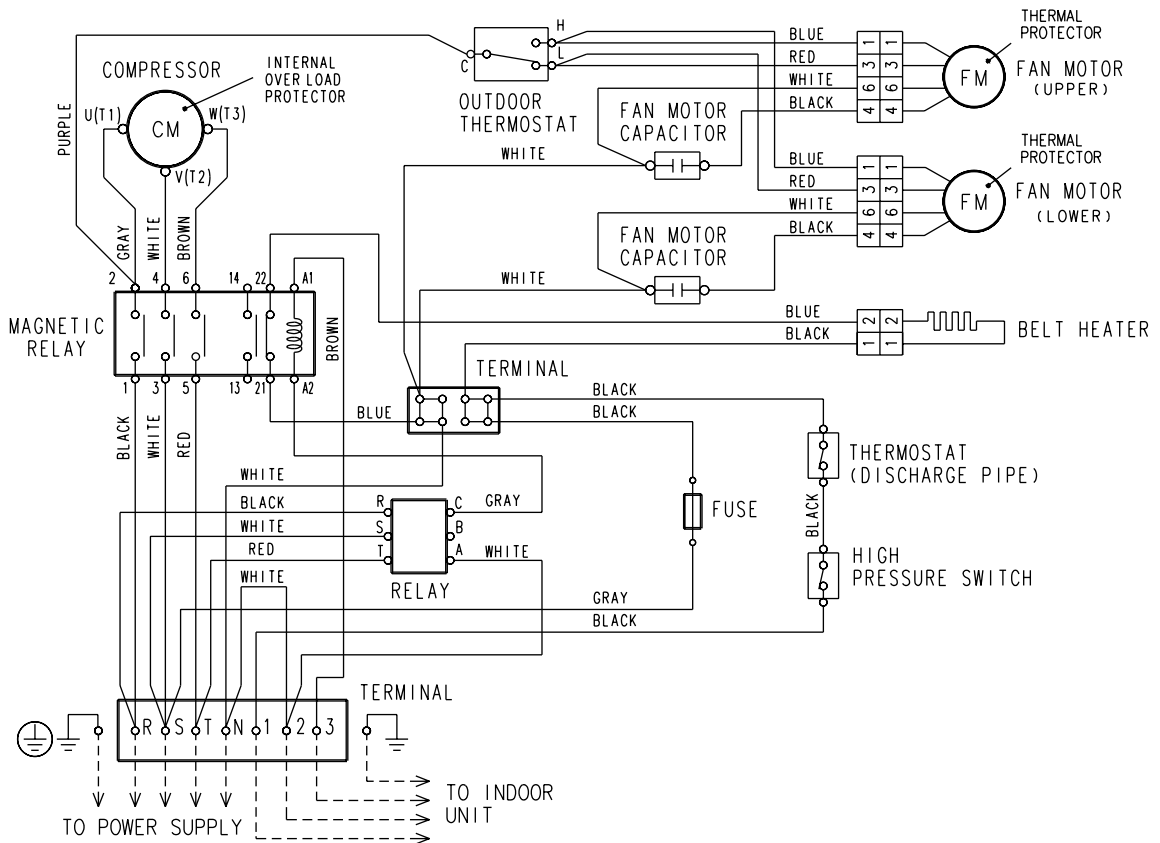
→ : COOL  
 - - -> : HEAT

# CIRCUIT DIAGRAM

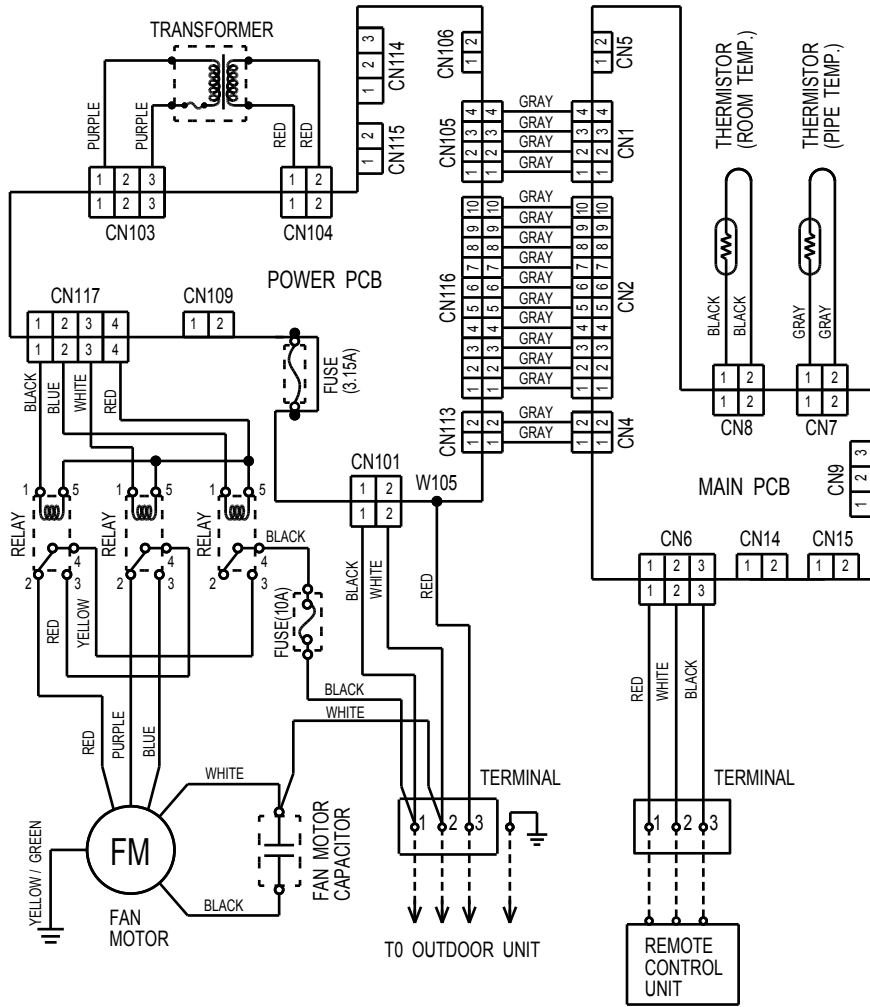
## Model : ARY60FUAK



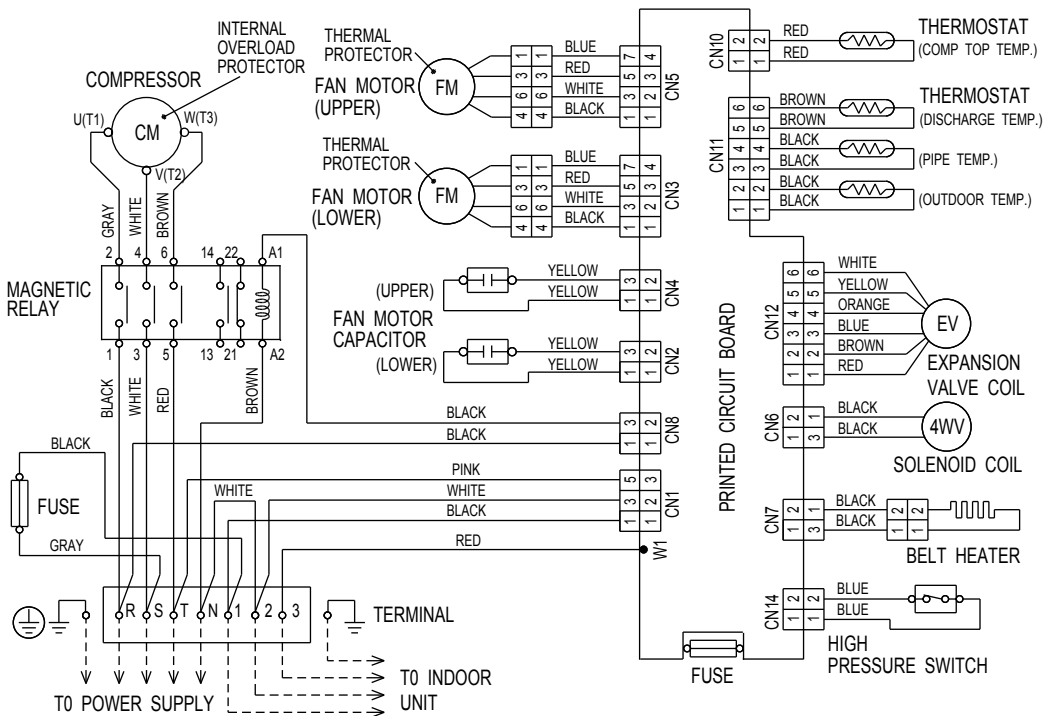
## Model : AOY60FMAYT



## Model : ARY60UUAJ



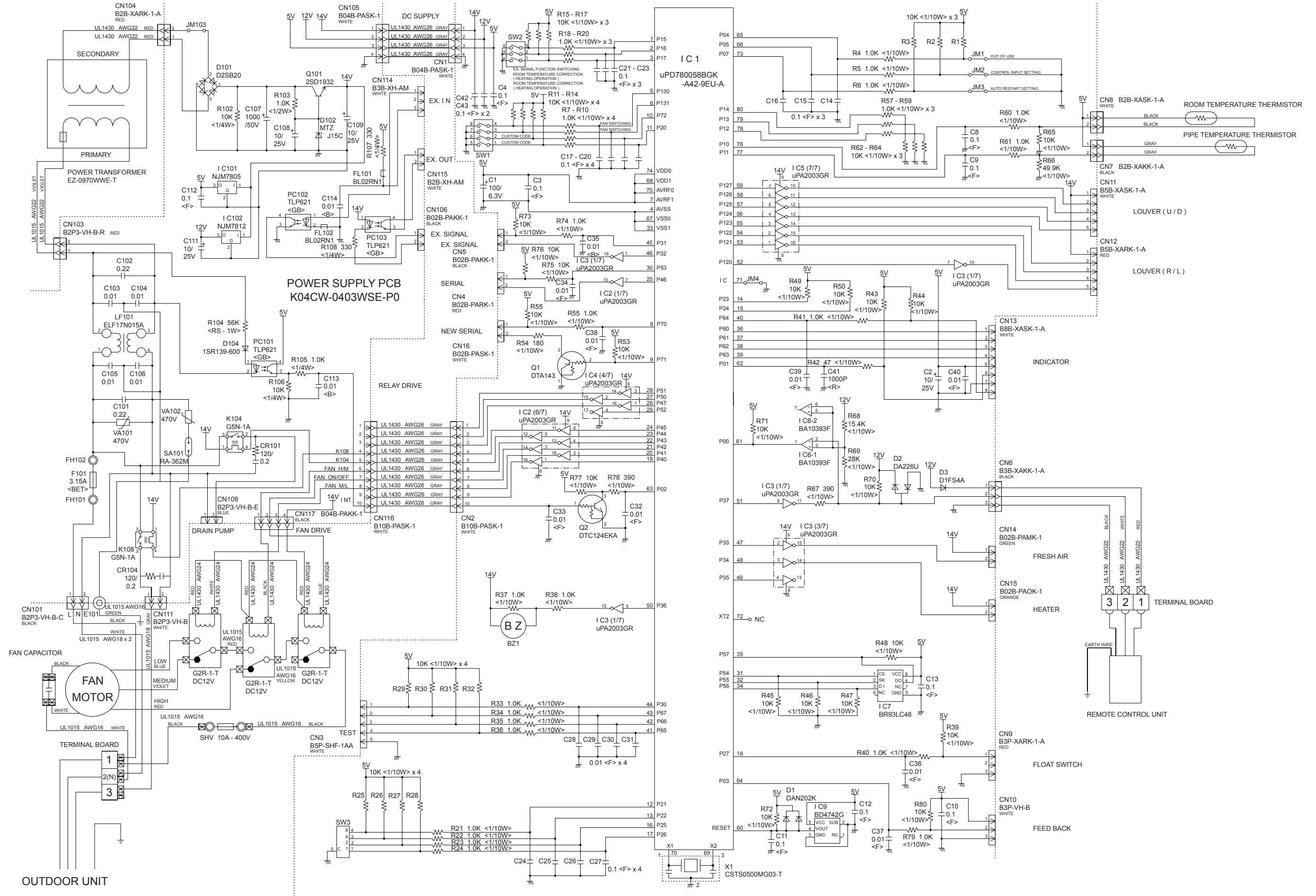
## Model : AOY60UMAYT



# INDOOR PCB CIRCUIT DIAGRAM

Model : ARY60FUAK

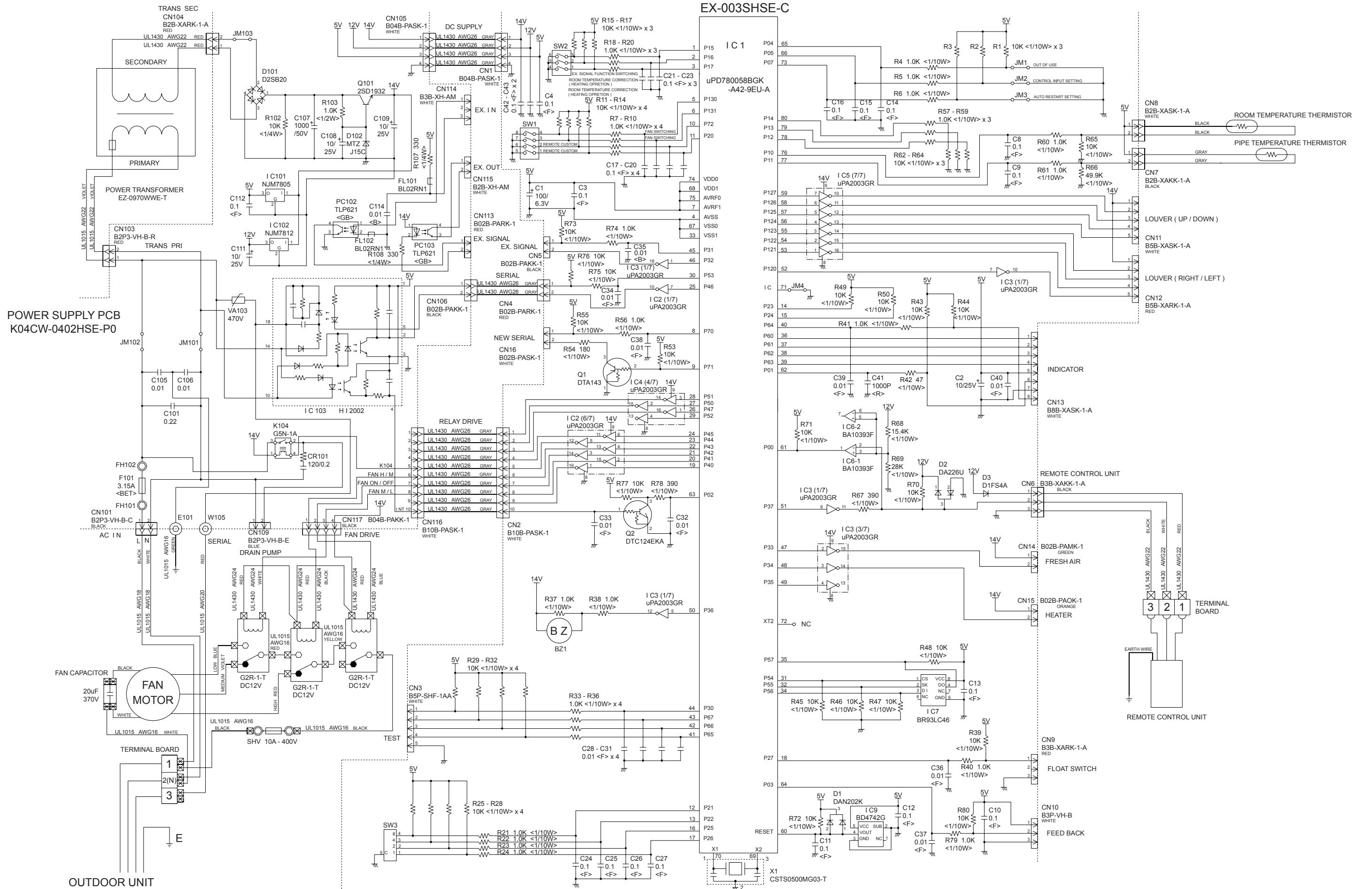
## CONTROLLER PCB ASSEMBLY ( MAIN PCB ) EZ-00304WSE-C





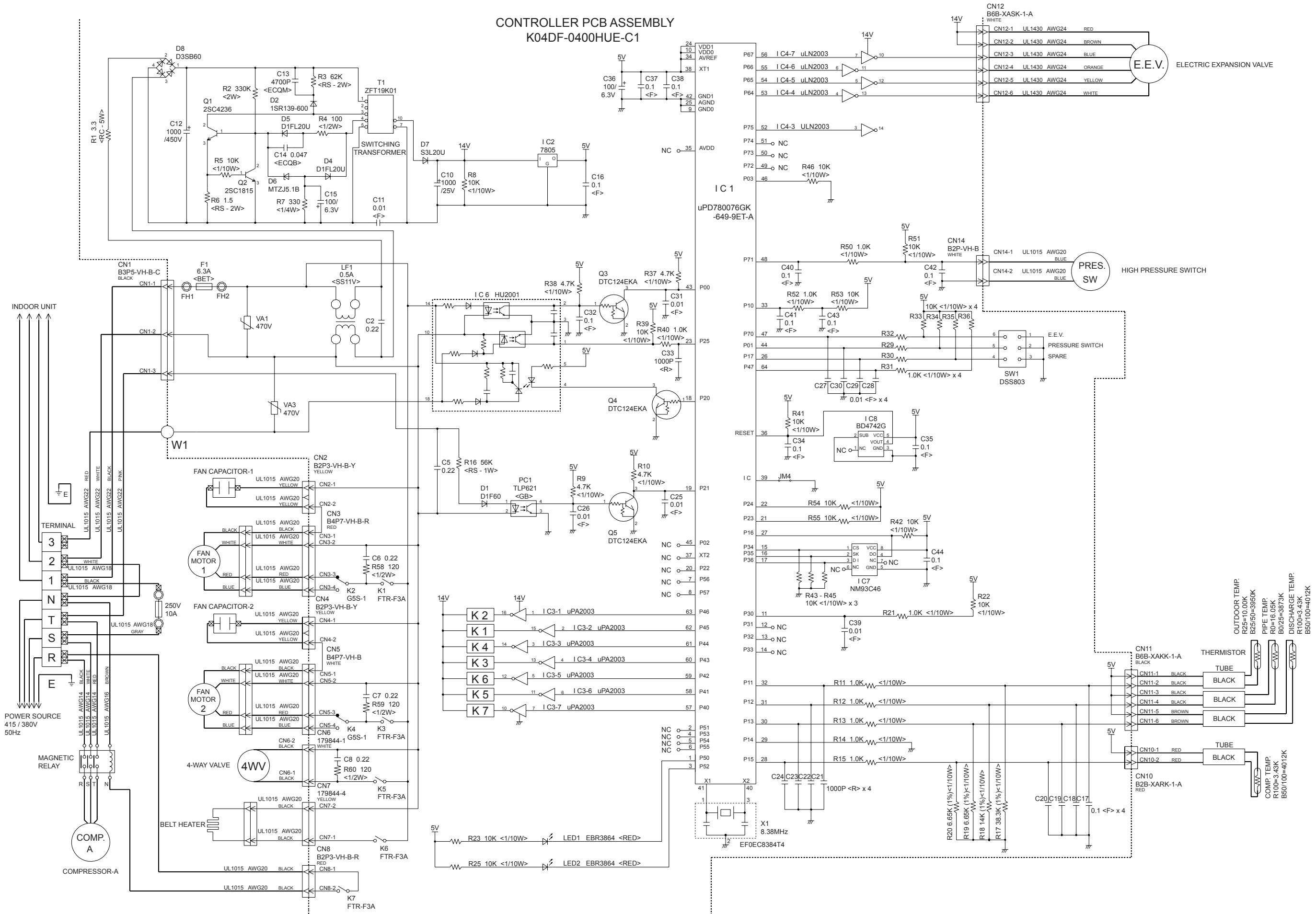
CONTROLLER PCB ASSEMBLY ( MAIN PCB )

EX-003SHSE-C



# OUTDOOR PCB CIRCUIT DIAGRAM

Model : AOY60UMAYT

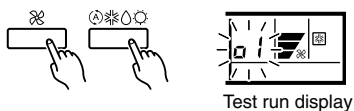


# ERROR DISPLAY

## 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.



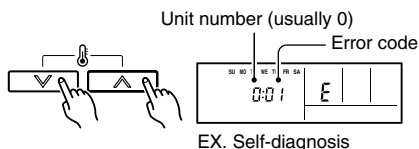
- Press the start/stop button to stop the test run.

## [SELF-DIAGNOSIS]

When the error indication  $\text{OE:EE}\text{O}$  is displayed, follow the following items to perform the self-diagnosis.  $\text{OE:EE}\text{O}$  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
<b>00</b>	Communication error (indoor unit $\leftrightarrow$ remote controller)
<b>01</b>	Communication error (indoor unit $\leftrightarrow$ 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 open
<b>07</b>	Outdoor heat exchanger temperature sensor short-circuited
<b>08</b>	Power source connection error
<b>09</b>	Float switch operated
<b>0A</b>	Outdoor temperature sensor open
<b>0b</b>	Outdoor temperature sensor short-circuited

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

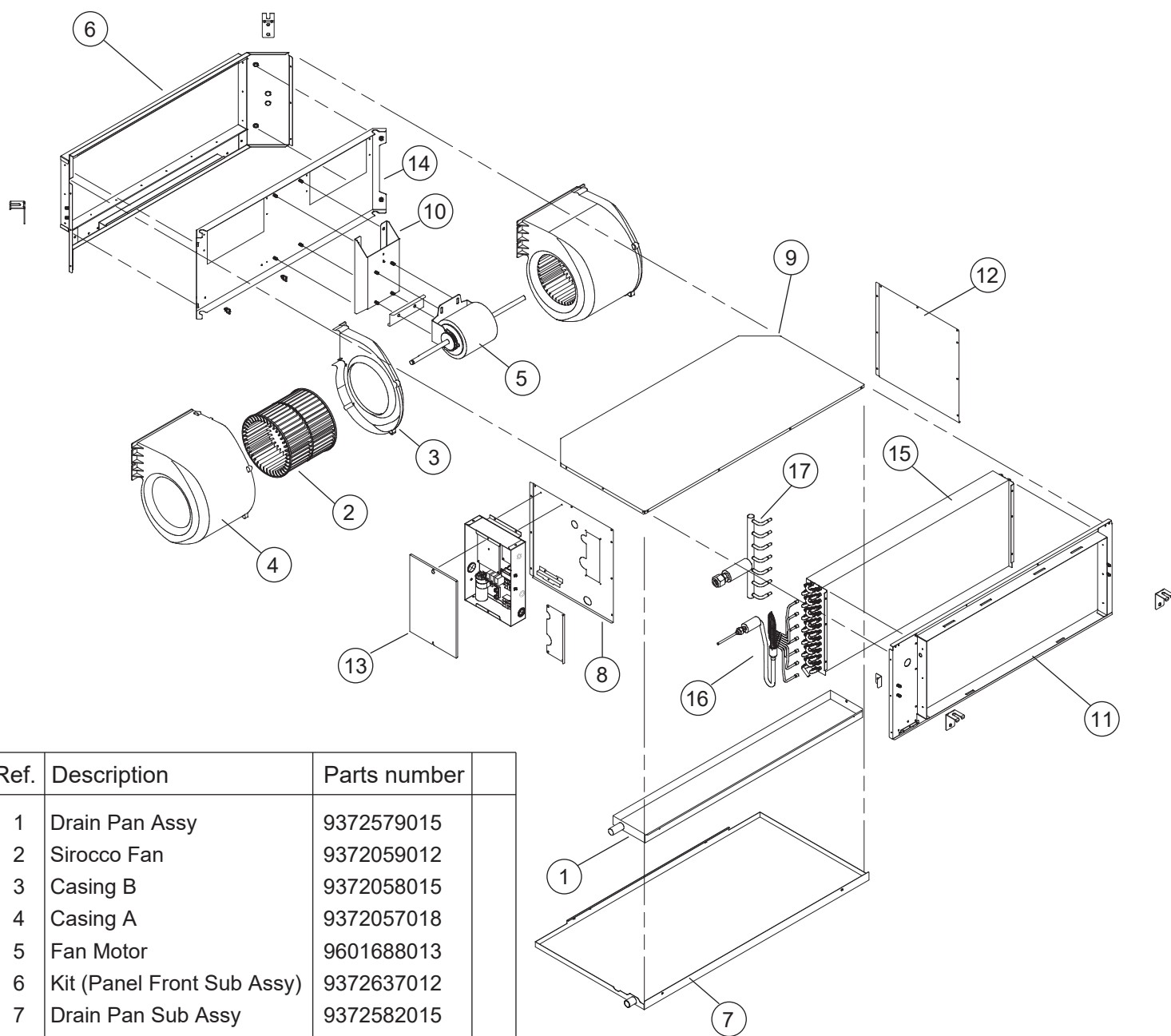


LED1	LED2	Error contents
flash	flash	Model abnormal or EEPROM abnormal
1 flash	Lighting	Power source connection error
2 flash	Lighting	Discharge temp. sensor error
3 flash	Lighting	Heat exchanger temp. sensor error
4 flash	Lighting	Outdoor temp. sensor error
5 flash	Lighting	Communication signal error
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.

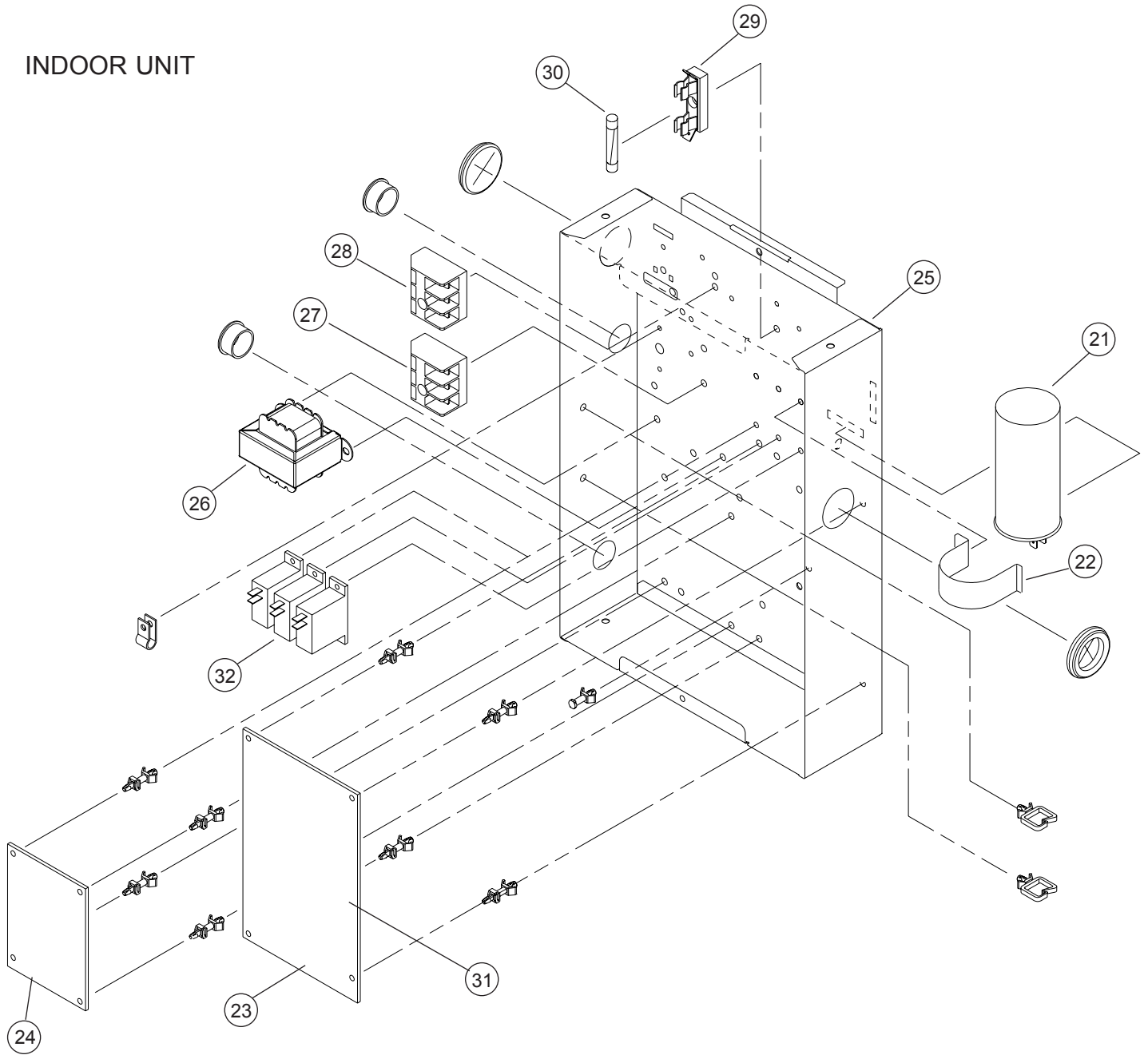
# DISASSEMBLY ILLUSTRATION

## INDOOR UNIT



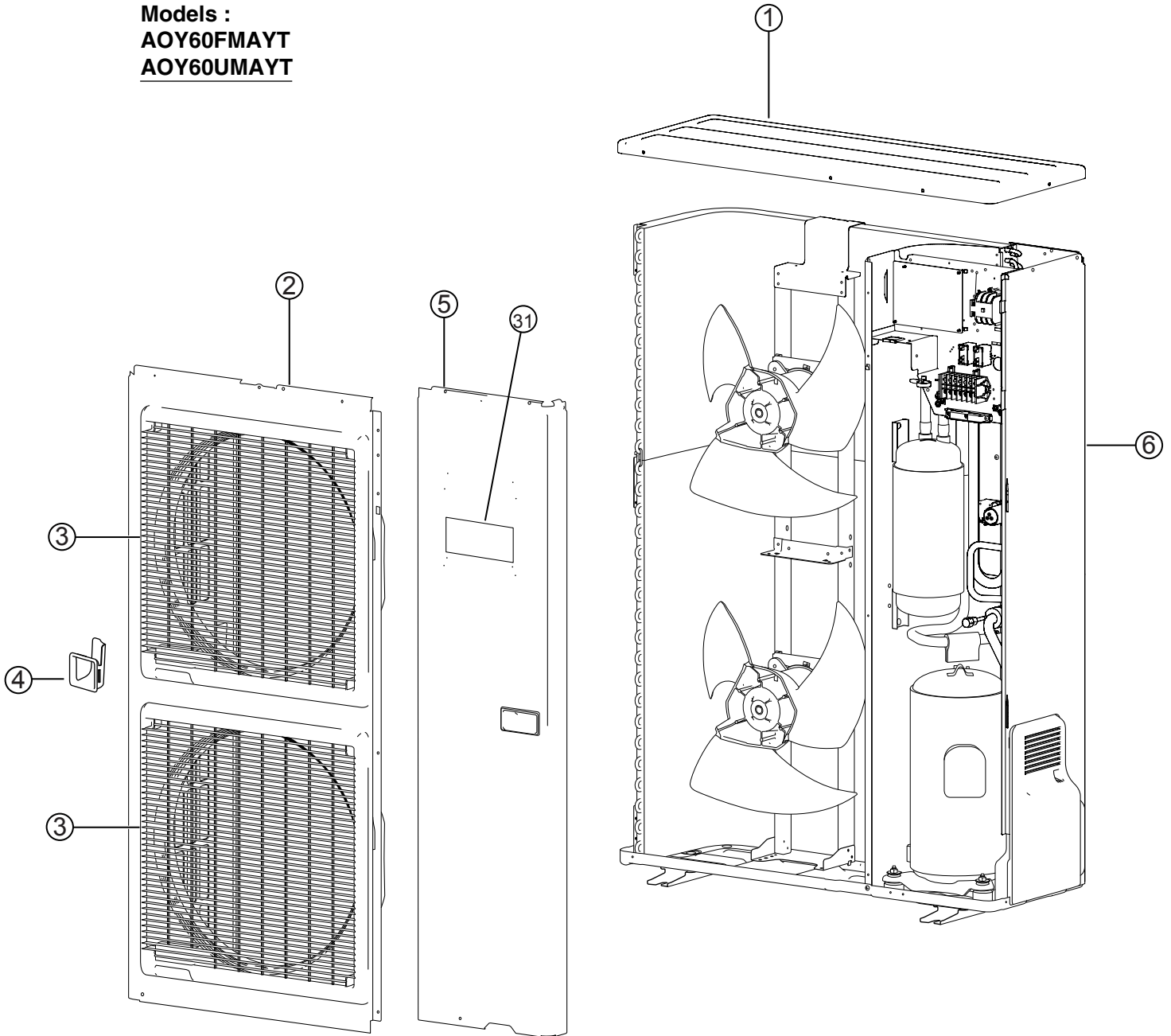
Ref.	Description	Parts number
1	Drain Pan Assy	9372579015
2	Sirocco Fan	9372059012
3	Casing B	9372058015
4	Casing A	9372057018
5	Fan Motor	9601688013
6	Kit (Panel Front Sub Assy)	9372637012
7	Drain Pan Sub Assy	9372582015
8	Kit (Panel Right Sub Assy)	9372916018
9	Plate Top Sub Assy	9372576014
10	Bracket Motor Assy	9372037003
11	Kit (Panel Rear Sub Assy)	9372636015
12	Kit (Panel Left Sub Assy)	9372581018
13	Cover Box	9372061008
14	Panel Fan Assy	9372035009
15	Evaporator <b>Sub Assy</b>	<b>9372584163</b>
16	Distributor Assy	9371325088
17	Coupling Pipe Assy	9373038122
--	Thermo. Spring A	313728262708
--	Pipe Thermistor	9703297113
--	Room Thermistor	9703299216
--	Remote Control (FUAK)	9372266021
--	Remote Control (UUAK)	9372266014

# INDOOR UNIT

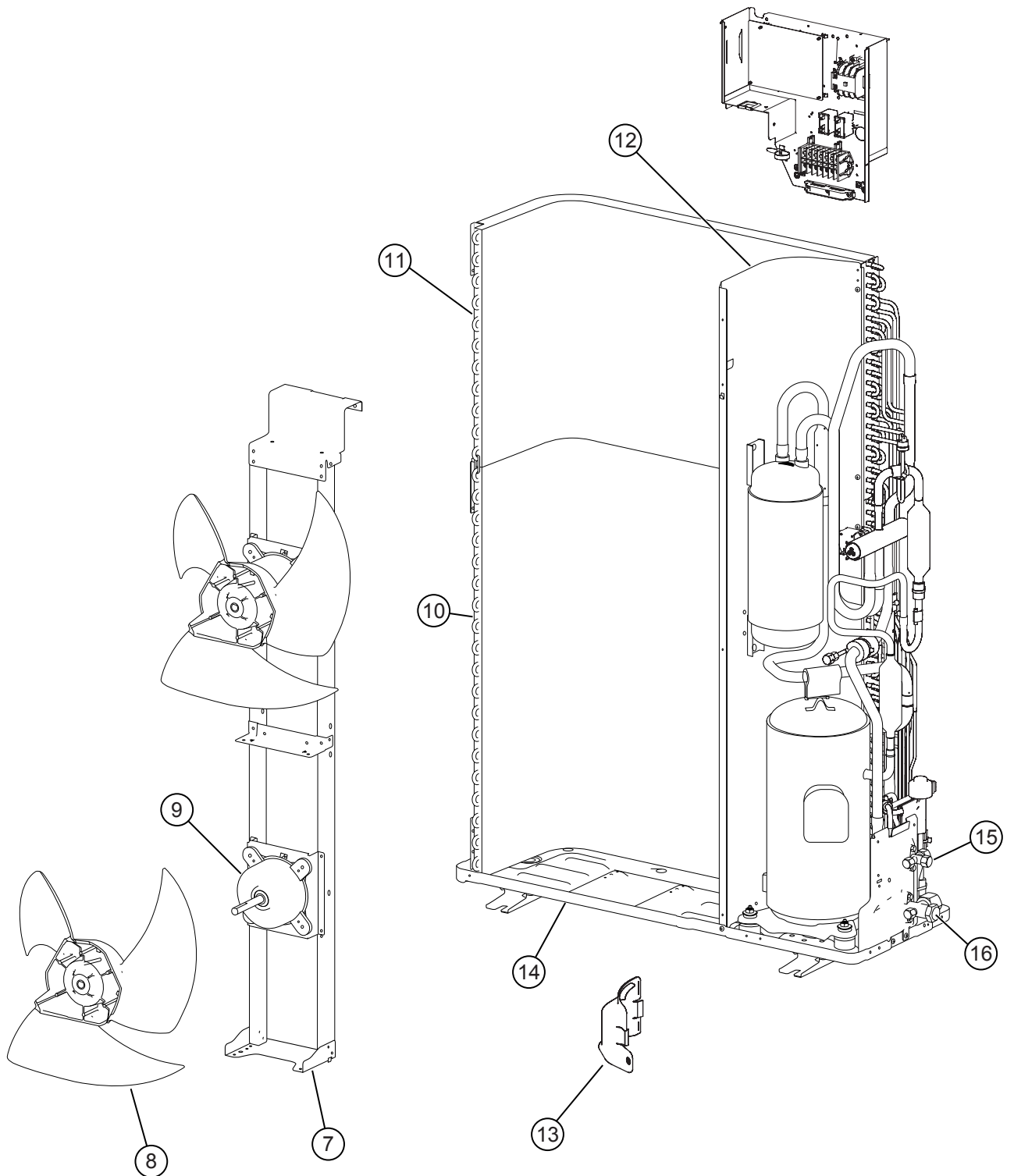


Ref.	Description	Parts number
21	Capacitor, Plastic	9900269111
22	Capacitor Clamp	9308114006
23	Power Supply PCB Assy (FUAK)	9705668041
23	Power Supply PCB Assy (UUAK)	9705668034
24	Controller PCB Assy (FUAK)	9705246027
24	Controller PCB Assy (UUAK)	9705246010
25	Control Box Assy	9372536001
26	Transformer (Power)	9704129017
27	Terminal 3P	9306489045
28	Terminal 3P	9703345012
29	Fuse Holder	0501454012
30	Fuse	0600222512
31	Fuse	0600315023
32	Relay	9702100018

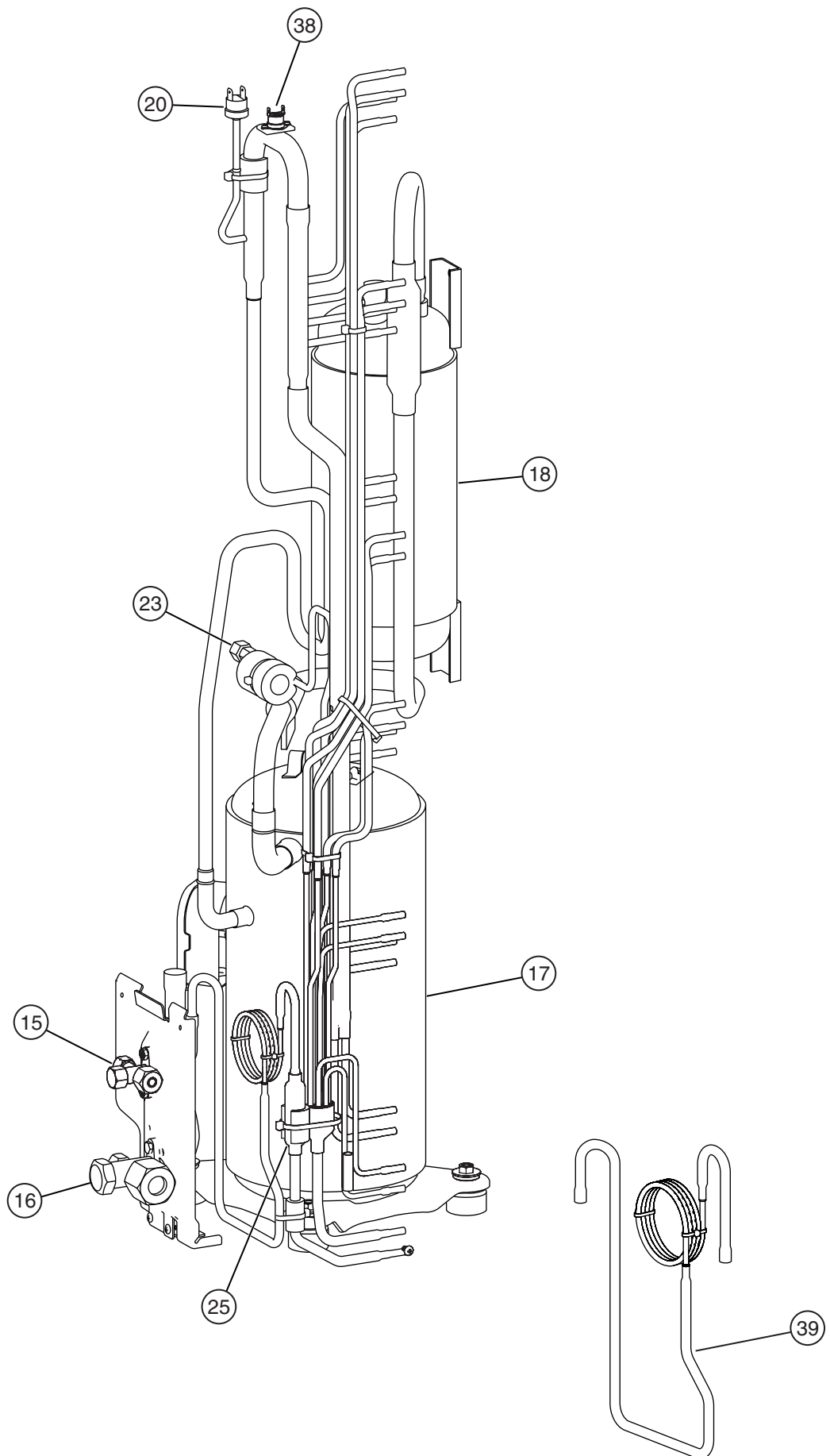
**Models :**  
**AOY60FMAYT**  
**AOY60UMAYT**



**Models :**  
**AOY60FMAYT**  
**AOY60UMAYT**

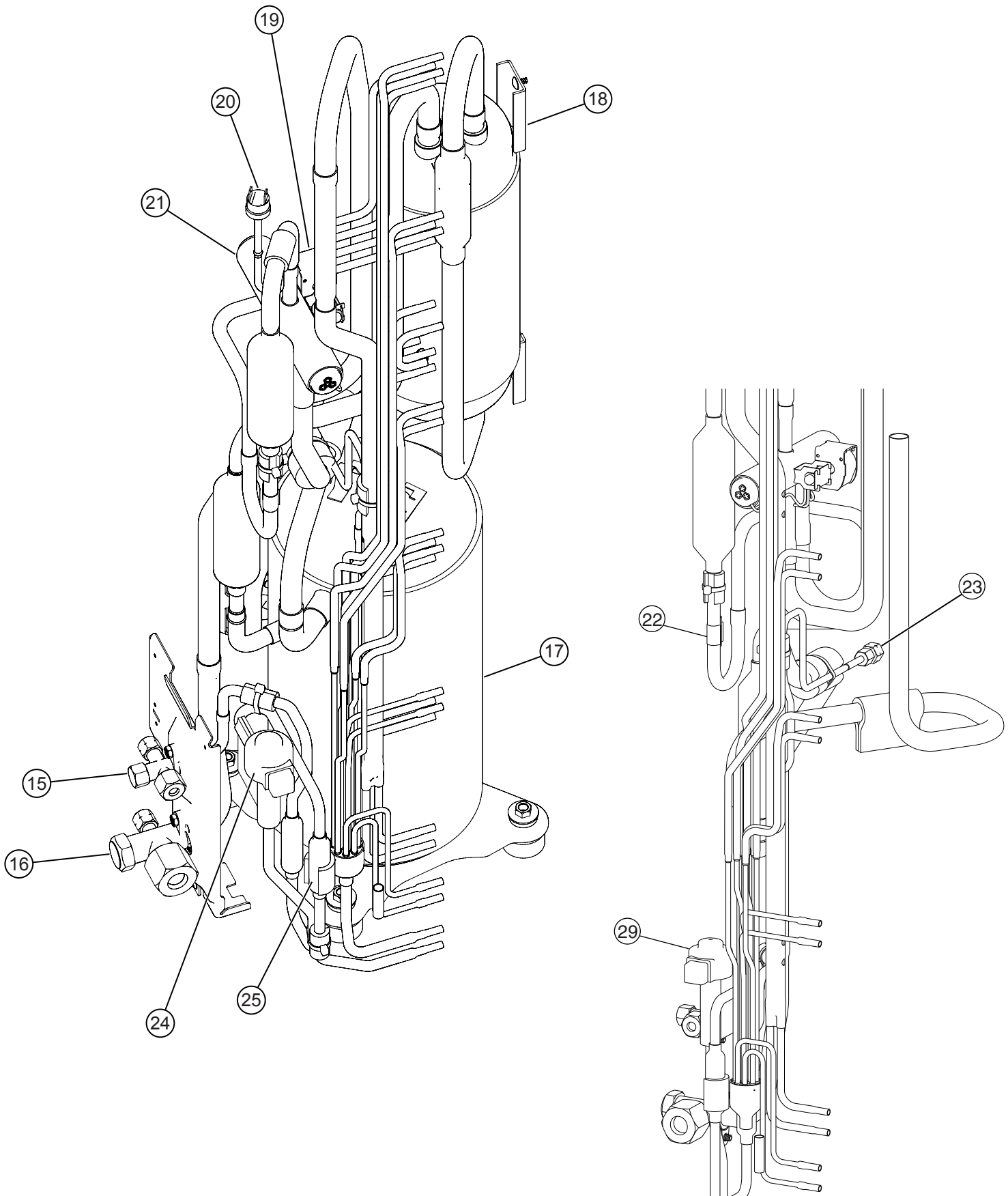


**Models :**  
**AOY60FMAYT**

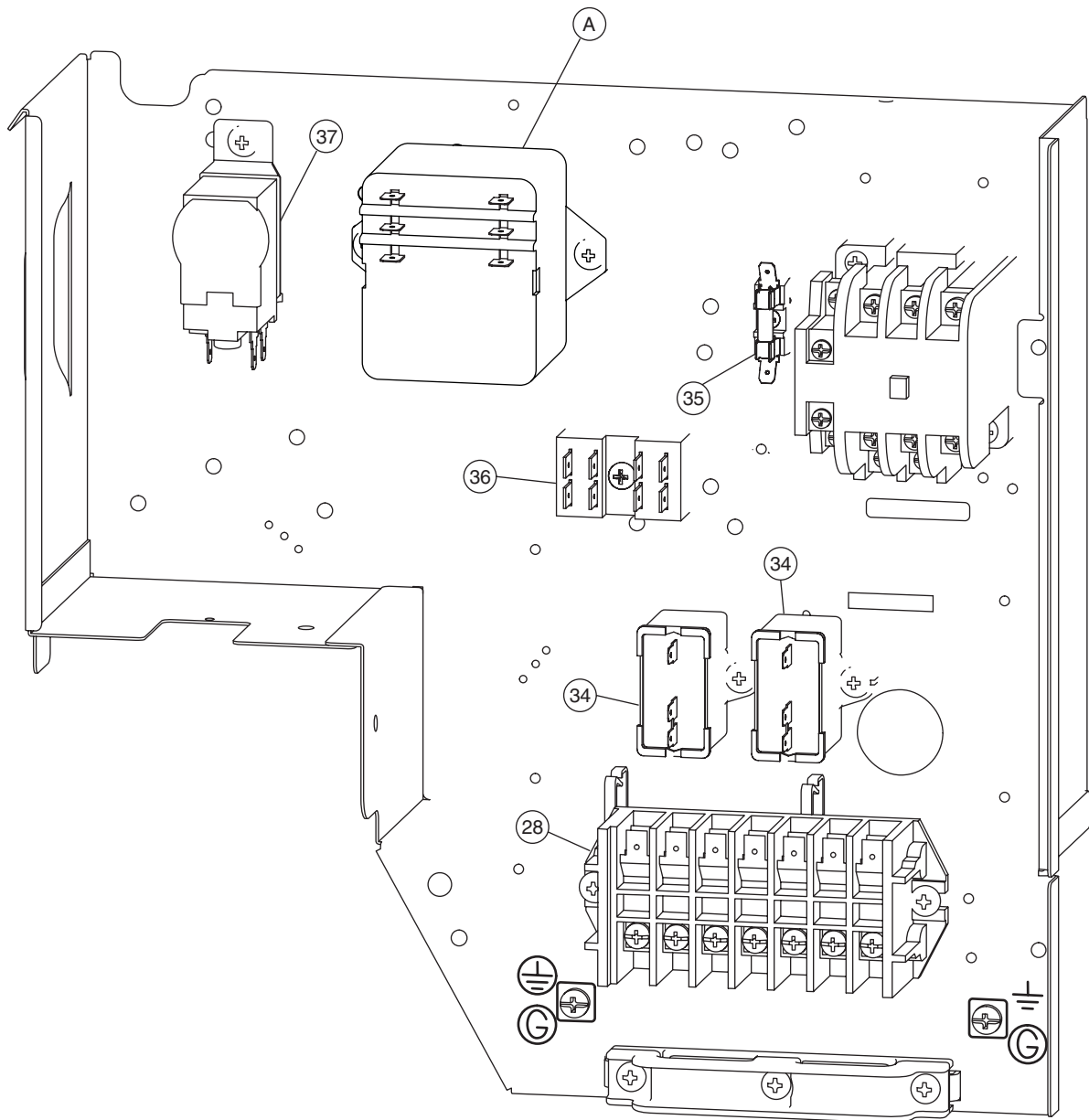




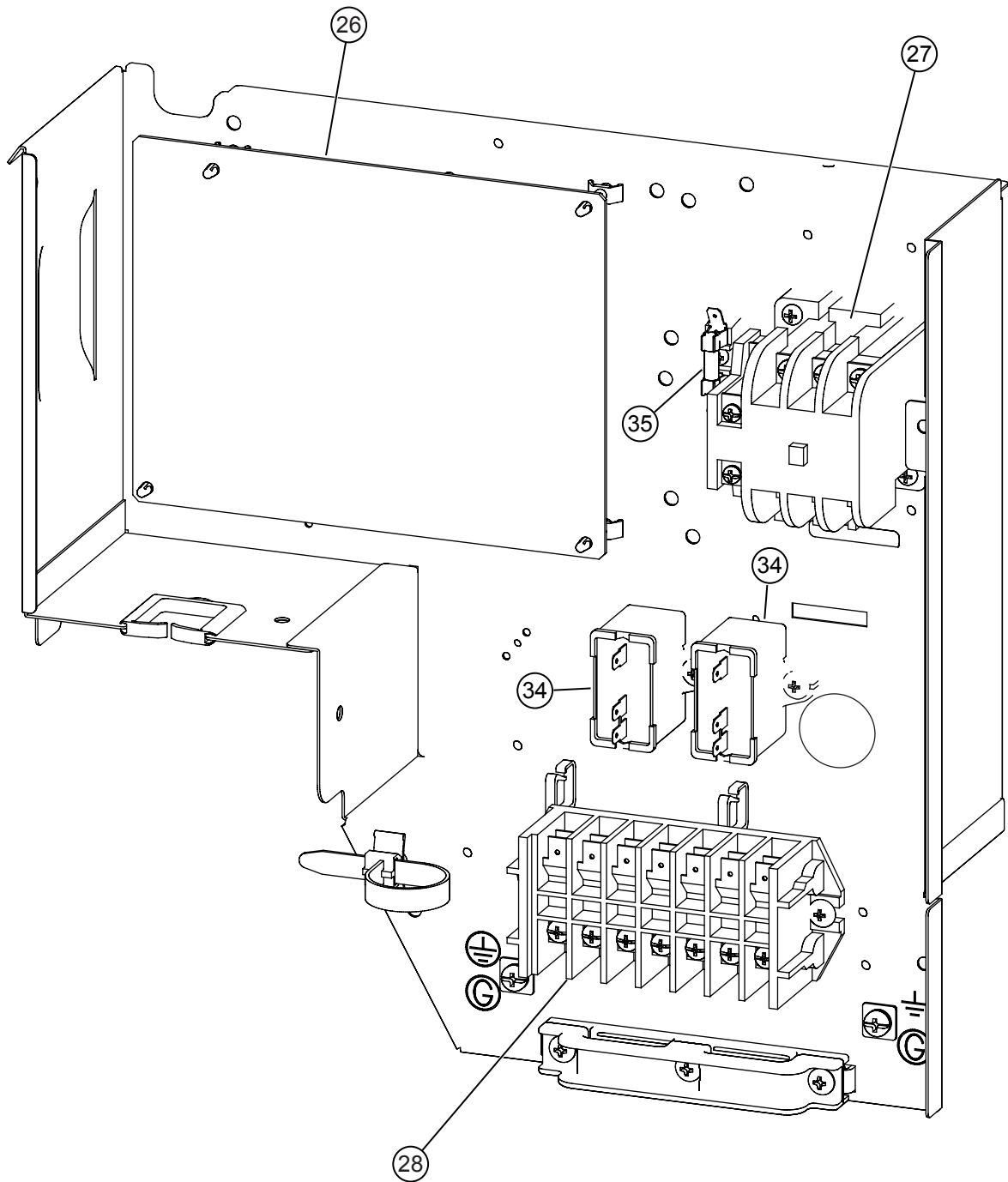
**Models :**  
**AOY60UMAYT**



**Model : AOY60FMA YT**



Model : AOY60UMAYT



## Outdoor unit






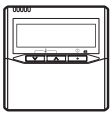

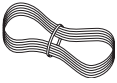
Ref No.	Description	Parts No.
		AOY60FMAYT
1	Top Panel Sub Assy	9374417018
2	Front Panel X	9374094028
3	Fan Guard	9374330010
4	Grip Side	9374173013
5	Service Panel Sub Assy	9374415014
6	Right Panel Sub Assy	9374416011
7	Motor Bracket Sub Assy	9374418015
8	Propeller Fan Assy	9366378013
9	Motor Induct	9601671060
10	Condenser A Sub Assy	9374420025
11	Condenser B Sub Assy	9374422029
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	9351355005
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.
		AOY60UMAYT
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 Sub Assy	9374420018
11	Condenser B Sub Assy	9374422012
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	9351355005
34	Capacitor (Fan)	9900270049
35	Fuse	0600222529
---	Thermistor Assy	9900274016
---	Drain Cap	313166024302
---	Drain Pipe	9303029022

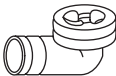

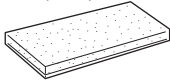
# STANDARD ACCESSORIES

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).
- 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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