



**SPLIT TYPE
AIR CONDITIONER
CASSETTE type (50Hz)**

**SERVICE
MANUAL**



Models

Indoor unit	Outdoor unit
AUHA12LAL	AOHA12LACL
AUHA14LAL	AOHA14LACL
AUHA18LAL	AOHA18LACL
AUHA24LAL	AOHA24LACL

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SPECIFICATIONS

ELECTRICAL DATA

TYPE		Inverter cooling & heating			
INDOOR UNIT		AUHA12LAL	AUHA14LAL	AUHA18LAL	AUHA24LAL
OUTDOOR UNIT		AOHA12LACL	AOHA14LACL	AOHA18LACL	AOHA24LACL
COOLING CAPACITY		3.50 kW	4.30 kW	5.20 kW	7.10 kW
HEATING CAPACITY		4.10 kW	5.00 kW	6.00 kW	8.00 kW
POWER SOURCE		230 V 50 Hz	230 V 50 Hz	230 V 50 Hz	230 V 50 Hz
RUNNING CURRENT	Cooling	4.6 A	5.8 A	7.1 A	9.7 A
	Heating	4.9 A	5.9 A	7.3 A	9.7 A
INPUT WATTS	Cooling	1.05 kW	1.33 kW	1.62 kW	2.21 kW
	Heating	1.11 kW	1.34 kW	1.66 kW	2.21 kW
E.E.R.	Cooling	3.33 kW/kW	3.21 kW/kW	3.21 kW/kW	3.21 kW/kW
COP	Heating	3.69 kW/kW	3.71 kW/kW	3.61 kW/kW	3.61 kW/kW
MOISTURE REMOVAL		1.3 L/hr	1.5 L/hr	2.2 L/hr	2.7 L/hr
AIR CIRCULATION (HIGH)	Cooling	600 m ³ /hr	680 m ³ /hr	680 m ³ /hr	930 m ³ /hr
	Heating	600 m ³ /hr	800 m ³ /hr	800 m ³ /hr	930 m ³ /hr
MAXIMUM CURRENT		10.0 A	12.5 A	12.5 A	13.5 A

FAN MOTOR

INDOOR UNIT (cool / heat)	Discrimination	MFF-24RVL			
	High speed	650 / 650 r.p.m.	730 / 830 r.p.m.	730 / 830 r.p.m.	960 / 960 r.p.m.
	Med speed	580 / 580 r.p.m.	630 / 730 r.p.m.	630 / 730 r.p.m.	850 / 880 r.p.m.
	Low speed	520 / 520 r.p.m.	540 / 630 r.p.m.	540 / 630 r.p.m.	650 / 740 r.p.m.
	Quiet	460 / 460 r.p.m.	460 / 500 r.p.m.	460 / 500 r.p.m.	500 / 580 r.p.m.
OUTDOOR UNIT (cool / heat)		770 / 700 r.p.m.	820 / 750 r.p.m.	860 / 820 r.p.m.	1,050 / 1,050 r.p.m.

NOISE LEVEL

INDOOR UNIT (cool / heat)	High speed	37 dB / 37 dB	38 dB / 43 dB	38 dB / 43 dB	49 dB / 49 dB
	Med speed	34 dB / 34 dB	34 dB / 38 dB	34 dB / 38 dB	44 dB / 45 dB
	Low speed	30 dB / 31 dB	30 dB / 34 dB	30 dB / 34 dB	36 dB / 40 dB
	Quiet	27 dB / 29 dB	27 dB / 30 dB	26 dB / 30 dB	30 dB / 33 dB
OUTDOOR UNIT (cool / heat)		47 dB / 48 dB	49 dB / 49 dB	50 dB / 50 dB	52 dB / 53 dB

DIMENSIONS

INDOOR UNIT	H x W x D	245 x 570 x 570 mm		
PANEL	H x W x D	49 x 700 x 700 mm		
OUTDOOR UNIT	H x W x D	578 x 790 x 300 mm		578 x 790 x 315 mm

WEIGHT

INDOOR UNIT	Net / Gross	15 kg / 18 kg		17 kg / 20 kg
PANEL	Net / Gross	2.6 kg / 4.5 kg		
OUTDOOR UNIT	Net / Gross	40 kg / 44 kg		44 kg / 48 kg

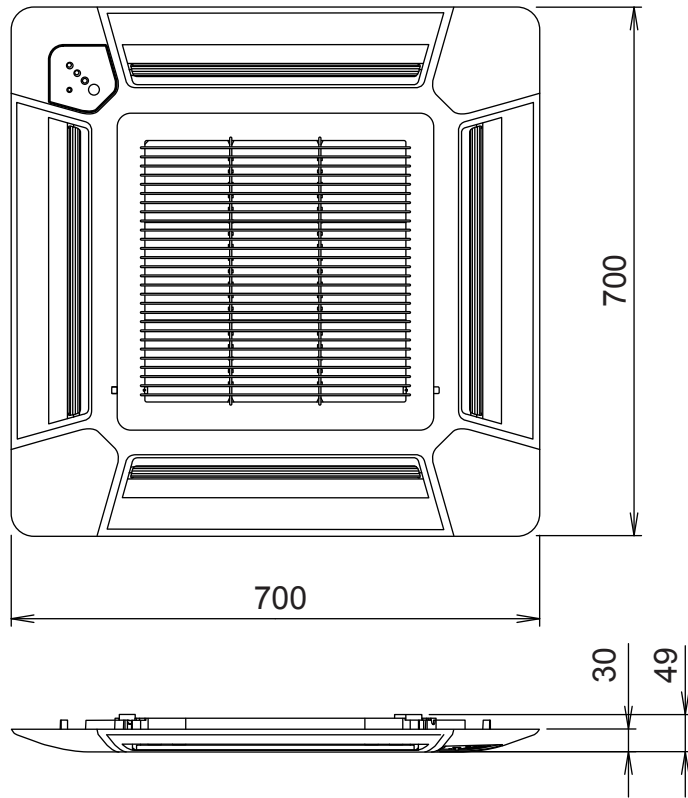
REFRIGERANT (R410A)

COMPRESSOR		DA130A1F-25NA			DA150A1F-20NA
COMPRESSOR WEIGHT (with oil)		9.6kg			10.0 kg
FULL CHARGE	Pipe Length 15 m	1,150 g	1,250 g	1,250 g	1,700 g
	20 m	1,250 g	1,350 g	1,350 g	1,800 g
	25 m	1,350 g	1,450 g	1,450 g	1,900 g
	30 m	---	---	---	2,000 g
ADDITIONAL REFRIGERANT		20 g/m	20 g/m	20 g/m	20 g/m

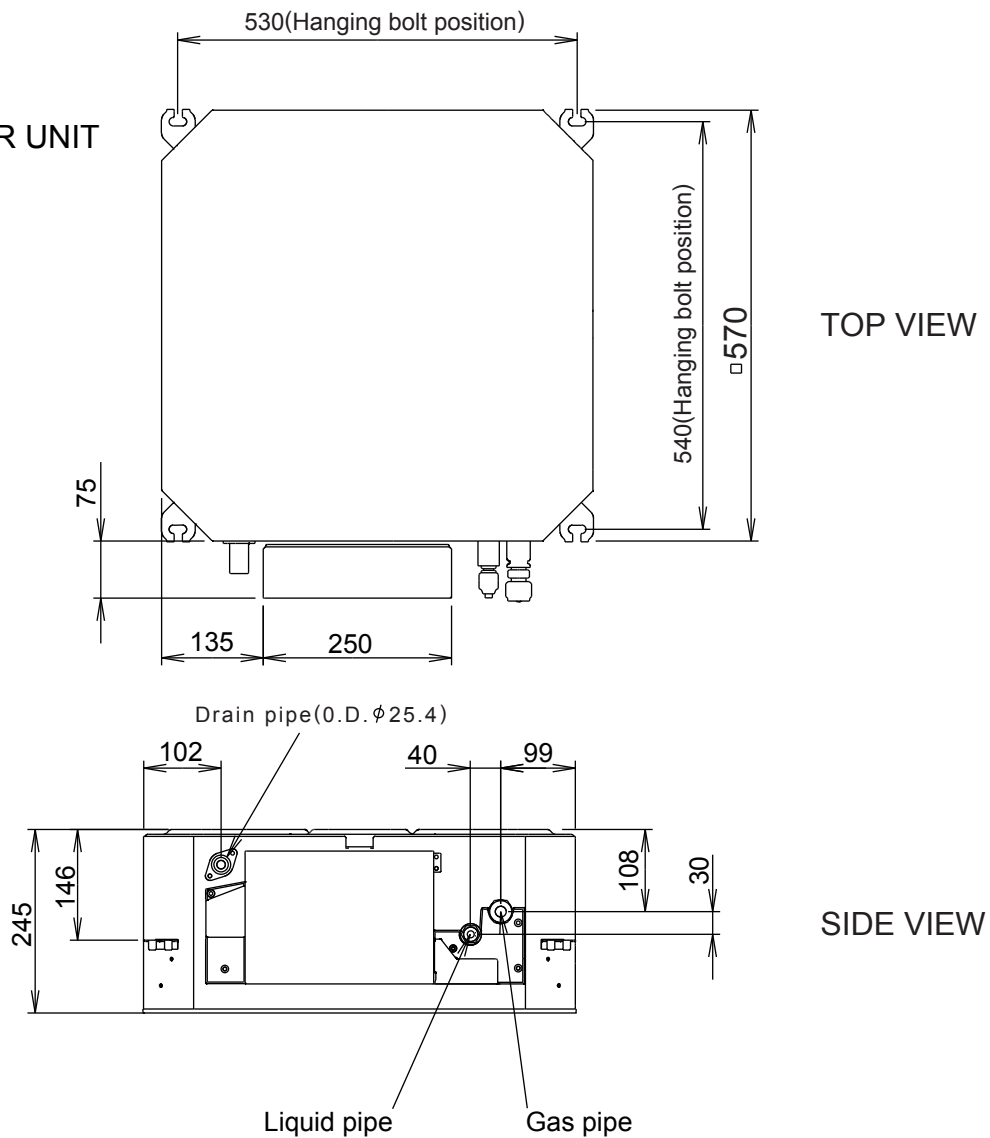
OUTLINE AND DIMENSIONS

Unit : mm

DECORATION PANEL



INDOOR UNIT

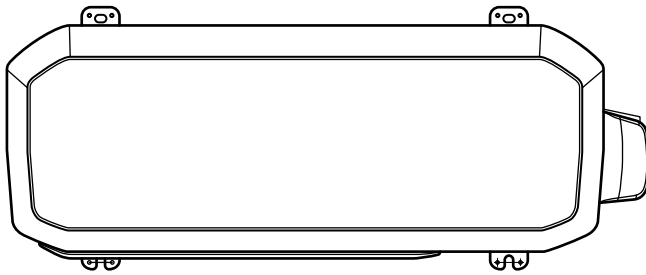


TOP VIEW

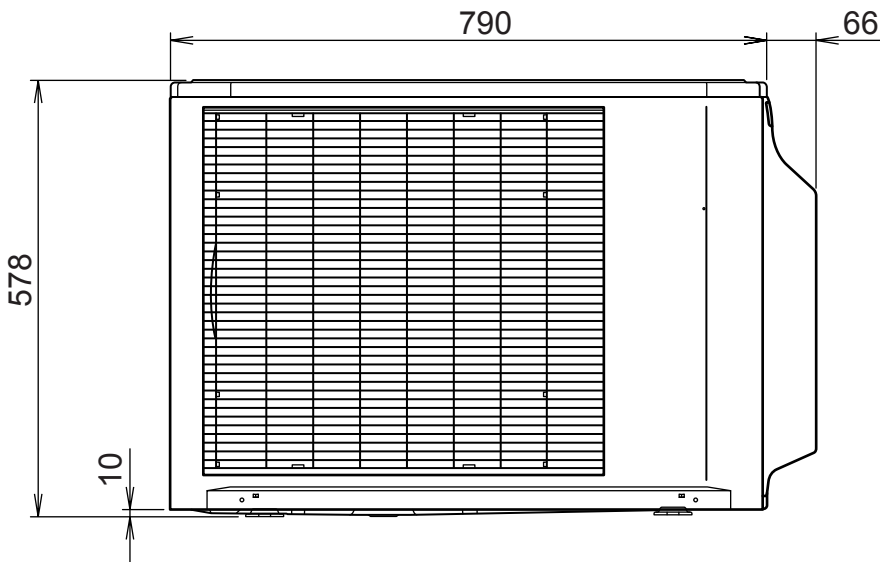
SIDE VIEW

OUTDOOR UNIT
 AOHA12LACL
 AOHA14LACL
 AOHA18LACL

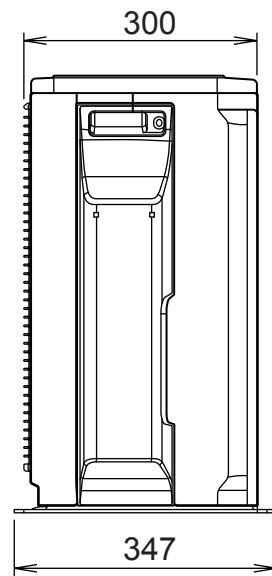
Unit : mm



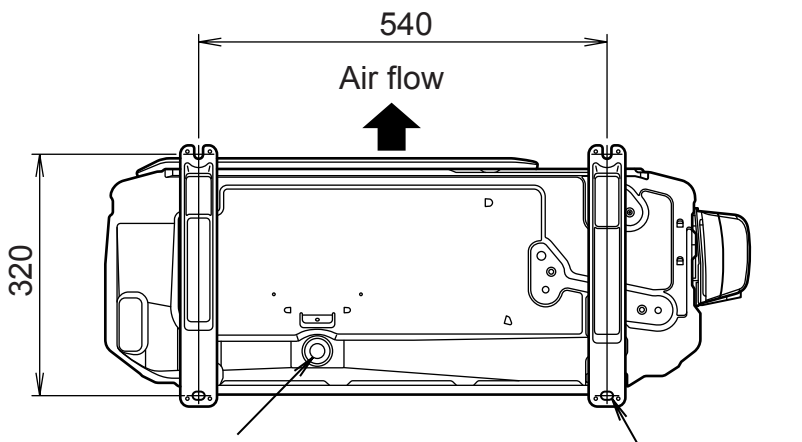
Top view



Front view



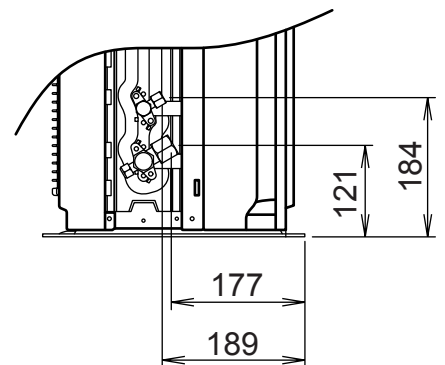
Side view



Drain pipe
 mounting place
 (ø 20)

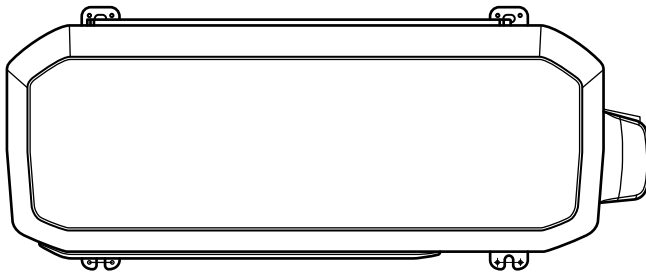
Bottom view

4- ø 10mm hole

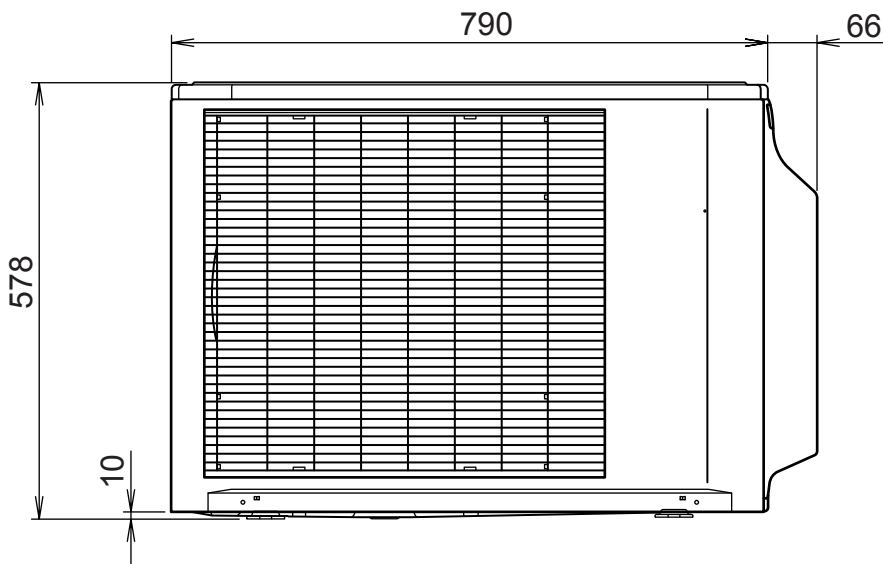


OUTDOOR UNIT
AOHA24LACL

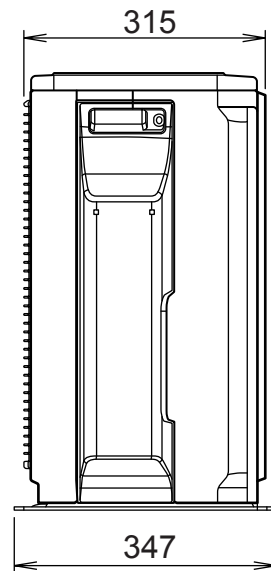
Unit : mm



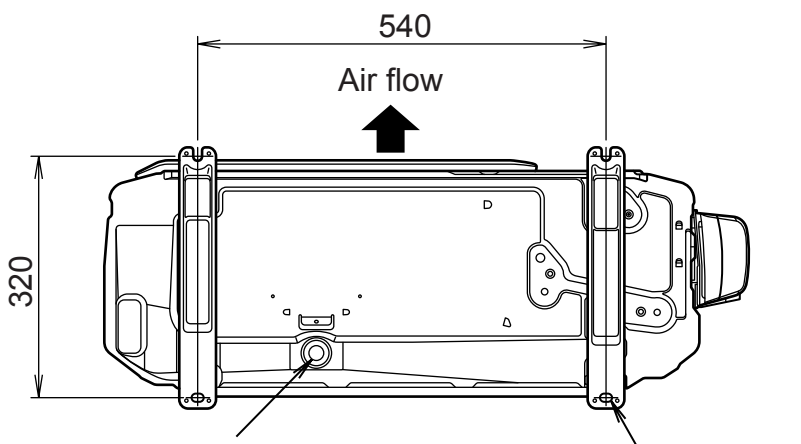
Top view



Front view



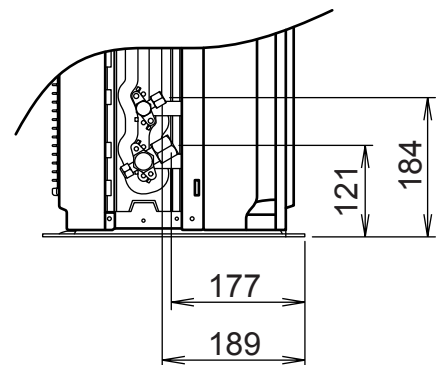
Side view



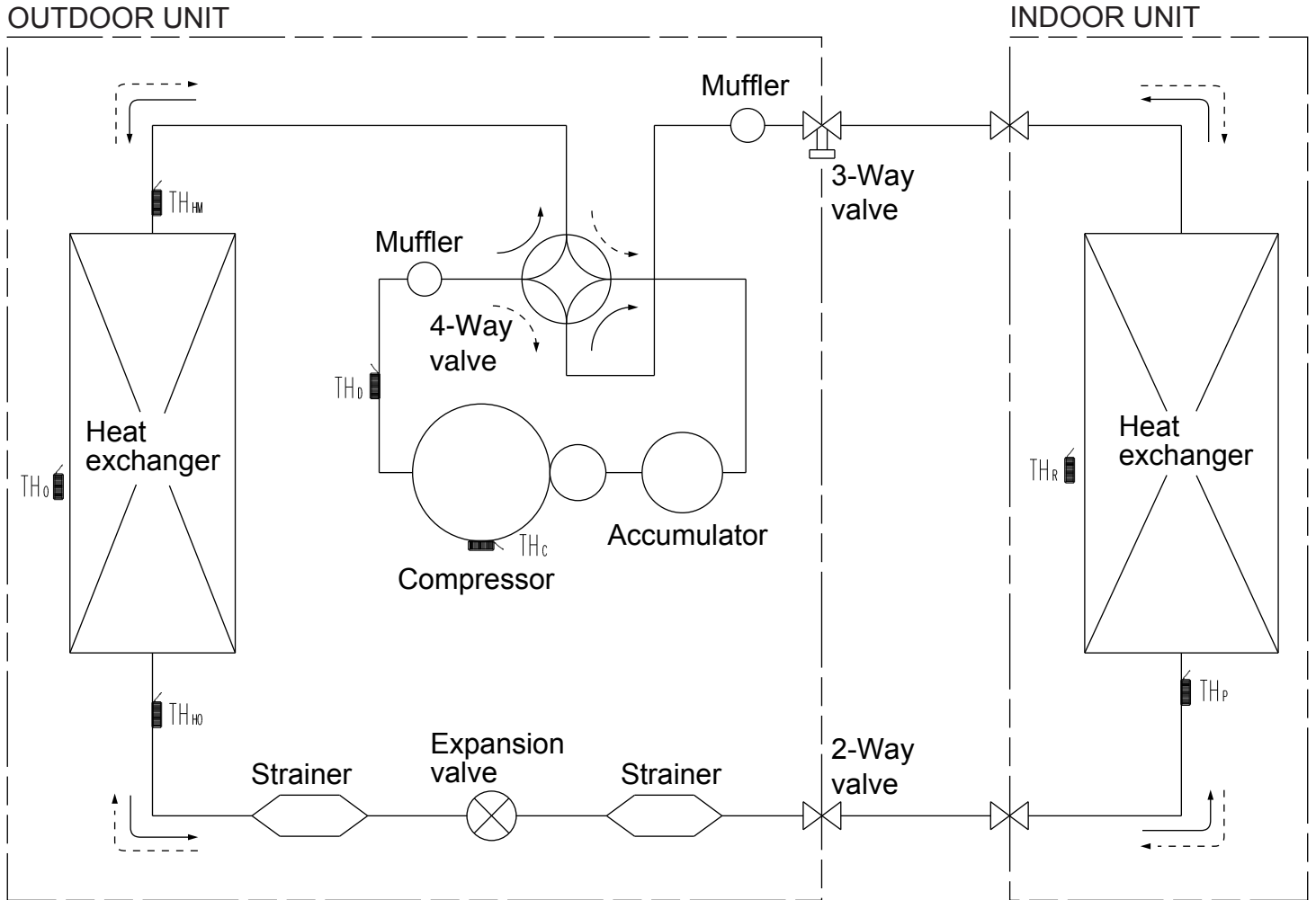
Drain pipe
mounting place
(ϕ 20)

Bottom view

4- ϕ 10mm hole



REFRIGERANT SYSTEM DIAGRAM



TH_c : Compressor thermistor
 TH_d : Discharge pipe thermistor
 TH_m : Heat exchanger thermistor (Middle)
 TH_{ho} : Heat exchanger thermistor (Out)
 TH_o : Outdoor thermistor

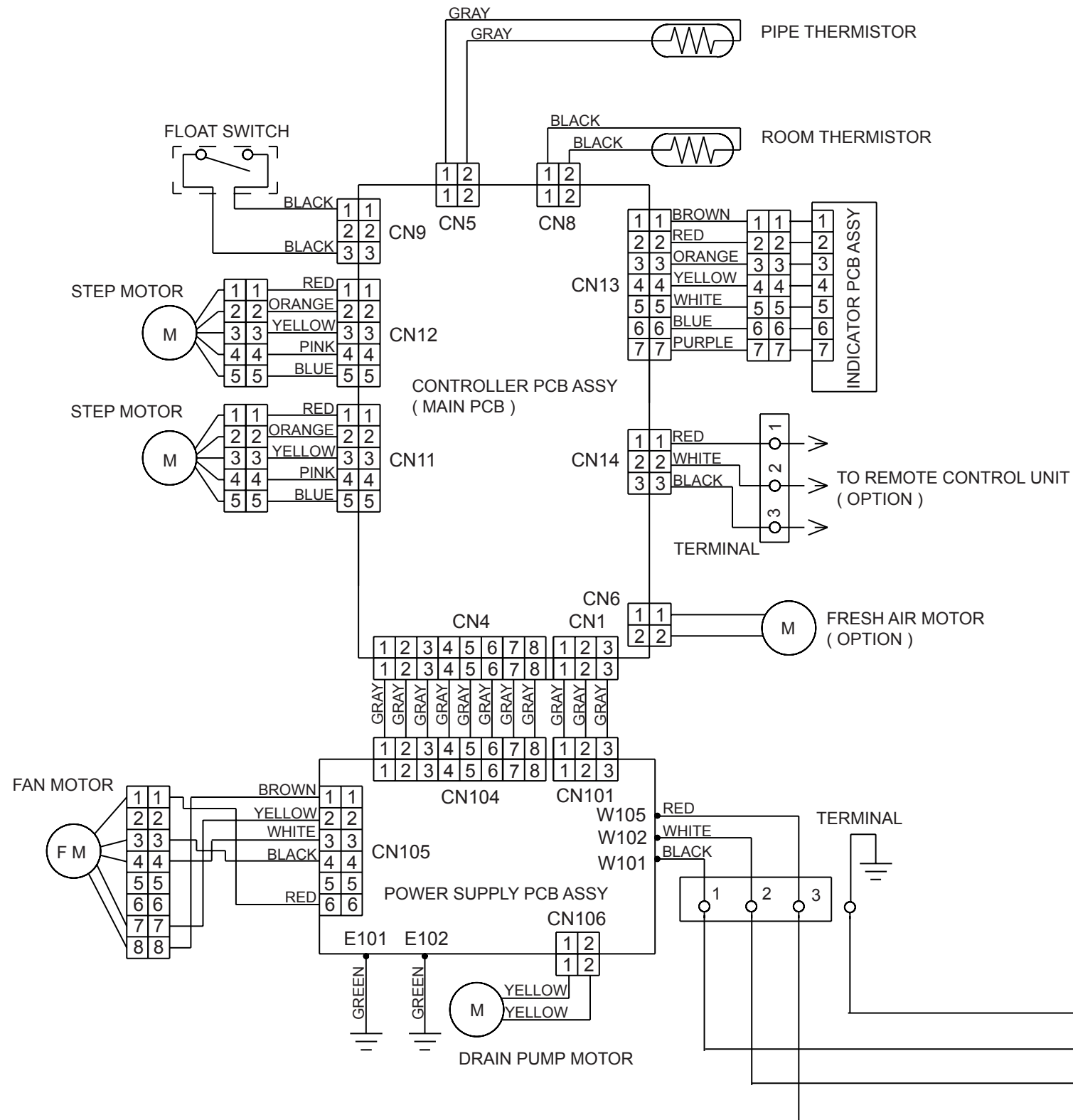
TH_p : Pipe thermistor
 TH_r : Room thermistor

<Refrigerant pipe diameter>
 AUHA12LAL / AOHA12LACL
 Liquid : 1/4" (6.35 mm)
 Gas : 3/8" (9.52 mm)
 AUHA14LAL / AOHA14LACL
 AUHA18LAL / AOHA18LACL
 Liquid : 1/4" (6.35 mm)
 Gas : 1/2" (12.70 mm)
 AUHA24LAL / AOHA24LACL
 Liquid : 1/4" (6.35 mm)
 Gas : 5/8" (15.88 mm)

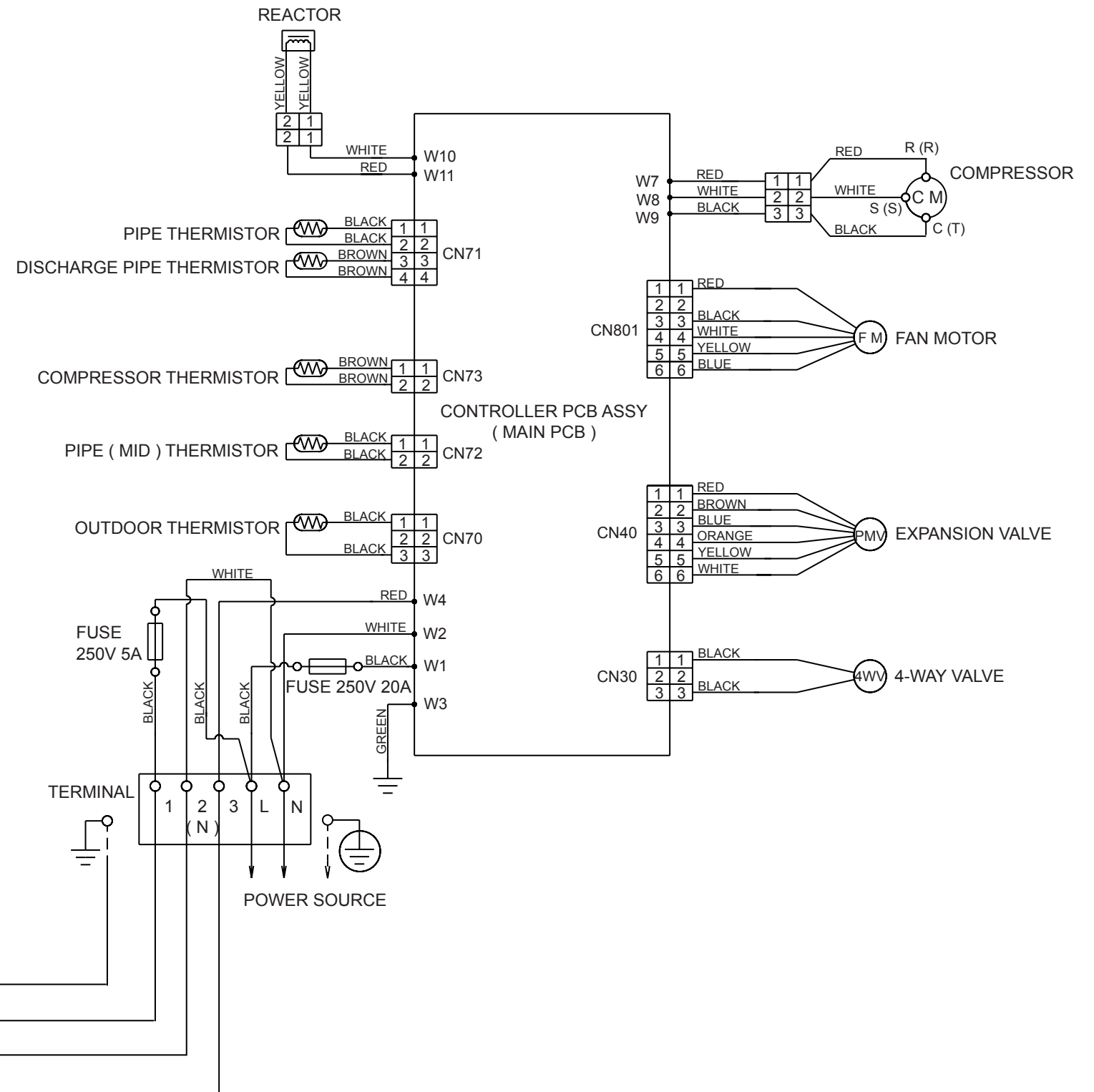
<Refrigerant direction>
 ———→ Cooling
 - - - - -→ Heating

CIRCUIT DIAGRAM

INDOOR UNIT:



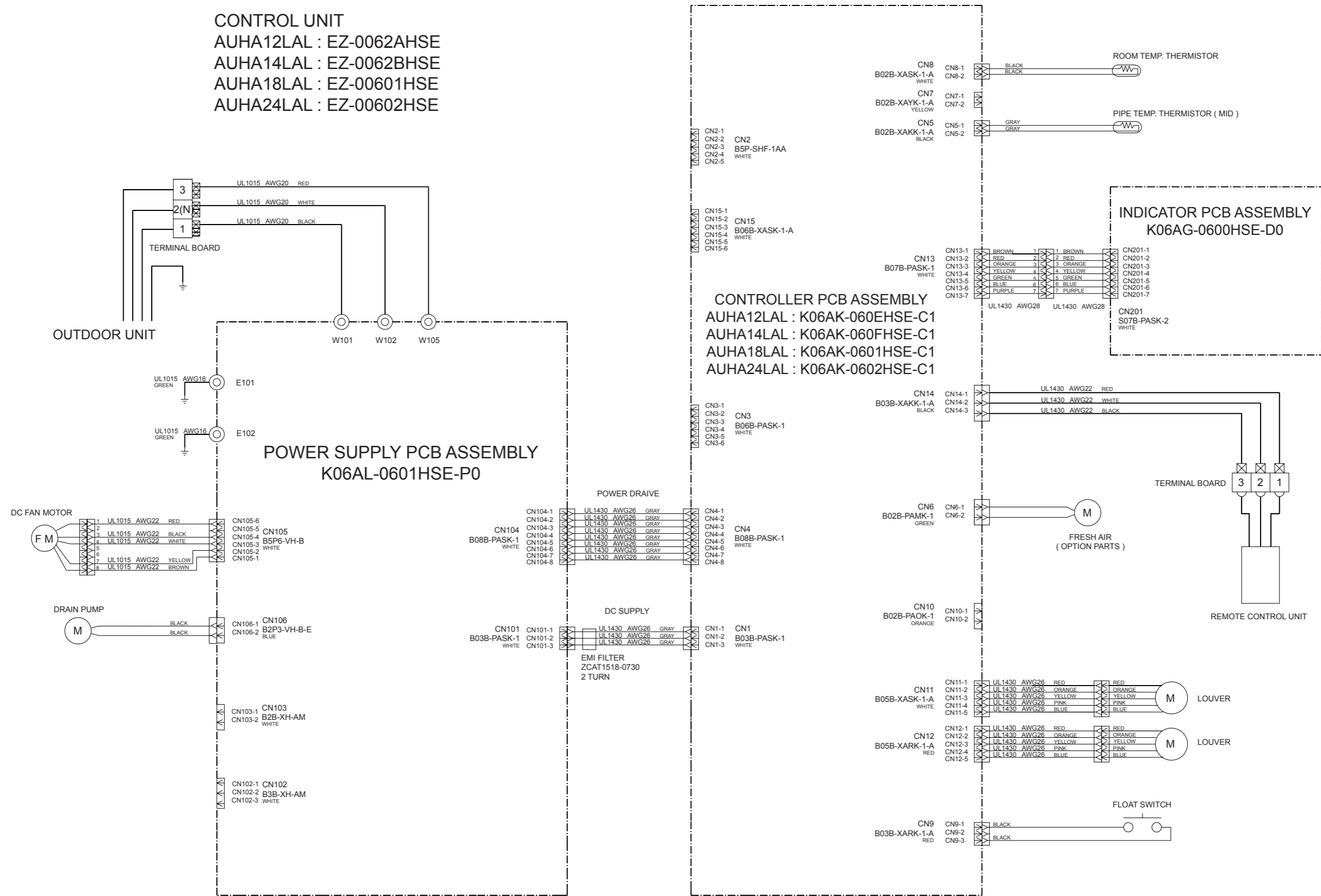
OUTDOOR UNIT:



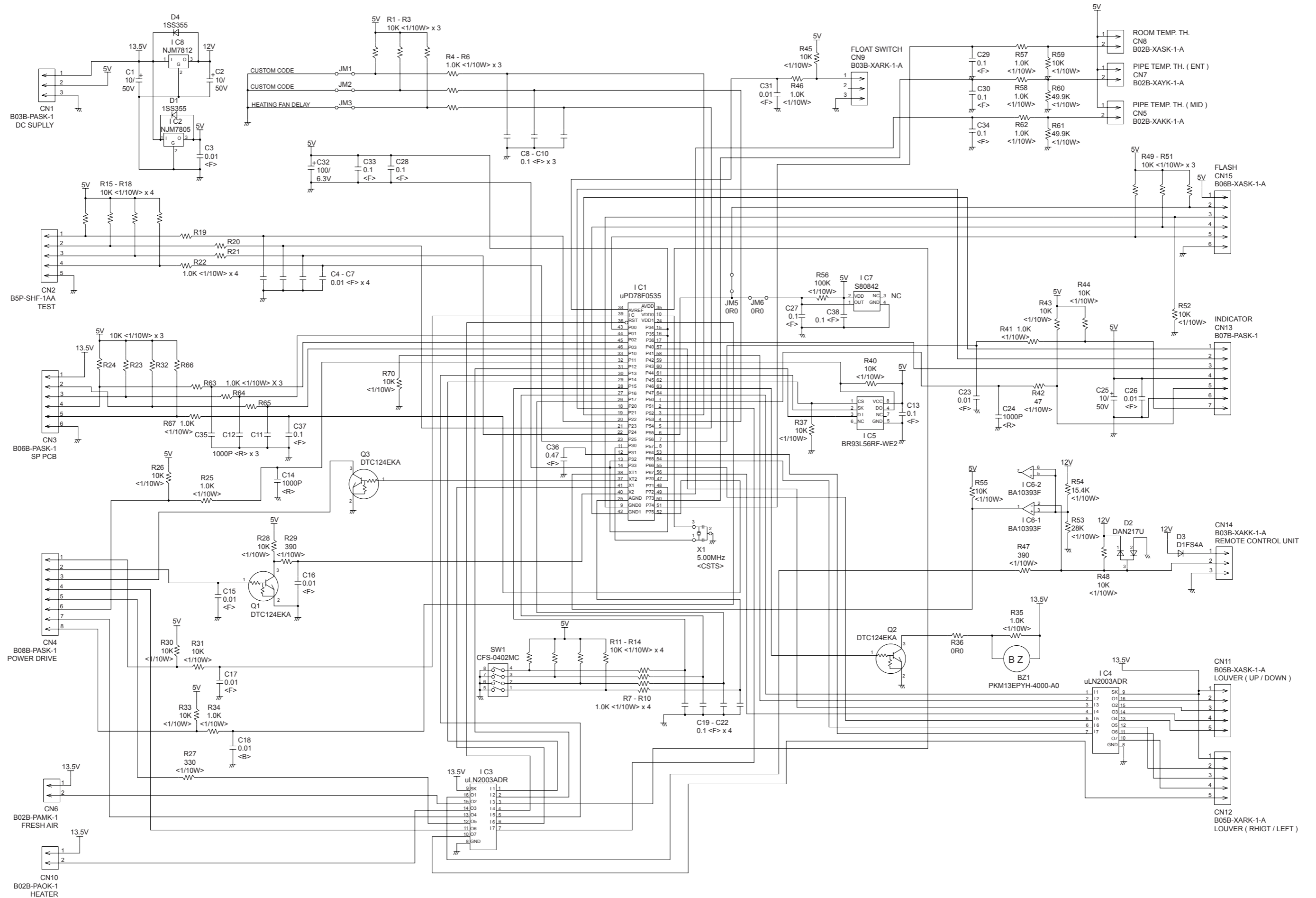
INDOOR PCB CIRCUIT DIAGRAM

CONTROL UNIT

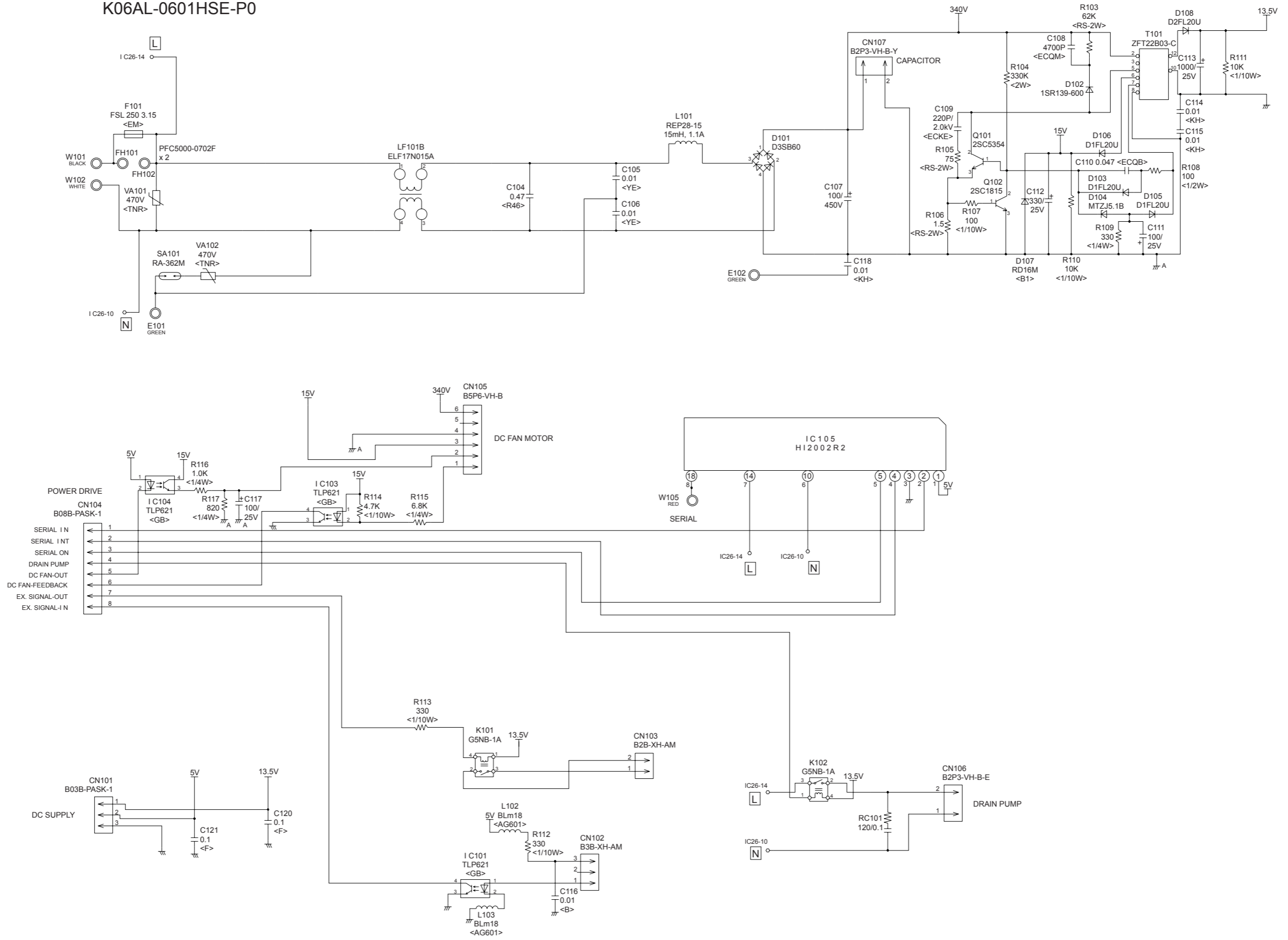
AUHA12LAL : EZ-0062AHSE
 AUHA14LAL : EZ-0062BHSE
 AUHA18LAL : EZ-00601HSE
 AUHA24LAL : EZ-00602HSE



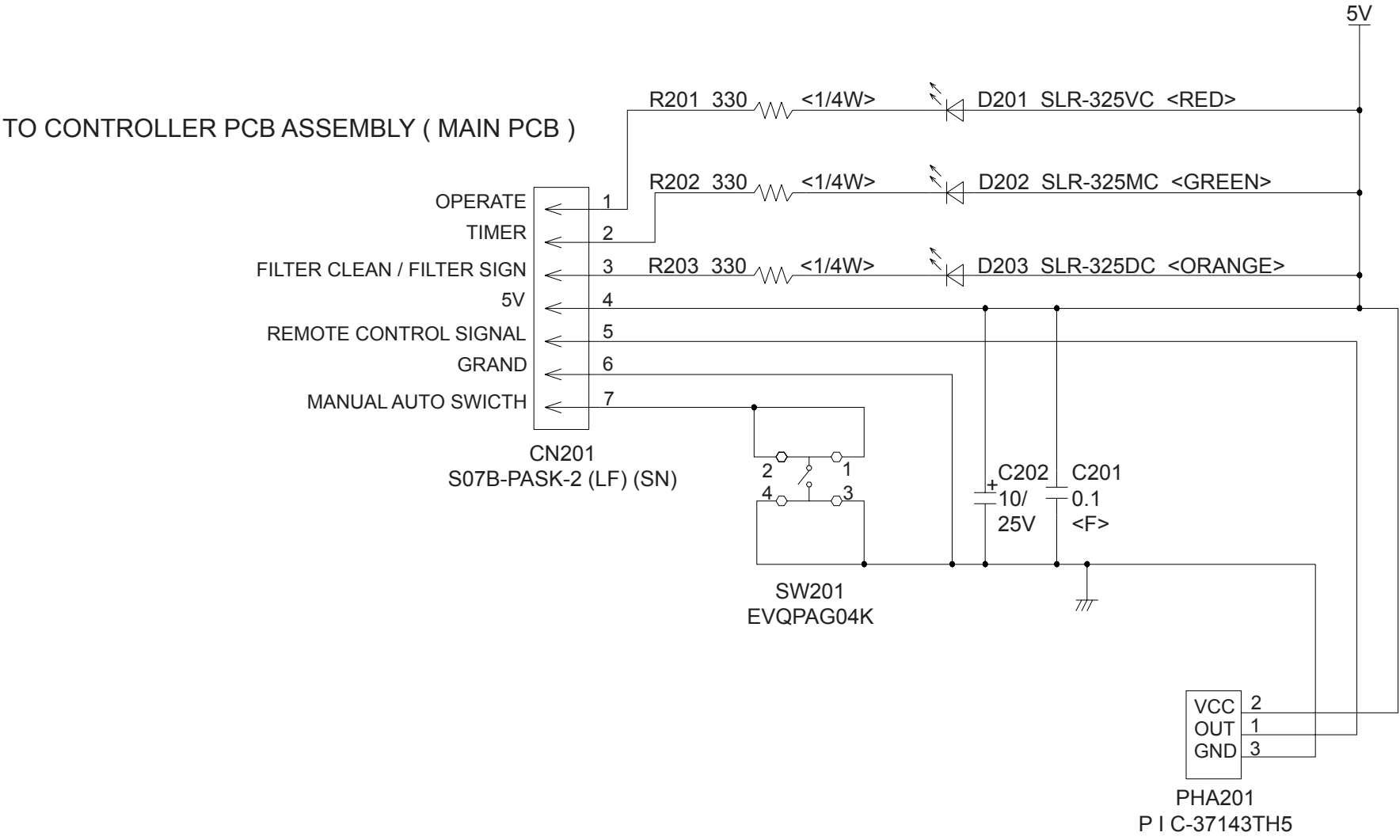
INDOOR UNIT
 CONTROLLER PCB ASSEMBLY (MAIN PCB)
 AUHA12LAL : K06AK-060EHSE-C1
 AUHA14LAL : K06AK-060FHSE-C1
 AUHA18LAL : K06AK-0601HSE-C1
 AUHA24LAL : K06AK-0602HSE-C1



INDOOR UNIT
POWER SUPPLY PCB ASSEMBLY
K06AL-0601HSE-P0



INDOOR UNIT
 INDICATOR PCB ASSEMBLY
 K06AG-0600HSE-D0



OUTDOOR PCB CIRCUIT DIAGRAM

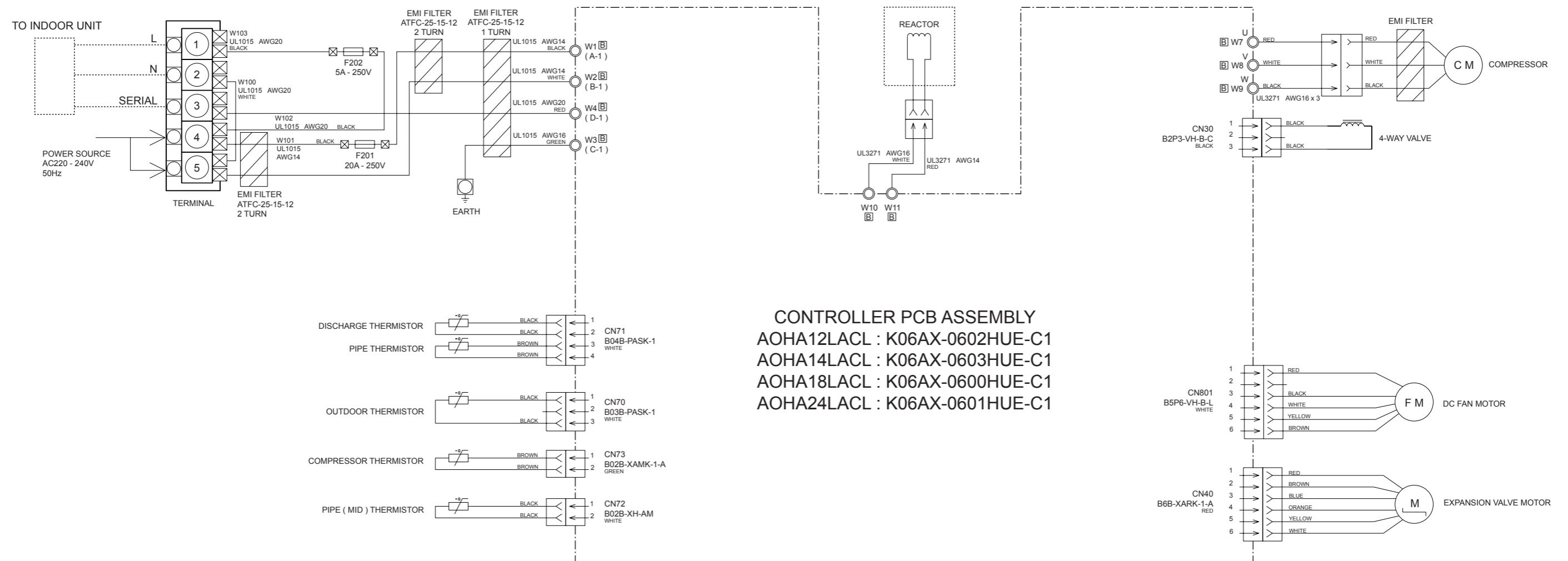
INVERTER ASSEMBLY

AOHA12LACL : EZ-0060RHUE

AOHA14LACL : EZ-0060SHUE

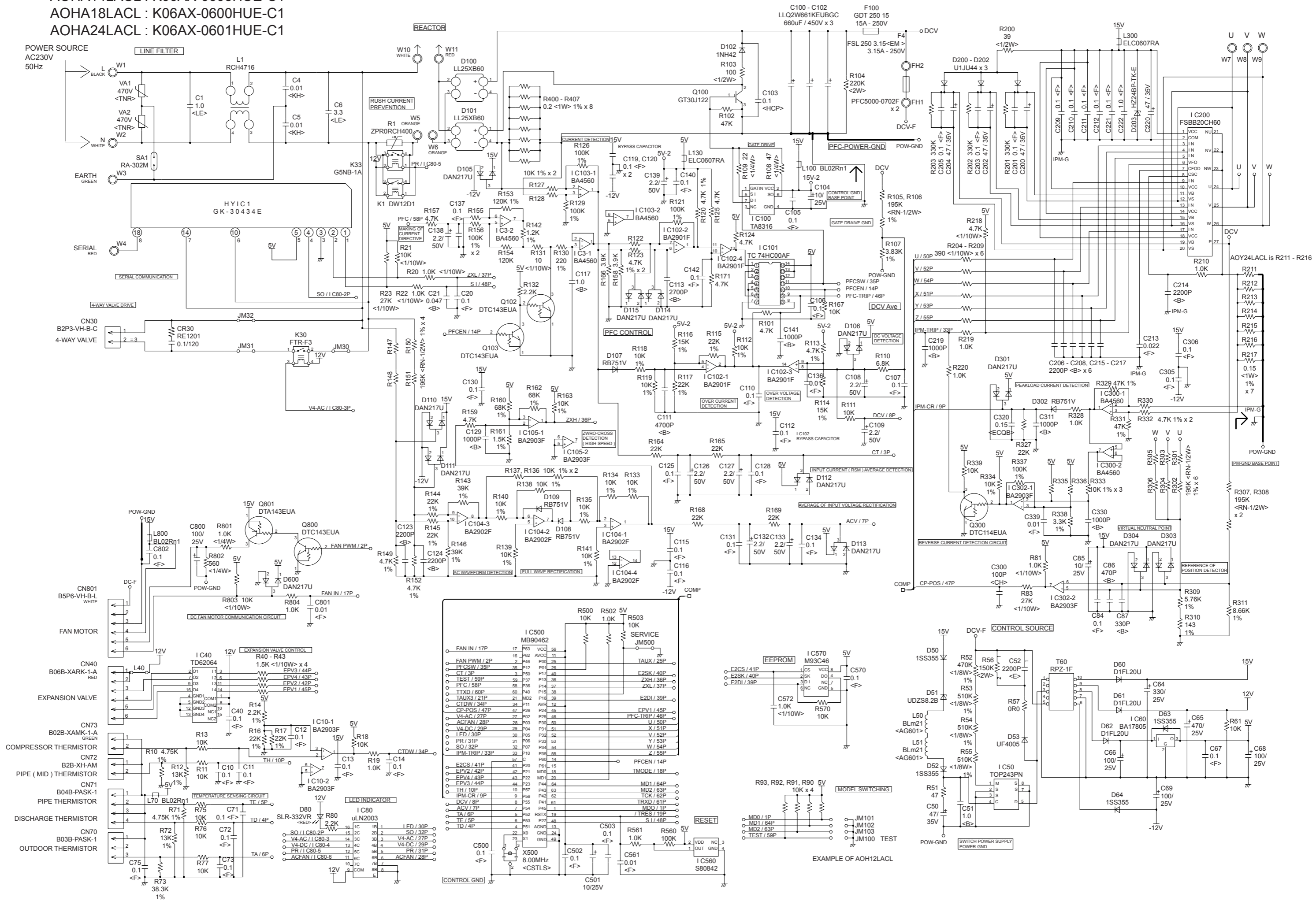
AOHA18LACL : EZ-0069HUE

AOHA24LACL : EZ-006AHUE



CONTROLLER PCB ASSEMBLY
 AOHA12LACL : K06AX-0602HUE-C1
 AOHA14LACL : K06AX-0603HUE-C1
 AOHA18LACL : K06AX-0600HUE-C1
 AOHA24LACL : K06AX-0601HUE-C1

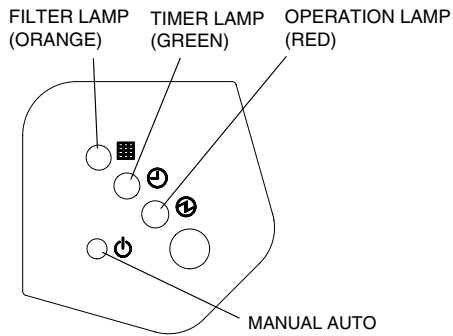
CONTROLLER PCB ASSEMBLY
 AOHA12LACL : K06AX-0602HUE-C1
 AOHA14LACL : K06AX-0603HUE-C1
 AOHA18LACL : K06AX-0600HUE-C1
 AOHA24LACL : K06AX-0601HUE-C1



ERROR CONTENTS

INDOOR UNIT

Troubleshooting at the indoor unit display
(Troubleshooting at the display is available
either on the wired or wireless remote control.)



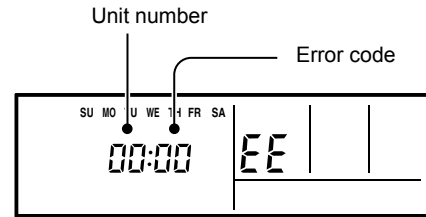
The OPERATION, TIMER and FILTER lamp operate as follows table according to the error contents.

Error contents	OPERATION lamp (Red)	TIMER lamp (Green)	FILTER lamp (Orange)
Indoor signal error	×	○	×
Wired remote controller abnormal	×	(8 times)○	×
Indoor room temperature sensor error	(2 times)○	(2 times)○	×
Indoor heat exchanger temperature sensor (middle) error	(2 times)○	(3 times)○	×
Indoor heat exchanger temperature sensor (inlet) error	(2 times)○	(4 times)○	×
Float switch operated	(2 times)○	(6 times)○	×
Outdoor discharge pipe temperature sensor error	(3 times)○	(2 times)○	×
Outdoor heat exchanger temperature sensor (outlet) error	(3 times)○	(3 times)○	×
Outdoor temperature sensor error	(3 times)○	(4 times)○	×
Compressor temperature sensor error	(3 times)○	(8 times)○	×
2-way valve temperature sensor error	(3 times)○	×	(2 times)○
3-way valve temperature sensor error	(3 times)○	×	(3 times)○
Outdoor heat exchanger temperature sensor (middle) error	(3 times)○	×	(4 times)○
Indoor manual auto switch abnormal	(4 times)○	(2 times)○	×
Power supply frequency detection error	(4 times)○	(4 times)○	×
IPM protection	(5 times)○	(2 times)○	×
CT error	(5 times)○	(3 times)○	×
Compressor location error	(5 times)○	(5 times)○	×
Outdoor fan error	(5 times)○	(6 times)○	×
Connected indoor unit abnormal	(5 times)○	(7 times)○	×
Outdoor unit computer communication error	(5 times)○	(8 times)○	×
Indoor fan abnormal	(6 times)○	(2 or 3 times)○	×
Discharge temperature error	(7 times)○	(2 times)○	×
Excessive high pressure protection on cooling	(7 times)○	(3 times)○	×
4-way valve abnormal	(7 times)○	(4 times)○	×
Pressure switch abnormal	(7 times)○	(5 times)○	×
Compressor temperature error	(7 times)○	(6 times)○	×
Active filter abnormal	(8 times)○	(2 or 3 times)○	×
PFC circuit error	(8 times)○	(4 times)○	×

○ : 0.5s ON/0.5s OFF (Flash) × : OFF

Troubleshooting at the wired remote control LCD Self diagnosis

If an error occurs, the following display will be shown.
("EE" will appear in the set room temperature display.)



Ex. Self-diagnosis

Error code	Error contents
01 13 26 27	Indoor signal error
00	Wired remote controller abnormal
02	Indoor room temperature sensor error
04	Indoor heat exchanger temperature sensor (middle) error
28	Indoor heat exchanger temperature sensor (inlet) error
09	Float switch operated
0C	Outdoor discharge pipe temperature sensor error
06	Outdoor heat exchanger temperature sensor (outlet) error
0A	Outdoor temperature sensor error
15	Compressor temperature sensor error
1d	2-way valve temperature sensor error
1E	3-way valve temperature sensor error
29	Outdoor heat exchanger temperature sensor (middle) error
20	Indoor manual auto switch abnormal
2A	Power supply frequency detection error
17	IPM protection
18	CT error
1A	Compressor location error
1b	Outdoor fan error
1F	Connected indoor unit abnormal
1c	Outdoor unit computer communication error
12	Indoor fan abnormal
0F	Discharge temperature error
24	Excessive high pressure protection on cooling
2c	
16	
2b	
19	
25	

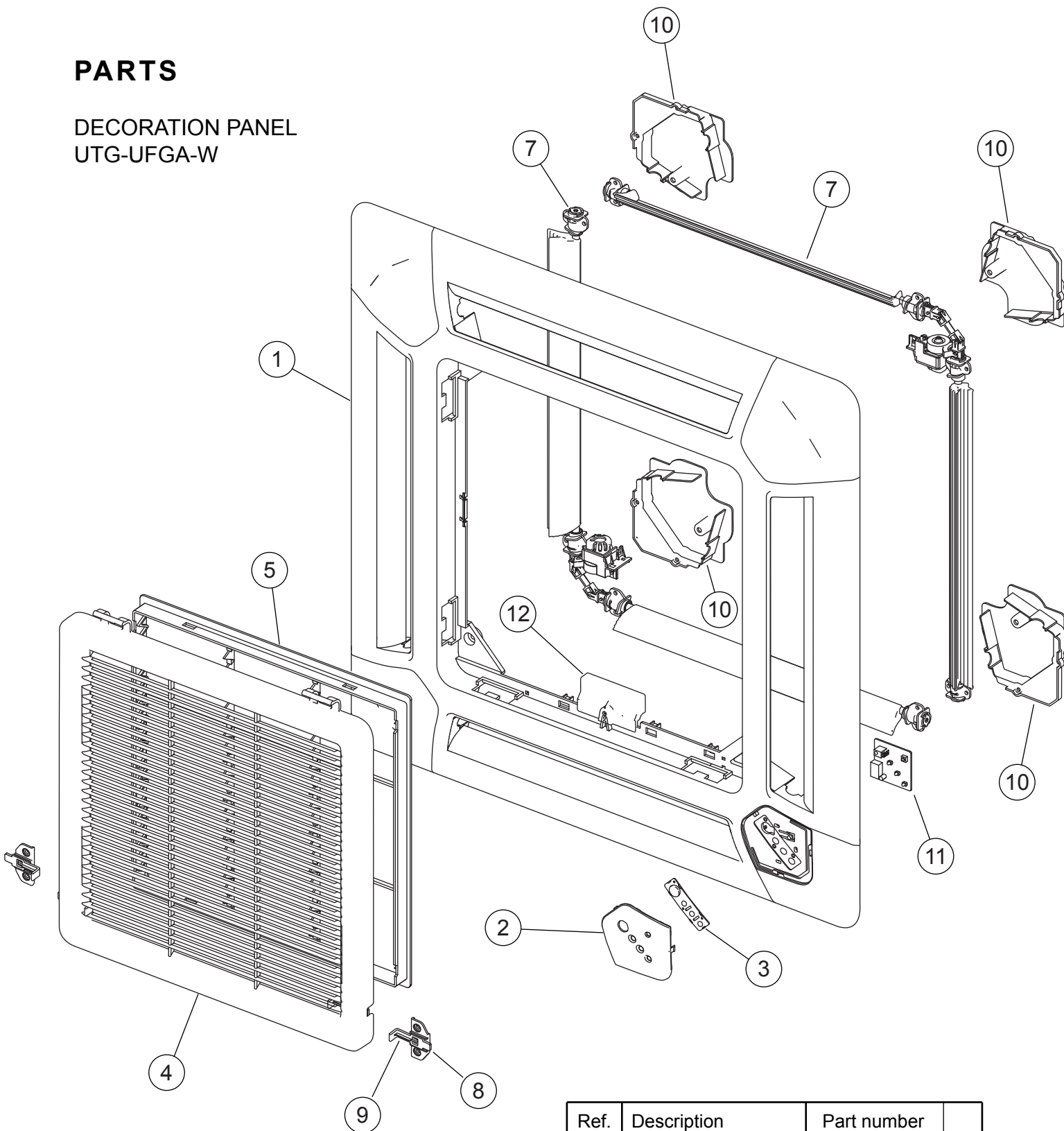
If "CO" appears in the unit number display, there is a remote controller error. Refer to the installation instruction sheet included with the remote controller.

OUTDOOR UNIT

Error contents	LED
Thermistor malfunction	on 0.1 sec / off 0.1 sec
Abnormal discharge temperature	on
Current surge protection	on 0.5 sec / off 0.5 sec
CT abnormality	on 2.0 sec / off 2.0 sec
Compressor position detection malfunction	on 0.1 sec / off 2.0 sec
Fan malfunction	on 5.0 sec / off 5.0 sec
PAM voltage abnormality	on 5.0 sec / off 0.1 sec
Timer short	on 1.0 sec / off 0.1 sec
Compressor temperature protection (permanent stop)	on 2.0 sec / off 5.0 sec
PFC surge protection (permanent stop)	on 5.0 sec / off 2.0 sec

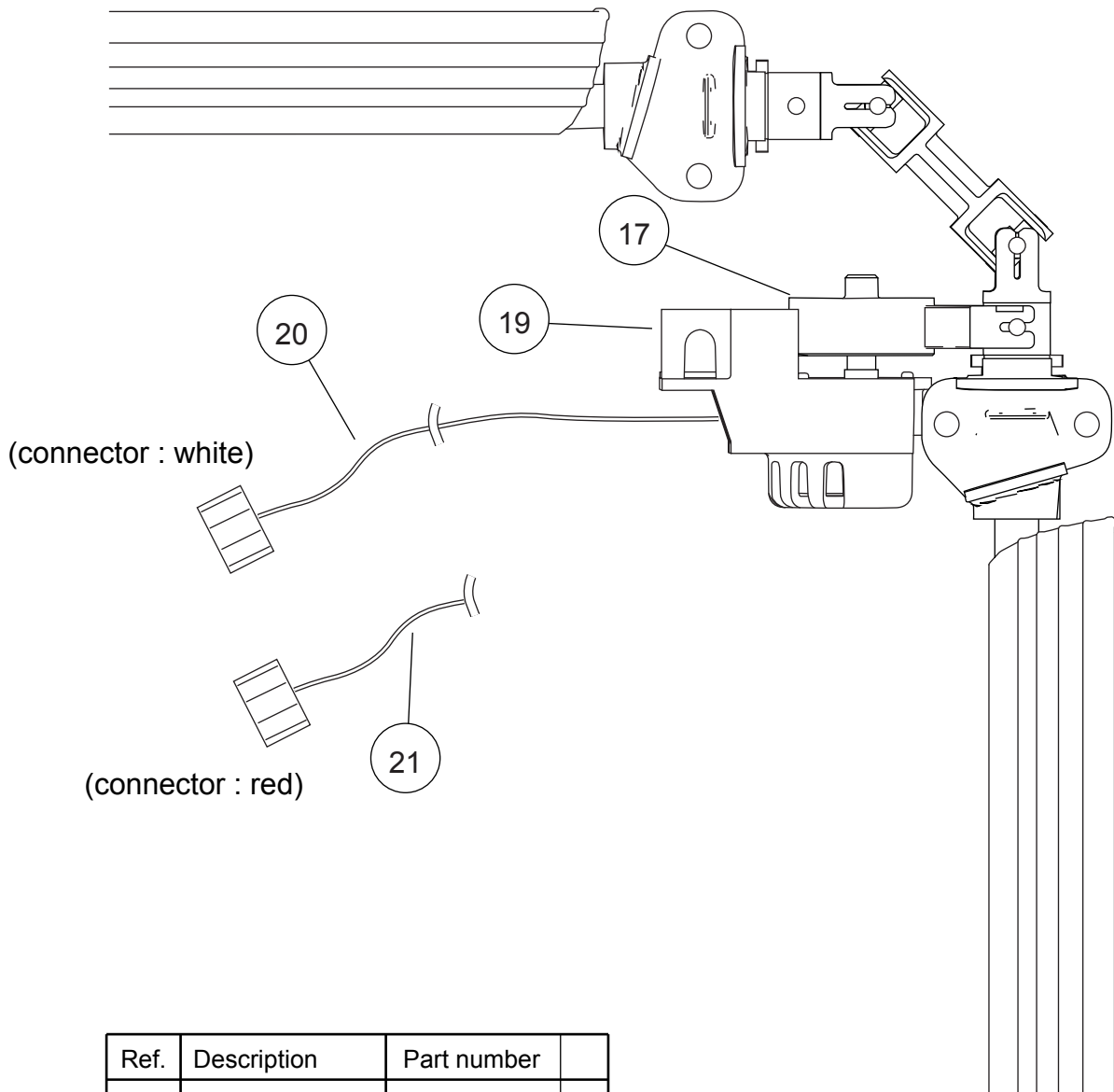
PARTS

DECORATION PANEL
UTG-UFGA-W



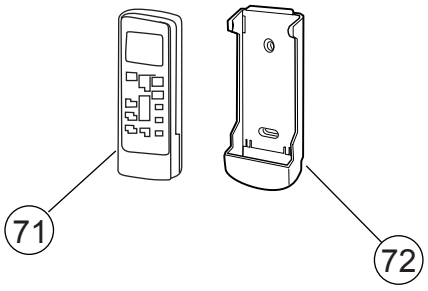
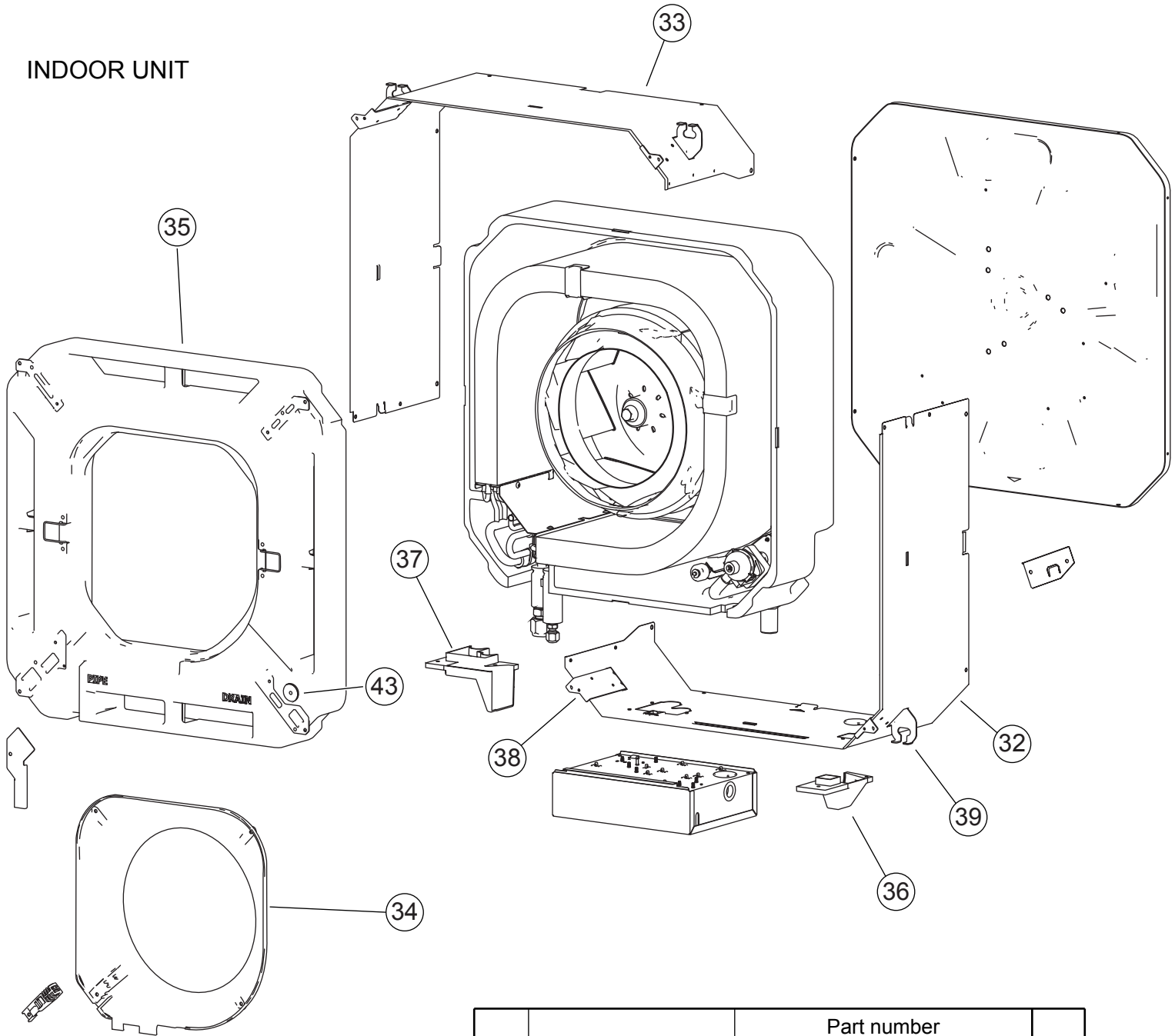
Ref.	Description	Part number
1	Decoration Panel without Insulations	9375525019
2	Display Panel	9375529024
3	Receiver Window	9375547011
4	Intake Grille	9375531010
5	Long Life Filter	9375533014
7	Flap Total Assy	9377760012
8	Hook Bracket	9375546014
9	Grille Hook	9375532017
10	Panel Cover without Insulations	9375530013
11	Indicator PCB Assy	9707371017
12	Connector Cover	9375549015

DECORATION PANEL
 UTG-UFGA-W
 Flap total assy
 Motor holder assy



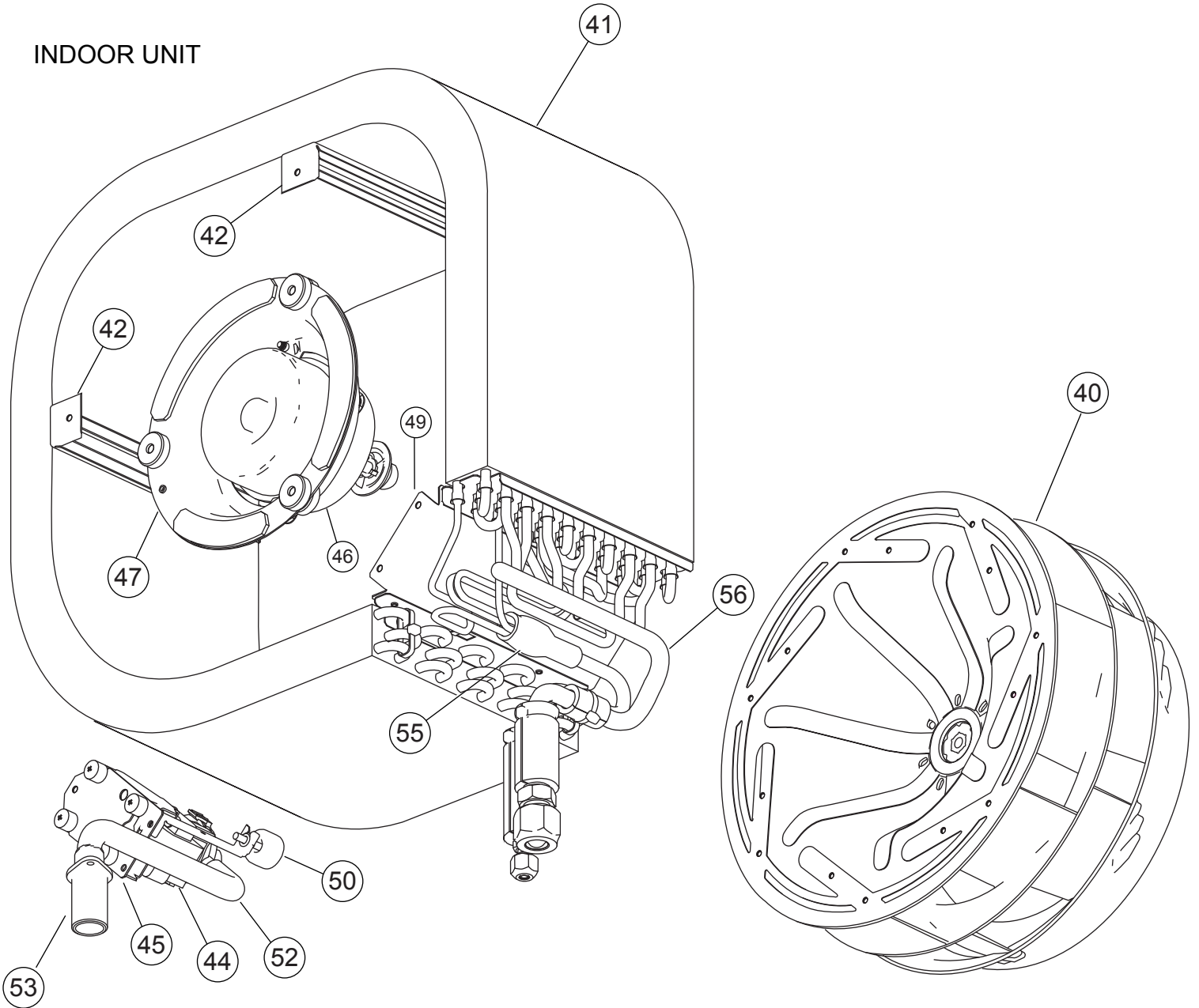
Ref.	Description	Part number
17	Gear A	9375536015
19	Motor Holder	9375535018
20	Step Motor (white connector)	9900139070
21	Step Motor (red connector)	9900139087

INDOOR UNIT



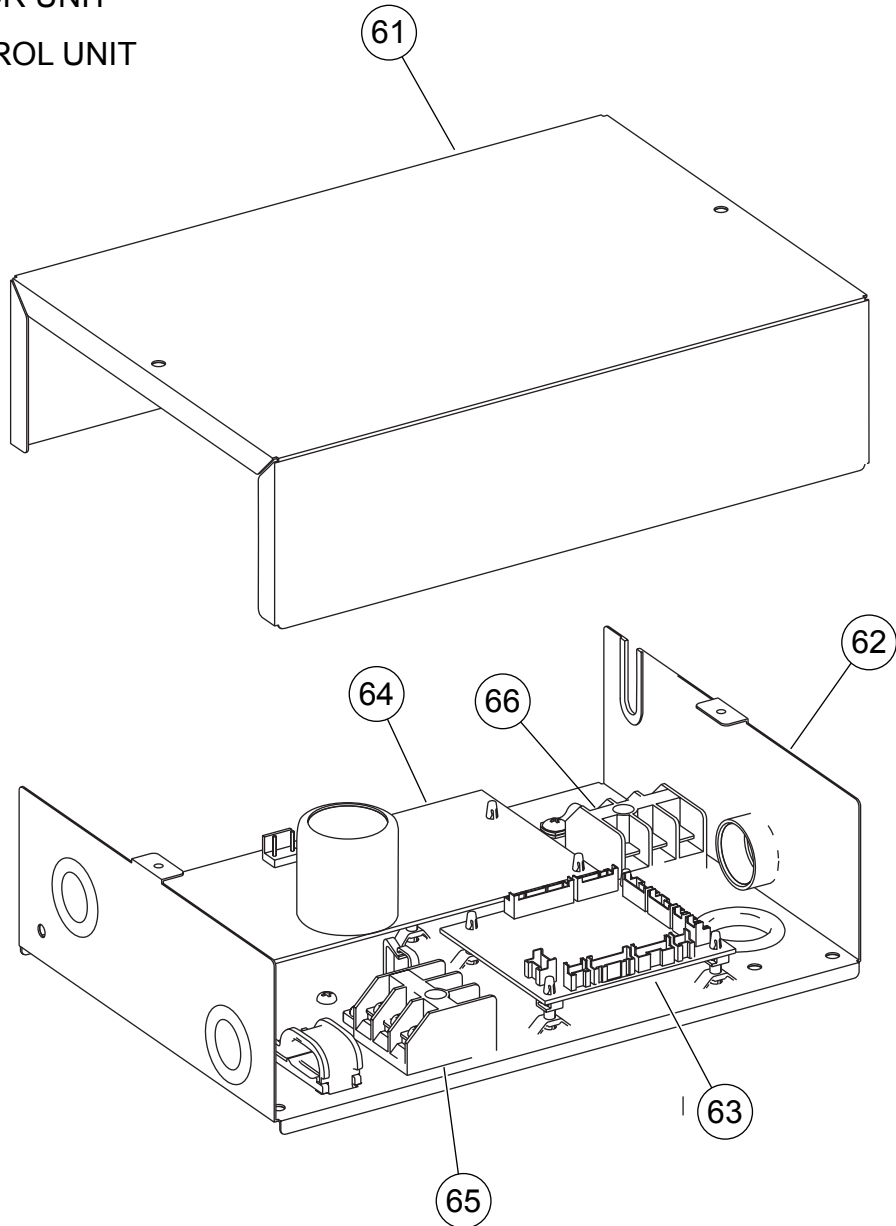
Ref.	Description	Part number		
		AUHA12LAL AUHA14LAL AUHA18LAL	AUHA24LAL	
32	Cabinet A Assy	9375492014	9375492014	
33	Cabinet B	9375494018	9375494018	
34	Bell Mouse	9375503017	9375503017	
35	Drain Pan Sub Assy	9377765024	9377765017	
36	Wire Cover	9375516017	9375516017	
37	Pipe Cover	9375515010	9375515010	
38	Hook R	9375504014	9375504014	
39	Hook L	9375505011	9375505011	
43	Drain Cap	9375502010	9375502010	
71	Remote Control	9315885012	9315885012	
72	Remote Control Holder	9305642014	9305642014	

INDOOR UNIT



Ref.	Description	Part number		
		AUHA12LAL	AUHA14LAL AUHA18LAL	AUHA24LAL
40	2 Stage Turbo Fan Assy	9375480011	9375480011	9375480011
41	Evaporator Assy	9372585085	9372585054	9372585061
42	Evaporator Holder	9375508012	9375508012	9375507015
44	Pump Assy	9900360047	9900360047	9900360047
45	Drain Pump Holder B	9375518011	9375518011	9375518011
46	Fan Motor	9602436019	9602436019	9602436019
47	Fan Motor Holder	9375552015	9375552015	9375552015
49	Separate Wall	9375506018	9375506018	9375506018
50	Float Switch	9900361037	9900361037	9900361037
52	Drain Hose	9375519018	9375519018	9375519018
53	Drain Port	9375520014	9375520014	9375520014
55	Distributor Assy	9371325316	9371325316	9371325330
56	Coupling Pipe Assy	9373038412	9373038368	9373038375

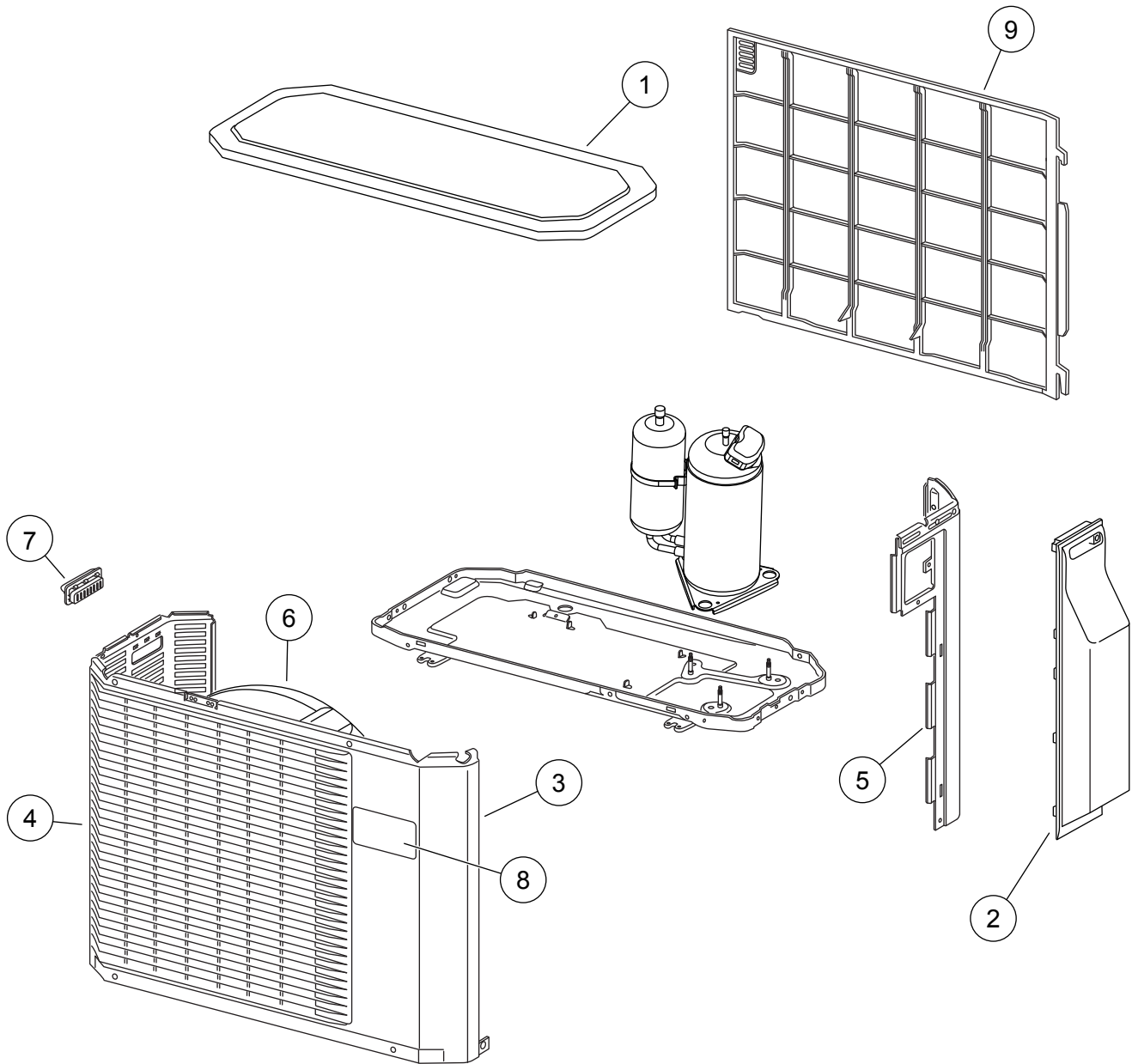
INDOOR UNIT
CONTROL UNIT



Ref.	Description	Part number			
		AUHA12LAL	AUHA14LAL	AUHA18LAL	AUHA24LAL
61	Control Box Cover	9375512019	9375512019	9375512019	9375512019
62	Control Box A	9375511012	9375511012	9375511012	9375511012
63	Controller PCB Assy	9707393156	9707393163	9707393026	9707393033
64	Power Supply PCB Assy	9707398021	9707398021	9707398021	9707398021
65	Terminal	9306489045	9306489045	9306489045	9306489045
66	Terminal	9703345012	9703345012	9703345012	9703345012
--	Pipe Thermistor	9703297014	9703297014	9703297014	9703297014
--	Room Thermistor	9703299223	9703299223	9703299223	9703299223

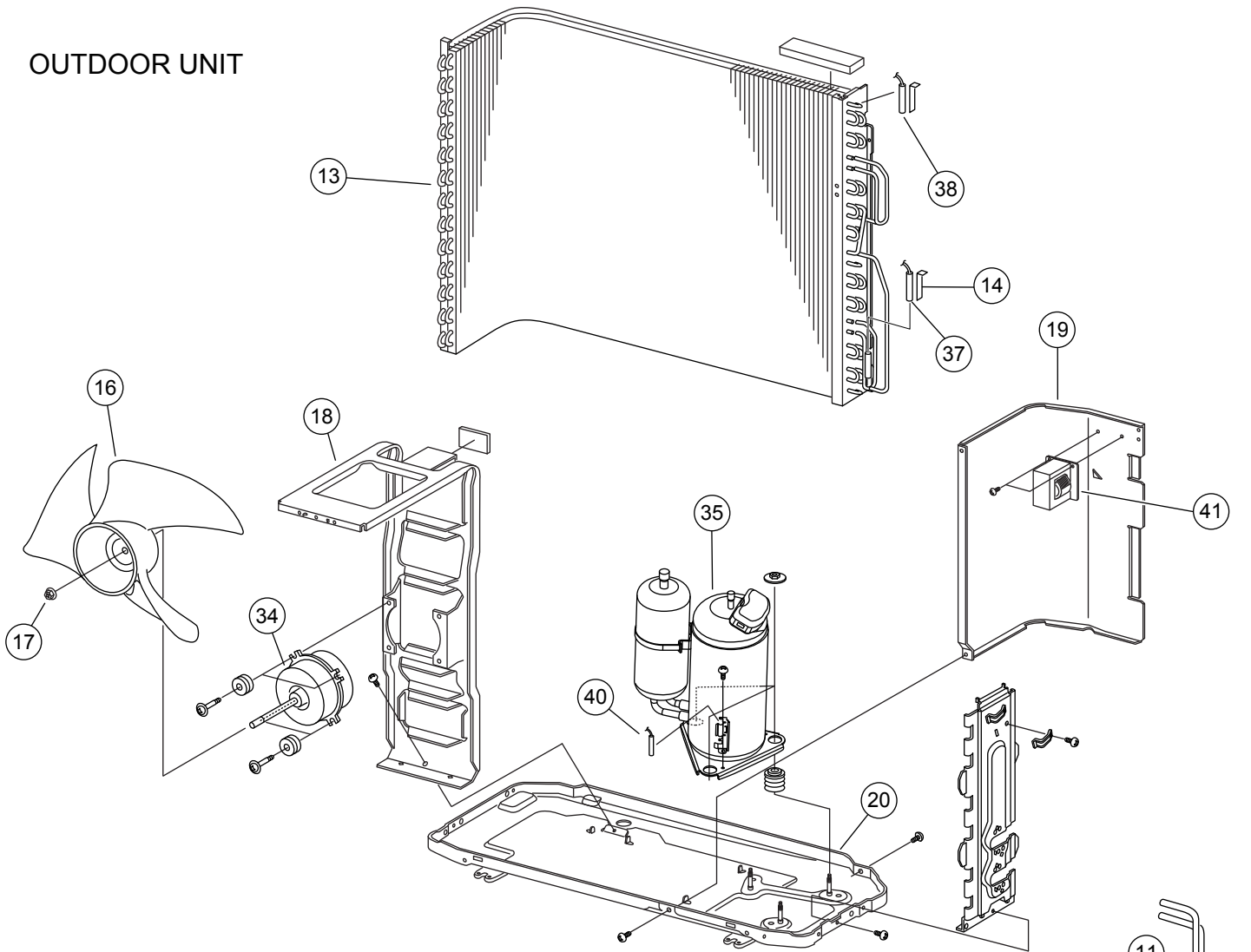
PARTS

OUTDOOR UNIT

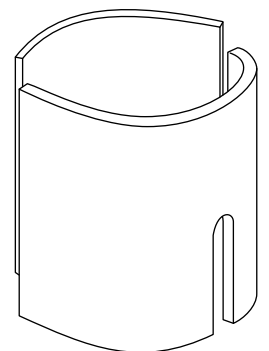
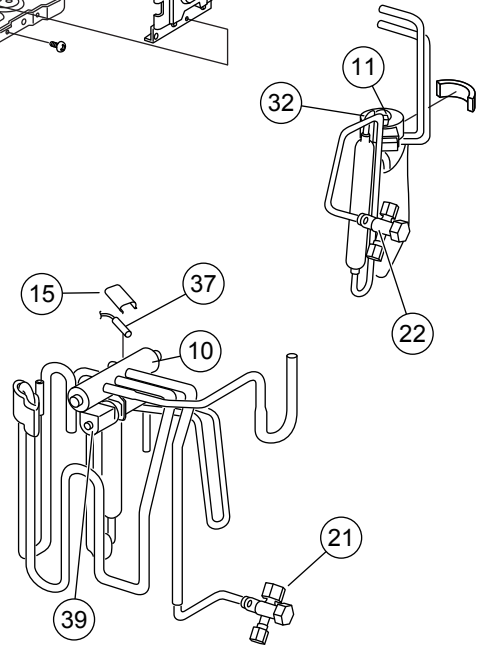


Ref.	Description	Part number	
		AOHA12LACL AOHA14LACL AOHA18LACL	AOHA24LACL
1	Top Panel Assy	9309230057	9309230057
2	Cover (Switch) Assy	9309237032	9309237032
3	Cabinet Assy	9314809040	9314809019
4	Blow Down Grille	9308884015	9308884015
5	Cabinet Right Assy	9309236011	9309236028
6	Fan Ring	9308885012	9308885012
7	Grip	9308880017	9308880017
8	Emblem	9315211019	9315211019
9	Protective Net	9315319012	9315033017

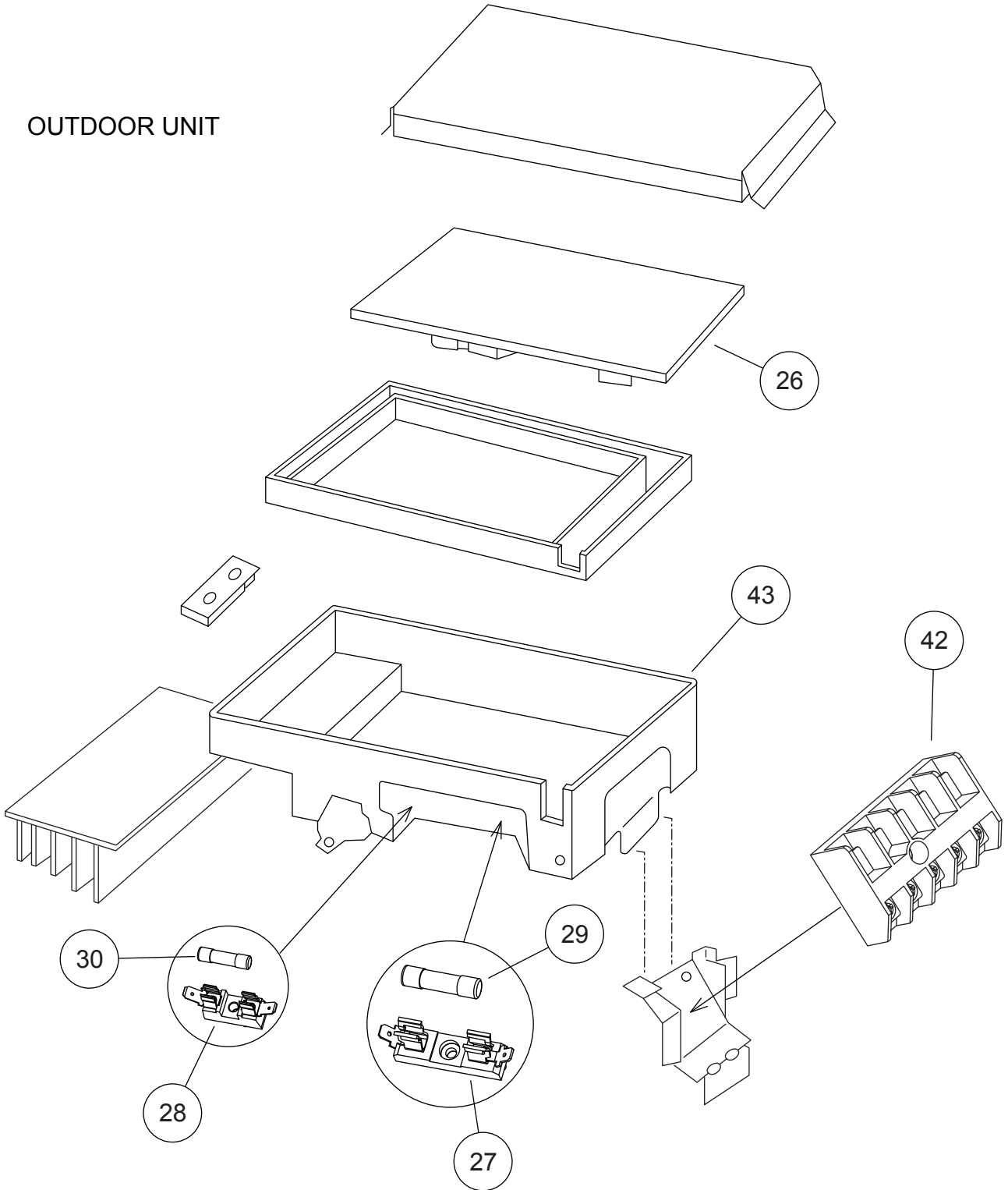
OUTDOOR UNIT



Ref.	Description	Part number	
		AOHA12, 14, 18LACL	AOHA24LACL
10	4-Way Valve	9900047016	9900163013
11	Pulse Motor Valve Assy	9311641018	9315310019
13	Condenser Assy	9311382027	9315302014
14	Thermistor Spring A	313728262708	313728262708
15	Thermistor Spring	9300089012	9357804002
16	Propeller Fan	9309909014	9309909014
17	Nut	9304902003	9304902003
18	Motor Bracket	9308872012	9308872029
19	Separator Assy	9312971015	9312971015
20	Base Assy	9308869081	9315296030
21	3-Way Valve Assy	9315159014	9315414014
22	2-Way Valve Assy	9313064013	9313062019
32	Expansion Valve Coil	9900057039	9900057039
34	Fan Motor	9602133017	9602451012
35	Compressor Assy	9313763039	9315297037
37	Thermistor Assy	9900148027	9900148027
38	Heat Exchanger Thermistor	9900403010	9900403010
39	Solenoid Coil	9970033018	9970055010
40	Compressor Thermistor	9900156046	9900156046
41	Reactor Assy	9900354015	9900354015
--	Outdoor Thermistor	9900210045	9900210045
--	Condenser Assy B	---	9315303011






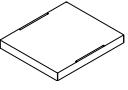
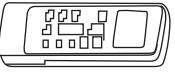
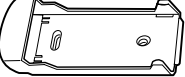


OUTDOOR UNIT






Ref.	Description	Part number			
		AOHA12LACL	AOHA14LACL	AOHA18LACL	AOHA24LACL
26	Inverter PCB Assy	9707427035	9707427042	9707427011	9707427028
27	Fuse Holder	0501454012	0501454012	0501454012	0501454012
28	Fuse Holder	0501456016	0501456016	0501456016	0501456016
29	Fuse	0600382018	0600382018	0600382018	0600382018
30	Fuse	0600372163	0600372163	0600372163	0600372163
42	Terminal	9703874031	9703874031	9703874031	9703874031
43	Inverter Case Assy	9315690012	9315690012	9315690012	9315690012

STANDARD ACCESSORIES



INDOOR UNIT

Name and Shape	Q'ty	Application
Coupler heat insulation 	2	For indoor side pipe joint
Special nut A (large flange) 	4	For installing indoor unit
Special nut B (small flange) 	4	For installing indoor unit
Template (Carton top) 	1	For ceiling openings cutting Also used as packing
Remote control 	1	For air conditioner operation
Remote control holder 	1	For installing remote control on the wall
Battery 	2	For remote control
Tapping screw 	2	For mounting the remote control holder

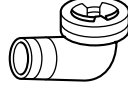

DECORATION PANEL

Name and Shape	Q'ty	Application
Connector cover 	4	For covering connector
Screw 	4	For mounting decoration panel
Screw 	1	For mounting connector cover

OPTIONAL PARTS

Name and Shape	Summary
Wired remote control UTB-* YD 	Unit control is performed by wired remote control.
Air outlet shutter plate UTR-YDZA 	Install the plate at outlet when carrying out 3-way direction operation.

OUTDOOR UNIT

Name and Shape	Q'ty	Application
Drain pipe 	1	For drain piping work. 9303029015
Adapter assy 	1	To connect 12,000 BTU model 9370244007

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