



# INVERTER SPLIT TYPE AIR CONDITIONER (50Hz)

## DUCT type

# SERVICE MANUAL



### Models

Indoor unit

Outdoor unit

ARHA12LATN

AOHA12LACL

ARHA14LATN

AOHA14LACL

ARHA18LATN

AOHA18LACL

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# SPECIFICATIONS

TYPE	Inverter Cool & Heat	Inverter Cool & Heat	Inverter Cool & Heat
INDOOR UNIT	ARHA12LATN	ARHA14LATN	ARHA18LATN
OUTDOOR UNIT	AOHA12LACL	AOHA14LACL	AOHA18LACL
COOLING CAPACITY	3.50 kW	4.30 kW	5.20 kW
HEATING CAPACITY	4.10 kW	5.00 kW	6.00 kW

## ELECTRICAL DATA

POWER SOURCE		230 V	230 V	230 V
FREQUENCY		50 Hz	50 Hz	50 Hz
RUNNING CURRENT	Cooling	4.6 A	5.9 A	7.1 A
	Heating	4.9 A	5.9 A	7.3 A
INPUT WATTS	Cooling	1.05 kW	1.34 kW	1.62 kW
	Heating	1.11 kW	1.34 kW	1.66 kW
E.E.R.	Cooling	3.33 kW/kW	3.21 kW/kW	3.21 kW/kW
	Heating	3.69 kW/kW	3.71 kW/kW	3.61 kW/kW
STARTING CURRENT		4.9 A	4.9 A	7.7 A
MOISTURE REMOVAL		1.2 L/hr	1.5 L/hr	2.0 L/hr

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 m <sup>3</sup> /h	820 m <sup>3</sup> /h	820 m <sup>3</sup> /h
	Med	630 m <sup>3</sup> /h	720 m <sup>3</sup> /h	720 m <sup>3</sup> /h
	Low	560 m <sup>3</sup> /h	610 m <sup>3</sup> /h	610 m <sup>3</sup> /h
	Quiet	480 m <sup>3</sup> /h	550 m <sup>3</sup> /h	550 m <sup>3</sup> /h
OUTDOOR UNIT	Cooling	1,780 m <sup>3</sup> /h	1,910 m <sup>3</sup> /h	2,000 m <sup>3</sup> /h
	Heating	1,630 m <sup>3</sup> /h	1,740 m <sup>3</sup> /h	1,910 m <sup>3</sup> /h

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

INDOOR UNIT	ARHA12LATN	ARHA14LATN	ARHA18LATN
OUTDOOR UNIT	AOHA12LAACL	AOHA14LAACL	AOHA18LAACL

## 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 uit)

## 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

TYPE	Hermetic type, 4 poles, DC motor, Twin Rotary			
DISCRIMINATION	DA130AIF-25NA			
REFRIGERANT	R410A	1,150 g	1,250 g	1,250 g

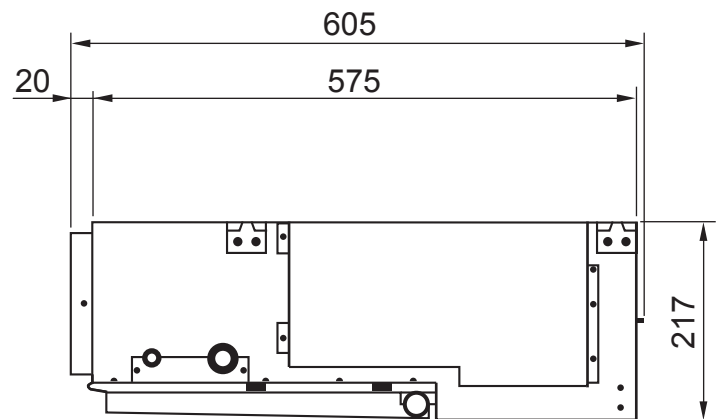
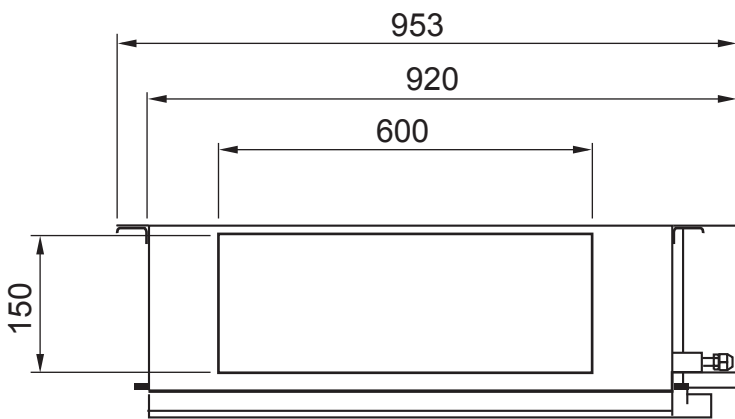
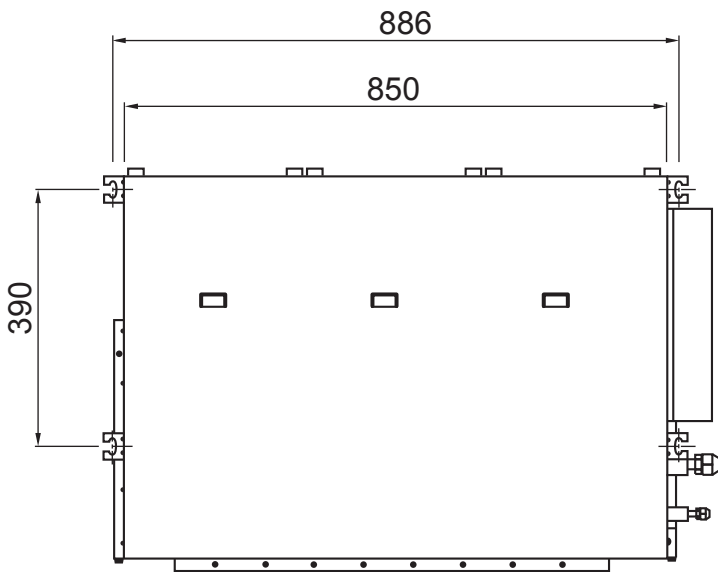
## REFRIGERANT CHARGE

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

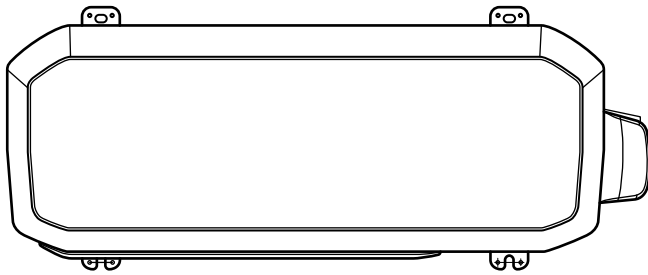
## INDOOR UNIT

(Unit : mm)

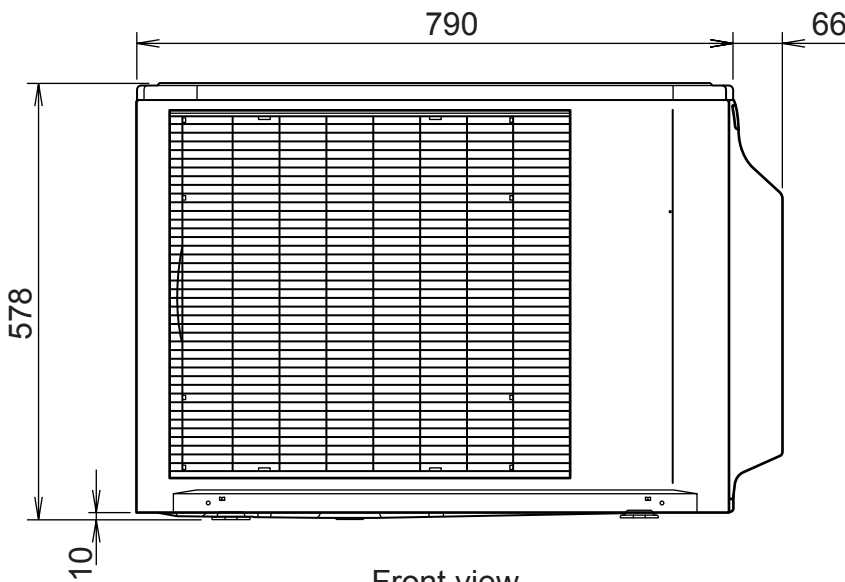


# OUTDOOR UNIT

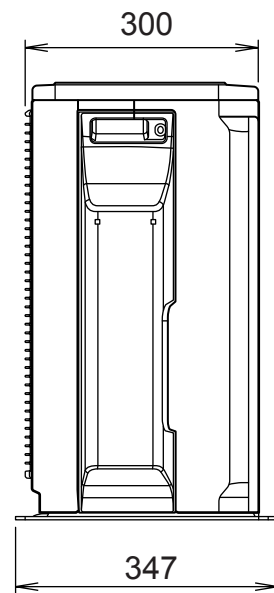
Unit : mm



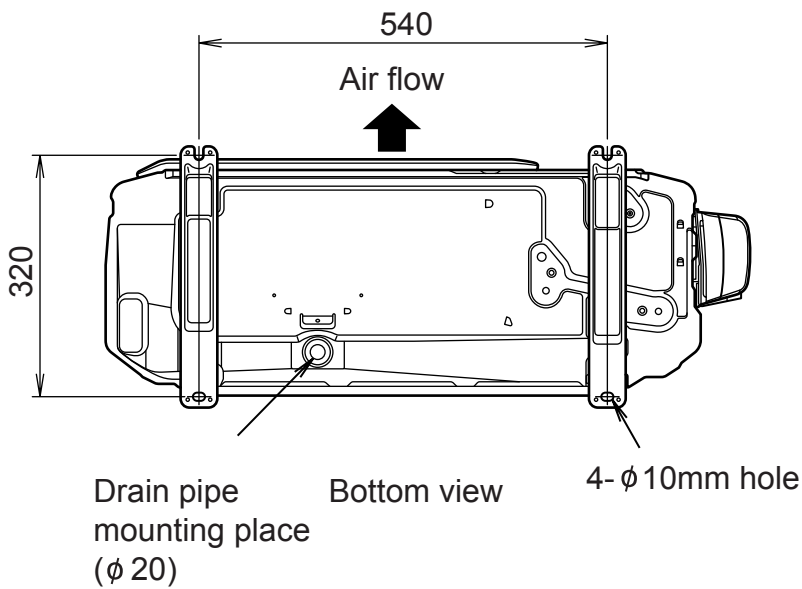
Top view



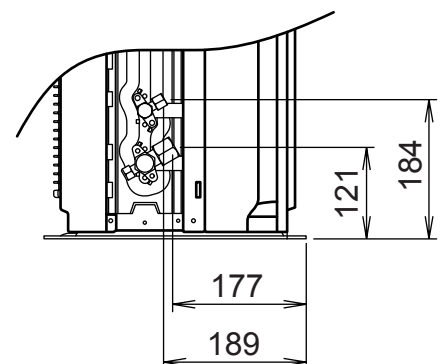
Front view



Side view



Bottom view

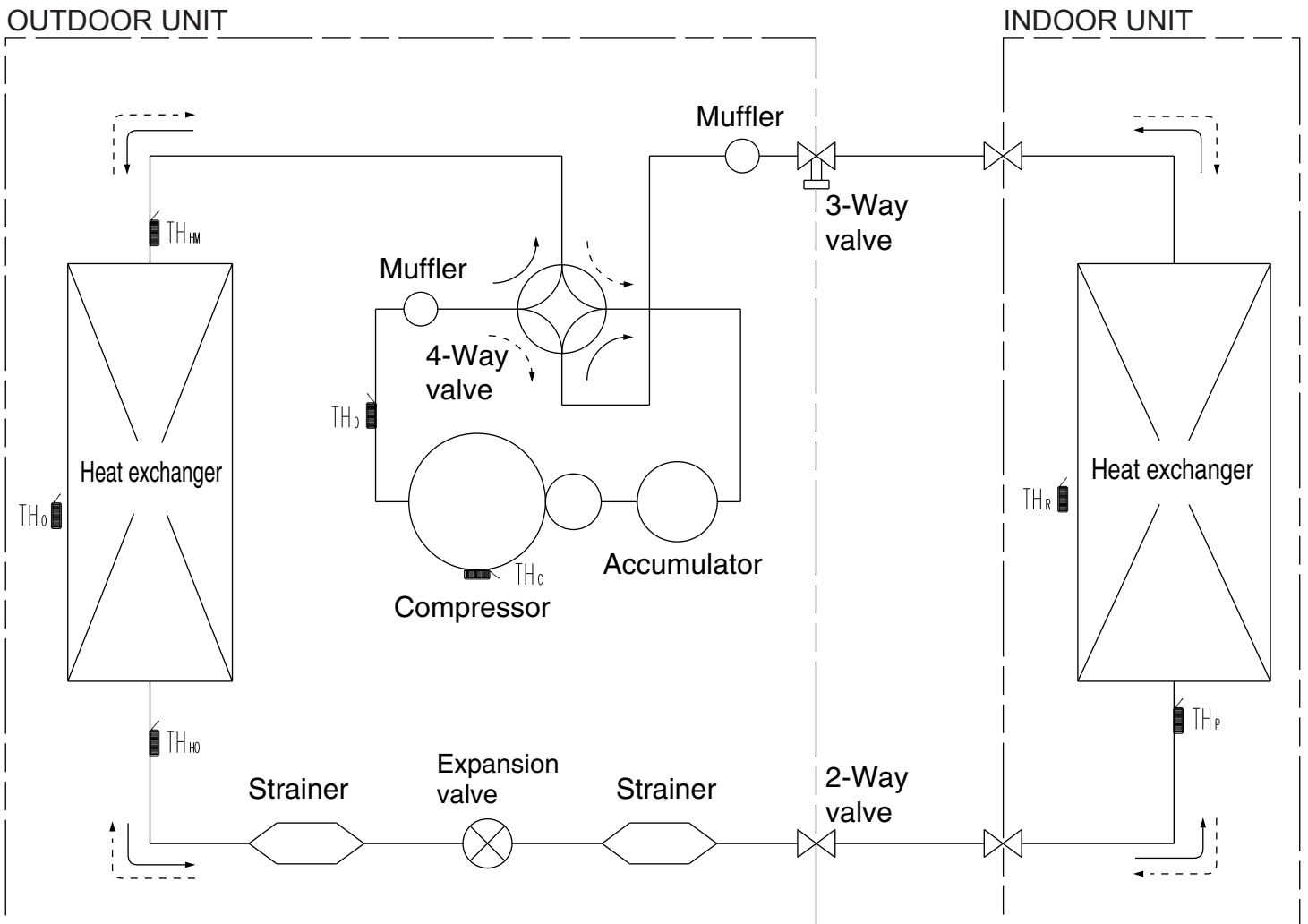


# REFRIGERANT SYSTEM DIAGRAM

<Refrigerant direction>

————> Cool

- - - - -> Heat



TH<sub>c</sub> : THERMISTOR (COMPRESSOR)  
 TH<sub>o</sub> : THERMISTOR (DISCHARGE)  
 TH<sub>HM</sub> : THERMISTOR (HEAT EXCHANGER MED)  
 TH<sub>HO</sub> : THERMISTOR (HEAT EXCHANGER OUT)  
 TH<sub>o</sub> : THERMISTOR (OUTDOOR AIR)

TH<sub>p</sub> : THERMISTOR (PIPE)  
 TH<sub>r</sub> : THERMISTOR (ROOM)

<Refrigerant pipe diameter>

ARHA12LATN / AOHA12LACL

Liquid : 1/4" (6.35 mm)

Gas : 3/8" (9.52 mm)

ARHA14LATN / AOHA14LACL

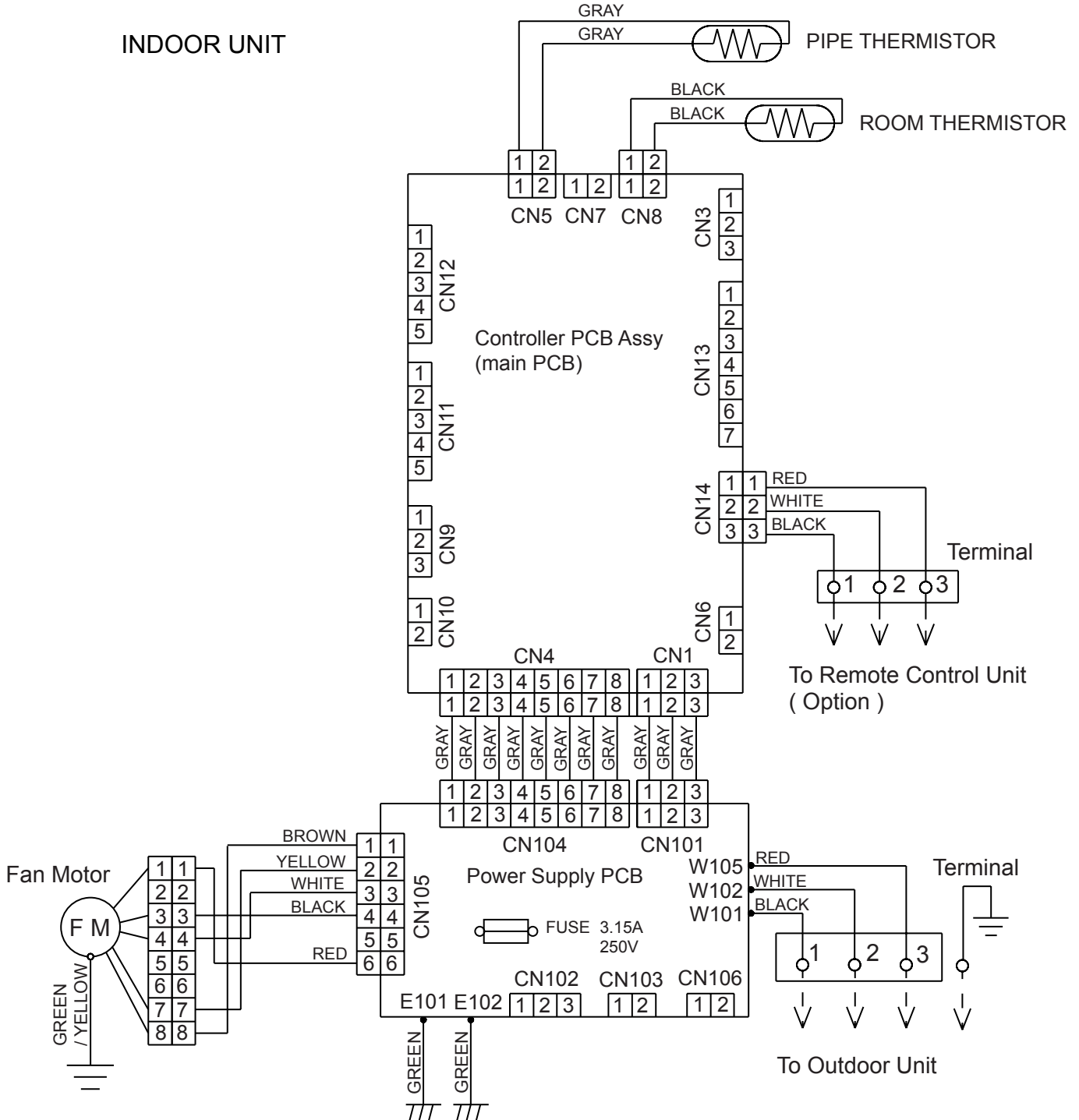
ARHA18LATN / AOHA18LACL

Liquid : 1/4" (6.35 mm)

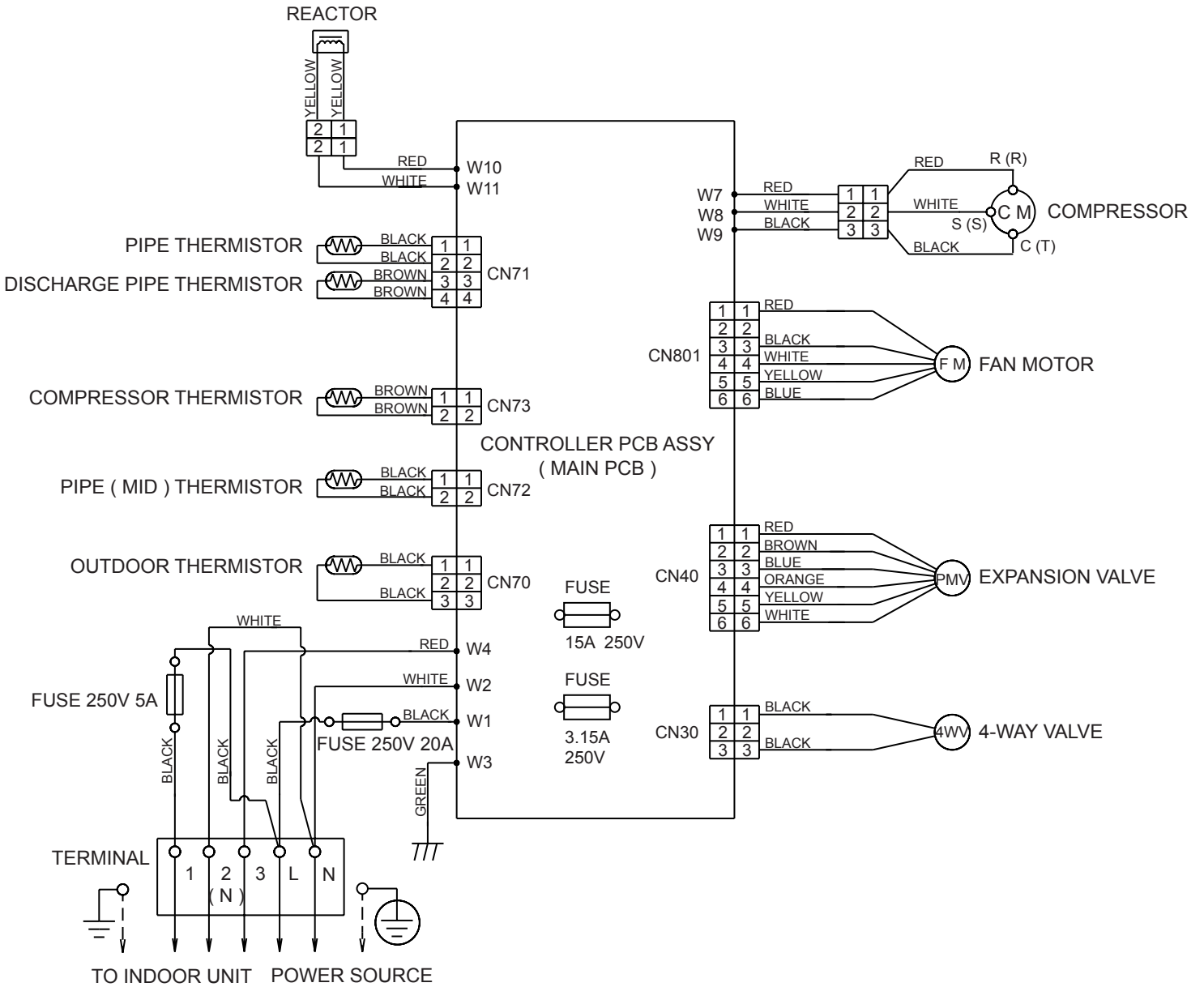
Gas : 1/2" (12.70 mm)

# CIRCUIT DIAGRAM

## INDOOR UNIT



# OUTDOOR UNIT





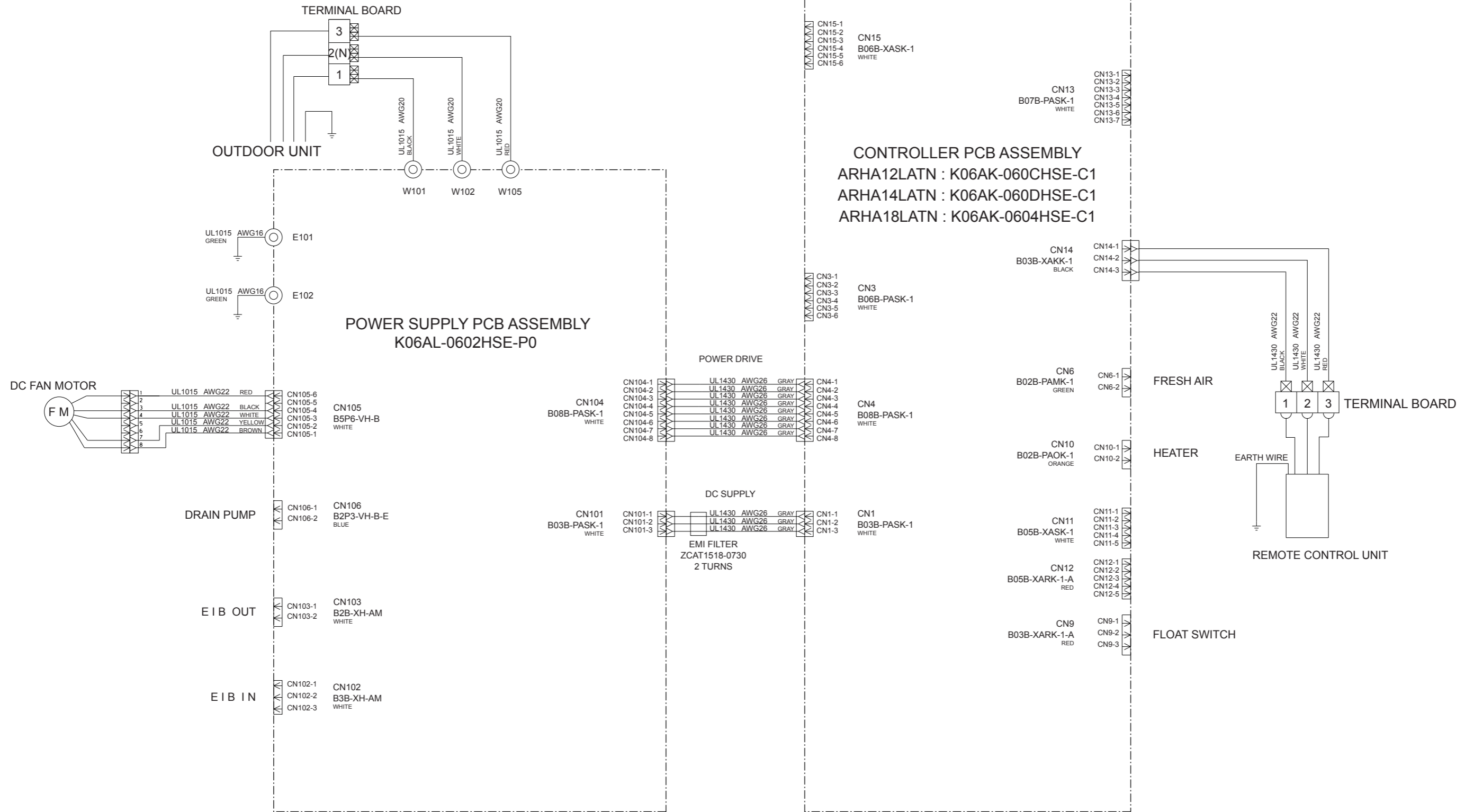
# INDOOR PCB CIRCUIT DIAGRAM

## CONTROL UNIT

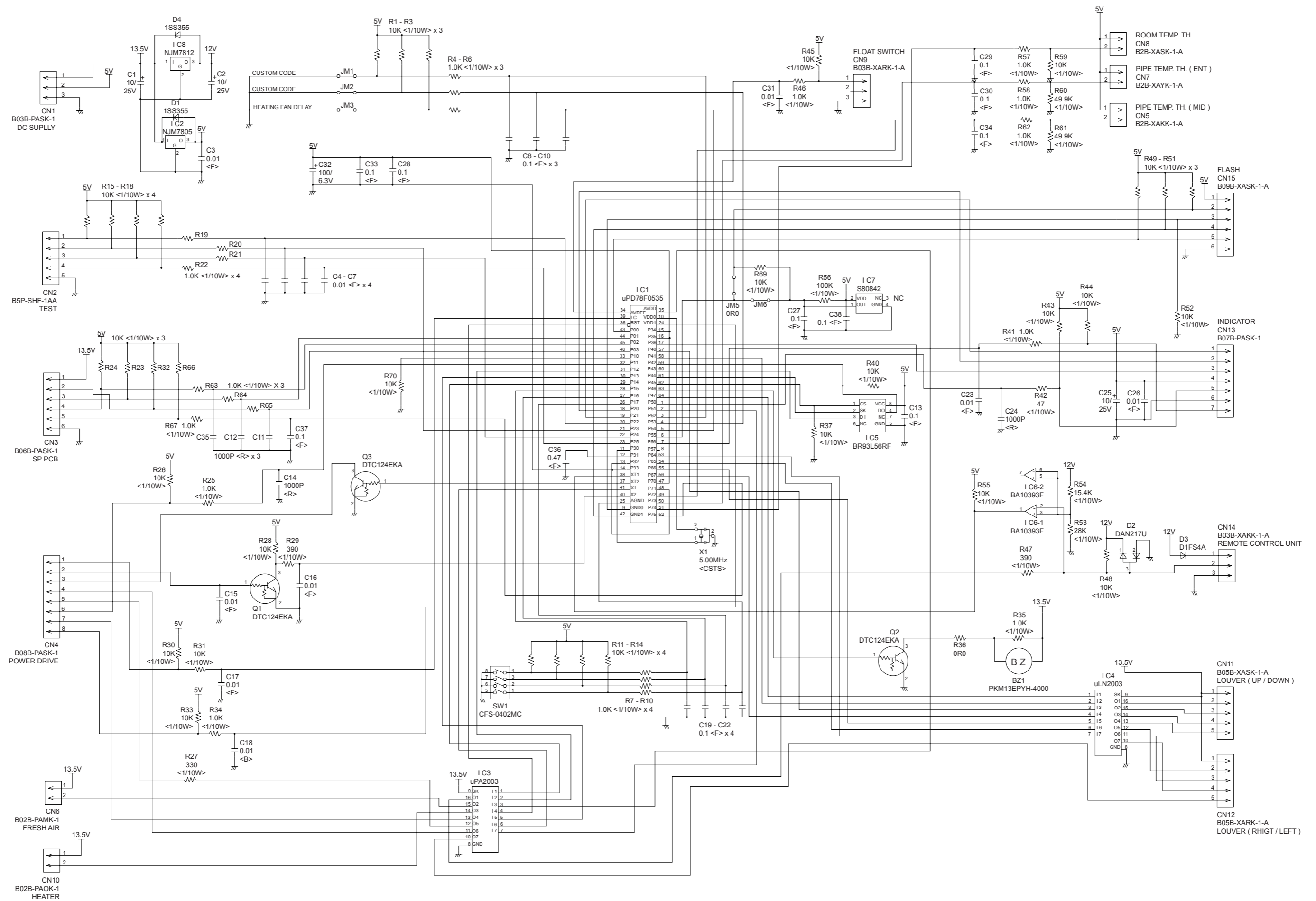
ARHA12LATN : EZ-00628HSE

ARHA14LATN : EZ-00629HSE

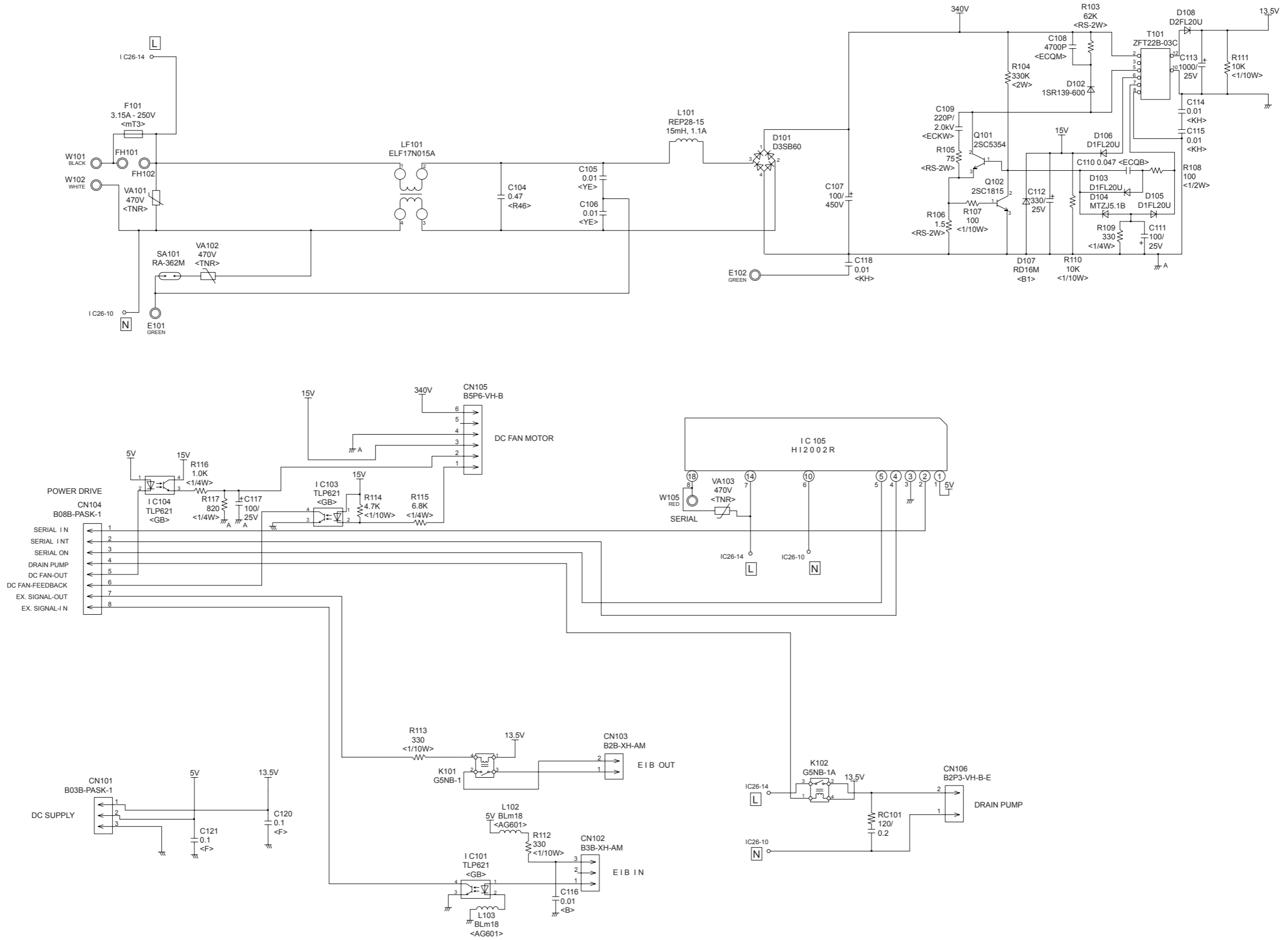
ARHA18LATN : EZ-00604HSE



CONTROLLER PCB ASSEMBLY  
 ARHA12LATN : K06AK-060CHSE-C1  
 ARHA14LATN : K06AK-060DHSE-C1  
 ARHA18LATN : K06AK-0604HSE-C1



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



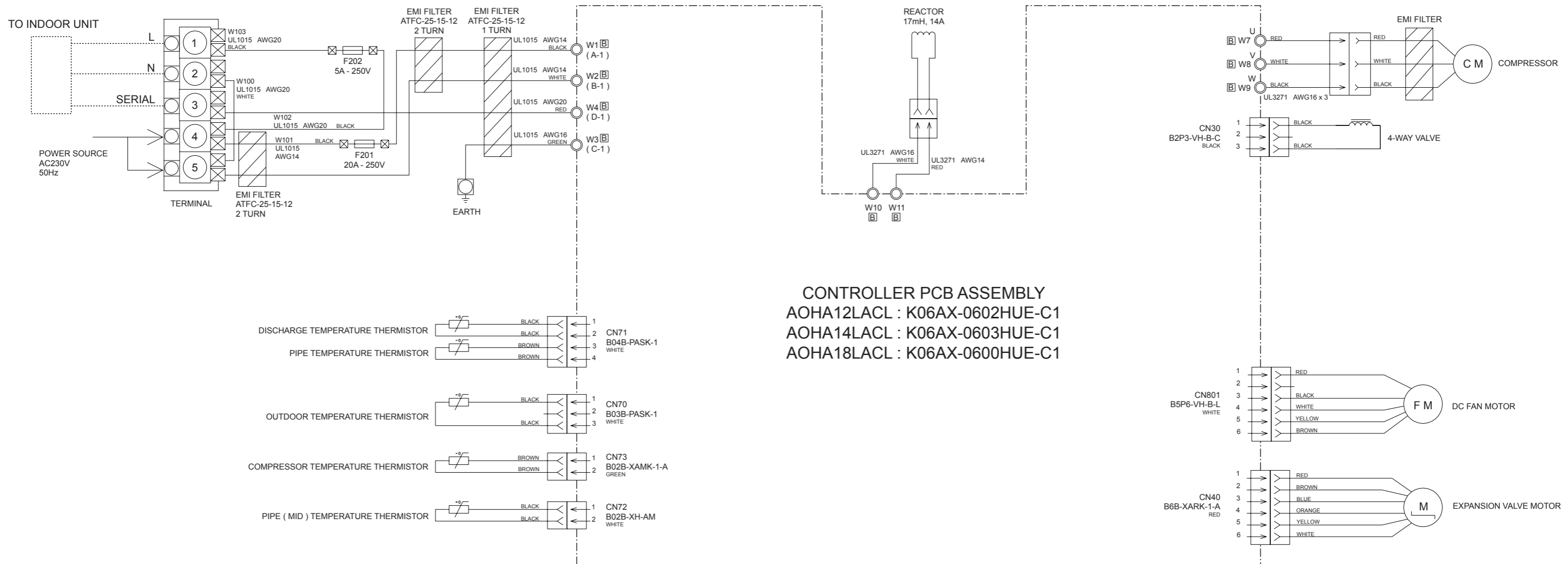
# OUTDOOR PCB CIRCUIT DIAGRAM

## INVERTER ASSEMBLY

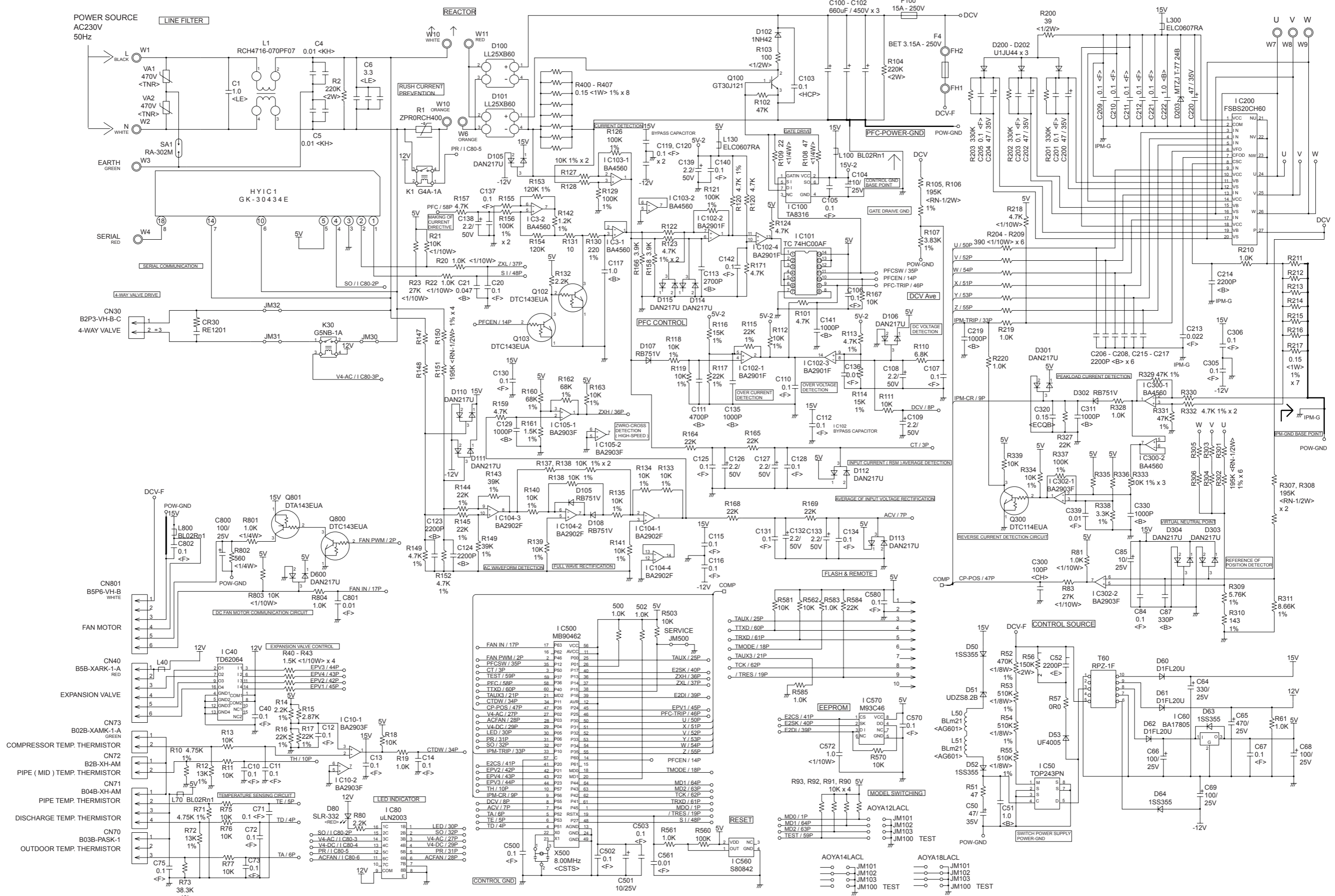
AOHA12LACL : EZ-0060RHUE

AOHA14LACL : EZ-0060SHUE

AOHA18LACL : EZ-0069HUE



INDOOR UNIT  
 CONTROLLER PCB ASSEMBLY  
 AOHA12LACL : K06AX-0602HUE-C1  
 AOHA14LACL : K06AX-0603HUE-C1  
 AOHA18LACL : K06AX-0600HUE-C1



# ERROR CONTENTS

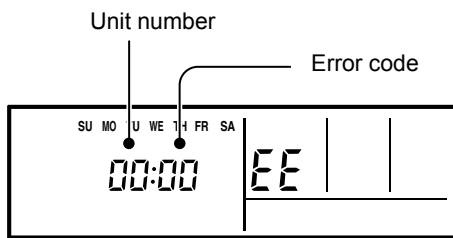
## REMOTE CONTROL UNIT

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.)



Ex. Self-diagnosis

Code	Error contents
<b>01</b> <b>13</b> <b>26</b> <b>27</b>	Indoor signal error
<b>00</b>	Wired remote controller abnormal
<b>02</b>	Indoor room temperature sensor error
<b>04</b>	Indoor heat exchanger temperature sensor (middle) error
<b>28</b>	Indoor heat exchanger temperature sensor (inlet) error
<b>09</b>	Float switch operated
<b>0C</b>	Outdoor discharge pipe temperature sensor error
<b>06</b>	Outdoor heat exchanger temperature sensor (outlet) error
<b>0A</b>	Outdoor temperature sensor error
<b>15</b>	Compressor temperature sensor error
<b>1d</b>	2-way valve temperature sensor error
<b>1E</b>	3-way valve temperature sensor error
<b>29</b>	Outdoor heat exchanger temperature sensor (middle) error
<b>20</b>	Indoor manual auto switch abnormal
<b>2A</b>	Power supply frequency detection error
<b>17</b>	IPM protection
<b>18</b>	CT error
<b>1A</b>	Compressor location error
<b>1b</b>	Outdoor fan error
<b>1F</b>	Connected indoor unit abnormal
<b>1c</b>	Outdoor unit computer communication error
<b>12</b>	Indoor fan abnormal
<b>0F</b>	Discharge temperature error
<b>24</b>	Excessive high pressure protection on cooling
<b>2c</b>	4-way valve abnormal
<b>16</b>	Pressure switch abnormal
<b>2b</b>	Compressor temperature error
<b>19</b>	Active filter abnormal
<b>25</b>	PFC circuit error

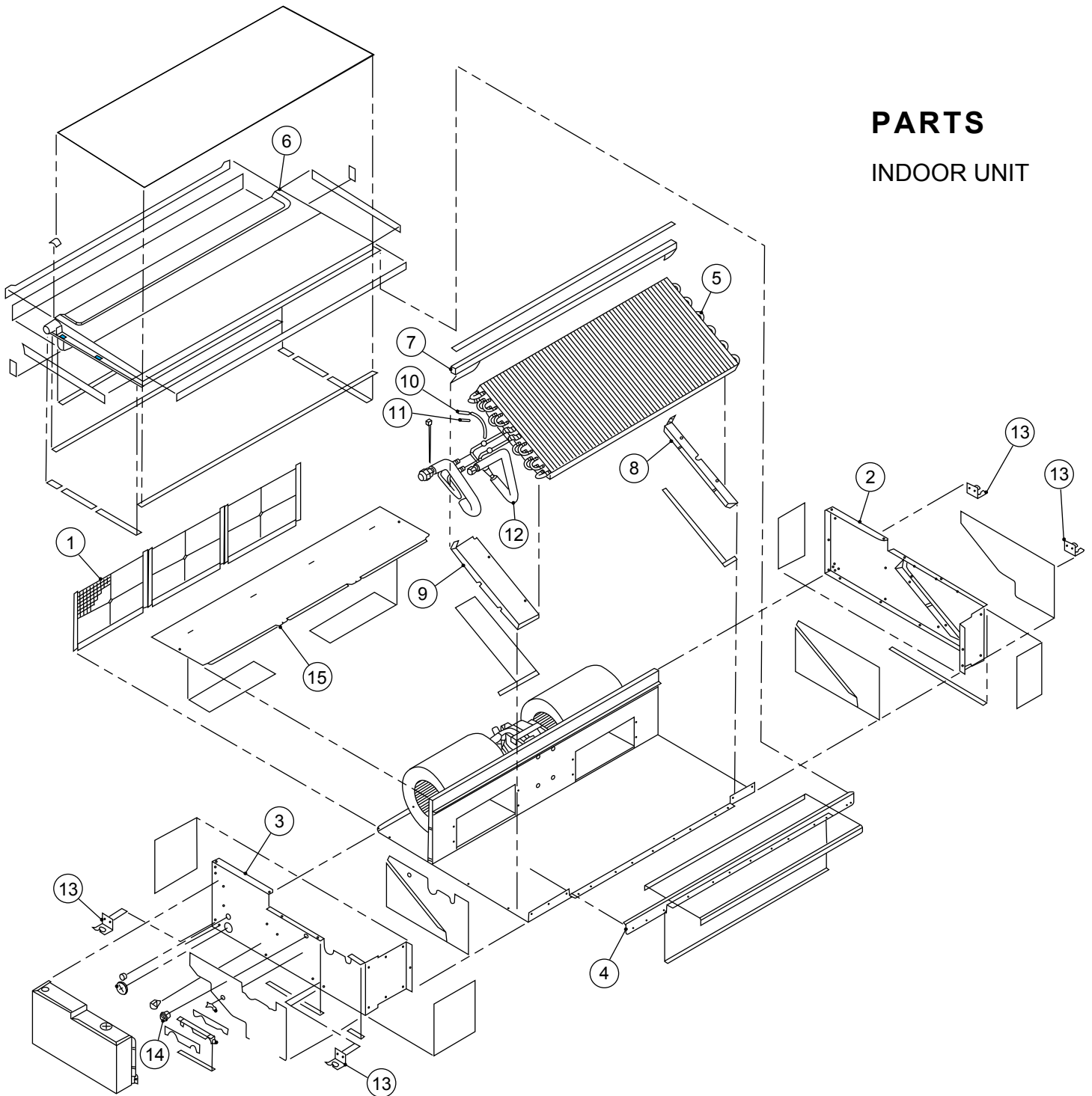
If "CO" appears in the unit number display, there is a remote controller error. Refer to the installation instruction sheet included with the remote controller.

## 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

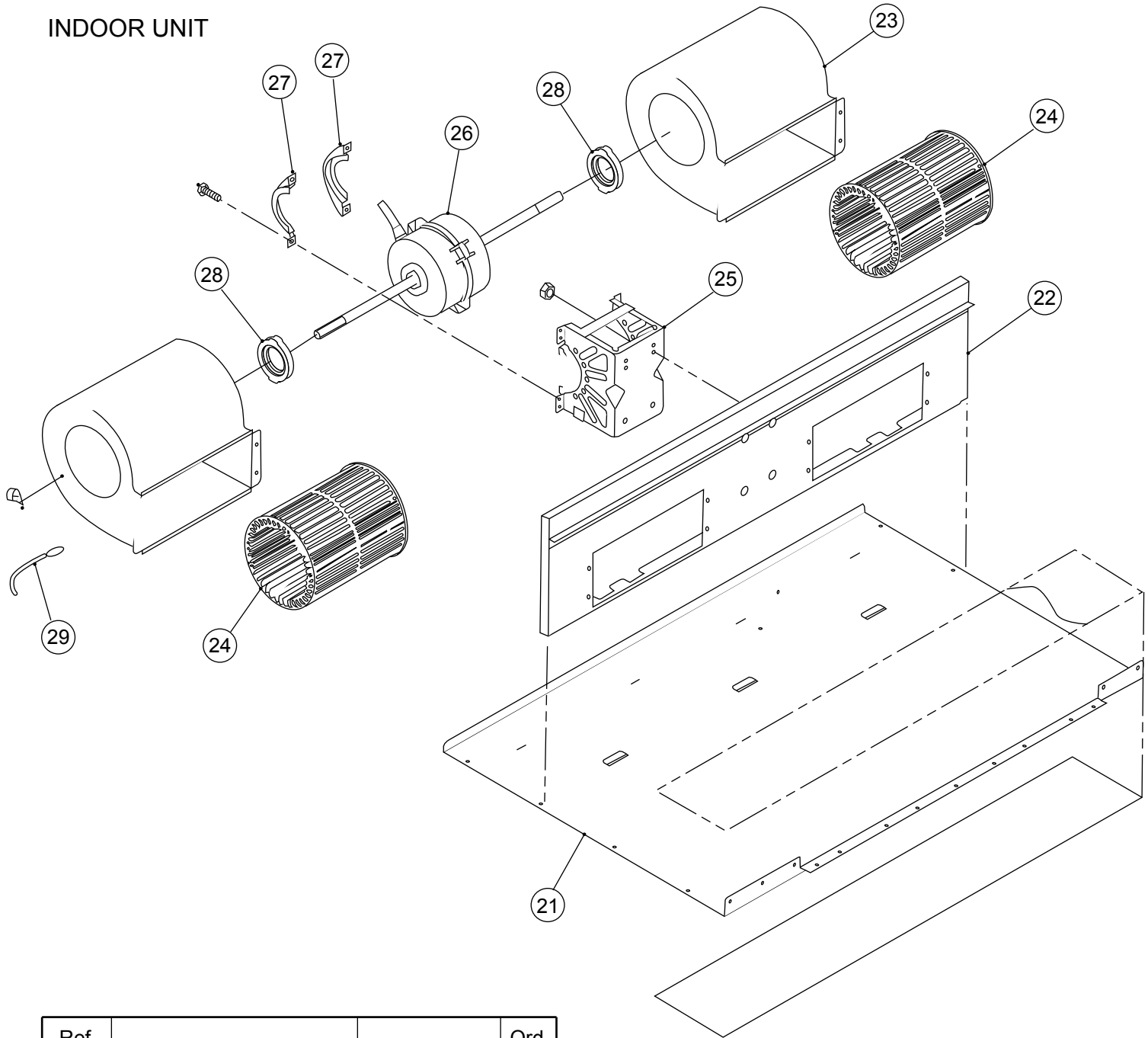
## INDOOR UNIT



Ref. No.	Description	Part number		Ord. Q'ty
		ARHA12LATN	ARHA14LATN ARHA18LATN	
1	Air Filter	9366833017	9366833017	
2	Side Panel R Sub Assy	9364505022	9364505022	
3	Side Panel L Sub Assy	9364506029	9364506029	
4	Front Panel Sub Assy	9364508023	9364508023	
5	Evaporator Assy	9373255024	9372972014	
6	Drain Pan Sub Assy	9364502045	9364502045	
7	Evaporator Support Plate	9363404005	9363404005	
8	Bracket Evaporator R	9363199000	9363199000	
9	Bracket Evaporator L	9363198003	9363198003	
10	Pipe Thermistor	9703297090	9703297090	
11	Thermistor Spring A	313728262708	313728262708	
12	Distributor	9304394006	9368859008	
13	Hook	9363195002	9363195002	
14	Cord Bushing	9359240006	9359240006	
15	Cabinet Cover Sub Assy	9364503028	9364503028	
--	Control Box Cover	9363201000	9363201000	

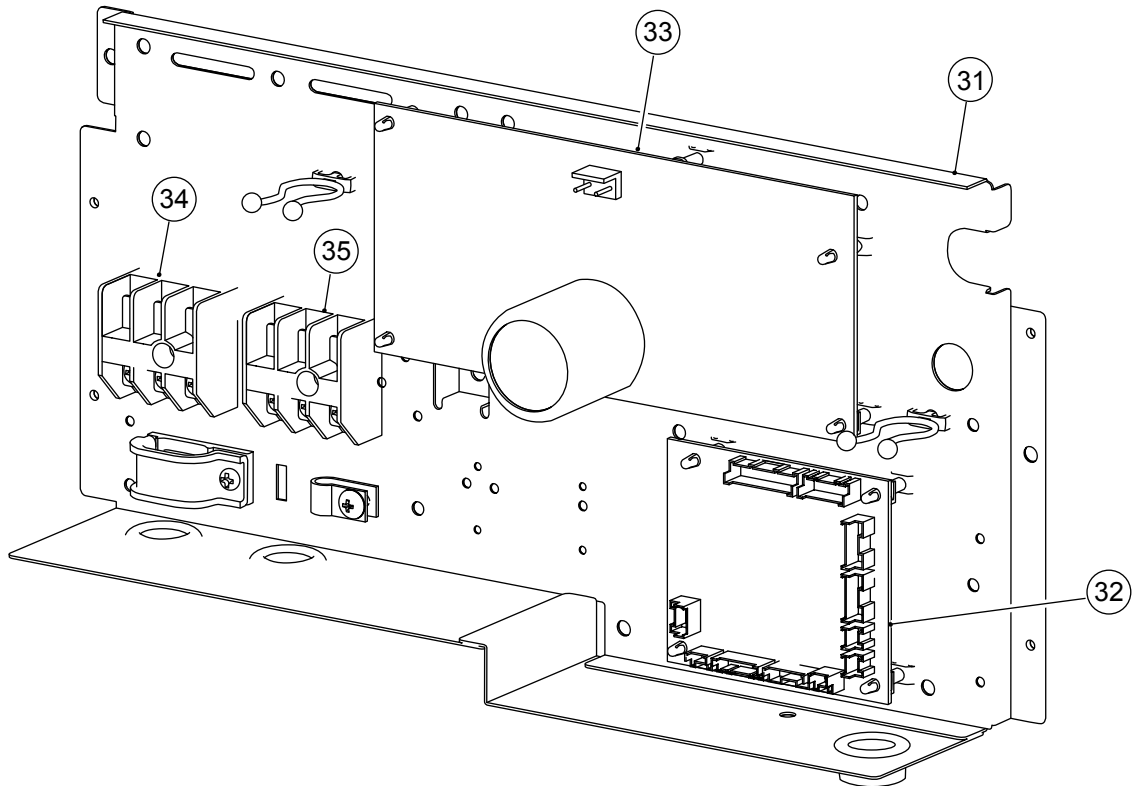


# INDOOR UNIT



Ref. No.	Description	Part number	Ord. Q'ty
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	

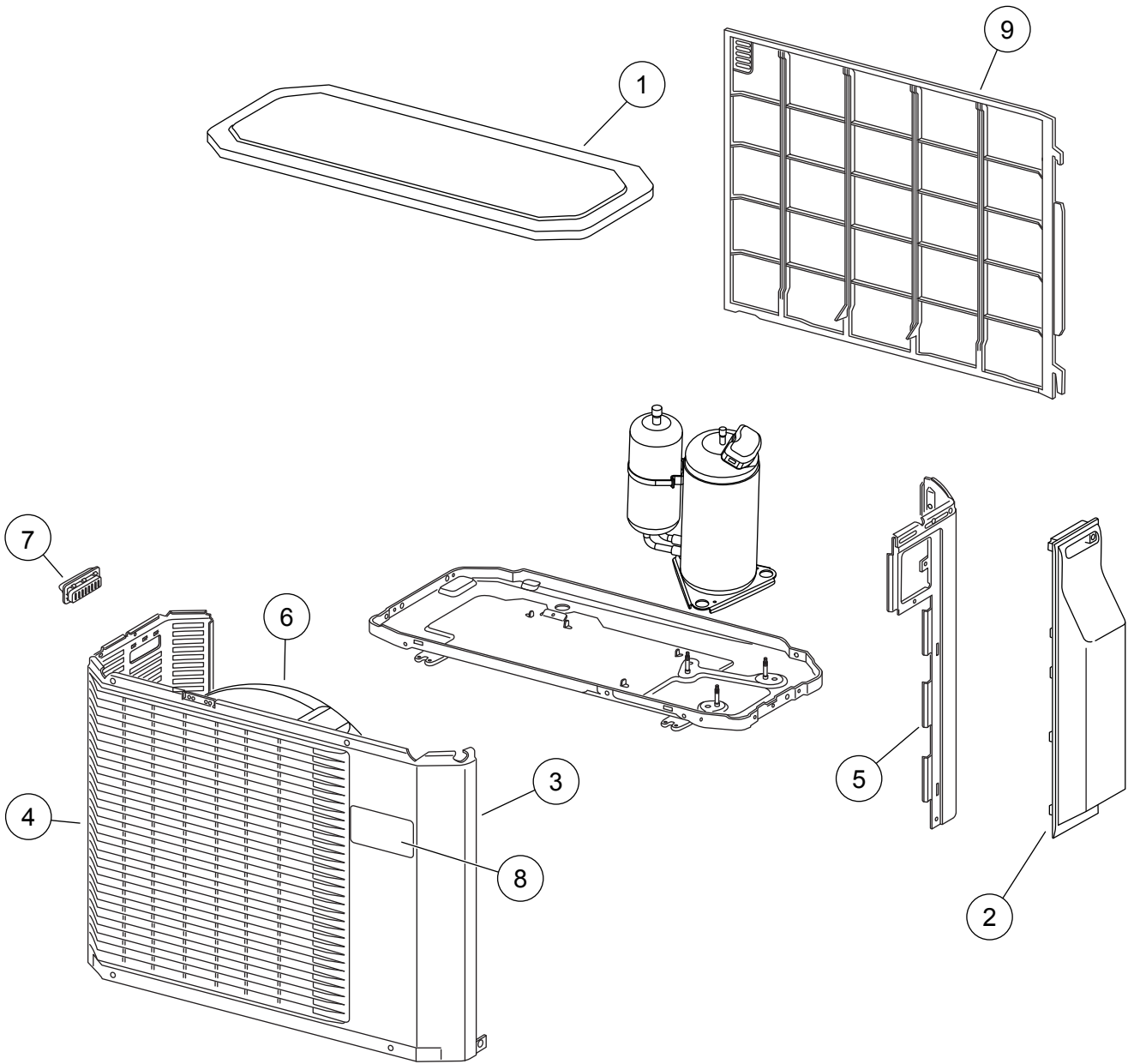
## INDOOR UNIT



Ref. No.	Description	Part number			Ord. Q'ty
		ARHA12LATN	ARHA14LATN	ARHA18LATN	
31	Control Box	9375586010	9375586010	9375586010	
32	Controller PCB Assy	9707393170	9707393187	9707393057	
33	Power Supply PCB Assy	9707398038	9707398038	9707398038	
34	Terminal	9703345012	9703345012	9703345012	
35	Terminal	9306489045	9306489045	9306489045	

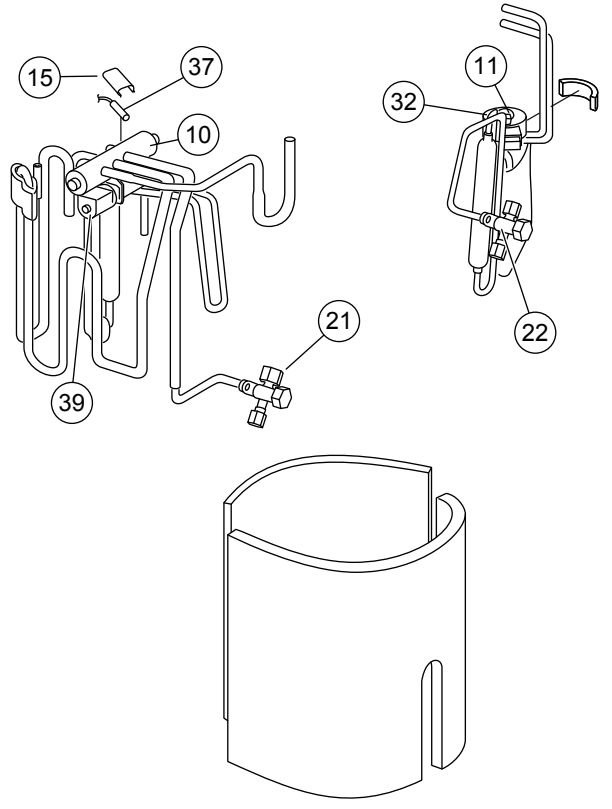
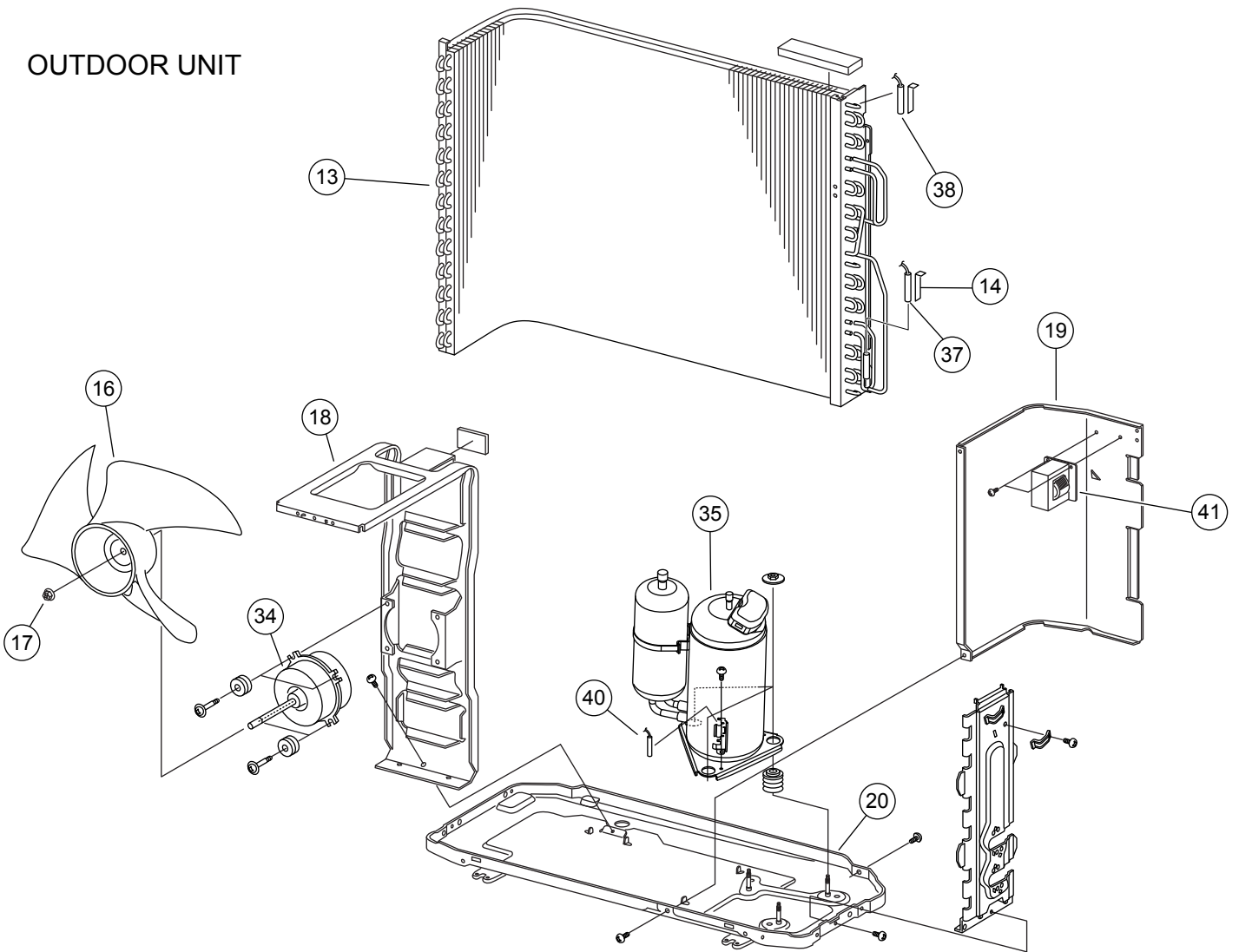
# PARTS

## OUTDOOR UNIT



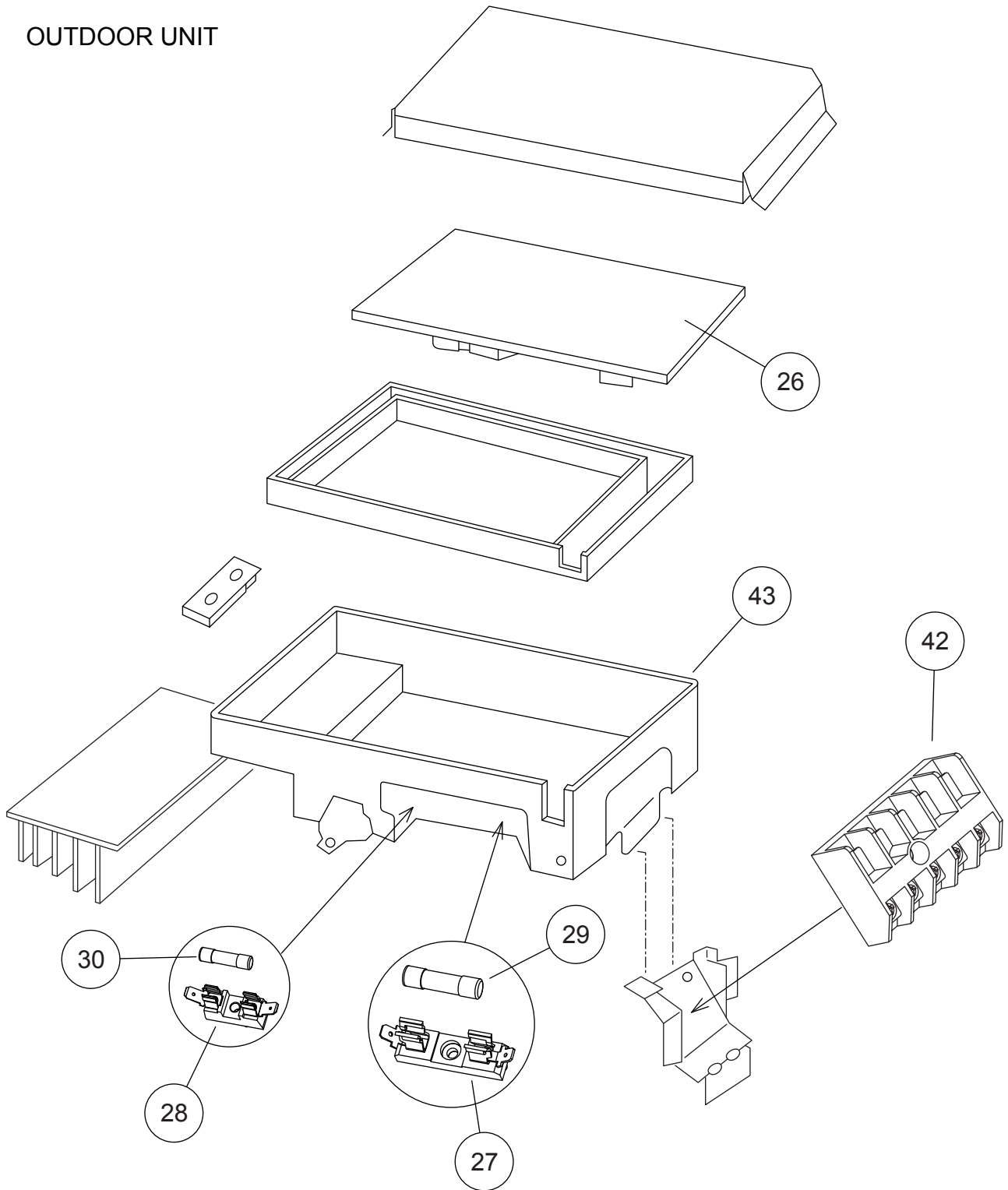
Ref. No.	Description	Part number	Ord. Q'ty
1	Top Panel Assy	9309230057	
2	Cover (Switch) Assy	9309237032	
3	Cabinet Assy	9314809040	
4	Blow Down Grille	9308884015	
5	Cabinet Right Assy	9309236011	
6	Fan Ring	9308885012	
7	Grip	9308880017	
8	Emblem	9315211019	
9	Protective Net	9315319012	

# OUTDOOR UNIT



Ref. No.	Description	Part number	Ord. Q'ty
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	9315159014	
22	2-Way Valve Assy	9313064013	
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

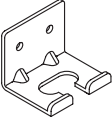



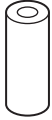
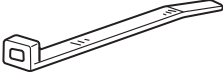
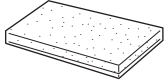


Ref. No.	Description	Part number			Ord. Q'ty
		AOHA12LACL	AOHA14LACL	AOHA18LACL	
26	Inverter PCB Assy	9707427035	9707427042	9707427011	
27	Fuse Holder	0501454012	0501454012	0501454012	
28	Fuse Holder	0501456016	0501456016	0501456016	
29	Fuse	0600382018	0600382018	0600382018	
30	Fuse	0600372163	0600372163	0600372163	
42	Terminal	9703874031	9703874031	9703874031	
43	Inverter Case Assy	9315690012	9315690012	9315690012	

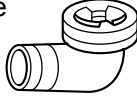

## STANDARD ACCESSORIES

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

### INDOOR UNIT

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)
Binder 	1 (large)	For fixing the drain hose
Drain hose insulation 	1	Insulates the drain hose and vinyl hose

### OUTDOOR UNIT

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

0610G3149