

# SERVICE MANUAL

## SPLIT TYPE ROOM AIR CONDITIONER

### CEILING WALL type INVERTER



#### Models

Indoor unit	Outdoor unit
AWY14LSAZ	AOY14LSAWC
AWH14LSAZ	AOH14LSAWC
AWY17LSAZ	AOY17LSAWC
AWH17LSAZ	AOH17LSAWC

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# S P E C I F I C A T I O N S

TYPE	Cooling and Heat-pump heating	
INDOOR UNIT	AWH14LSAZ AWY14LSAZ	AWH17LSAZ AWY17LSAZ
OUTDOOR UNIT	AOH14LSAWC AOY14LSAWC	AOH17LSAWC AOY17LSAWC
COOLING CAPACITY (kW)	4.0	4.8
HEATING CAPACITY (kW)	6.0	6.7

## ELECTRICAL DATA

POWER SOURCE (V)	230		
FREQUENCY (Hz)	50		
RUNNING CURRENT (A)	COOLING	4.7	6.6
	HEATING	6.2	7.4
INPUT WATTS (kW)	COOLING	1.06	1.49
	HEATING	1.41	1.69
E.E.R. (kW/kW)	COOLING	3.77	3.22
	HEATING	4.26	3.96
MOISTURE REMOVAL (ℓ/hr)	2.1	2.8	
AIR CIRCULATION-Hi (m <sup>3</sup> /hr)	COOL 840 / HEAT 970		

## COMPRESSOR

TYPE	Hermetic type, Inverter, Three phase Induction motor, Rotary	
CODE	808 - 902 - 80	
REFRIGERANT R410A (g)	1,350	

## FAN MOTOR

POWER SOURCE (V)	230		
INDOOR UNIT	HI-SPEED (r.p.m.)	1,500	
	MED-SPEED (r.p.m.)	1,370	
	LO-SPEED (r.p.m.)	1,110	
OUTDOOR UNIT (r.p.m.)	820	850	

## DIMENSIONS and WEIGHT

INDOOR UNIT	H x W x D (mm)	250 x 890 x 228	
OUTDOOR UNIT		578 x 790 x 300	
INDOOR UNIT	GROSS / NET (kg)	18 / 13.5	
OUTDOOR UNIT		40 / 38	

## NOISE LEVEL

INDOOR UNIT	HI-SPEED (r.p.m.)	COOL 48 / HEAT 48	
	MED-SPEED (r.p.m.)	COOL 46 / HEAT 42	
	LO-SPEED (r.p.m.)	COOL 38 / HEAT 36	
	SUPER QUIET (r.p.m.)	COOL 31 / HEAT 33	
OUTDOOR UNIT (r.p.m.)	COOL 47 / HEAT 48		

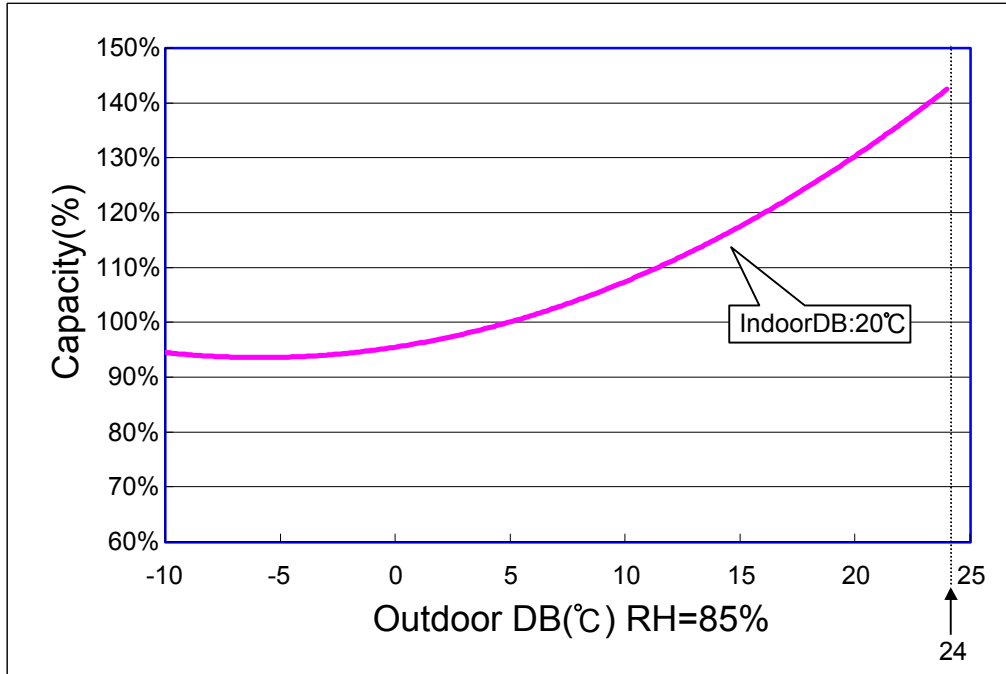
Note : Noise was measured in accordance with JIS standards, Japan.

## REFRIGERANT CHARGE (R410A)

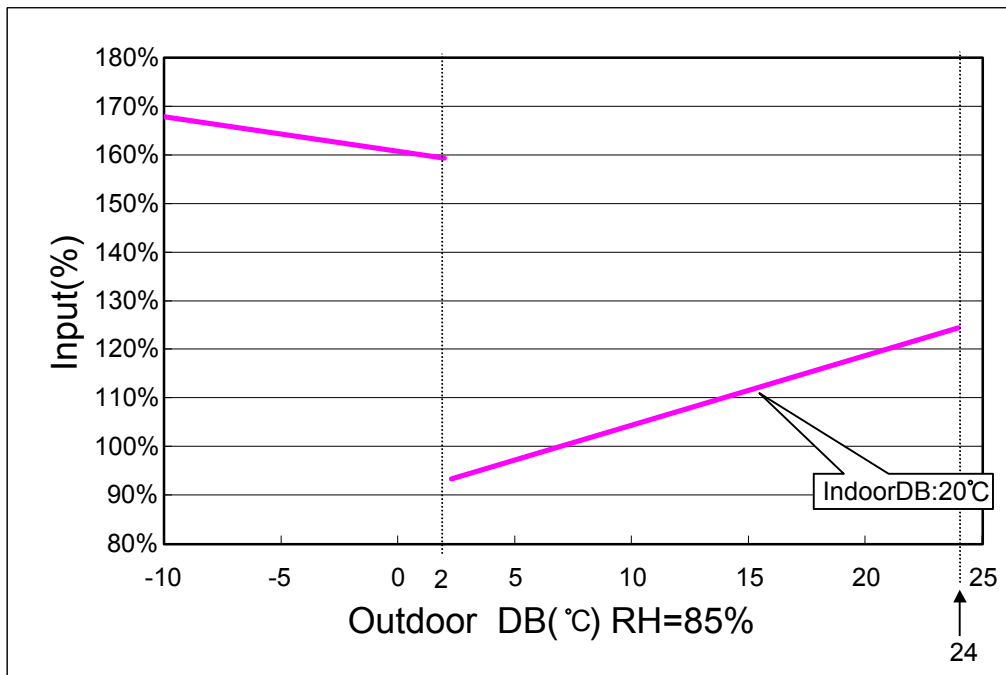
MAX PIPE LENGTH	15 m
ADDITIONAL REFRIGERANT	CHARGE LESS

•Heating

(Capacity curve)



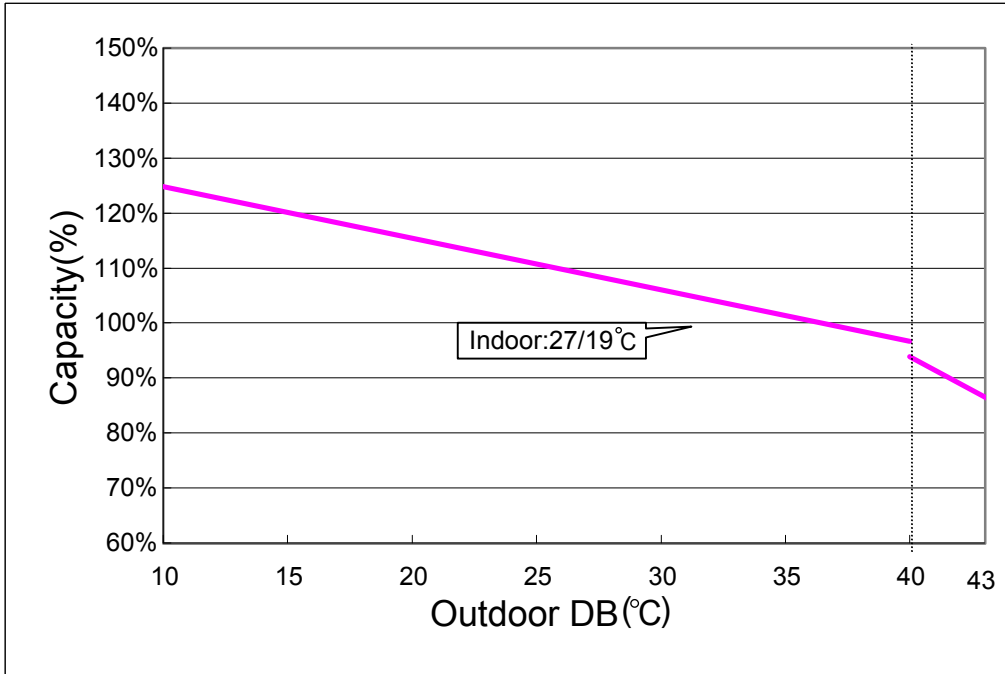
(Input curve)



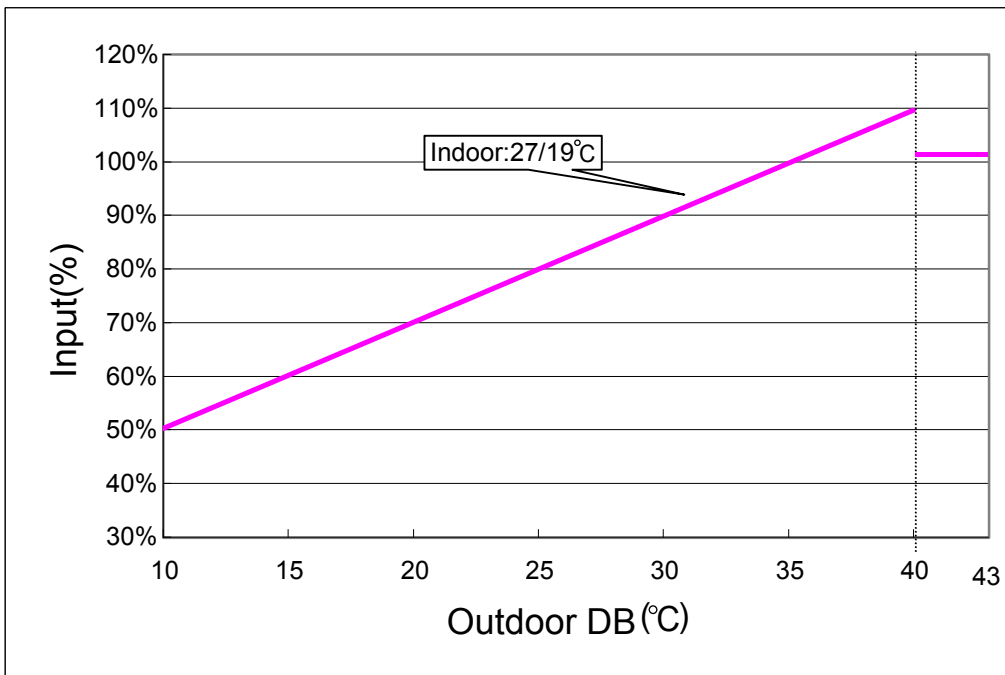
(Remarks) Above measurement was conducted under the low temperature heating capacity measuring condition, since the defrosting operation starts up at lower than 2 de (it was measured at the compressor maximum frequency, including the defrosting cycle.)

• **Cooling**

(Capacity curve)



(Input curve)

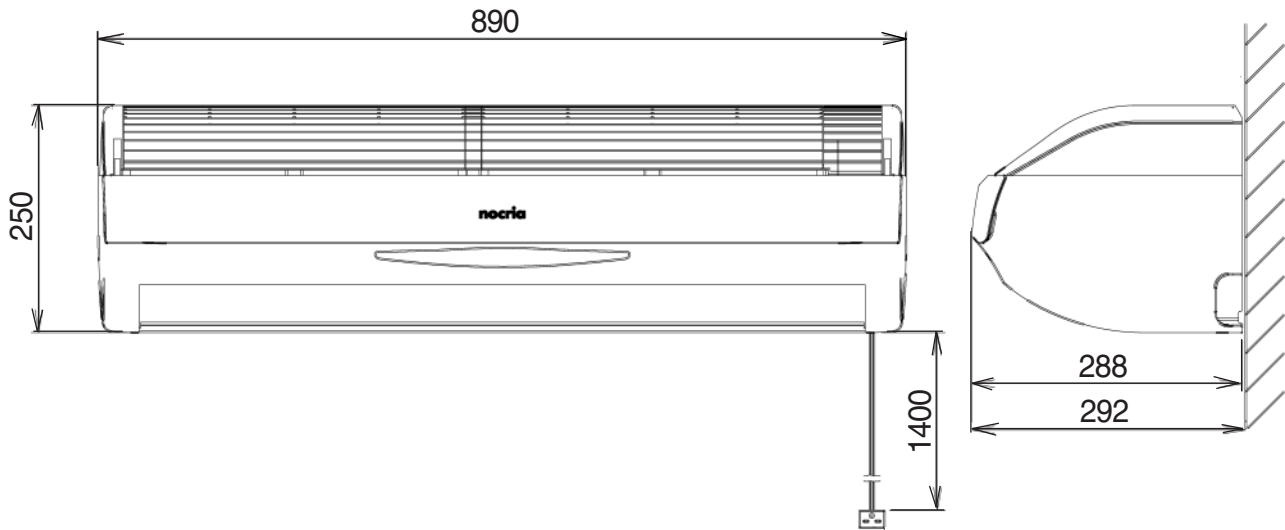


(Remarks) When the outdoor temperature is higher than 40 degC, the current release function starts to operate and the copressor rotation is decreased, and the capacity goes down.

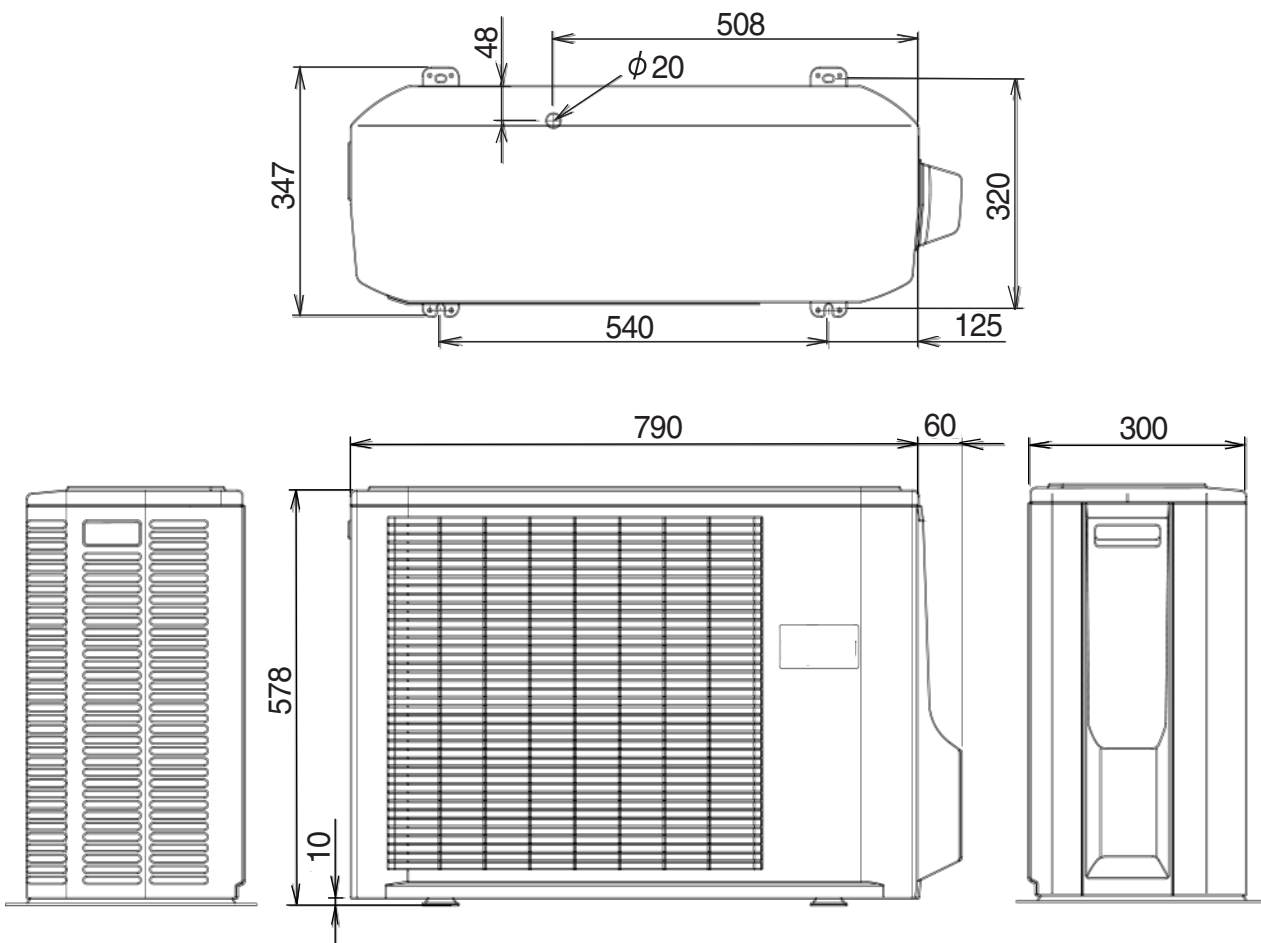
# DIMENSIONS

Models : AWY14LSAZ, AWH14LSAZ  
AWY17LSAZ, AWH17LSAZ

Unit : mm

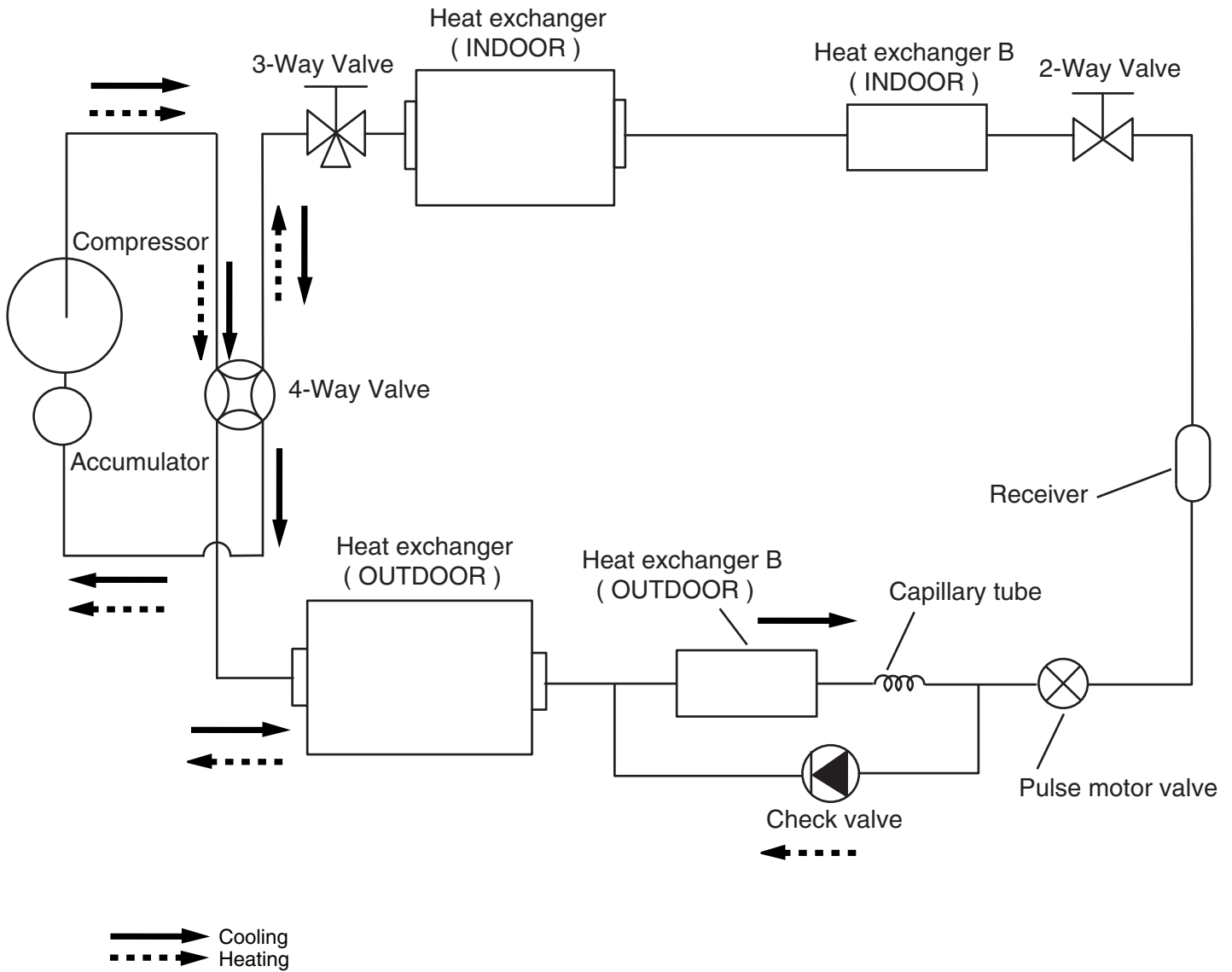


Models : AOY14LSAWC, AOH14LSAWC  
AOY17LSAWC, AOH17LSAWC



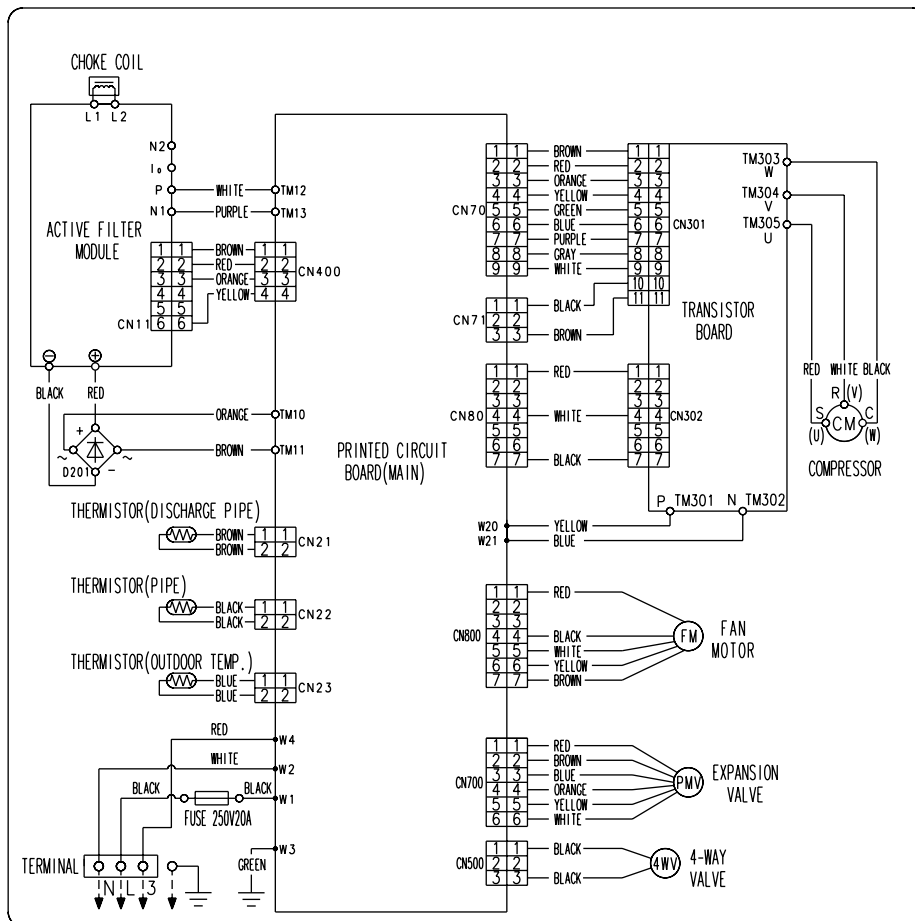
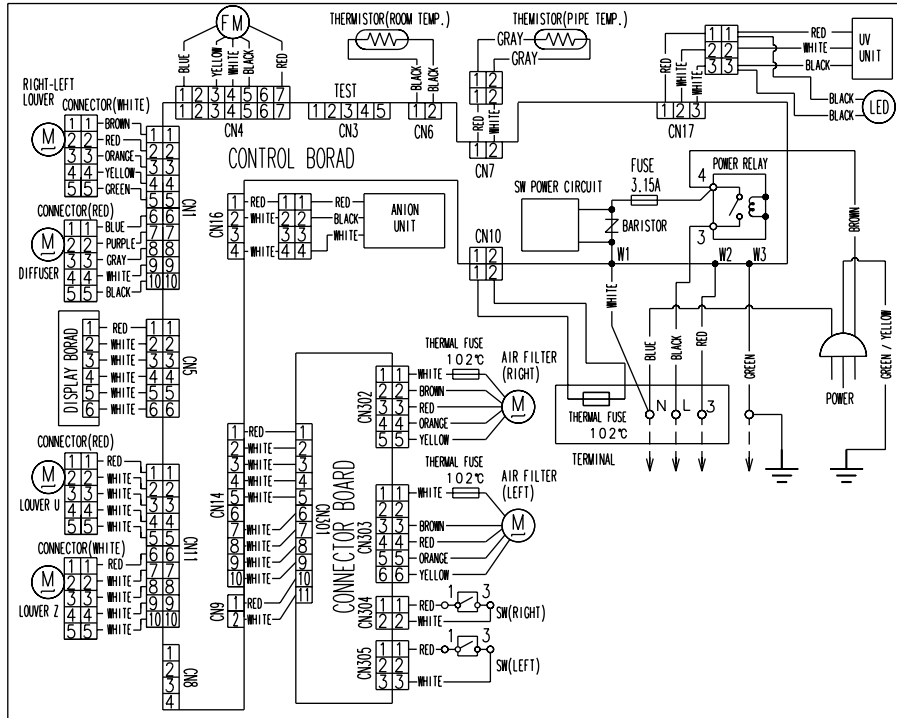
# REFRIGERANT SYSTEM DIAGRAM

Models : AWY14LSAZ / AOY14LSAWC  
 AWH14LSAZ / AOH14LSAWC  
 AWY17LSAZ / AOY17LSAWC  
 AWH17LSAZ / AOH17LSAWC



# CIRCUIT DIAGRAM

**Models : AWY14LSAZ / AOY14LSAWC  
 AWH14LSAZ / AOH14LSAWC  
 AWY17LSAZ / AOY17LSAWC  
 AWH17LSAZ / AOH17LSAWC**

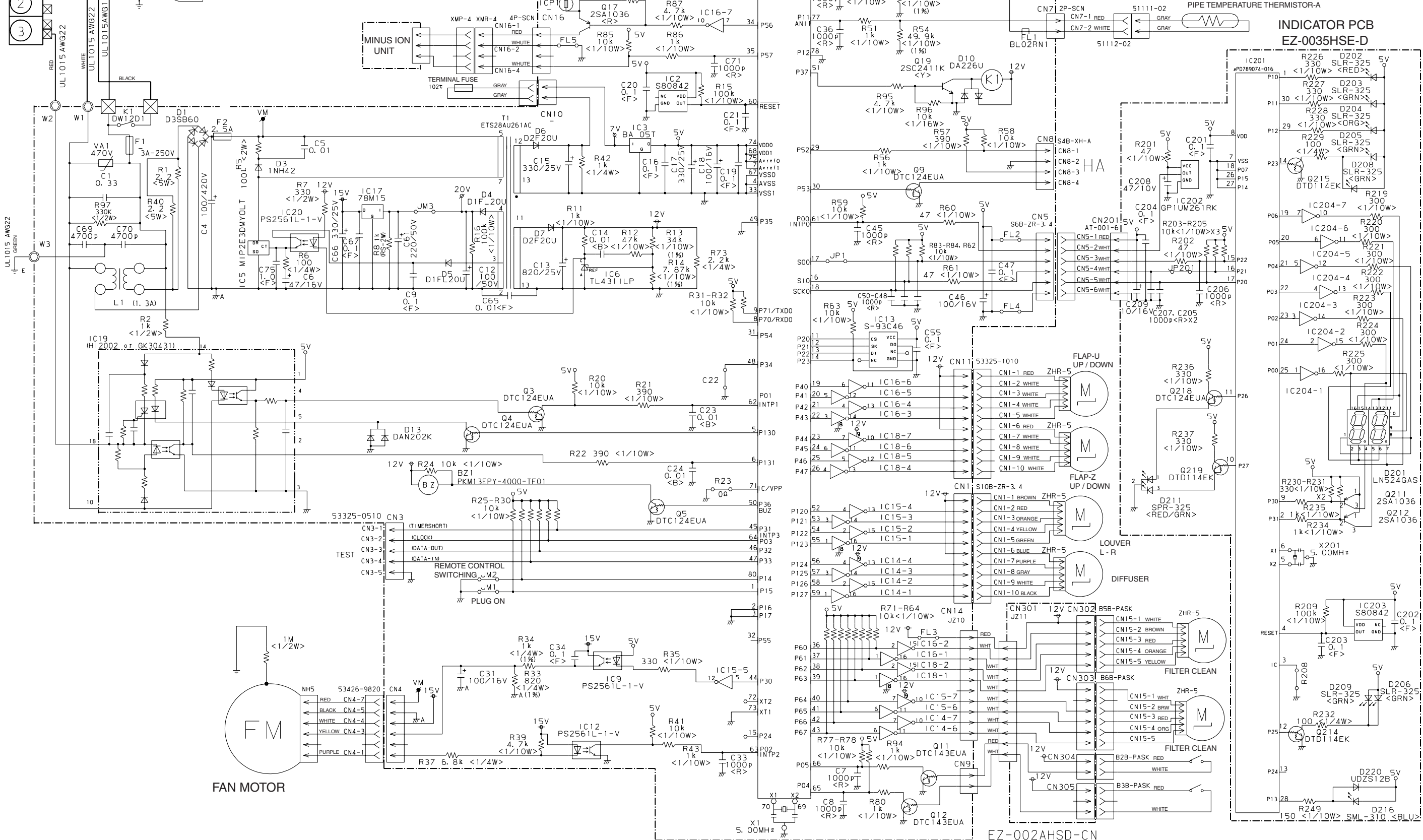
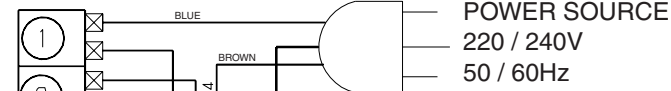


# INDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

Models : AWY14LSACW, AWH14LSACW  
AWY17LSACW, AWH17LSACW

## CONTROLLER PCB ASSEMBLY ( MAIN PCB ) EZ-35HSE-C

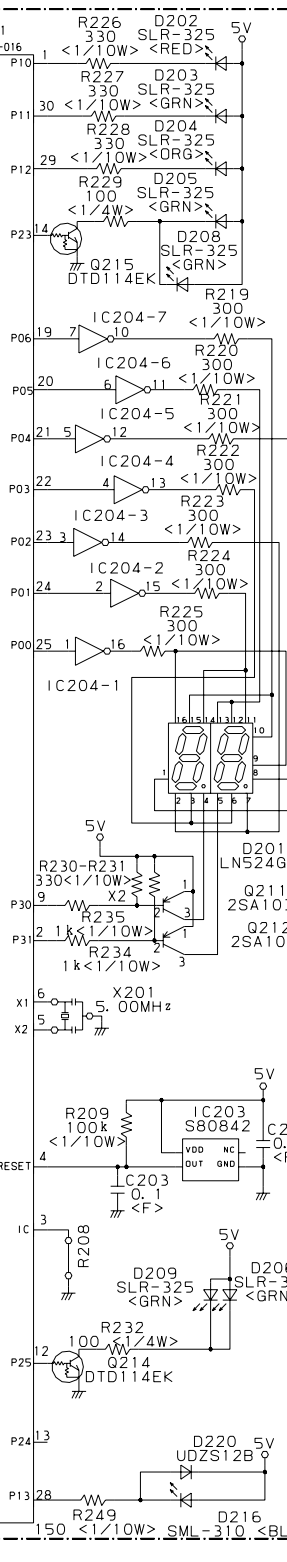
### TERMINAL BOARD



### FAN MOTOR



### INDICATOR PCB EZ-0035HSE-D



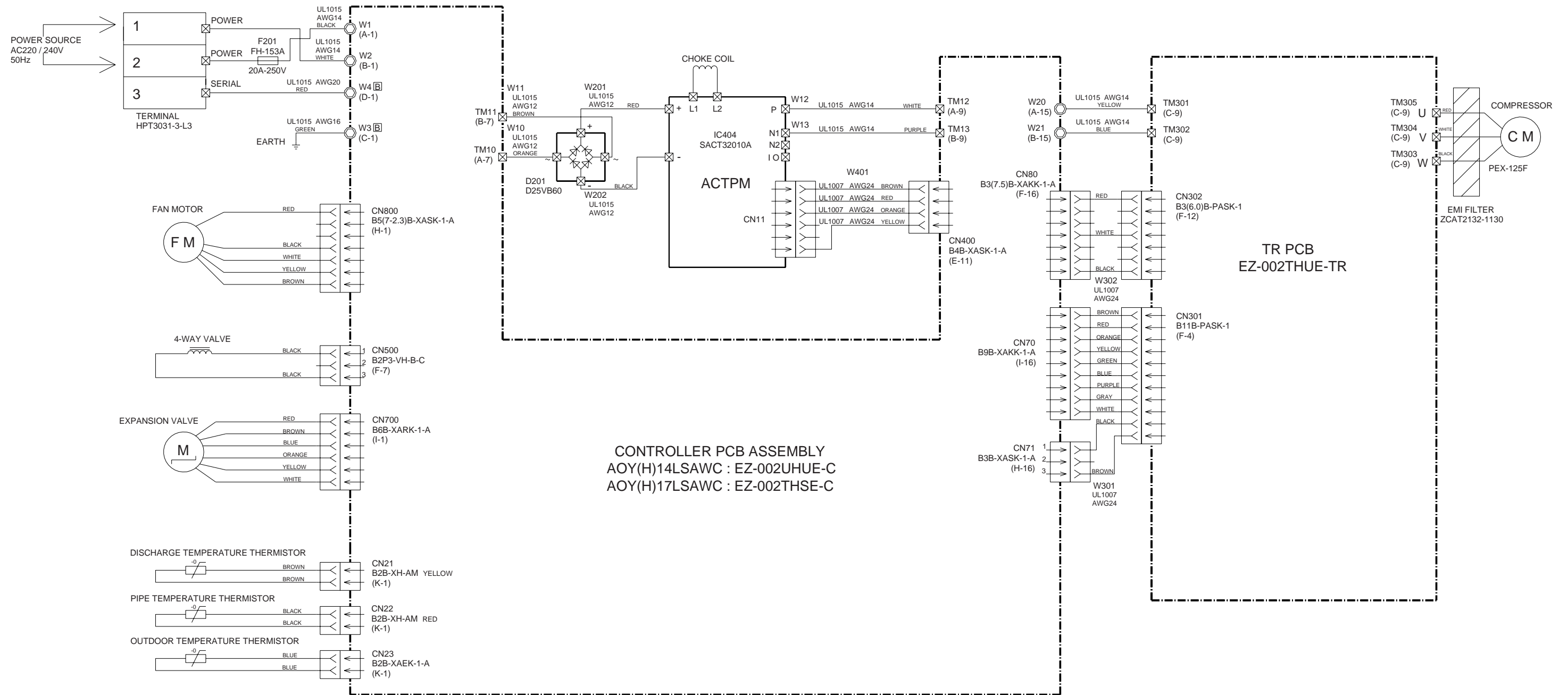
### EZ-002AHSD-CN

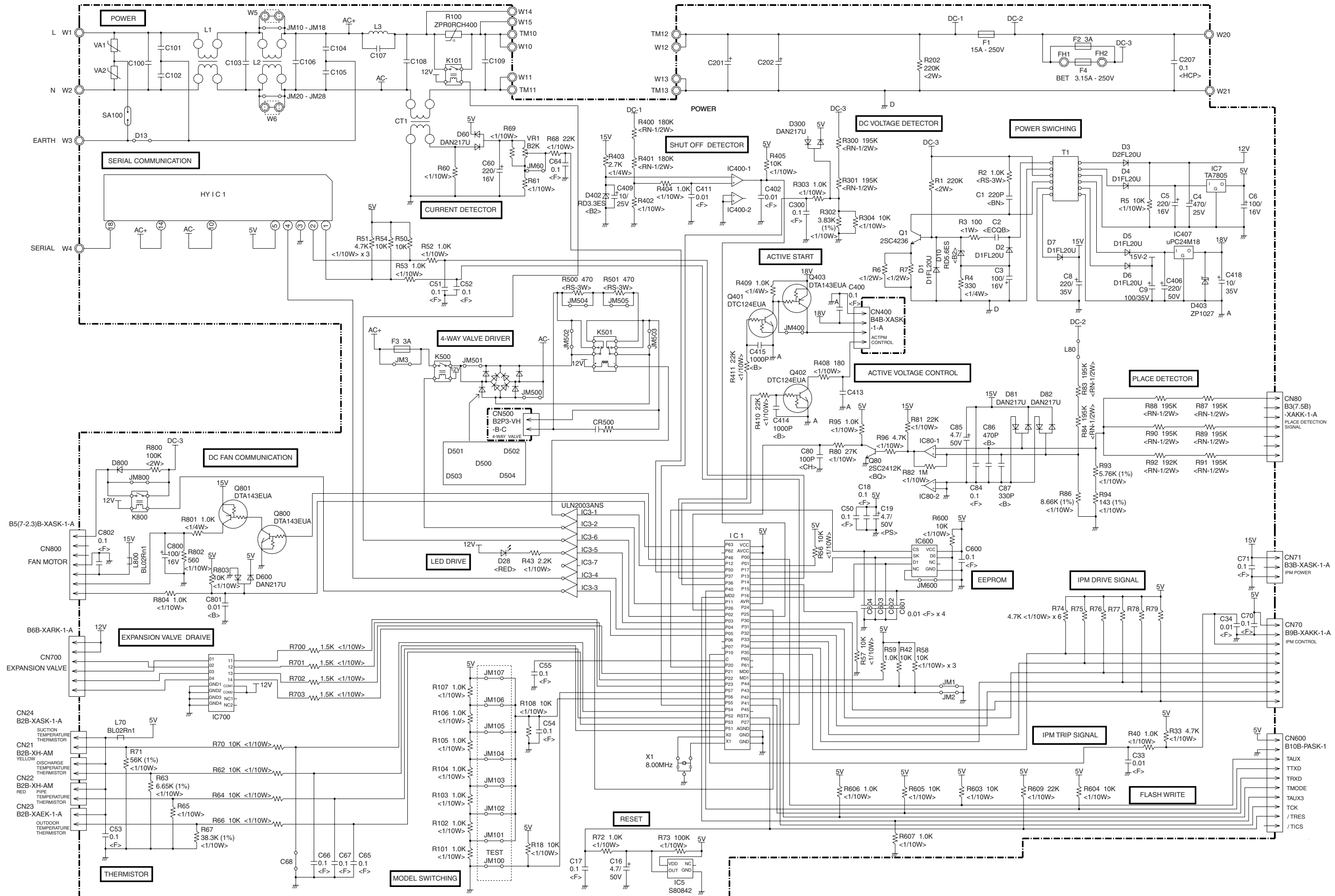


# OUTDOOR PRINTED CIRCUIT BOARD CIRCUIT DIAGRAM

**Models : AOY14LSAWC, AOH14LSAWC  
AOY17LSAWC, AOH17LSAWC**

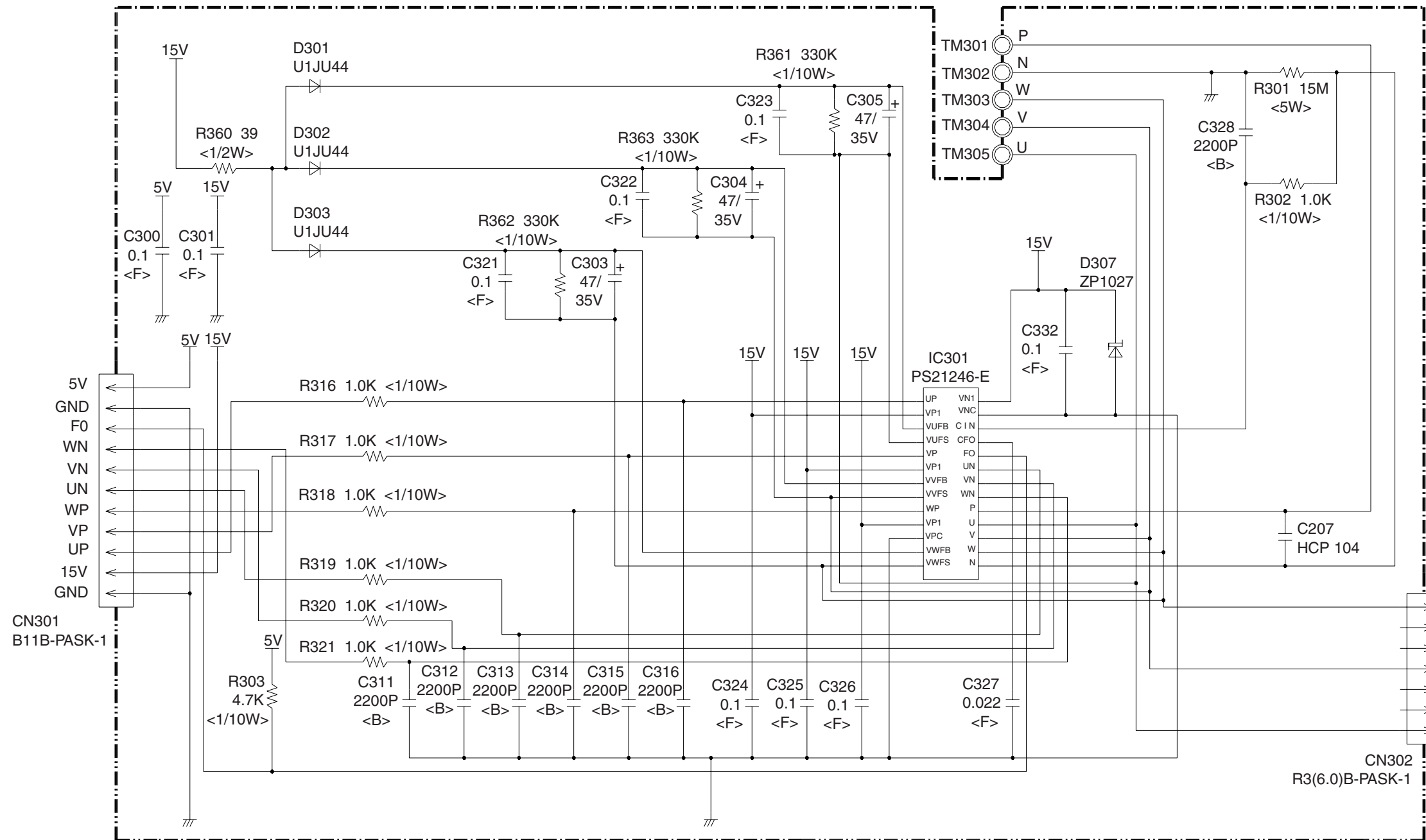
## INVERTER UNIT





Models : AOY14LSAWC, AOH14LSAWC  
 AOY17LSAWC, AOH17LSAWC

TR PCB ASSEMBLY  
 EZ-002THUE-TR



# E R R O R   C O N T E N T S

## Self-diagnosis function

This function memorizes the trouble diagnosis function (Flashing LED display) when trouble occurs at an indoor unit PC board. (The memory contents are not erased even when the power cord is disconnected from the power outlet.)

The self-diagnosis function (LED display) allows detailed diagnosis by allowing switching to large division indication and small division indication.

## Self-diagnosis function [LED display] (How to call memory)

- (1) □ When trouble occurs, it is displayed by [Operation lamp (red)], [Timer lamp (green)], and temperature monitor (7 segments display) 2 digits.
- (2) □ After the power plug is pulled, operation starts by remote control. **[Normal operation display]**
- (3) □ When the [Test run] button on the back of the remote controller is pressed, [Memory contents] display is performed.
  - \* □ When there is no error memory memorization, the unit enters the [Test run] state.

## Memory erase method

- (1) □ The memory contents can be erased by pressing the [Service end button-emergency operation] button on the body for 3 seconds or longer during self-diagnosis function display. (The indoor unit buzzer buzzes for 3 seconds.)
  - \* □ For 1 minute after trouble reset, the temperature and humidity monitor displays [--]. After 1 minute, the temperature and humidity monitor is displayed.

# Self-diagnosis function table (LED display)

[Small division indication] [Table 2] □

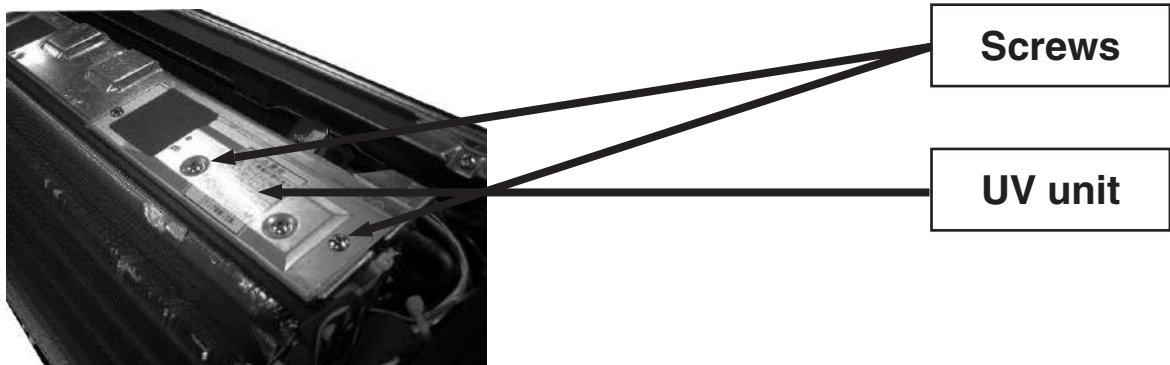
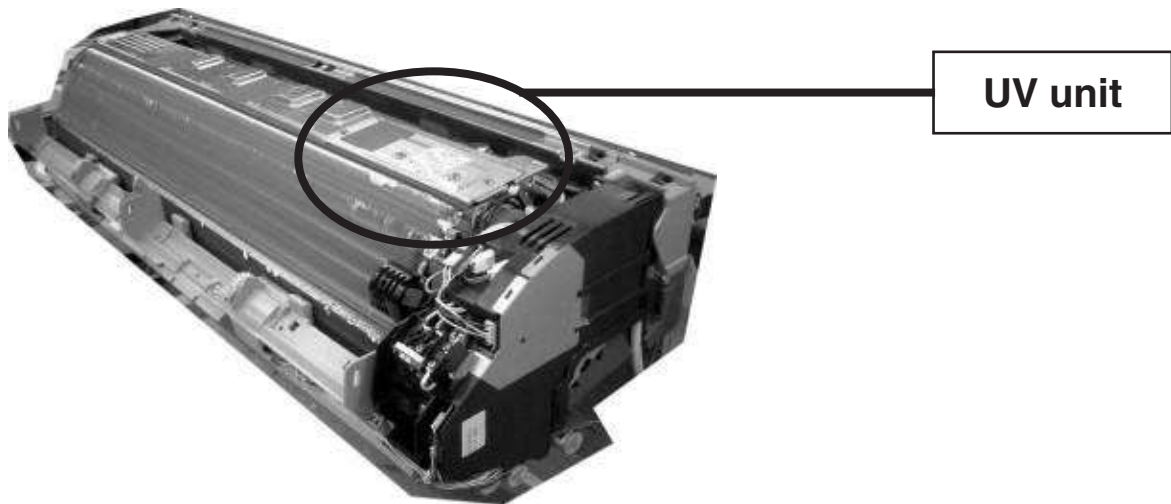
(1 / 3)

Large division indication	Small division indication		Temperature monitor display	Error judgement	Body operation
	Display	Display			
Serial signal error	Operation : □ ON Timer : □ 1 sec ON/OFF	Serial (reverse) error immediately after operation	02 to 07	When the serial signal is not read even once within 7 seconds from power relay ON after operation starts.	<b>Operation cause: Indoor and outdoor unit connection wire</b> Reset when serial (reverse) becomes normal.
		Serial (reverse) error during operation	02	Serial (reverse) error 7 seconds after power relay ON.	<b>Operation cause: Indoor and outdoor unit connection wire</b> Reset when serial (reverse) becomes normal.
		Serial (forward) error immediately after operation	03	When serial signal (forward) is not read within 10 seconds after power relay ON.	<b>Operation cause: Indoor unit</b> Reset when serial (forward) becomes normal.
		Serial (forward) error during operation	04	Serial (reverse) error 10 seconds after power relay ON.	<b>Operation cause: Indoor unit</b> Reset when serial (forward) becomes normal.
		Room temperature thermistor faulty	05	When thermistor detected valve open (Detected only when power on)	<b>Operation cause: Indoor unit</b> Reset when detected value becomes normal.
Indoor unit thermistor abnormal	Operation : 0.5 sec 2 times Timer : □ 0.1 sec	Piping thermistor (intermediate) faulty	22 to 25	When thermistor detected valve open or shorted (Detected only when power on)	<b>Operation cause: Indoor unit</b> Reset when detected value becomes normal.
		Outlet thermistor faulty	22	When thermistor detected valve open or shorted (constantly detected)	<b>Operation cause: Outdoor unit</b> Reset when detected value becomes normal.
Outdoor unit thermistor abnormal	Operation : 0.5 sec 3 times Timer : □ 0.1 sec	Heat exchange thermistor faulty	32 to 37	When thermistor detected valve open (constantly detected)	<b>Operation cause: Outdoor unit</b> Reset when detected value becomes normal.
		Outside air thermistor faulty	32	When thermistor detected valve open (constantly detected)	<b>Operation cause: Outdoor unit</b> Reset when detected value becomes normal.
			33	When thermistor detected valve open or shorted (constantly detected)	<b>Operation cause: Outdoor unit</b> Reset when detected value becomes normal.
			34	When thermistor detected valve open or shorted (constantly detected)	<b>Operation cause: Outdoor unit</b> Reset when detected value becomes normal.

Large division indication	Small division indication		Temperature monitor display	Error judgement	Body operation
	Display	Display			
Indoor unit control unit faulty	Operation : 0.5 sec 4 times Timer : □ 0.1 sec	Filter reset - forced automatic switch faulty	42	When filter reset ? forced automatic SW is ON for 30 secs or more	Other than display operate normally. Display performed only during normal operation. Goes off if operation stops.
	Operation : 0.1 sec Timer : □ 0.5 sec 3 times	Main relay welded			
	Operation : 0.1 sec Timer : □ 0.5 sec 4 times	Power interrupt faulty	44	When power frequency (50/60Hz) cannot be judged even after 2 secs have elapsed after power was turned on.	Operation cause: Indoor unit Permanent stop
	Outdoor unit control unit faulty	Operation : 0.5 sec 5 times Timer : □ 0.1 sec	Transistor module overcurrent	52	When outdoor unit overcurrent 2nd operation occurs within 40 secs from starting and 3rd operation occurs within 15 minutes
Outdoor unit input current abnormal			53		

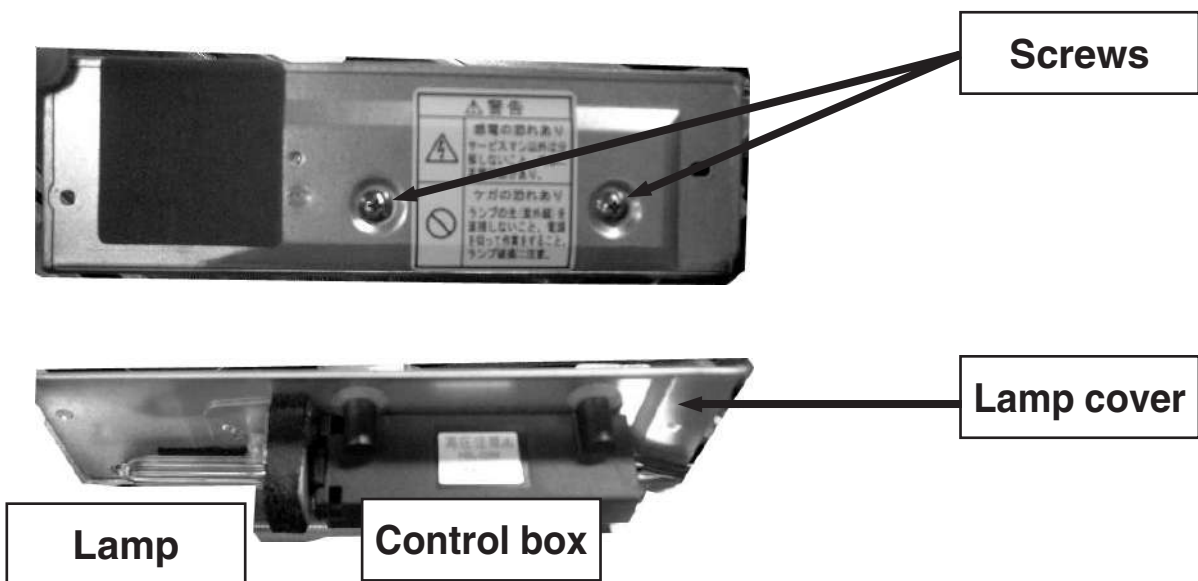
Large division indication	Small division indication		Temperature monitor display	Error judgement	Body operation
	Display	Display			
Outdoor unit thermistor abnormal	Operation : 0.5 sec 5 times Timer : □ 0.1 sec	Compressor position abnormal	52 to 57	When position detection abnormal 2nd operation occurs within 40 secs from starting	<b>Operation cause: Outdoor unit</b> Permanent stop
Indoor unit fan motor abnormal	Operation : 0.5 sec 6 times Timer : □ 0.1 sec	Outdoor unit fan abnormal	62 to 63	When fan motor current, position detection, or abnormal operated 2 times within 10 mins	<b>Operation cause: Outdoor unit</b> Permanent stop
Refrigerating cycle abnormal	Operation : 0.5 sec 7 times Timer : □ 0.1 sec	Fan motor locked	62	When detected value after 56 secs after fan motor starts is 0 r.p.m.	<b>Operation cause: Outdoor unit</b> Permanent stop
		Fan speed abnormal	63	When detected speed after 56 1/3 or less of target speed	<b>Operation cause: Outdoor unit</b> Permanent stop
		Discharge temperature abnormal	72	When compressor stopped 2 times by discharge protection	<b>Operation cause: Outdoor unit</b> Permanent stop
		Cooling excessive high pressure rise protection fault	73	Cooling excessive high pressure rise protection operated and displayed in 3 mins delay	<b>Operation cause: Outdoor unit</b> Compressor stopped During 3 mins delay
		DC 4-way valve, solenoid valve faulty	74	When 4-way valve switching performed and operated 5 times consecutively when room temperature and indoor unit piping thermistor temperature difference of 10°C or more detected	<b>Operation cause: Outdoor unit</b> Permanent stop
Active filter abnormal	Operation : 0.5 sec 8 times Timer : □ 0.1 sec	Active filter voltage detection abnormal (when operated 2 times)	82 to 83	When active filter output voltage abnormal (300V or more, or 80V or less) operated 2 consecutive times within 40 secs	<b>Operation cause: Outdoor unit</b> Permanent stop
		Active filter voltage detection abnormal (1 time instant operation)	83	Active filter abnormal / active filter instant interruption abnormal	<b>Operation cause: Outdoor unit</b> Permanent stop
Power supply voltage abnormal	Operation : □ 0.1 sec Dash : □ 0.1 sec Indoor unit buzzer sound	—	AA	200V model: When 100V impressed 100V model: When 200V impressed	<b>Operation cause: Outdoor unit</b> Permanent stop
Outdoor unit control unit board faulty	Operation : □ 0.1 sec Timer : □ 0.1 sec Dash : □ 0.1 sec UV negative ion: 0.1 sec	—	Ab	When model information ROM on control board cannot be read	<b>Operation cause: Outdoor unit</b> Permanent stop

## How to take UV unit to pieces



Take off screws, and take out UV unit.

## UV unit

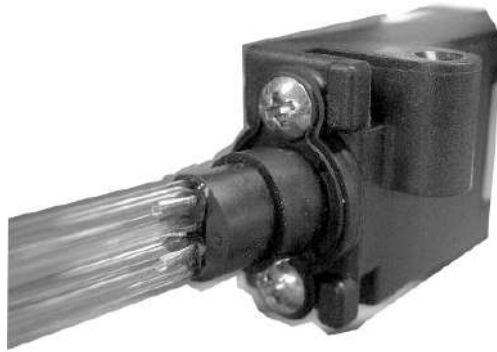


Take off screws, and take out Control box (with lamp) from lamp cover.





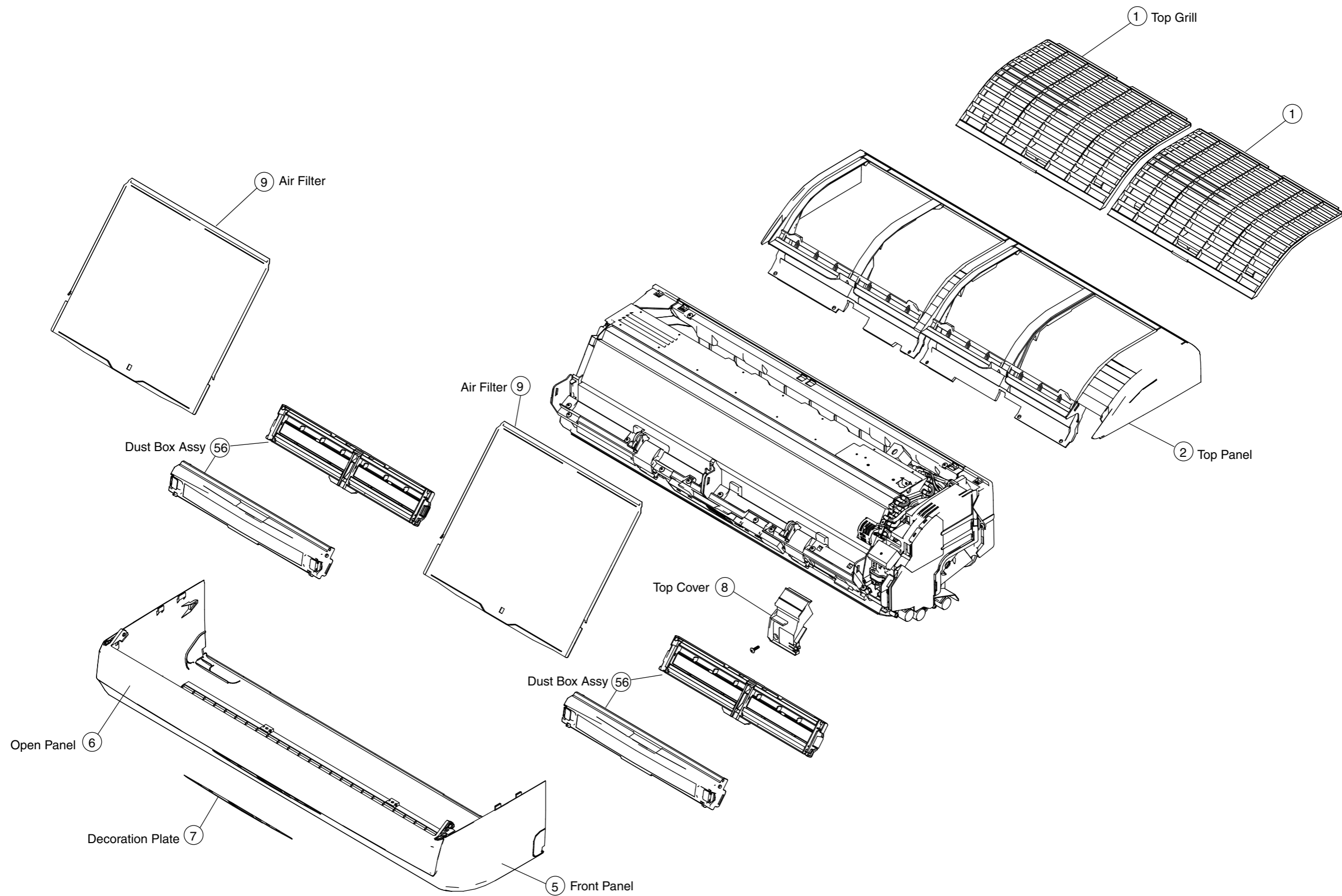
## UV lamp and control box

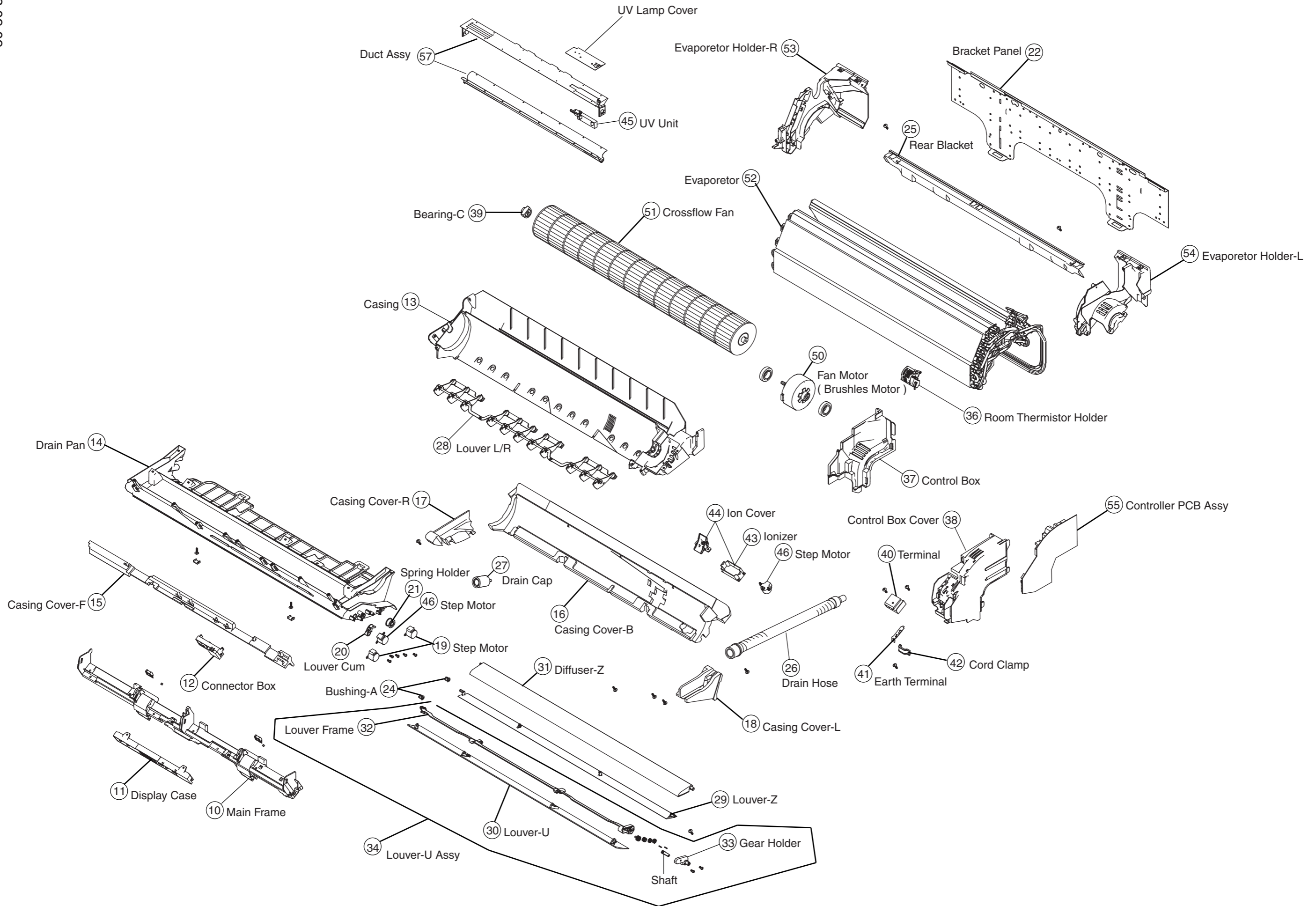


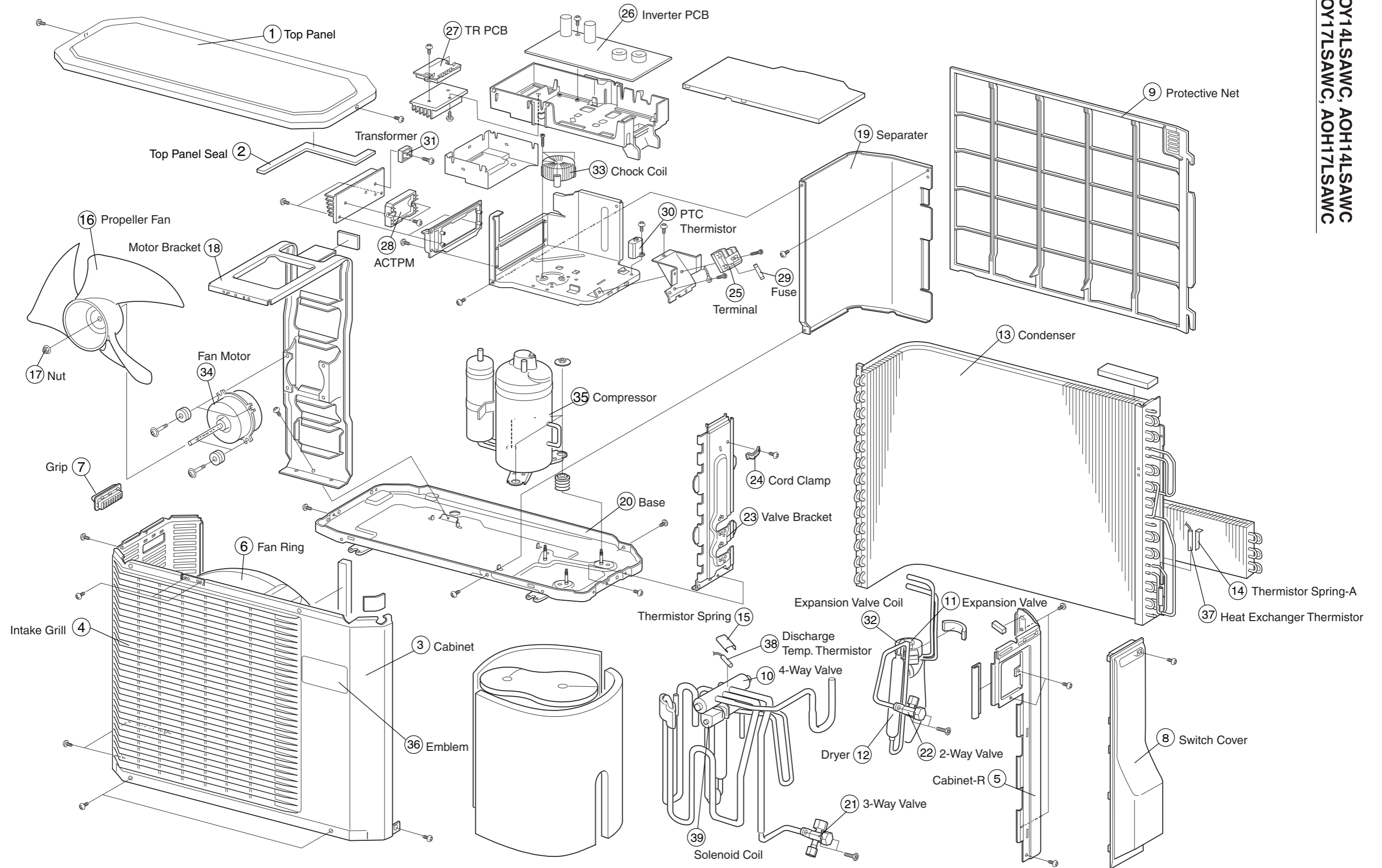
Take off screws, and pull lamp out of control box.



Models : AWY14LSAZ, AWH14LSAZ  
AWY17LSAZ, AWH17LSAZ







# PARTS LIST

## INDOOR UNIT

Ref. No.	Description	Part No.				Ord. Qty
		AWY14LSAZ	AWH14LSAZ	AWY17LSAZ	AWH17LSAZ	
1	Top Grill	9311962014	9311962014	9311962014	9311962014	
2	Top Panel	9311963011	9311963011	9311963011	9311963011	
5	Front Panel Assy	9312251025	9312251032	9312251025	9312251032	
6	Open Panel	9311959021	9311959038	9311959021	9311959038	
7	Decoration Plate	9311964025	9311964025	9311964025	9311964025	
8	Top Cover	9311982012	9311982012	9311982012	9311982012	
9	Air Filter	9311983019	9311983019	9311983019	9311983019	
10	Main Frame	9311973010	9311973010	9311973010	9311973010	
11	Display Case	9312009015	9312009015	9312009015	9312009015	
12	Connector Box	9312008018	9312008018	9312008018	9312008018	
13	Casing total Assy	9312240012	9312240012	9312240012	9312240012	
14	Drain Pan total Assy	9312241019	9312241019	9312241019	9312241019	
15	Casing Cover-F	9312023011	9312023011	9312023011	9312023011	
16	Casing Cover-B	9312022014	9312022014	9312022014	9312022014	
17	Casing Cover-R	9312403011	9312403014	9312403014	9312403014	
18	Casing Cover-L	9312021017	9312021017	9312021017	9312021017	
19	Step Motor ( MP24ZAN )	9703477010	9703477010	9703477010	9703477010	
20	Louver Cam	9312000012	9312000012	9312000012	9312000012	
21	Spring Holder	9311999010	9311999010	9311999010	9311999010	
22	Bracket Panel	9312011018	9312011018	9312011018	9312011018	
24	Bushing-A	9303529010	9303529010	9303529010	9303529010	
25	Rear Bracket	9312416011	9312416011	9312416011	9312416011	
26	Drain Hose	9310357019	9310357019	9310357019	9310357019	
27	Drain Cap	9304150008	9304150008	9304150008	9304150008	
28	Louver L / R	9311997016	9311997016	9311997016	9311997016	
29	Louver-Z	9311996019	9311996019	9311996019	9311996019	
30	Louver-U	9311993018	9311993018	9311993018	9311993018	
31	Diffuser-Z	9312003013	9312003013	9312003013	9312003013	
32	Louver Frame	9311994015	9311994015	9311994015	9311994015	
33	Gear Holder	9311995012	9311995012	9311995012	9311995012	
34	Louver-U Assy	9312243013	9312243013	9312243013	9312243013	
36	Room Temp. Thermistor Holder	9311948018	9311948018	9311948018	9311948018	
37	Control Box	9312005017	9312005017	9312005017	9312005017	
38	Control Box Cover	9312006014	9312006014	9312006014	9312006014	
39	Bearing-C	9306628017	9306628017	9306628017	9306628017	
40	Terminal	9306489120	9306489120	9306489120	9306489120	
41	Earth Terminal	9312809011	9312809011	9312809011	9312809011	
42	Cord Clamp	9302271002	9302271002	9302271002	9302271002	
43	Ionizer Assy	9312244010	9312244010	9312244010	9312244010	
44	Ion Cover	9312185016	9312185016	9312185016	9312185016	
45	UV Unit	9900144012	9900144012	9900144012	9900144012	
46	Step Motor ( MP24GA )	9305780006	9305780006	9305780006	9305780006	
50	Fan Motor Assy	9601423041	9601423041	9601423041	9601423041	
51	Crossflow Fan	9312004010	9312004010	9312004010	9312004010	
52	Evaporator Total Assy	9312776016	9312776016	9312776016	9312776016	
53	Evaporator Holder-R	9311985013	9311985013	9311985013	9311985013	
54	Evaporator Holder-L	9311986010	9311986010	9311986010	9311986010	
55	PCB Assy (Controller + Connector)	9705164017	9705164017	9705164024	9705164024	
56	Dust Box Assy	9312787012	9312787012	9312787012	9312787012	
57	Duct Assy	9312412013	9312412013	9312412013	9312412013	
-	Gear Box L Assy	9312511013	9312511013	9312511013	9312511013	
-	Gear Box R Assy	9312255016	9312255016	9312255016	9312255016	

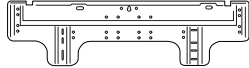



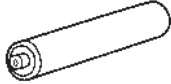


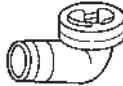
OUTDOOR UNIT

Ref. No.	Description	Part No.				Ord. Q'ty
		AOY14LSAWC	AOH14LSAWC	AOY17LSAWC	AOH17LSAWC	
1	Top Panel	9308883025	9308883025	9308883025	9308883025	
2	Top Panel Seal	9309228016	9309228016	9309228016	9309228016	
3	Cabinet	9308878021	9308878021	9308878021	9308878021	
4	Blow Down Grill	9308884015	9308884015	9308884015	9308884015	
5	Cabinet-R	9308879028	9308879028	9308879028	9308879028	
6	Fan Ring	9308885012	9308885012	9308885012	9308885012	
7	Grip	9308880017	9308880017	9308880017	9308880017	
8	Switch Cover	9308882028	9308882028	9308882028	9308882028	
9	Protective Net	9312026012	9312026012	9312026012	9312026012	
10	4-Way Valve Assy	9312571017	9312571017	9312571017	9312571017	
11	Expansion Valve Assy	9312340019	9312340019	9312340019	9312340019	
12	Dryer	9312056002	9312056002	9312056002	9312056002	
13	Condenser	9312323012	9312323012	9312323012	9312323012	
14	Thermistor Spring-A	313728262708	313728262708	313728262708	313728262708	
15	Thermistor Spring	9300089012	9300089012	9300089012	9300089012	
16	Propeller Fan	9309909014	9309909014	9309909014	9309909014	
17	Nut	9304902003	9304902003	9304902003	9304902003	
18	Motor Bracket	9308872029	9308872029	9308872029	9308872029	
19	Separater	9312032013	9312032013	9312032013	9312032013	
20	Base Assy , Painted	9308869081	9308869081	9308869081	9308869081	
21	3-Way Valve Assy	9313067014	9313067014	9313067014	9313067014	
22	2-Way Valve Assy	9313062019	9313062019	9313062019	9313062019	
24	Cord Clamp	9307271014	9307271014	9307271014	9307271014	
25	Terminal	9306489038	9306489038	9306489038	9306489038	
26	Inverter PCB Assy	9704936035	9704936035	9704936028	9704936028	
27	TR PCB Assy	9704949035	9704949035	9704949035	9704949035	
28	ACTPM	9703457012	9703457012	9703457012	9703457012	
29	Fuse	0600036027	0600036027	0600036027	0600036027	
30	PTC Thermistor	9900041014	9900041014	9900041014	9900041014	
31	Diode bridge	0100122107	0100122107	0100122107	0100122107	
32	Expansion Valve Coil	9900057015	9900057015	9900057015	9900057015	
33	Choke Coil	9703458019	9703458019	9703458019	9703458019	
34	Fan Motor	9601405030	9601405030	9601405030	9601405030	
35	Compressor Assy	9313192006	9313192006	9313192006	9313192006	
36	Emblem	9312633012	9312635016	9312633012	9312635016	
37	Heat Exchanger Thermistor	9704220028	9704220028	9704220028	9704220028	
38	Discharge Temp. Thermistor	9704219091	9704219091	9704219091	9704219091	
39	Solenoid Coil	9970033018	9970033018	9970033018	9970033018	
-	Outdoor Thermistor	9900149017	9900149017	9900149017	9900149017	

When you order parts, please make a photocopy of this page and fill the number of the parts in the "Order" column.

# STANDARD ACCESSORIES

The following installation accessories are supplied.  
Use them as required.

Name and Shape	Part No.	Q'ty	Name and Shape	Part No.	Q'ty
Wall hook bracket 	<b>9312011018</b>	<b>1</b>	Cloth tape 	<b>9308117007</b>	<b>1</b>
Remote control unit 	<b>AWY14,17</b> <b>9312226023</b>  <b>AWH14,17</b> <b>9312226030</b>	<b>1</b>	Tapping screw(big) (φ 4x20) 	<b>0700076046</b>	<b>8</b>
Battery 	<b>0600185046</b>	<b>2</b>	Tapping screw(small) 	<b>0700019036</b>	<b>2</b>
Remote control unit holder 	<b>9310082010</b>	<b>1</b>	Drain pipe (outdoor unit) 	<b>9301102000</b>	<b>1</b>

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