



INVERTER SPLIT TYPE
AIR CONDITIONER (50Hz)
DUCT TYPE

SERVICE MANUAL



Indoor unit	Outdoor unit
ARHF12LALU	AOHB12LACL
ARHF12LALU	AOHB12LALL
ARHF14LALU	AOHB14LACL
ARHF14LALU	AOHB14LALL
ARHF18LALU	AOHB18LACL
ARHF18LALU	AOHB18LALL

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SPECIFICATIONS

ELECTRICAL DATA

TYPE		Inverter Cool & Heat	Inverter Cool & Heat	Inverter Cool & Heat
INDOOR UNIT		ARHF12LALU	ARHF14LALU	ARHF18LALU
OUTDOOR UNIT		AOHB12LA_L	AOHB14LA_L	AOHB18LA_L
COOLING CAPACITY		3.50 kW	4.30 kW	5.20 kW
HEATING CAPACITY		4.10 kW	5.00 kW	6.00 kW
POWER SOURCE		230 V	230 V	230 V
FREQUENCY		50 Hz	50 Hz	50 Hz
RUNNING CURRENT	Cooling	4.9 A	6.2 A	7.4 A
	Heating	5.1 A	6.2 A	7.7 A
INPUT WATTS	Cooling	1.11 kW	1.41 kW	1.70 kW
	Heating	1.17 kW	1.42 kW	1.75 kW
E.E.R.	Cooling	3.15 kW/kW	3.05 kW/kW	3.06 kW/kW
	Heating	3.50 kW/kW	3.52 kW/kW	3.43 kW/kW
STARTING CURRENT		4.9 A	5.9 A	7.7 A
MOISTURE REMOVAL		1.3 L/hr	1.5 L/hr	2.0 L/hr
MAXIMUM CURRENT		10.0 A	12.5 A	12.5 A

Note : The above list shows values at the external static pressure of 0Pa, setting the fan speed high notch. (indoor unit)

FAN SPEED

INDOOR UNIT	Discrimination	MFH-24RVL	MFH-24RVL	MFH-24RVL
	High	880 r.p.m.	1,040 r.p.m.	1,040 r.p.m.
	Med	780 r.p.m.	950 r.p.m.	950 r.p.m.
	Low	720 r.p.m.	840 r.p.m.	840 r.p.m.
	Quiet	620 r.p.m.	740 r.p.m.	740 r.p.m.
OUTDOOR UNIT	Discrimination	MFE-18ROM	MFE-18ROM	MFE-18ROM
	Cooling	770 r.p.m.	820 r.p.m.	860 r.p.m.
	Heating	700 r.p.m.	750 r.p.m.	820 r.p.m.

Note : The above list shows values at the external static pressure of 0Pa, setting the fan speed high notch. (indoor unit)

AIR FLOW

INDOOR UNIT	High	720 m³/h	870 m³/h	820 m³/h
	Med	630 m³/h	770 m³/h	720 m³/h
	Low	560 m³/h	670 m³/h	610 m³/h
	Quiet	480 m³/h	580 m³/h	550 m³/h
OUTDOOR UNIT	Cooling	1,780 m³/h	1,910 m³/h	2,000 m³/h
	Heating	1,630 m³/h	1,740 m³/h	1,910 m³/h

Note : The above list shows values at the external static pressure of 0Pa, setting the fan speed high notch. (indoor unit)

INDOOR UNIT	ARHF12LALU	ARHF14LALU	ARHF18LALU
OUTDOOR UNIT	AOHB12LA_L	AOHB14LA_L	AOHB18LA_L

NOISE LEVEL

INDOOR UNIT	High speed	32 dB	33 dB	33 dB
	Med speed	30 dB	31 dB	31 dB
	Low speed	28 dB	29 dB	29 dB
	Quiet	26 dB	27 dB	27 dB
OUTDOOR UNIT	Cooling	47 dB	49 dB	50 dB
	Heating	48 dB	49 dB	50 dB

Note : Static pressure : 0Pa

Duct length : Inlet 1m, Outlet 2m (indoor unit)

MEASUREMENT

DIMENSIONS H x W x D	Indoor unit	217 x 953 x 595 mm
	Outdoor unit	578 x 790 x 300 mm
WEIGHT Gross / Net	Indoor unit	27 kg / 23 kg
	Outdoor unit	44 kg / 40 kg

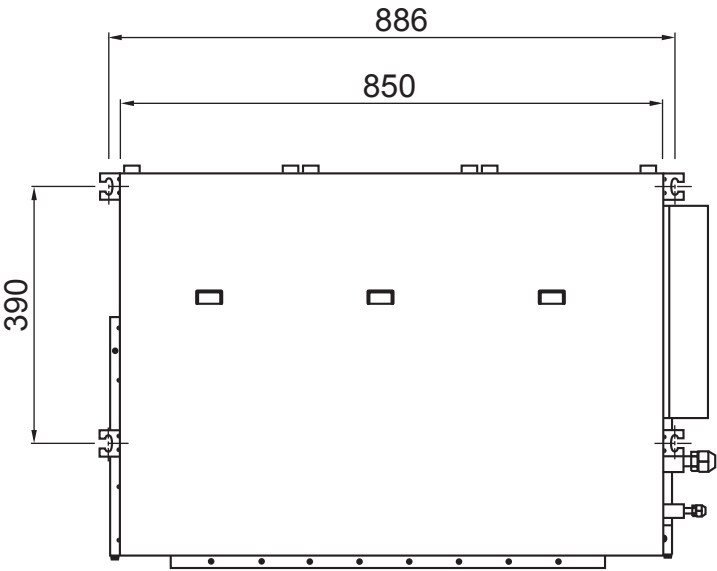
COMPRESSOR AND REFRIGERANT

COMPRESSOR TYPE		Hermetic type, 4 poles, DC motor, Twin Rotary		
DISCRIMINATION		DA130AIF-25NA		
WEIGHT (with oil)		9.6 kg		
REFRIGERANT TYPE		R410A	R410A	R410A
STANDARD REFRIGERANT		1,150 g	1,250 g	1,250 g
FULL CHARGE	Pipe Length 15 m	1,150 g	1,250 g	1,250 g
	20 m	1,250 g	1,350 g	1,350 g
	25 m	1,350 g	1,450 g	1,450 g
ADDITIONAL CHARGE		20 g/m	20 g/m	20 g/m
MAXIMUM PIPE HEIGHT		15 m	15 m	15 m

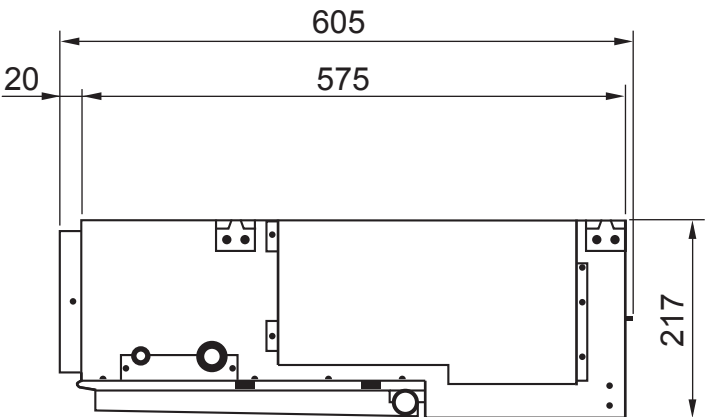
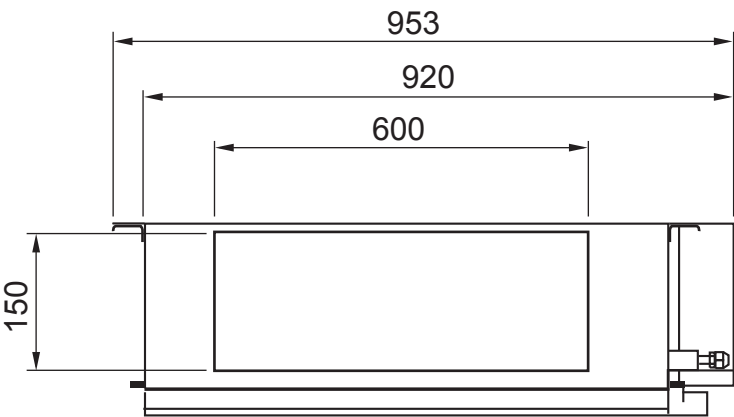
DIMENSIONS

INDOOR UNIT

Unit : mm

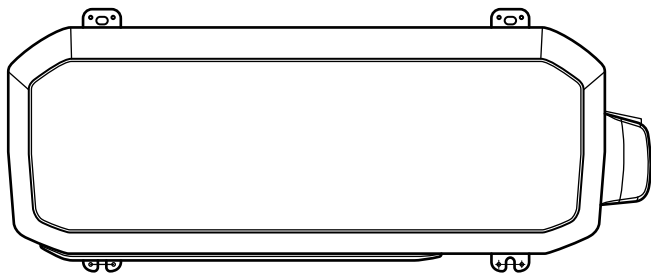


Drain pipe diameter
Inside : 21.5 mm
Outside : 26.0 mm

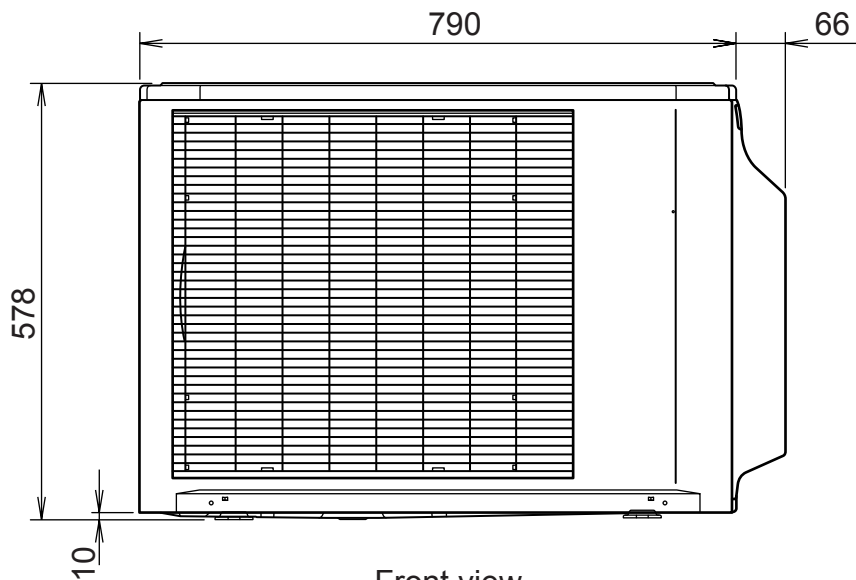


OUTDOOR UNIT

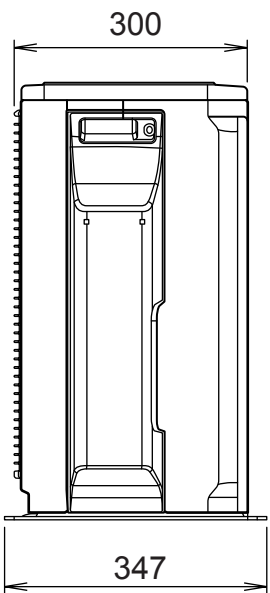
Unit : mm



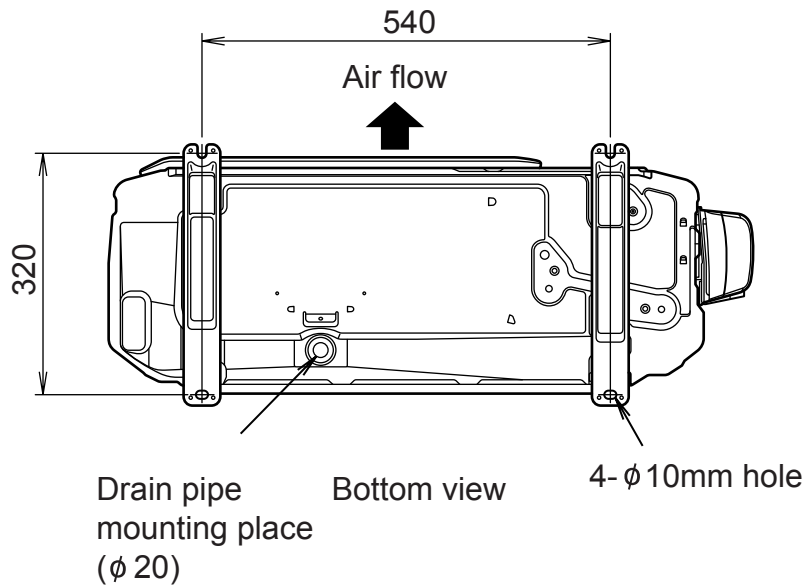
Top view



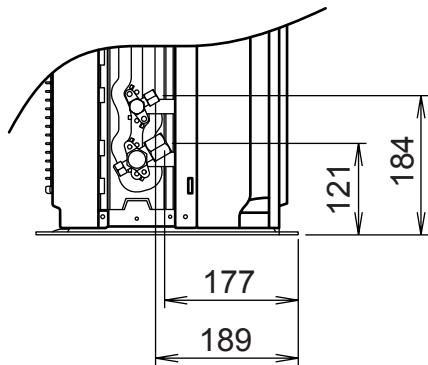
Front view



Side view



Bottom view

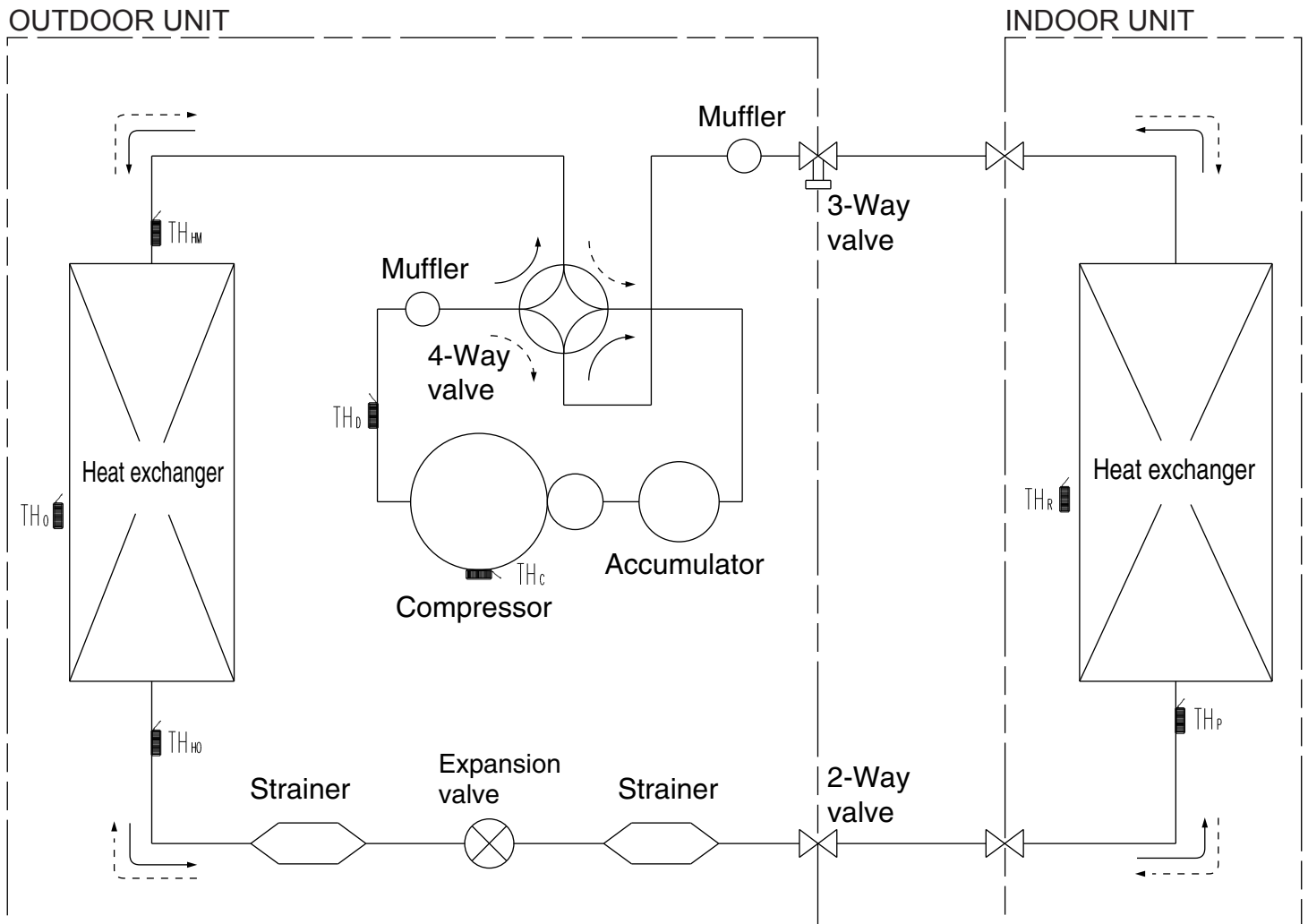


REFRIGERANT SYSTEM DIAGRAM

<Refrigerant direction>

—→ Cool

- - - - -→ Heat



TH_c : THERMISTOR (COMPRESSOR)
 TH_o : THERMISTOR (DISCHARGE)
 TH_{HM} : THERMISTOR (HEAT EXCHANGER MED)
 TH_{HO} : THERMISTOR (HEAT EXCHANGER OUT)
 TH_o : THERMISTOR (OUTDOOR AIR)

TH_p : THERMISTOR (PIPE)
 TH_R : THERMISTOR (ROOM)

<Refrigerant pipe diameter>

ARHF12LALU / AOHB12LA_L

Liquid : 1/4" (6.35 mm)

Gas : 3/8" (9.52 mm)

ARHF14LALU / AOHB14LA_L

ARHF18LALU / AOHB18LA_L

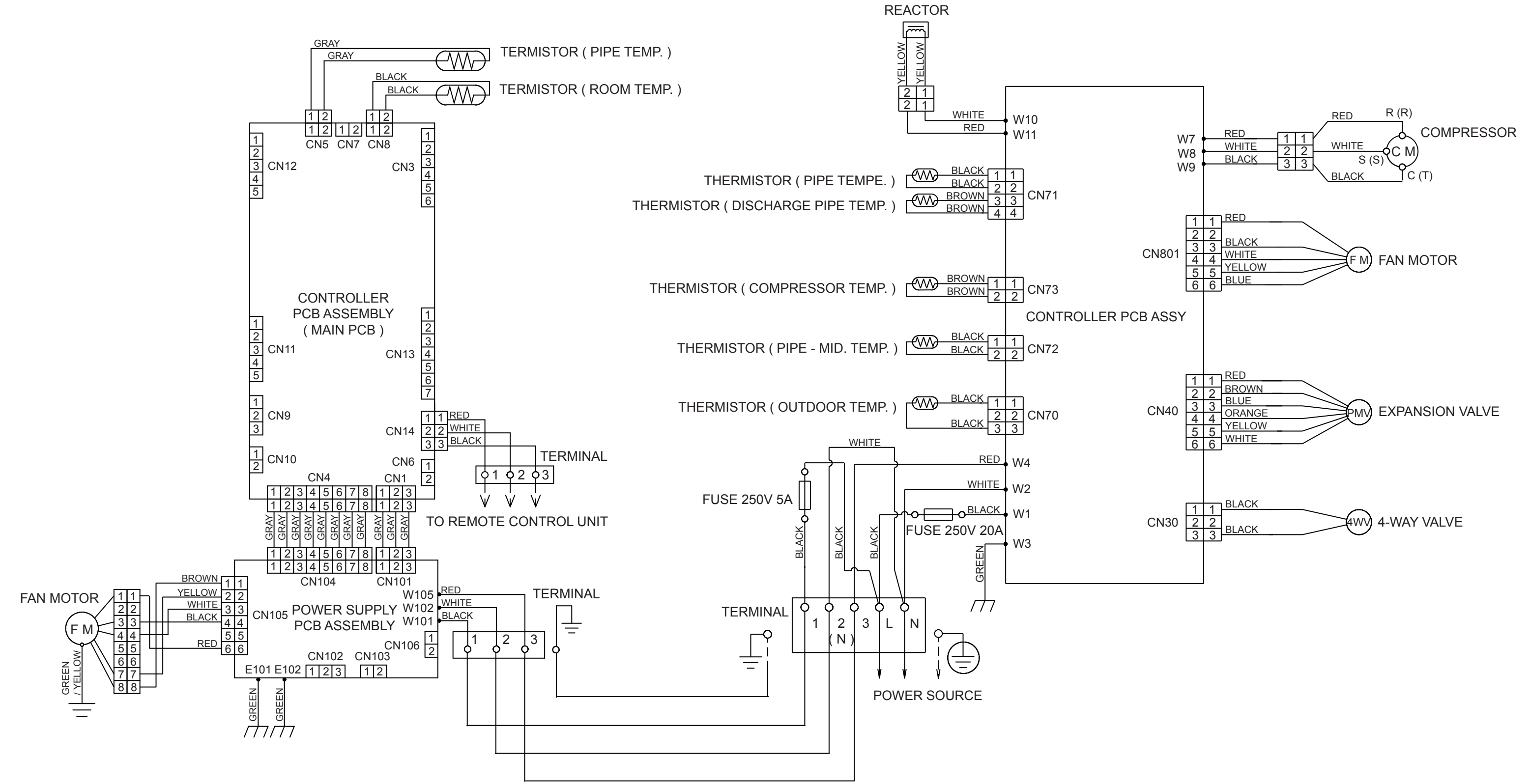
Liquid : 1/4" (6.35 mm)

Gas : 1/2" (12.70 mm)

CIRCUIT DIAGRAM

INDOOR UNIT

OUTDOOR UNIT



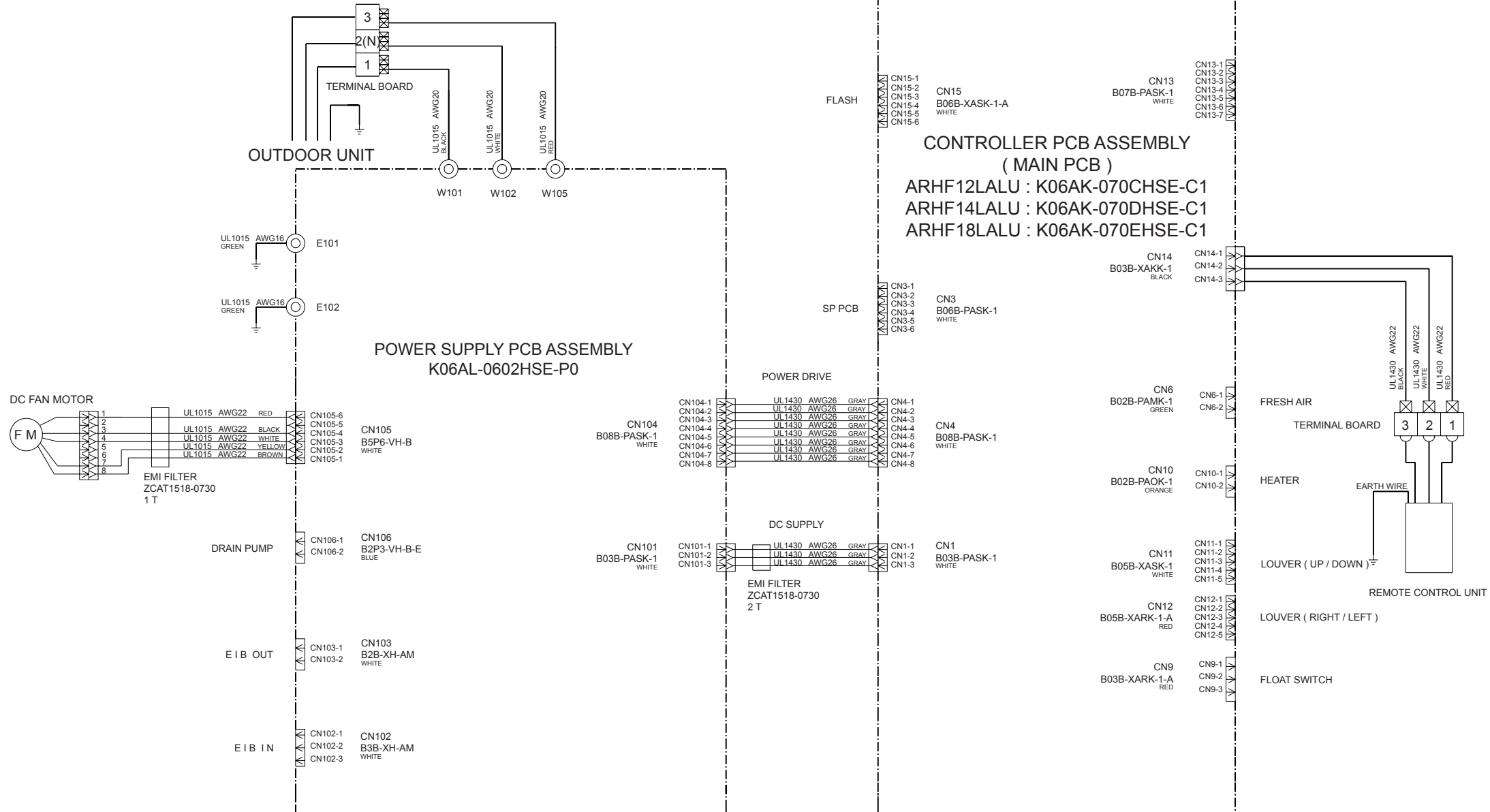
INDOOR PCB CIRCUIT DIAGRAM

CONTROL UNIT

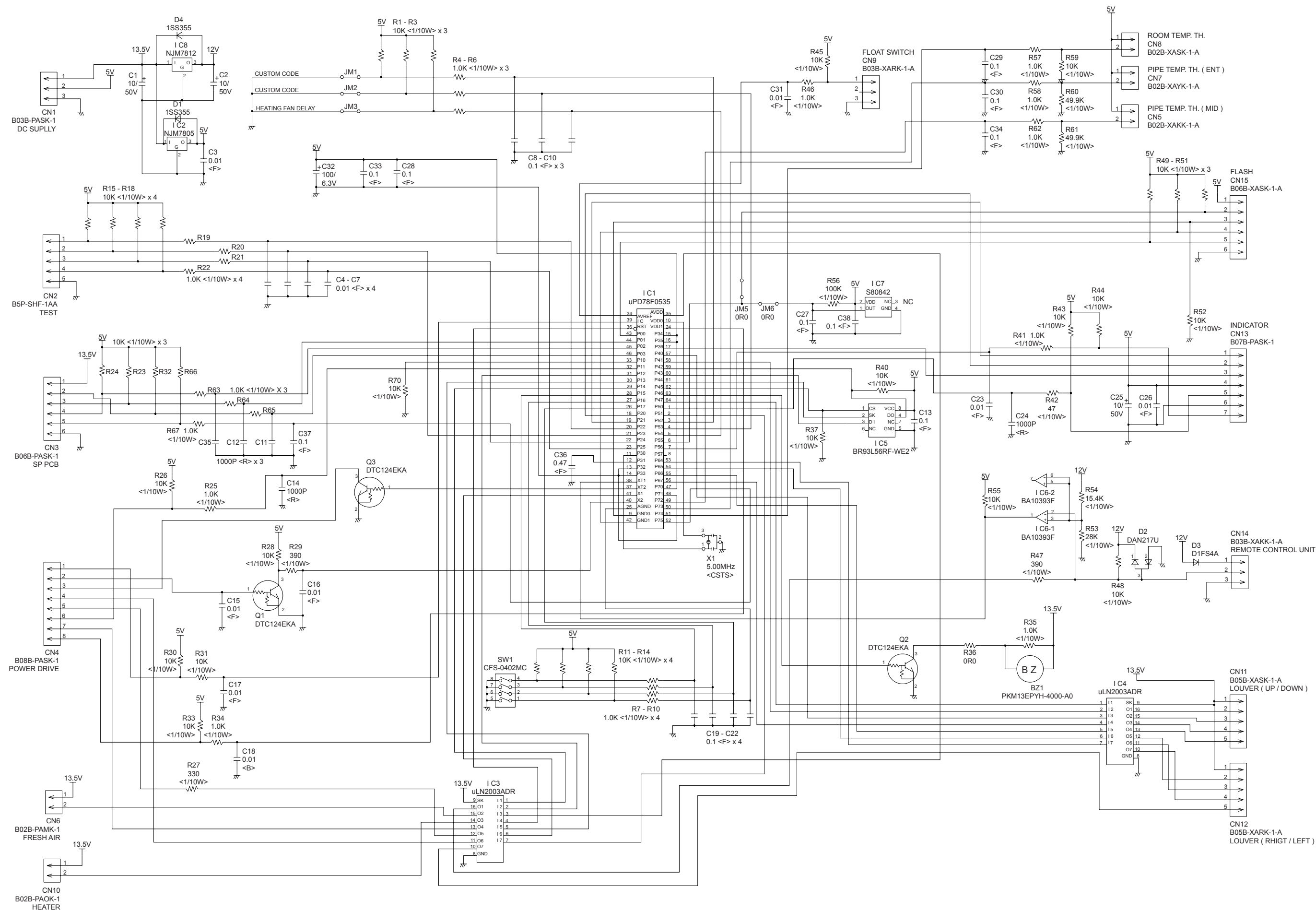
ARHF12LALU : EZ-0070SHSE

ARHF14LALU : EZ-0070THSE

ARHF18LALU : EZ-0070WHSE



INDOOR UNIT
CONTROLLER PCB ASSEMBLY (MAIN PCB)
ARHF12LALU : K06AK-070CHSE-C1
ARHF14LALU : K06AK-070DHSE-C1
ARHF18LALU : K06AK-070EHSE-C1

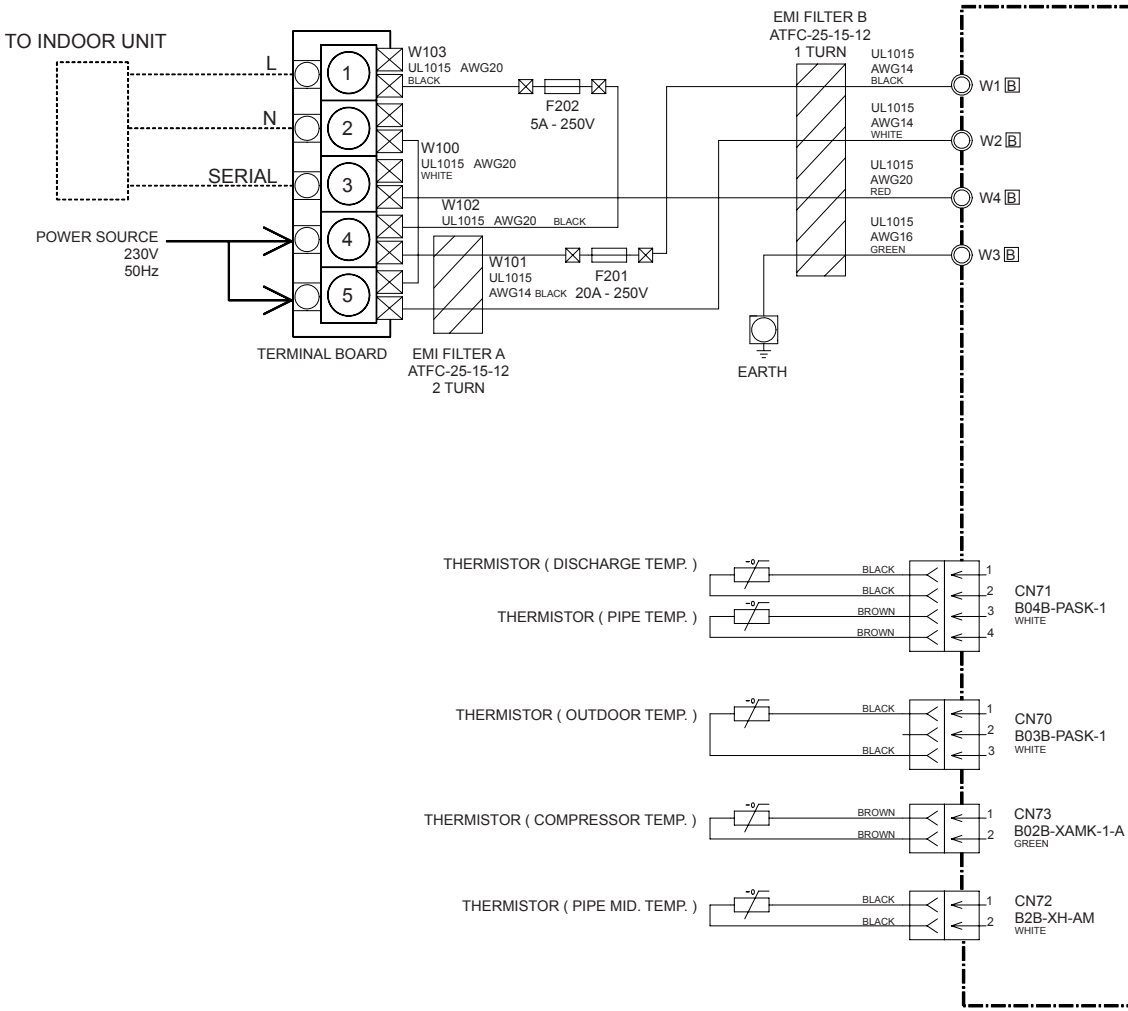


**INDOOR UNIT
POWER SUPPLY PCB ASSEMBLY
K06AL-0602HSE-P0**

The schematic diagram illustrates the power supply and control circuitry for the indoor unit. Key components and sections include:

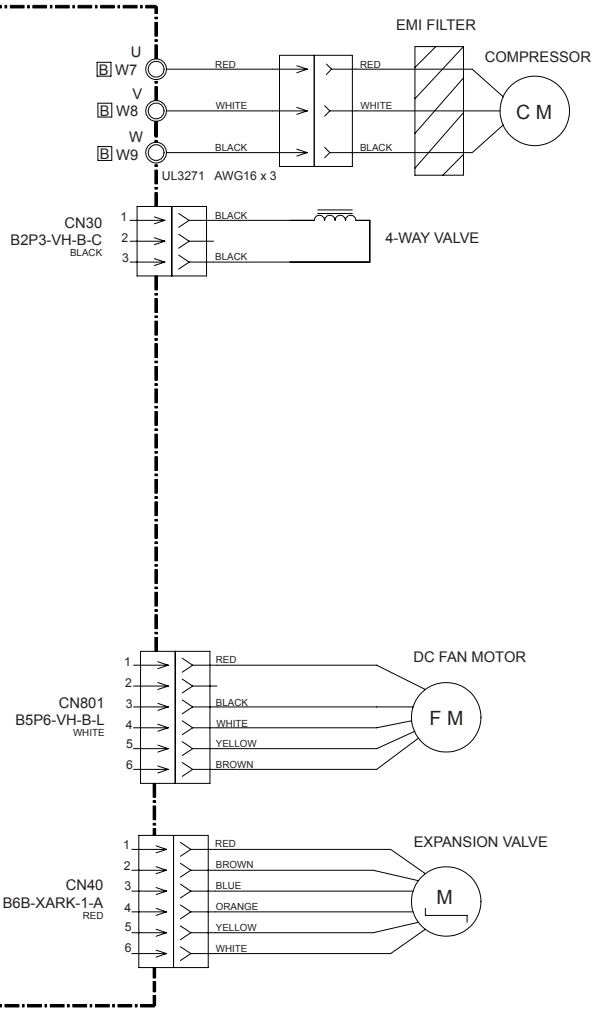
- AC Input and Protection:** AC26-14 and AC26-10 inputs, fuses F101 (FSL 250 3.15) and F102 (FSL 250 3.15), and thermal fuses VA101 (470V <TNR>) and VA102 (470V <TNR>).
- Power Factor Correction (PFC):** PFC5000-0702F x2.
- Transformer and Rectifier:** Transformer LF101 (ELF17N015A), inductor L101 (REP28-15 15mH, 1.1A), and diode D101 (D3SB60).
- DC Fan Motor Drive:** Inverter stage with MOSFETs Q101 (2SC5354) and Q102 (2SC1815), gate driver IC103 (TLP621 <GB>), and various resistors (R104, R105, R106, R107, R110, R111, R112, R113, R114, R115) and capacitors (C104, C105, C106, C107, C108, C109, C110, C111, C112, C113, C114, C115, C116, C117, C118, C120, C121).
- DC Supply and Drain Pump:** DC supply section with IC101 (TLP621 <GB>), inductor L102 (5V BLm18 <AG601>), and capacitor C120 (0.1 <F>). Drain pump section with IC102 (B3B-XH-AM), inductor L103 (BLm18 <AG601>), and capacitor C121 (0.1 <F>).
- Control and Relay:** IC105 (HI2002R2) relay driver, IC104 (TLP621 <GB>), IC103 (TLP621 <GB>), and various other components like D102 (1SR139-600), D103 (D1FL20U), D104 (MTZJ5.1B), D105 (D1FL20U), D106 (D1FL20U), D107 (RD16M <B1>), D108 (D2FL20U), D109 (330 <1/4W>), D110 (10K <1/10W>), D111 (10K <1/10W>), D112 (10K <1/10W>), D113 (10K <1/10W>), D114 (10K <1/10W>), D115 (10K <1/10W>), D116 (10K <1/10W>), D117 (10K <1/10W>), D118 (10K <1/10W>), D119 (10K <1/10W>), D120 (10K <1/10W>), D121 (10K <1/10W>), D122 (10K <1/10W>), D123 (10K <1/10W>), D124 (10K <1/10W>), D125 (10K <1/10W>), D126 (10K <1/10W>), D127 (10K <1/10W>), D128 (10K <1/10W>), D129 (10K <1/10W>), D130 (10K <1/10W>), D131 (10K <1/10W>), D132 (10K <1/10W>), D133 (10K <1/10W>), D134 (10K <1/10W>), D135 (10K <1/10W>), D136 (10K <1/10W>), D137 (10K <1/10W>), D138 (10K <1/10W>), D139 (10K <1/10W>), D140 (10K <1/10W>), D141 (10K <1/10W>), D142 (10K <1/10W>), D143 (10K <1/10W>), D144 (10K <1/10W>), D145 (10K <1/10W>), D146 (10K <1/10W>), D147 (10K <1/10W>), D148 (10K <1/10W>), D149 (10K <1/10W>), D150 (10K <1/10W>), D151 (10K <1/10W>), D152 (10K <1/10W>), D153 (10K <1/10W>), D154 (10K <1/10W>), D155 (10K <1/10W>), D156 (10K <1/10W>), D157 (10K <1/10W>), D158 (10K <1/10W>), D159 (10K <1/10W>), D160 (10K <1/10W>), D161 (10K <1/10W>), D162 (10K <1/10W>), D163 (10K <1/10W>), D164 (10K <1/10W>), D165 (10K <1/10W>), D166 (10K <1/10W>), D167 (10K <1/10W>), D168 (10K <1/10W>), D169 (10K <1/10W>), D170 (10K <1/10W>), D171 (10K <1/10W>), D172 (10K <1/10W>), D173 (10K <1/10W>), D174 (10K <1/10W>), D175 (10K <1/10W>), D176 (10K <1/10W>), D177 (10K <1/10W>), D178 (10K <1/10W>), D179 (10K <1/10W>), D180 (10K <1/10W>), D181 (10K <1/10W>), D182 (10K <1/10W>), D183 (10K <1/10W>), D184 (10K <1/10W>), D185 (10K <1/10W>), D186 (10K <1/10W>), D187 (10K <1/10W>), D188 (10K <1/10W>), D189 (10K <1/10W>), D190 (10K <1/10W>), D191 (10K <1/10W>), D192 (10K <1/10W>), D193 (10K <1/10W>), D194 (10K <1/10W>), D195 (10K <1/10W>), D196 (10K <1/10W>), D197 (10K <1/10W>), D198 (10K <1/10W>), D199 (10K <1/10W>), D200 (10K <1/10W>), D201 (10K <1/10W>), D202 (10K <1/10W>), D203 (10K <1/10W>), D204 (10K <1/10W>), D205 (10K <1/10W>), D206 (10K <1/10W>), D207 (10K <1/10W>), D208 (10K <1/10W>), D209 (10K <1/10W>), D210 (10K <1/10W>), D211 (10K <1/10W>), D212 (10K <1/10W>), D213 (10K <1/10W>), D214 (10K <1/10W>), D215 (10K <1/10W>), D216 (10K <1/10W>), D217 (10K <1/10W>), D218 (10K <1/10W>), D219 (10K <1/10W>), D220 (10K <1/10W>), D221 (10K <1/10W>), D222 (10K <1/10W>), D223 (10K <1/10W>), D224 (10K <1/10W>), D225 (10K <1/10W>), D226 (10K <1/10W>), D227 (10K <1/10W>), D228 (10K <1/10W>), D229 (10K <1/10W>), D230 (10K <1/10W>), D231 (10K <1/10W>), D232 (10K <1/10W>), D233 (10K <1/10W>), D234 (10K <1/10W>), D235 (10K <1/10W>), D236 (10K <1/10W>), D237 (10K <1/10W>), D238 (10K <1/10W>), D239 (10K <1/10W>), D240 (10K <1/10W>), D241 (10K <1/10W>), D242 (10K <1/10W>), D243 (10K <1/10W>), D244 (10K <1/10W>), D245 (10K <1/10W>), D246 (10K <1/10W>), D247 (10K <1/10W>), D248 (10K <1/10W>), D249 (10K <1/10W>), D250 (10K <1/10W>), D251 (10K <1/10W>), D252 (10K <1/10W>), D253 (10K <1/10W>), D254 (10K <1/10W>), D255 (10K <1/10W>), D256 (10K <1/10W>), D257 (10K <1/10W>), D258 (10K <1/10W>), D259 (10K <1/10W>), D260 (10K <1/10W>), D261 (10K <1/10W>), D262 (10K <1/10W>), D263 (10K <1/10W>), D264 (10K <1/10W>), D265 (10K <1/10W>), D266 (10K <1/10W>), D267 (10K <1/10W>), D268 (10K <1/10W>), D269 (10K <1/10W>), D270 (10K <1/10W>), D271 (10K <1/10W>), D272 (10K <1/10W>), D273 (10K <1/10W>), D274 (10K <1/10W>), D275 (10K <1/10W>), D276 (10K <1/10W>), D277 (10K <1/

OUTDOOR PCB CIRCUIT DIAGRAM

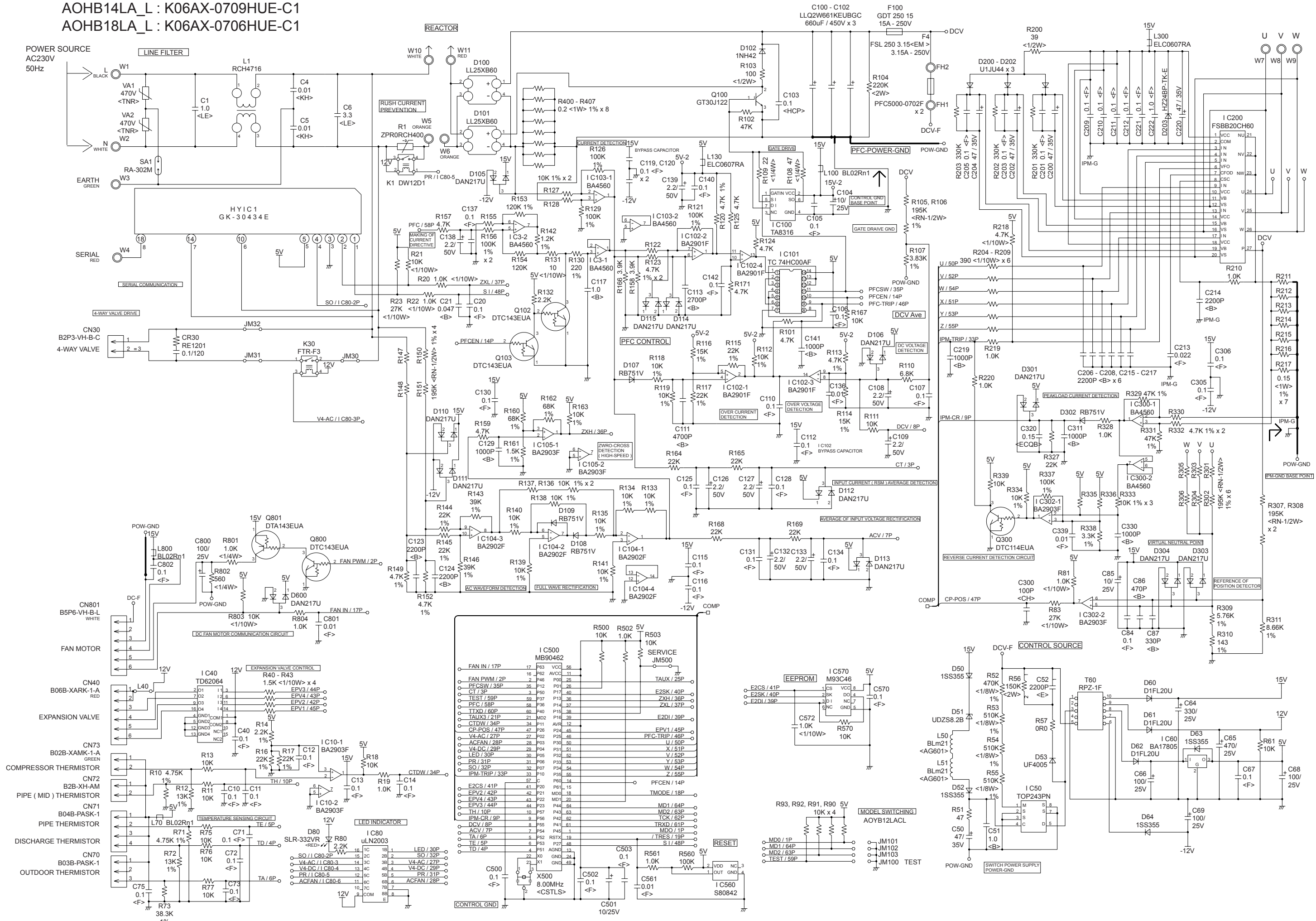


INVERTER ASSEMBLY
AOHB12LA_L : EZ-007HHUE
AOHB14LA_L : EZ-007KHUE
AOHB18LA_L : EZ-007FHUE

CONTROLLER PCB ASSEMBLY
AOHB12LA_L : K06AX-0708HUE-C1
AOHB14LA_L : K06AX-0709HUE-C1
AOHB18LA_L : K06AX-0706HUE-C1



OUTDOOR UNIT
CONTROLLER PCB ASSEMBLY
AOHB12LA_L : K06AX-0708HUE-C1
AOHB14LA_L : K06AX-0709HUE-C1
AOHB18LA_L : K06AX-0706HUE-C1



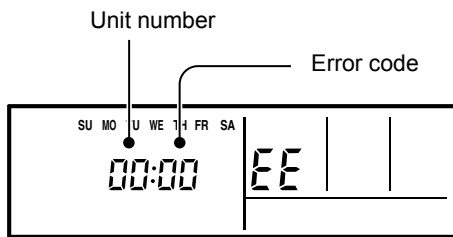
ERROR CONTENTS

REMOTE CONTROL

Troubleshooting at the remote control LCD
This is possible only on the wired remote control.

SELF-DIAGNOSIS

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



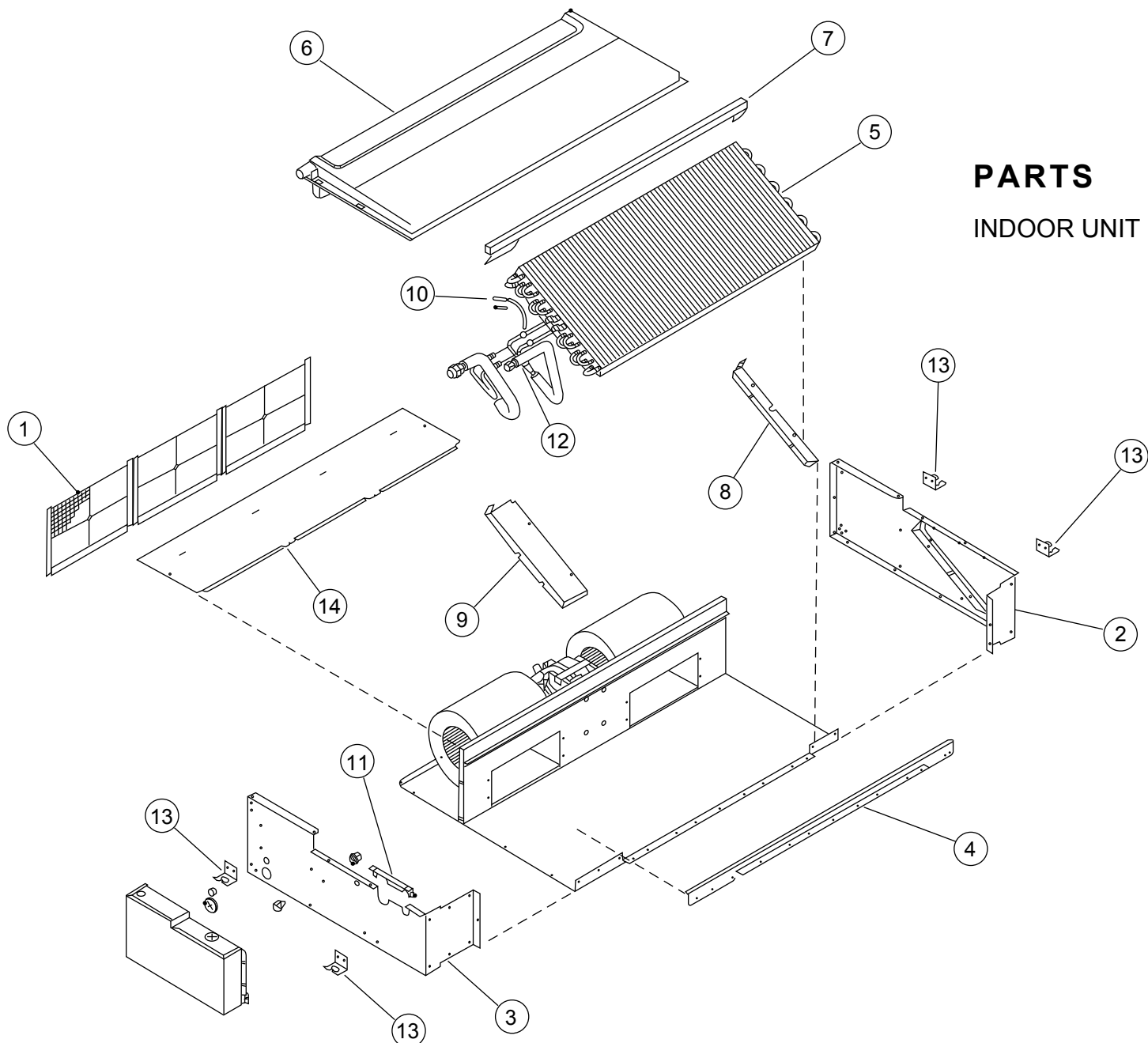
Code	Error contents
01 13 26 27	Indoor signal error
00	Wired remote controller abnormal
02	Indoor room temperature sensor error
04	Indoor heat exchanger temperature sensor (middle) error
28	Indoor heat exchanger temperature sensor (inlet) error
09	Float switch operated
0C	Outdoor discharge pipe temperature 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	4-way valve abnormal
16	Pressure switch abnormal
2b	Compressor temperature error
19	Active filter abnormal
25	PFC circuit error

If "CO" appears in the unit number display,
there is a remote control error.

Unit number	Error code	Content
CO	1d	Incompatible indoor unit is connected
CO	1c	Communication error between indoor unit and remote control

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 1.0 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

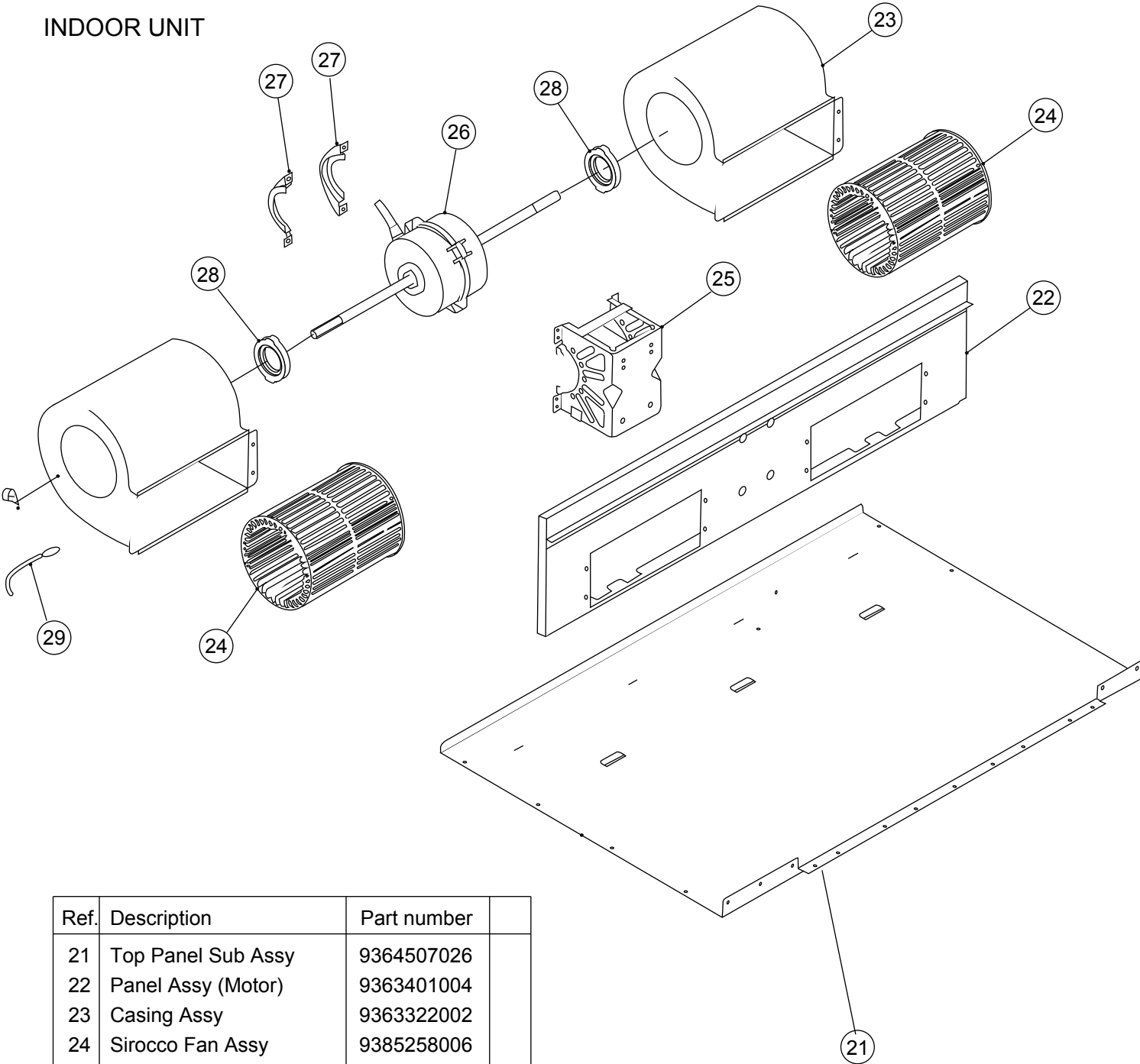


PARTS

INDOOR UNIT

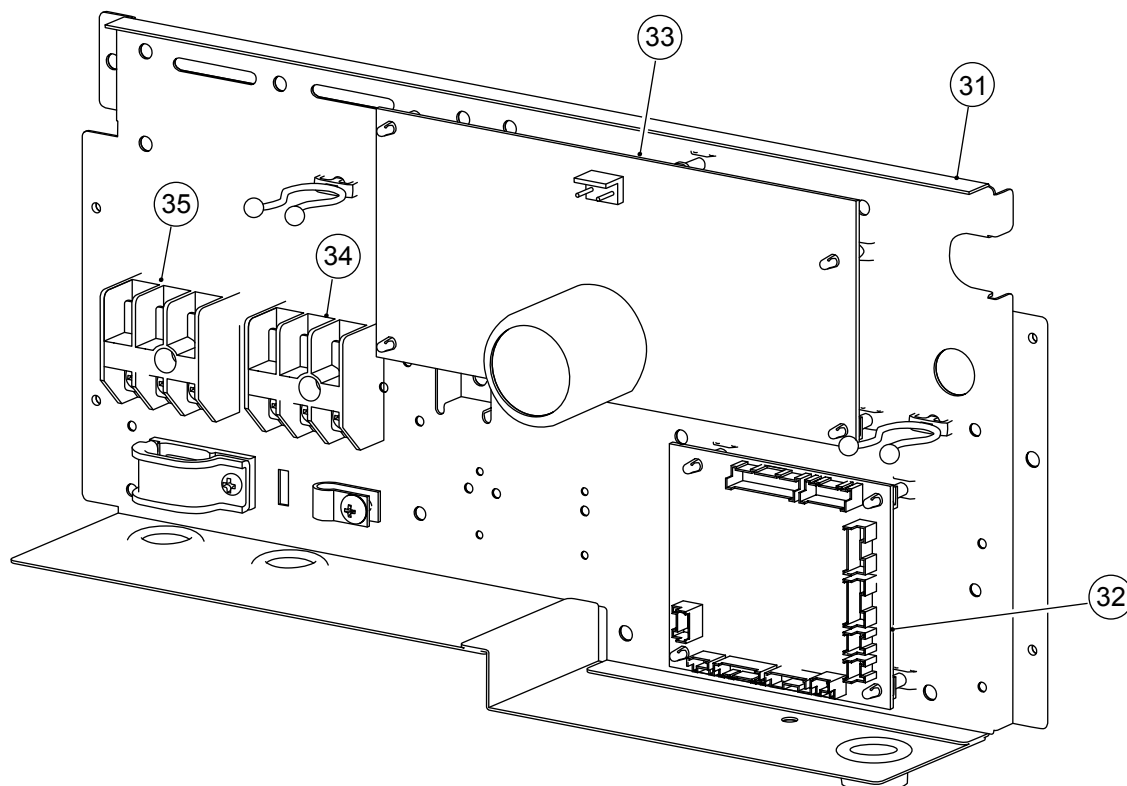
Ref.	Description	Part number			
		ARHF12LALU	ARHF14LALU	ARHF18LALU	
1	Air Filter	9366833017	9366833017	9366833017	
2	Side Panel R Sub Assy	9364505022	9364505022	9364505022	
3	Side Panel L Sub Assy	9364506029	9364506029	9364506029	
4	Front Panel Sub Assy	9364508023	9364508023	9364508023	
5	Evaporator Assy	9373255024	9373255017	9372972014	
6	Drain Pan Sub Assy	9364502069	9364502069	9364502069	
7	Evaporator Support Plate	9363404005	9363404005	9363404005	
8	Bracket Evaporator R	9363199000	9363199000	9363199000	
9	Bracket Evaporator L	9363198003	9363198003	9363198003	
10	Pipe Thermistor	9703297090	9703297069	9703297090	
11	Pipe Cover	9363327007	9363327007	9363327007	
12	Distributor Assy	9373034254	9373034209	9373034216	
13	Hook	9363195002	9363195002	9363195002	
14	Cabinet Cover Sub Assy	9364503028	9364503028	9364503028	
--	Drain Cap Assy	9377878014	9377878014	9377878014	
--	Coupling Pipe Assy	9373038467	9373038085	---	
--	Outlet (Eva) Assy	---	---	9372978047	

INDOOR UNIT



Ref.	Description	Part number	
21	Top Panel Sub Assy	9364507026	
22	Panel Assy (Motor)	9363401004	
23	Casing Assy	9363322002	
24	Sirocco Fan Assy	9385258006	
25	Motor Fixing Table Assy	9358591000	
26	Fan Motor Assy	9602401017	
27	Motor Fixture	9358594001	
28	Rubber (Vibration-proof)	9385102002	
29	Room Thermistor	9703299018	

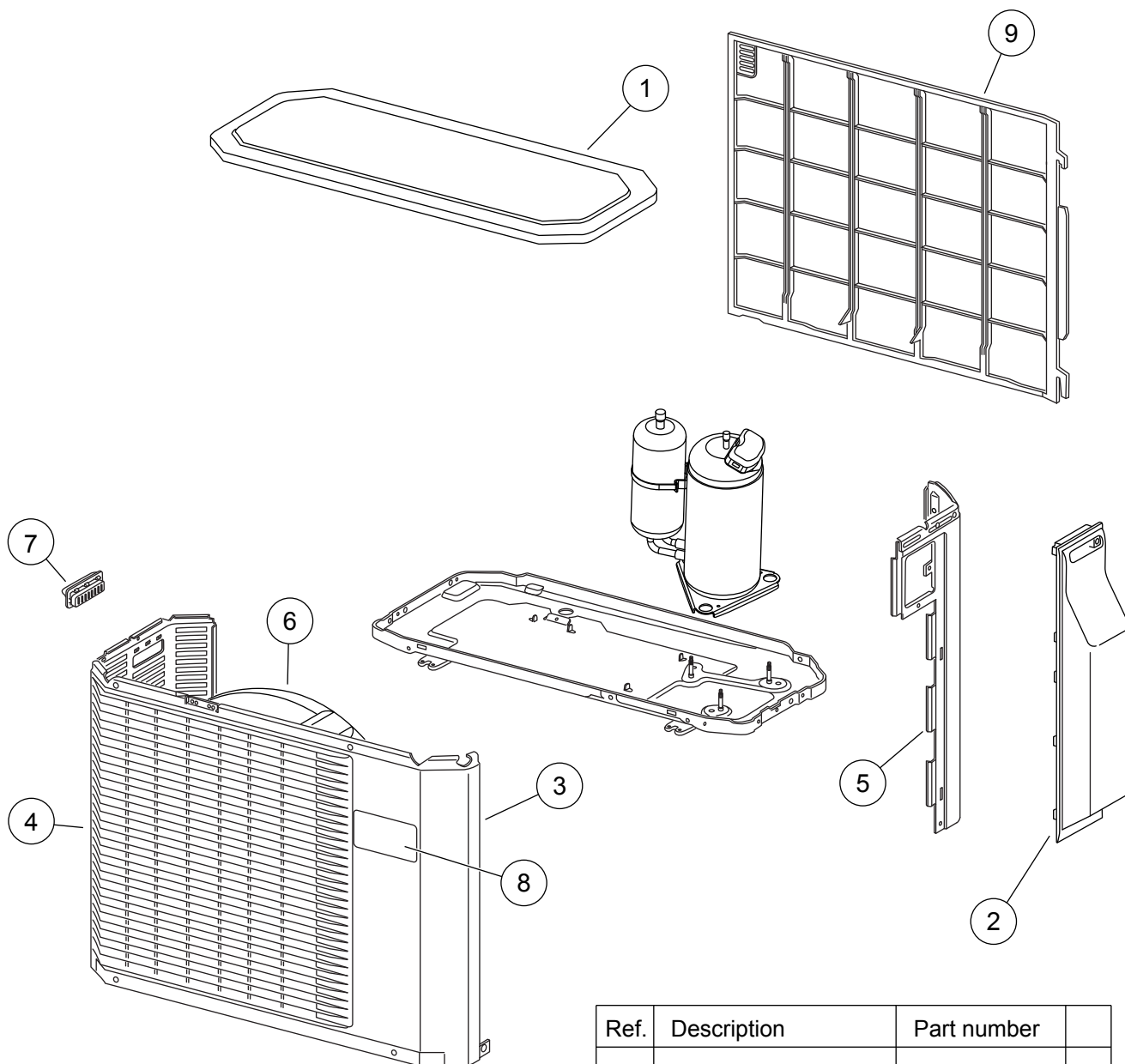
INDOOR UNIT



Ref.	Description	Part number	
31	Control Box	9375240035	
32	Controller PCB Assy (12)	9707393378	
32	Controller PCB Assy (14)	9707393385	
32	Controller PCB Assy (18)	9707393392	
33	Power Supply PCB Assy	9707398038	
34	Terminal	9703345012	
35	Terminal	9306489045	
--	Control Box Cover	9363201000	
--	Remote Control	9372266199	
--	Wire	9372714010	
--	Hole Cover	9378176010	
--	Cap (Power)	9352173011	

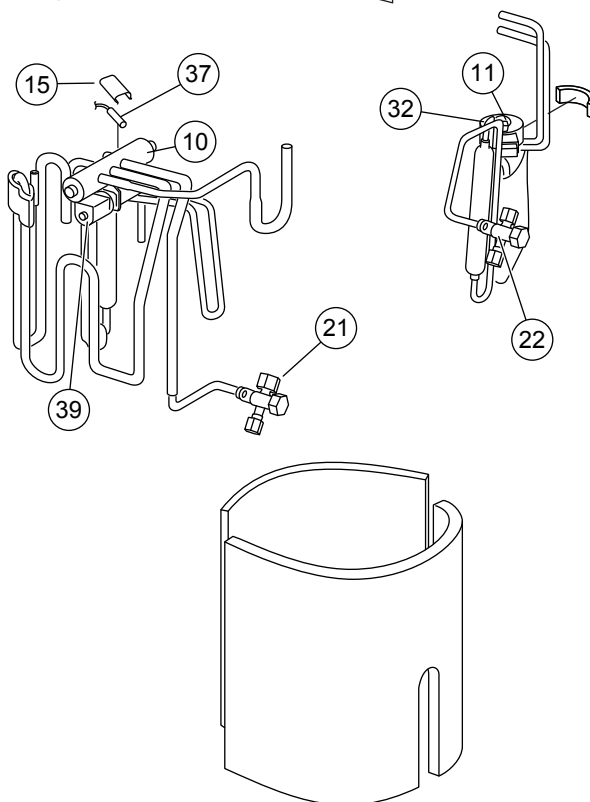
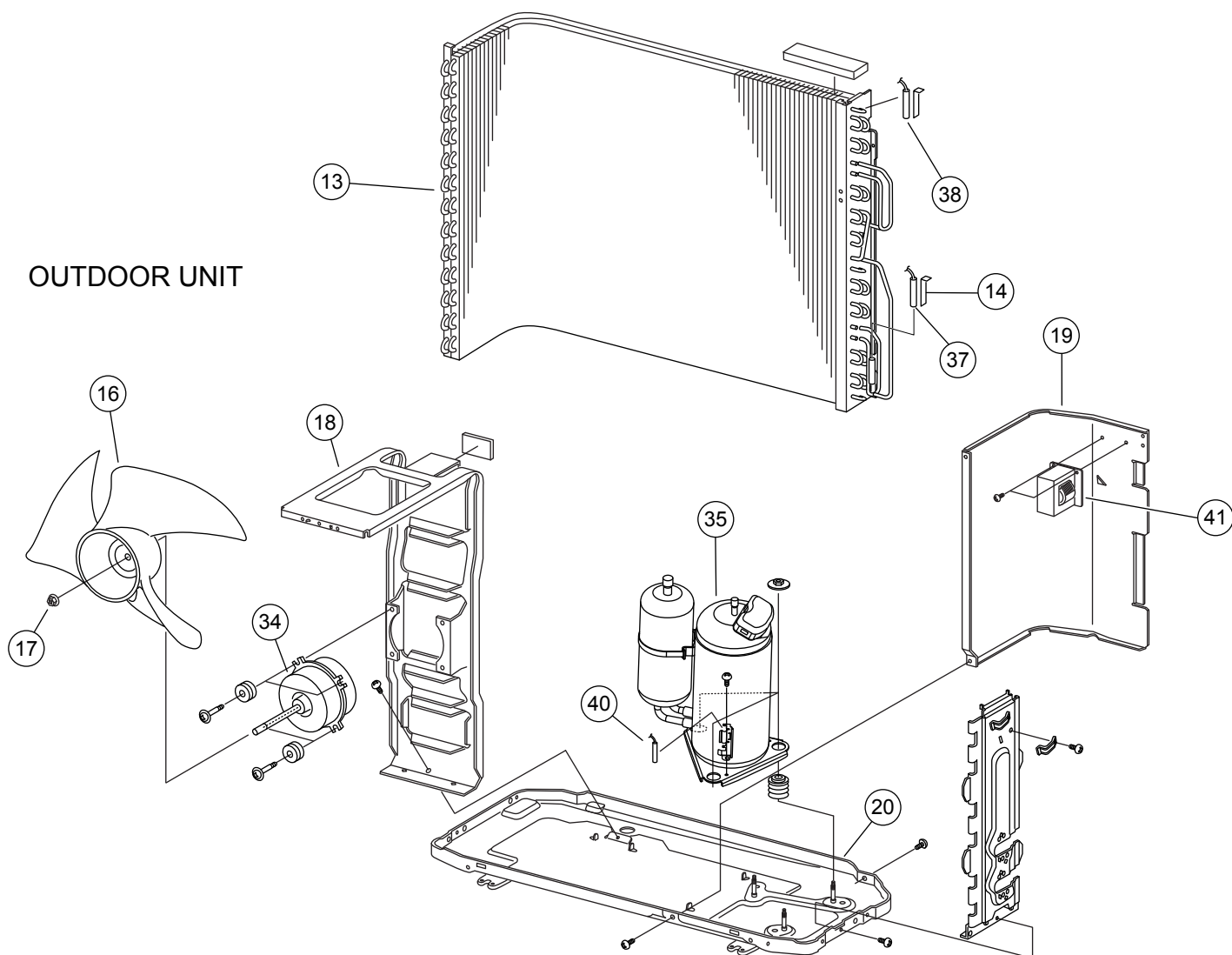
PARTS

OUTDOOR UNIT



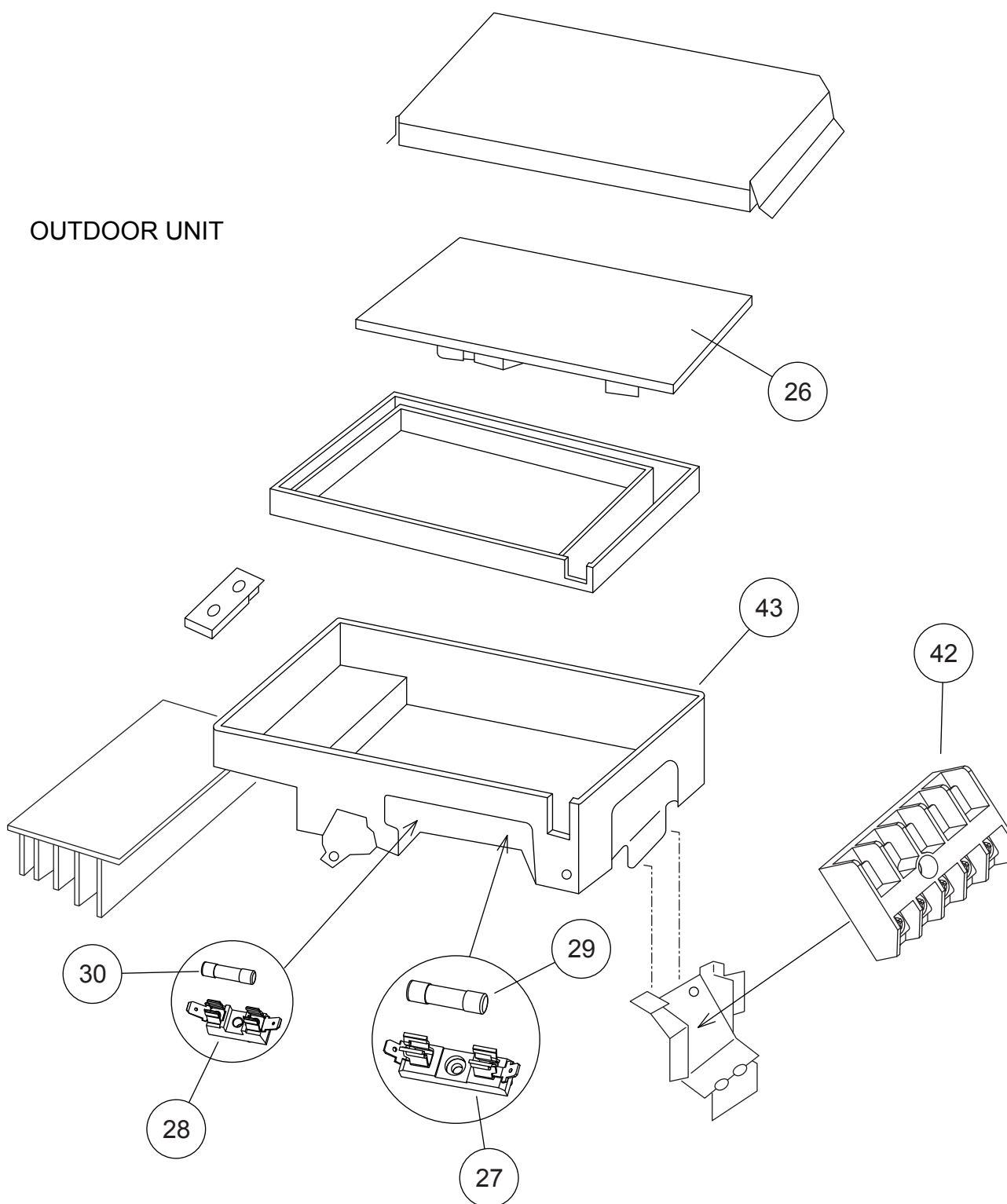
Ref.	Description	Part number	
1	Top Panel Assy	9309230057	
2	Cover (Switch) Assy	9309237032	
3	Cabinet Assy	9314809040	
4	Blow Down Grille	9308884015	
5	Cabinet Right Assy	9309236011	
6	Fan Ring	9308885012	
7	Grip	9308880017	
8	Emblem	9315211019	
9	Protective Net	9315319012	

OUTDOOR UNIT



Ref.	Description	Part number	
10	4-Way Valve	9900047016	
11	Pulse Motor Valve Assy	9311641018	
13	Condenser Assy	9311382027	
14	Thermistor Spring-A	313728262708	
15	Thermistor Spring	9300089012	
16	Propeller Fan	9309909014	
17	Nut	9304902003	
18	Motor Bracket	9308872012	
19	Separator Assy	9312971015	
20	Base Assy	9308869081	
21	3-Way Valve Assy	9970092015	
22	2-Way Valve Assy	9970093012	
32	Expansion Valve Coil	9900057039	
34	Fan Motor	9602133017	
35	Compressor Assy	9313763039	
37	Thermistor Assy	9900148027	
38	Heat Exchanger Thermistor	9900403010	
39	Solenoid Coil	9970033018	
40	Compressor Thermistor	9900156046	
41	Reactor Assy	9900354015	
--	Outdoor Thermistor	9900210045	

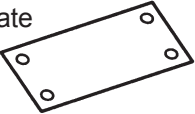
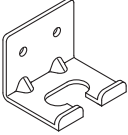
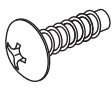
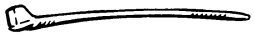
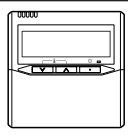
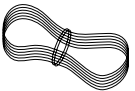
OUTDOOR UNIT

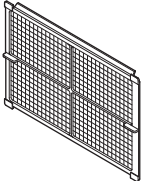
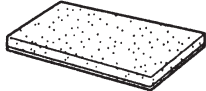


Ref.	Description	Part number	
26	Inverter PCB Assy (12)	9707427134	
26	Inverter PCB Assy (14)	9707427141	
26	Inverter PCB Assy (18)	9707427110	
27	Fuse Holder	0501454012	
28	Fuse Holder	0501456016	
29	Fuse	0600382018	
30	Fuse	0600372163	
42	Terminal	9703874031	
43	Inverter Case Assy	9315690012	

ACCESSORIES

INDOOR UNIT

Name and Shape	Q'ty	Application
Installation template 	1	For positioning the indoor unit (P/N 9364225005)
Hanger 	4	For suspending the indoor unit from ceiling (P/N 9363195002)
Screw (M4 x 10) 	8	For installing the hanger (P/N 0700009037)
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling (P/N 313005446653)
Special nut B (small flange) 	4	
Binder 	(Small) 1	For remote control and cord binding (P/N 313361275805)
	(Large) 4	For fixing the coupler heat insulation (P/N 312300787605)
Remote control 	1	For air conditioner operation (P/N 9372266199)
Remote control cord 	1	For connecting the remote control (P/N 9372714010)
Screw (M4 x 16) 	2	For installing remote control (P/N 0700181108)

Name and Shape	Q'ty	Application
Coupler heat insulation (large) 	1	For indoor side pipe joint (gas pipe) (P/N 9378173569)
Coupler heat insulation (small) 	1	For indoor side pipe joint (liquid pipe) (P/N 9378173521)
Filter 	3	For protecting air conditioner against dust (P/N 9366833017)
Drain hose insulation 	1	Insulates the drain hose and vinyl hose connection (P/N 313806217708)
Edge cover 	1	For making a wiring hole for connecting optional units (P/N 9364788005)

OPTIONAL PARTS

The following options are available.

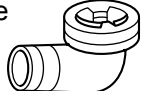
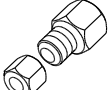
Remote sensor:UTD-RS100 (P/N 9072619004)

External control set:UTD-ECS5A (P/N 9077359004)

Drain pump unit : UTZ-PX1BBA (P/N 9052976004)

Receiver unit : UTY-LRHG1 (P/N 9048207006)

OUTDOOR UNIT

Name and Shape	Q'ty	Application	Part number
Drain pipe 	1	For drain piping work.	9303029015
Adapter assy 12.7 mm -> 9.52 mm 	1	To connect 12,000 BTU model * 12,000 BTU model only	9370244007

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