

SPLIT TYPE
AIR CONDITIONER
DUCT TYPE (50Hz)

SERVICE MANUAL



Indoor unit	Outdoor unit
ARTG60LDTA	AOTG60LBTA

CONTENTS

SPECIFICATIONS	1
DIMENSIONS	2
REFRIGERANT SYSTEM DIAGRAM ...	4
CIRCUIT DIAGRAM	5
PCB CIRCUIT DIAGRAM	6
ERROR DETECTION	8
PARTS (INDOOR UNIT)	10
PARTS (OUTDOOR UNIT)	13
ACCESSORIES	16

SPECIFICATIONS

ELECTRICAL DATA

INDOOR UNIT		ARTG60LDTA
OUTDOOR UNIT		AOTG60LBTA
TYPE		Cooling & Heating
POWER SOURCE		Single phase 240V 50Hz
COOLING	Capacity	15.8 kW
	Power consumption	4.92 kW
	EER	3.21 kW/kW
	Rated operating current	20.7 A
	Max operating current	26.0 A
	Moisture removal	2.1 L/h
HEATING	Capacity	18.0 kW
	Power consumption	4.99 kW
	COP	3.61 kW/kW
	Rated operating current	21.0 A
	Max operating current	26.0 A

FAN MOTOR AND FAN REVOLUTION

INDOOR UNIT	Discrimination	MFG-ZG5KA2P
	High	1,070 rpm
	Medium	960 rpm
	Low	860 rpm
	Quiet	740 rpm
OUTDOOR UNIT	Discrimination	MFE-45VVT
	Cooling	Upper 900 rpm / Lower 800 rpm
	Heating	Upper 900 rpm / Lower 900 rpm

AIR CIRCULATION

INDOOR UNIT	High	4,100 m³/h
	Medium	3,700 m³/h
	Low	3,300 m³/h
	Quiet	2,850 m³/h
OUTDOOR UNIT	Cooling	6,850 m³/h
	Heating	7,200 m³/h

NOISE LEVEL

INDOOR UNIT	High	44 dB
	Medium	41 dB
	Low	39 dB
	Quiet	35 dB
OUTDOOR UNIT	Cooling	57 dB
	Heating	59 dB

Static pressure : 60Pa

Duct length : Inlet 1m, Outlet 2m

COMPRESSOR AND REFRIGERANT

COMPRESSOR TYPE		Hermetic rotary type, 2 pole, Single phase, DC brushless motor
DISCRIMINATION		DA422A3F-28ZAD
WEIGHT (with oil)		23.0 kg
PRECHARGED REFRIGERANT		4,500 g
REFRIGERANT TYPE		R410A
FULL CHARGE	Pipe length 30 m	4,500 g
	45 m	5,250 g
	60 m	6,000 g
	75 m	6,750 g
ADDITIONAL CHARGE		50 g/m
MAX PIPE HEIGHT		30 m

DIMENSIONS

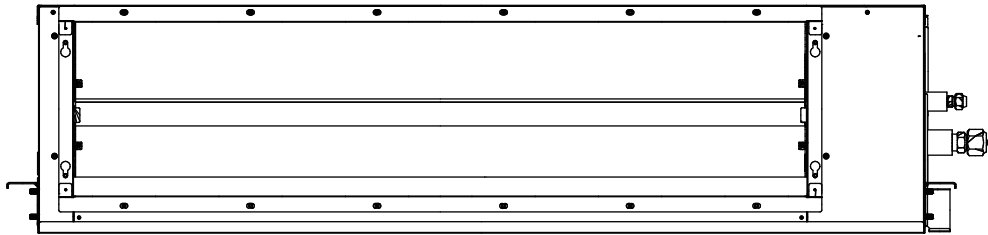
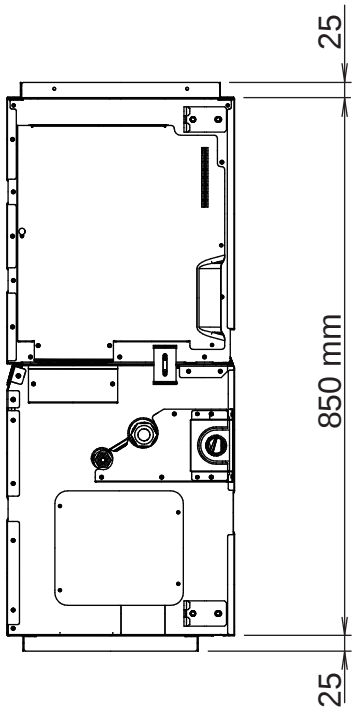
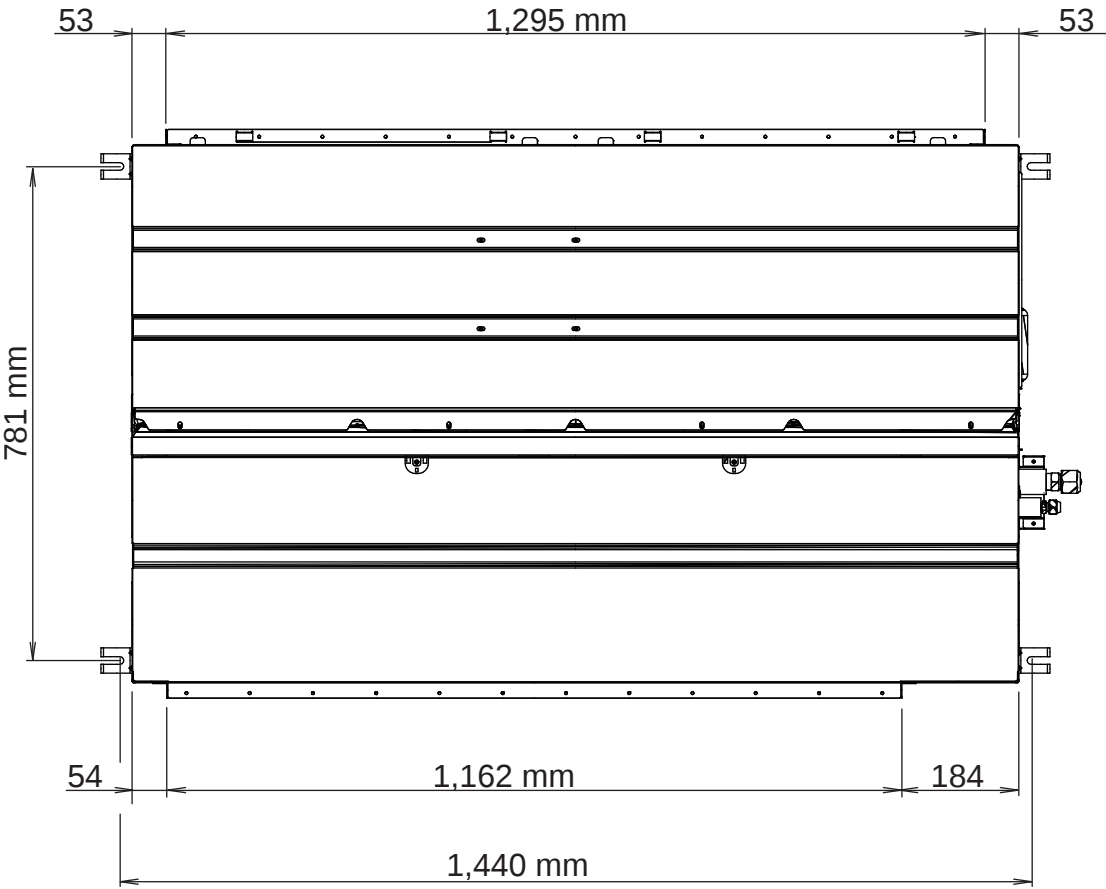
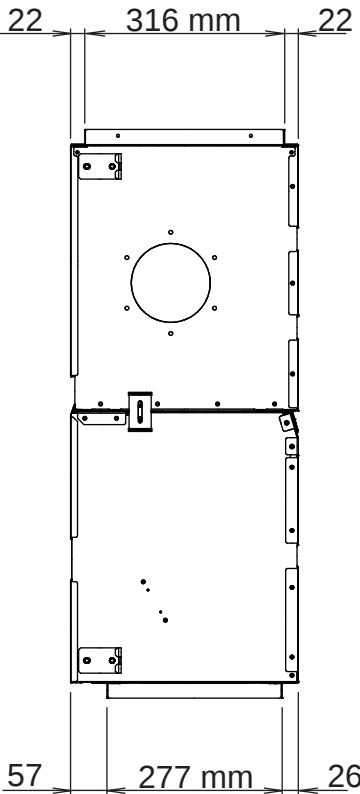
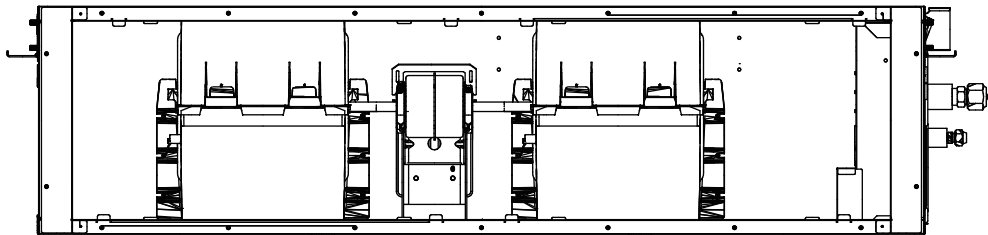
INDOOR UNIT	H x W x D	360 x 1,400 x 850 mm
OUTDOOR UNIT	H x W x D	1,290 x 900 x 330 mm

WEIGHT

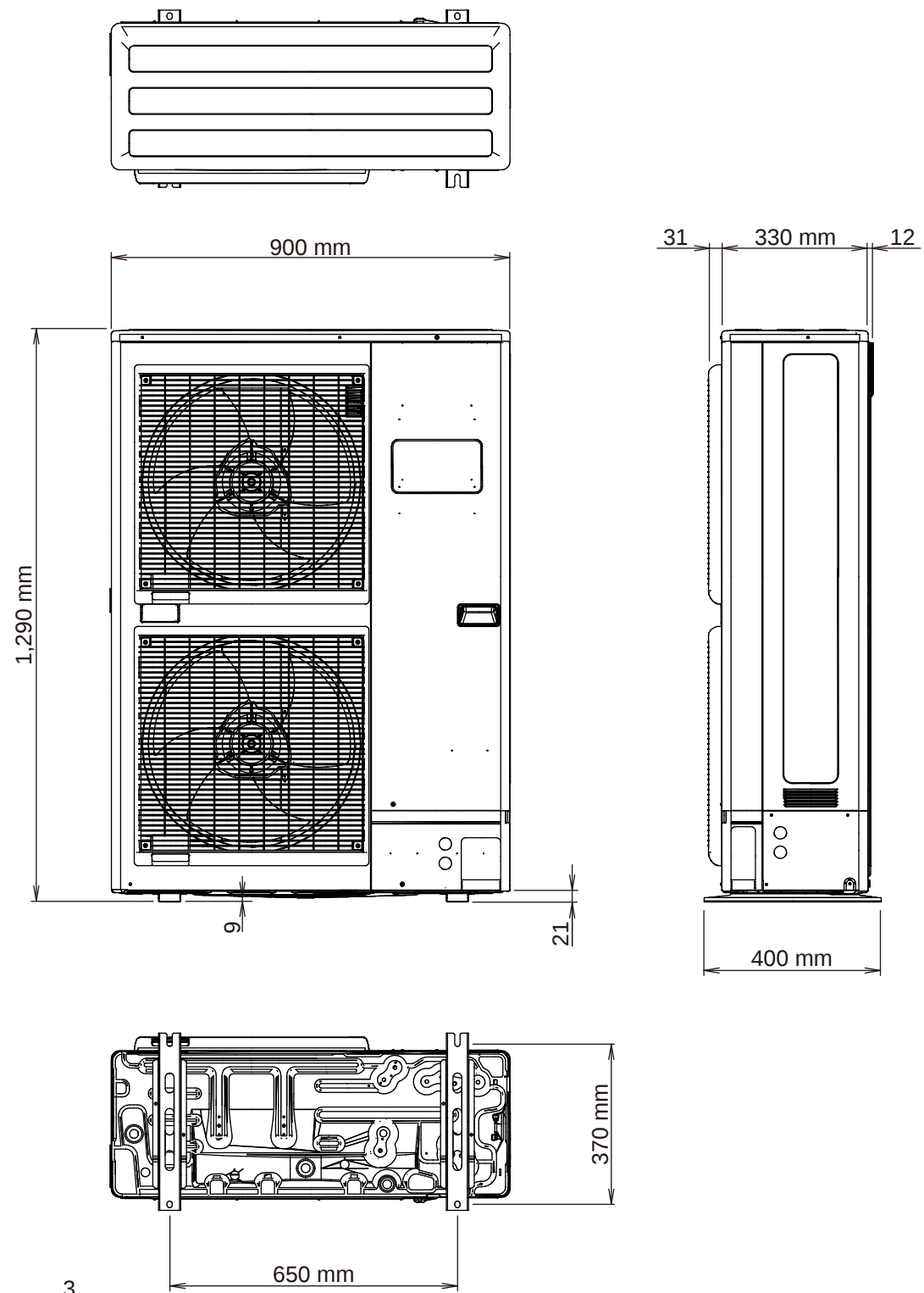
INDOOR UNIT	Net / Shipping	69 kg / 79 kg
OUTDOOR UNIT	Net / Shipping	97 kg / 105 kg

DIMENSIONS

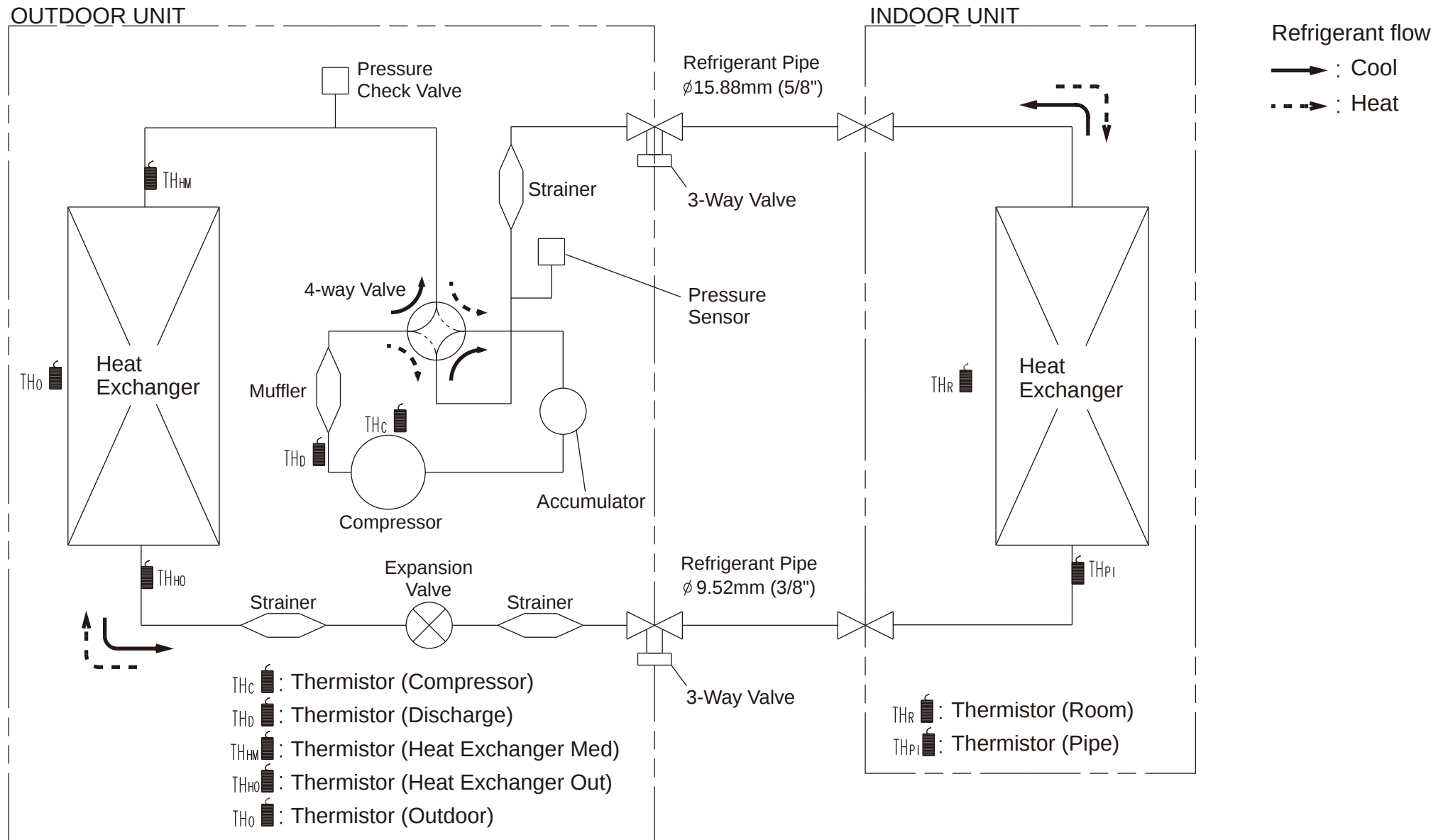
INDOOR UNIT

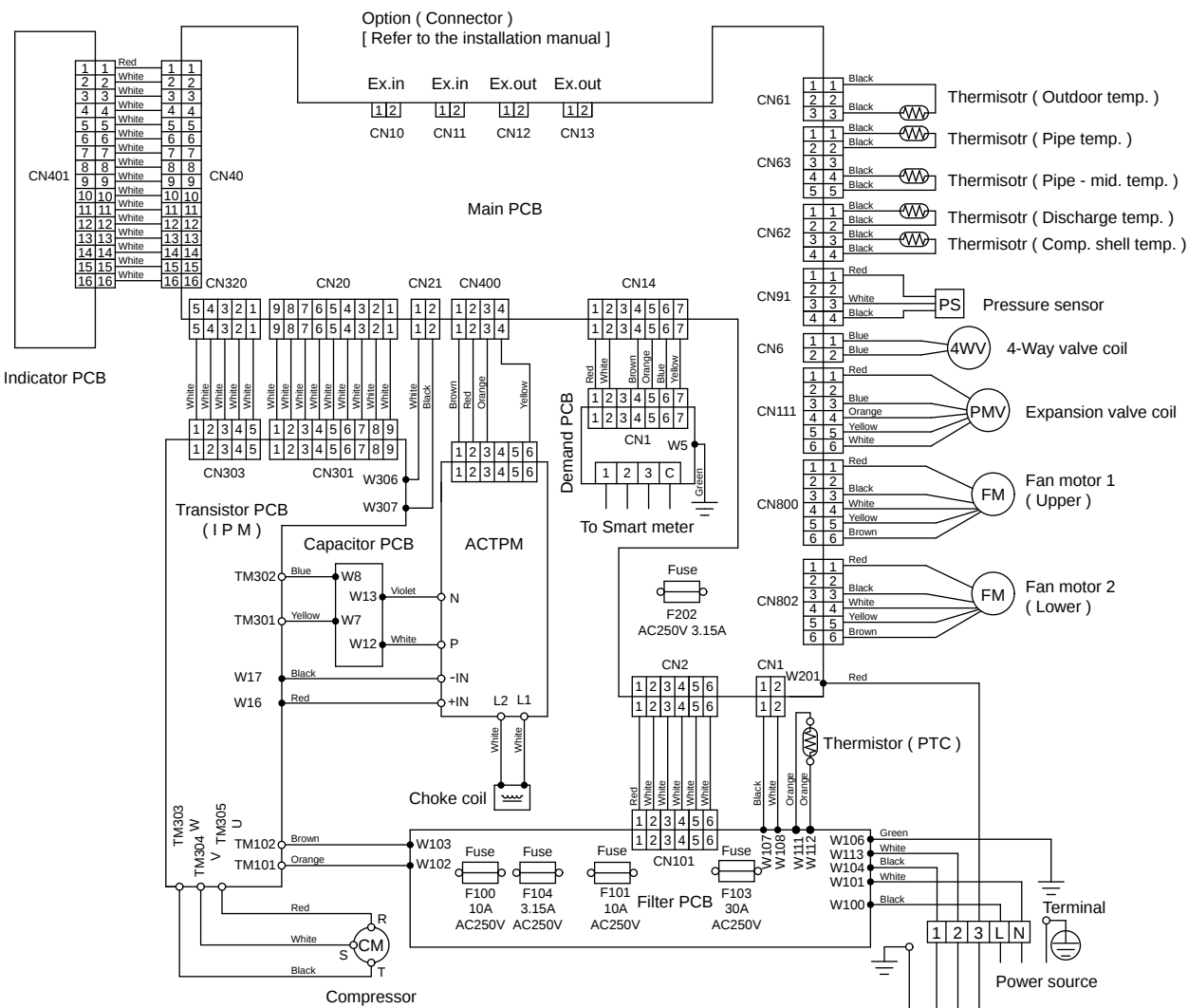


OUTDOOR UNIT

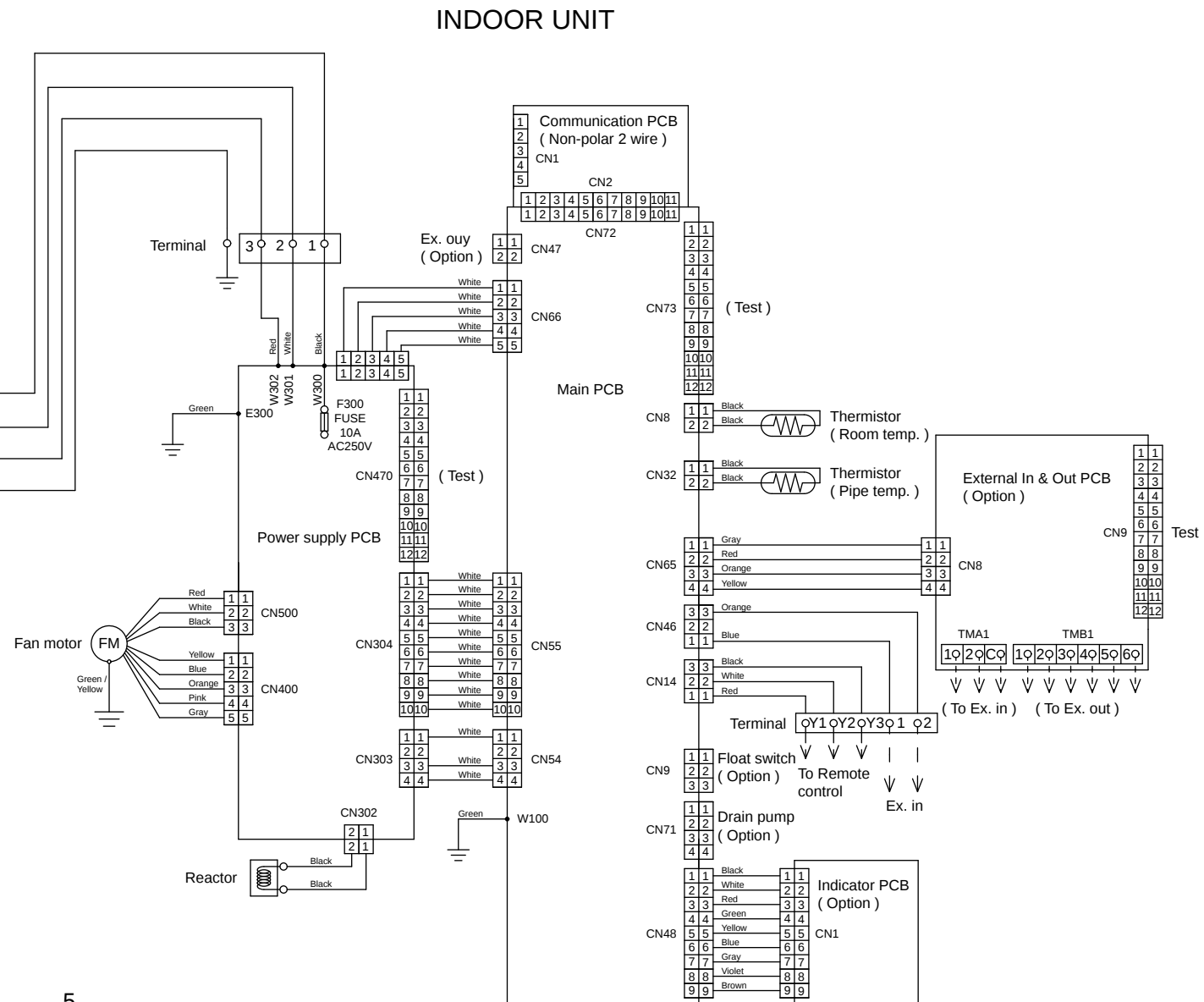


REFRIGERANT SYSTEM DIAGRAM





OUTDOOR UNIT



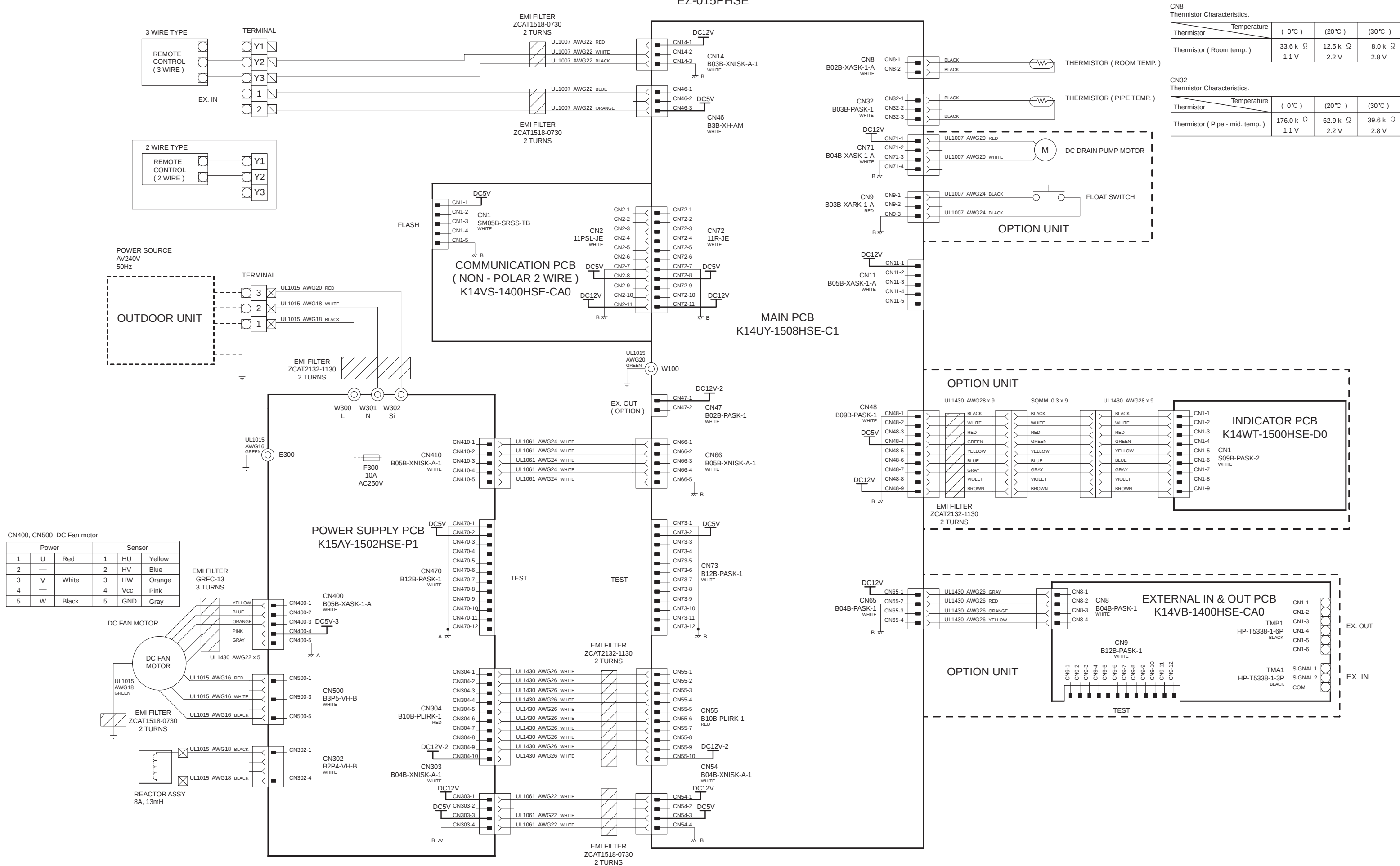
CIRCUIT DIAGRAM

INDOOR UNIT

PCB CIRCUIT DIAGRAM

INDOOR UNIT
ARTG60LDTA

CONTROL UNIT
EZ-015PHSE



CN8
Thermistor Characteristics.

Thermistor	Temperature	(0℃)	(20℃)	(30℃)
Thermistor (Room temp.)		33.6 k Ω	12.5 k Ω	8.0 k Ω
		1.1 V	2.2 V	2.8 V

CN32
Thermistor Characteristics.

Thermistor	Temperature	(0℃)	(20℃)	(30℃)
Thermistor (Pipe - mid. temp.)		176.0 k Ω	62.9 k Ω	39.6 k Ω
		1.1 V	2.2 V	2.8 V

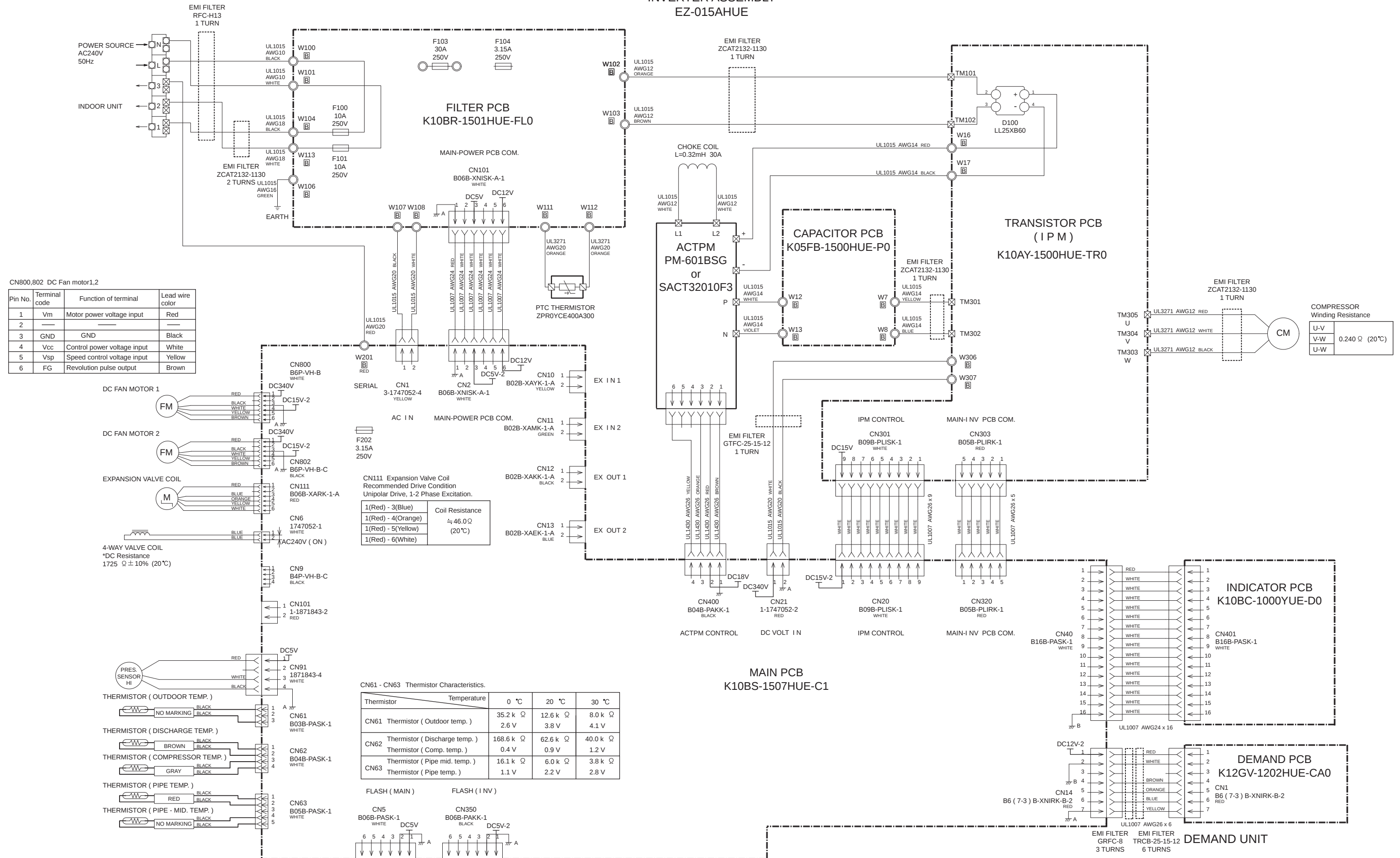
CN400, CN500 DC Fan motor

Power	Sensor
1 U Red	1 HU Yellow
2 —	2 HV Blue
3 V White	3 HW Orange
4 —	4 Vcc Pink
5 W Black	5 GND Gray

OUTDOOR UNIT
AOTG60LBTA

INVERTER ASSEMBLY

EZ-015AHUE



ERROR DETECTION

INDOOR UNIT

If you use a wired type remote control, error codes will appear on the remote control display. If you use a wireless remote control, the lamps on the IR receiver unit will output error codes by way of blinking patterns. See the lamp blinking patterns and error codes in the table below. An error display is displayed only during operation. For more details, refer to the installation manual of the remote control.

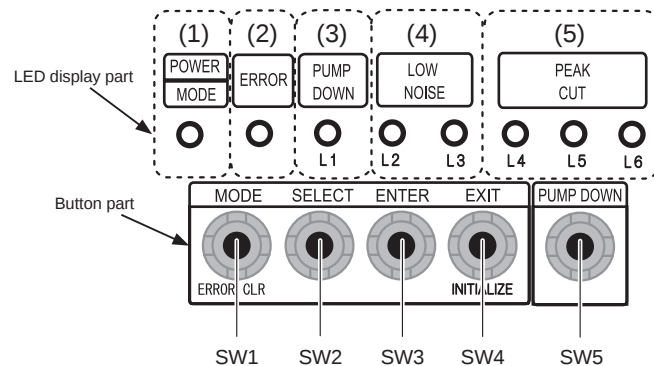
Error display			Wired remote control Error code	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
●(1)	●(1)	◇	11	Serial communication error
●(1)	●(2)	◇	12	Wired remote control communication error
●(1)	●(5)	◇	15	Check run unfinished Automatic airflow adjustment error
●(1)	●(6)	◇	16	Peripheral unit transmission PCB connection error
●(1)	●(8)	◇	18	External communication error
●(2)	●(1)	◇	21	Unit number or Refrigerant circuit address setting error [Simultaneous Multi]
●(2)	●(2)	◇	22	Indoor unit capacity error
●(2)	●(3)	◇	23	Combination error
●(2)	●(4)	◇	24	• Connection unit number error (indoor secondary unit) [Simultaneous Multi] • Connection unit number error (indoor unit or branch unit) [Flexible Multi]
●(2)	●(6)	◇	26	Indoor unit address setting error
●(2)	●(7)	◇	27	Primary unit, secondary unit setup error [Simultaneous Multi]
●(2)	●(9)	◇	29	Connection unit number error in wired remote controller system
●(3)	●(1)	◇	31	Power supply interruption error
●(3)	●(2)	◇	32	Indoor unit PCB model information error
●(3)	●(3)	◇	33	Indoor unit motor electricity consumption detection error
●(3)	●(5)	◇	35	Manual auto switch error
●(3)	●(9)	◇	39	Indoor unit power supply error for fan motor
●(3)	●(10)	◇	3A	Indoor unit communication circuit (wired remote controller) error
●(4)	●(1)	◇	41	Room temp. sensor error
●(4)	●(2)	◇	42	Indoor unit heat ex. middle temp. sensor error
●(4)	●(4)	◇	44	Human sensor error
●(5)	●(1)	◇	51	Indoor unit fan motor error
●(5)	●(3)	◇	53	Drain pump error
●(5)	●(7)	◇	57	Damper error
●(5)	●(15)	◇	5U	Indoor unit error
●(6)	●(1)	◇	61	Outdoor unit reverse/missing phase and wiring error
●(6)	●(2)	◇	62	Outdoor unit main PCB model information error or communication error
●(6)	●(3)	◇	63	Inverter error
●(6)	●(4)	◇	64	Active filter error, PFC circuit error
●(6)	●(5)	◇	65	Trip terminal L error

Error display			Wired remote control Error code	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
●(6)	●(8)	◇	68	Outdoor unit rush current limiting resistor temp. rise error
●(6)	●(10)	◇	6A	Display PCB microcomputers communication error
●(7)	●(1)	◇	71	Discharge temp. sensor error
●(7)	●(2)	◇	72	Compressor temp. sensor error
●(7)	●(3)	◇	73	Outdoor unit Heat Ex. liquid temp. sensor error
●(7)	●(4)	◇	74	Outdoor temp. sensor error
●(7)	●(5)	◇	75	Suction Gas temp. sensor error
●(7)	●(6)	◇	76	• 2-way valve temp. sensor error • 3-way valve temp. sensor error
●(7)	●(7)	◇	77	Heat sink temp. sensor error
●(8)	●(2)	◇	82	• Sub-cool Heat Ex. gas inlet temp. sensor error • Sub-cool Heat Ex. gas outlet temp. sensor error
●(8)	●(3)	◇	83	Liquid pipe temp. sensor error
●(8)	●(4)	◇	84	Current sensor error
●(8)	●(6)	◇	86	• Discharge pressure sensor error • Suction pressure sensor error • High pressure switch error
●(9)	●(4)	◇	94	Trip detection
●(9)	●(5)	◇	95	Compressor rotor position detection error (permanent stop)
●(9)	●(7)	◇	97	Outdoor unit fan motor 1 error
●(9)	●(8)	◇	98	Outdoor unit fan motor 2 error
●(9)	●(9)	◇	99	4-way valve error
●(9)	●(10)	◇	9A	Coil (expansion valve) error
●(10)	●(1)	◇	A1	Discharge temp. error
●(10)	●(3)	◇	A3	Compressor temp. error
●(10)	●(4)	◇	A4	High pressure error
●(10)	●(5)	◇	A5	Low pressure error
●(13)	●(2)	◇	12	Branch boxes error [Flexible Multi]

Display mode ● : 0.5s ON / 0.5s OFF
◇ : 0.1s ON / 0.1s OFF
) (of flashing Number

OUTDOOR UNIT ERROR CODE DISPLAY

You can determine the operating status by the lighting up and blinking of the LED lamp.



Display when an error occurs

POWER	ERROR	PUMP DOWN	LOW NOISE			PEAK CUT	
MODE		(L1)	(L2)	(L3)	(L4)	(L5)	(L6)
●	Blink (Hi speed)	○	○	○	○	○	○

Sign "○": Lights off, "●": Lights on

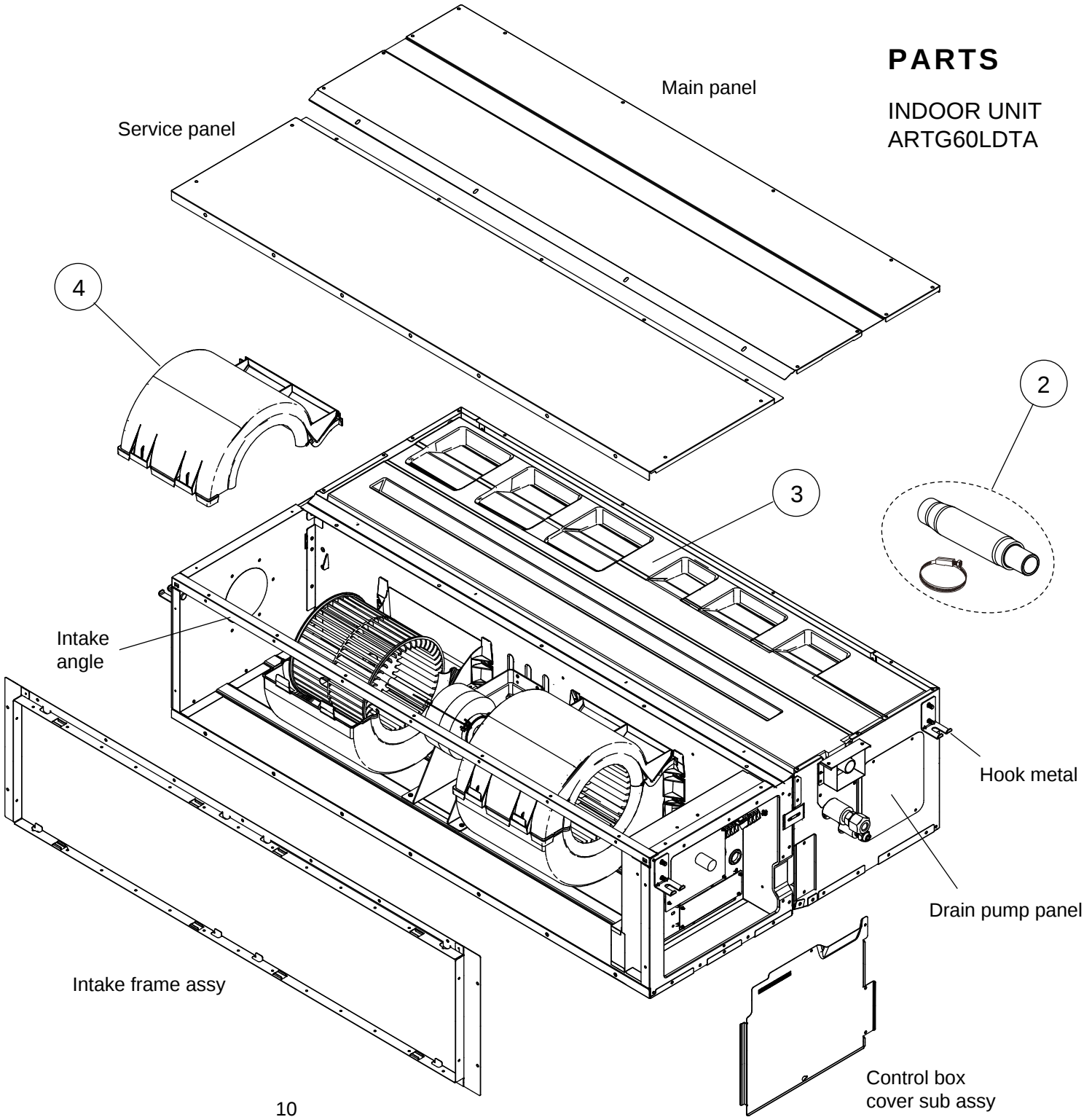
- (1) Check that the "ERROR" LED blinks, then press the [Enter] button once.
- (2) For details, refer to the following table.

Display mode ● : ON
○ : OFF
◆ : Blink (0.5s ON / 0.5s OFF)
() : Number of flashing

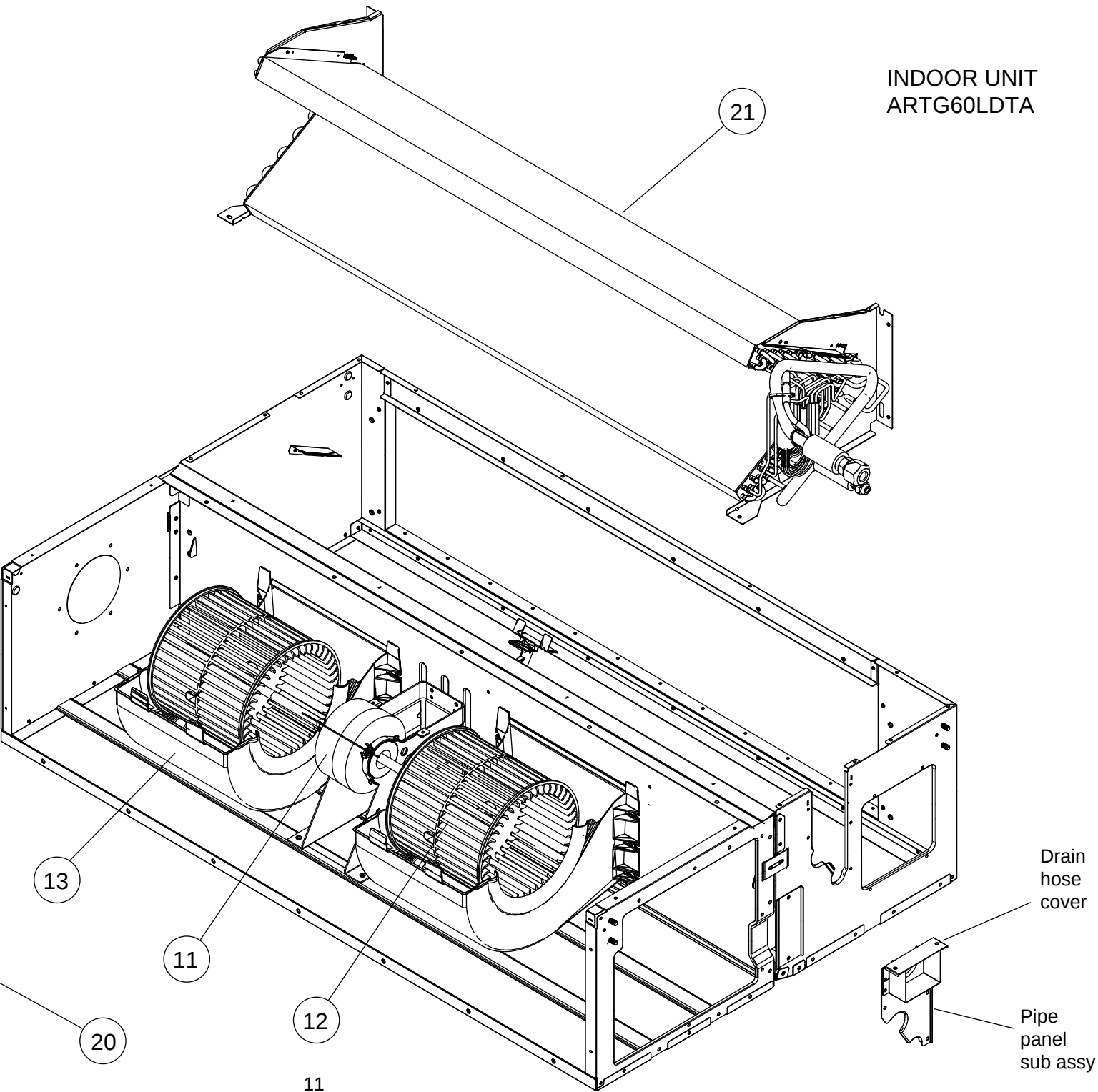
Error code check table

LED display								DESCRIPTION	REMARK
POWER MODE	ERROR	PUMP DOWN	LOW NOISE		PEAK CUT				
			(L1)	(L2)	(L3)	(L4)	(L5)		
◆(2)	●	◆(1)	◆(1)	○	○	●	●	Serial communication error	Serial forward transmission error immediately after operation
◆(2)	●	◆(1)	◆(1)	○	●	○	○		Serial forward transmission error during operation
◆(2)	●	◆(2)	◆(2)	○	○	○	●	Indoor unit capacity error	Indoor unit capacity error
◆(2)	●	◆(5)	◆(15)	○	○	○	●	Indoor unit error	Indoor unit error
◆(2)	●	◆(6)	◆(2)	○	○	○	●	Outdoor unit main PCB error	Outdoor unit PCB model information error
◆(2)	●	◆(6)	◆(3)	○	○	○	●	Inverter PCB error	Inverter error
◆(2)	●	◆(6)	◆(5)	○	○	●	●	IPM error	Trip terminal L error
◆(2)	●	◆(7)	◆(1)	○	○	○	●	Discharge temp. sensor error	Discharge temp. sensor 1 error
◆(2)	●	◆(7)	◆(2)	○	○	○	●	Compressor temp. sensor error	Compressor temp. sensor 1 error
◆(2)	●	◆(7)	◆(3)	○	○	●	○	Outdoor unit Heat Ex. sensor error	Heat Ex. middle temp. sensor error
◆(2)	●	◆(7)	◆(3)	○	○	●	●		Outdoor unit Heat Ex. liquid temp. sensor error
◆(2)	●	◆(7)	◆(4)	○	○	○	●	Outdoor temp. sensor error	Outdoor temp. sensor error
◆(2)	●	◆(7)	◆(7)	○	○	○	●	Heat sink temp. sensor error	Heat sink temp. sensor error
◆(2)	●	◆(8)	◆(4)	○	○	○	●	Current sensor error	Current sensor 1 error (stoppage permanently)
◆(2)	●	◆(8)	◆(6)	○	●	○	○	Pressure sensor error	High pressure switch 1 error
◆(2)	●	◆(8)	◆(6)	○	●	●	○		Pressure sensor error
◆(2)	●	◆(9)	◆(4)	○	○	○	●	Trip detection	Trip detection
◆(2)	●	◆(9)	◆(5)	○	○	○	●	Compressor motor control error	Rotor position detection error (stoppage permanently)
◆(2)	●	◆(9)	◆(7)	○	○	●	●	Outdoor unit fan motor 1 error	Duty error
◆(2)	●	◆(9)	◆(8)	○	○	●	●	Outdoor unit fan motor 2 error	Duty error
◆(2)	●	◆(9)	◆(9)	○	○	○	●	4-way valve error	4-way valve error
◆(2)	●	◆(10)	◆(1)	○	○	○	●	Discharge temp. 1 error	Discharge temp. 1 error
◆(2)	●	◆(10)	◆(3)	○	○	○	●	Compressor temp. error	Compressor 1 temp. error
◆(2)	●	◆(10)	◆(5)	○	○	○	●	Pressure error 2	Low pressure error

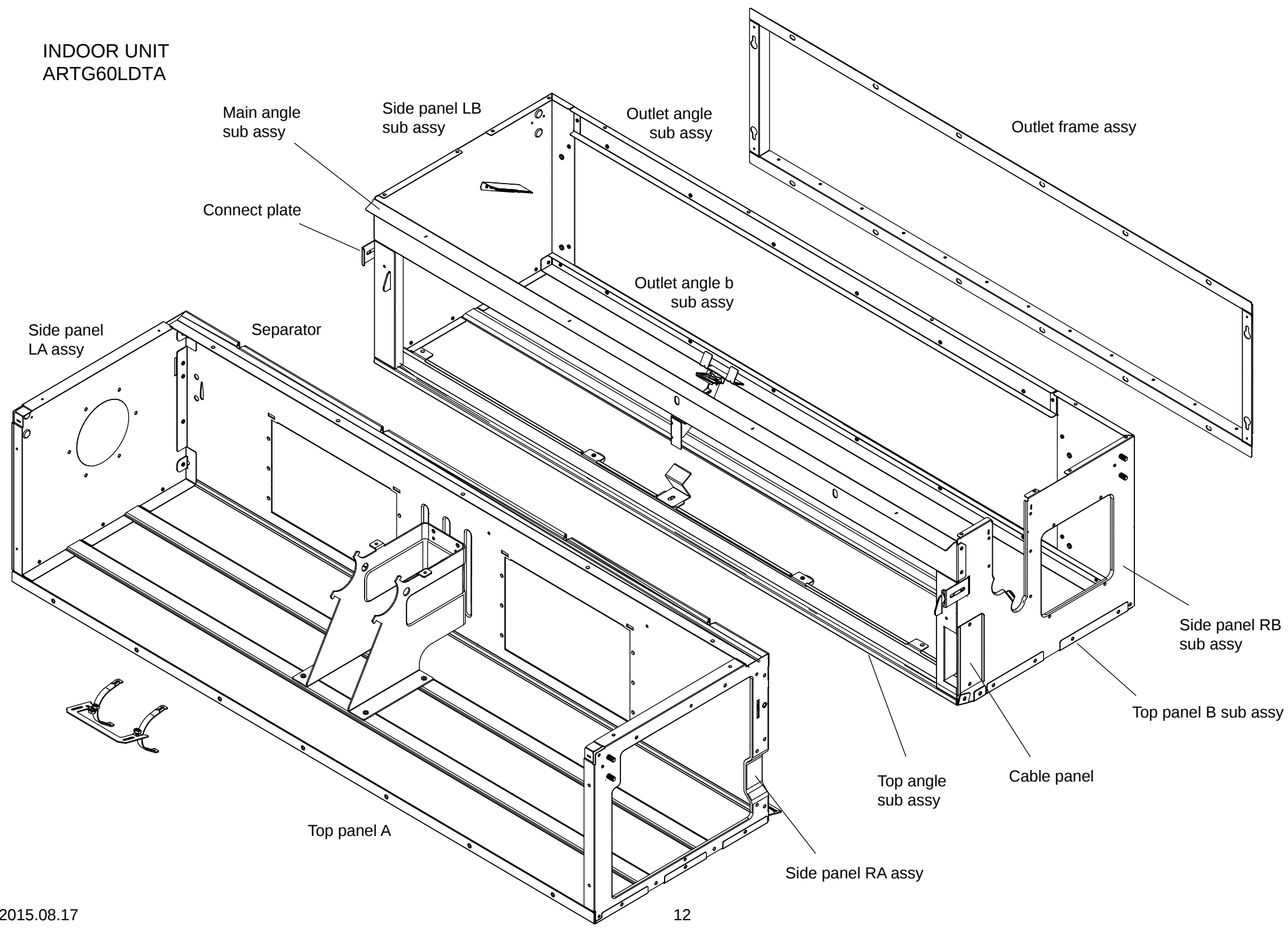
Ref.	Description	Part number	
1	Remote Control	9318623048	
2	Hose Sub Assy	9378450196	
3	Drain Pan Sub Assy	9381752010	
4	Casing B Sub Assy	9381829019	
5	Room Thermistor	9703299278	
6	Pipe Thermistor	9900892005	

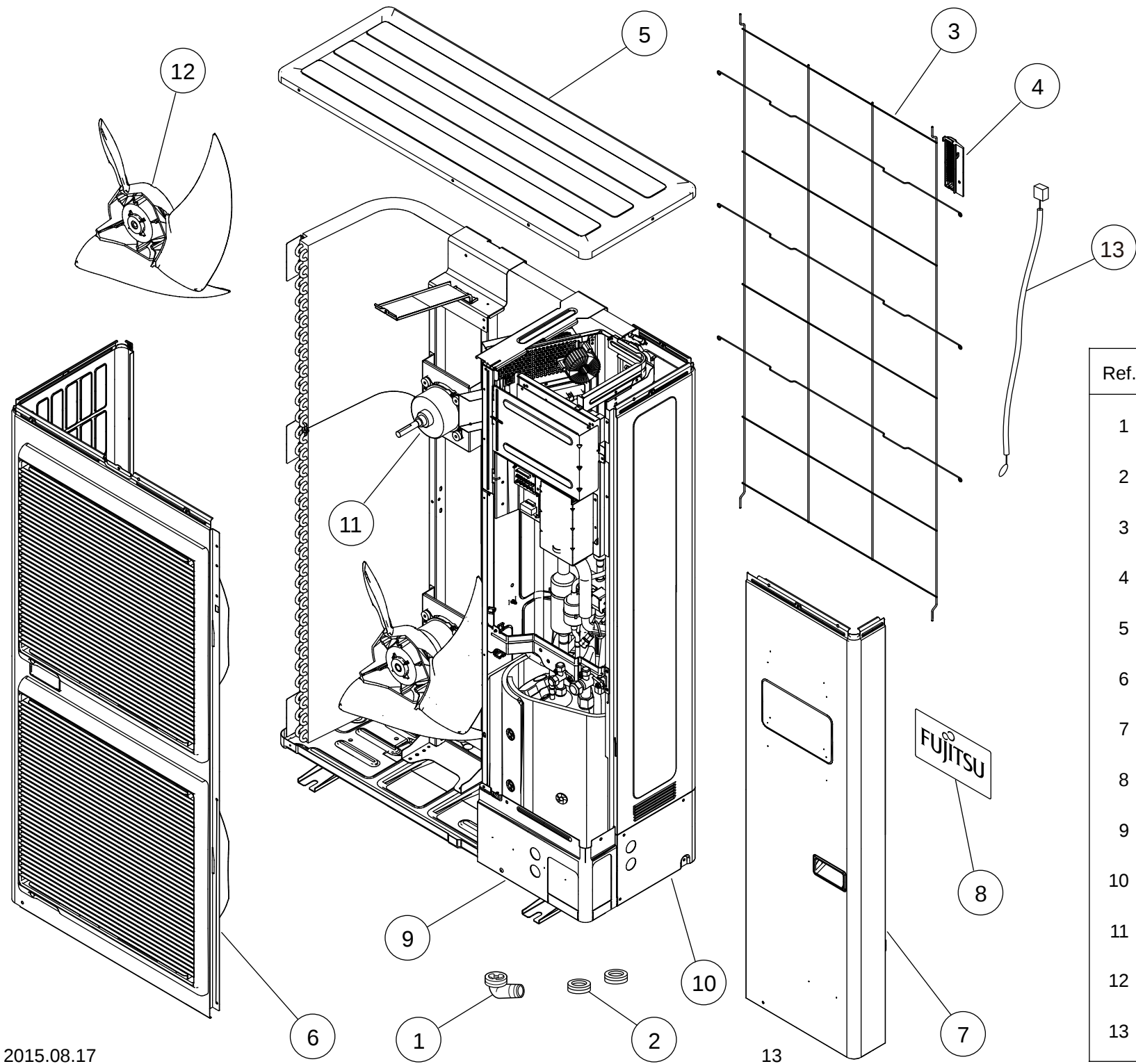


Ref.	Description	Part number
11	Fan Motor	9603482015
12	Sirocco Fan Assy	9381440016
13	Casing A	9381561001
14	Main PCB	9710016158
15	Communication PCB	9710019005
16	Power Supply PCB	9710261022
17	Reactor Assy	9900787028
18	Terminal (Remote)	9900896003
19	Terminal (Power)	9900568009
20	Heat Sink	9381518005
21	Evaporator Total Assy	9374517398



INDOOR UNIT
ARTG60LDTA



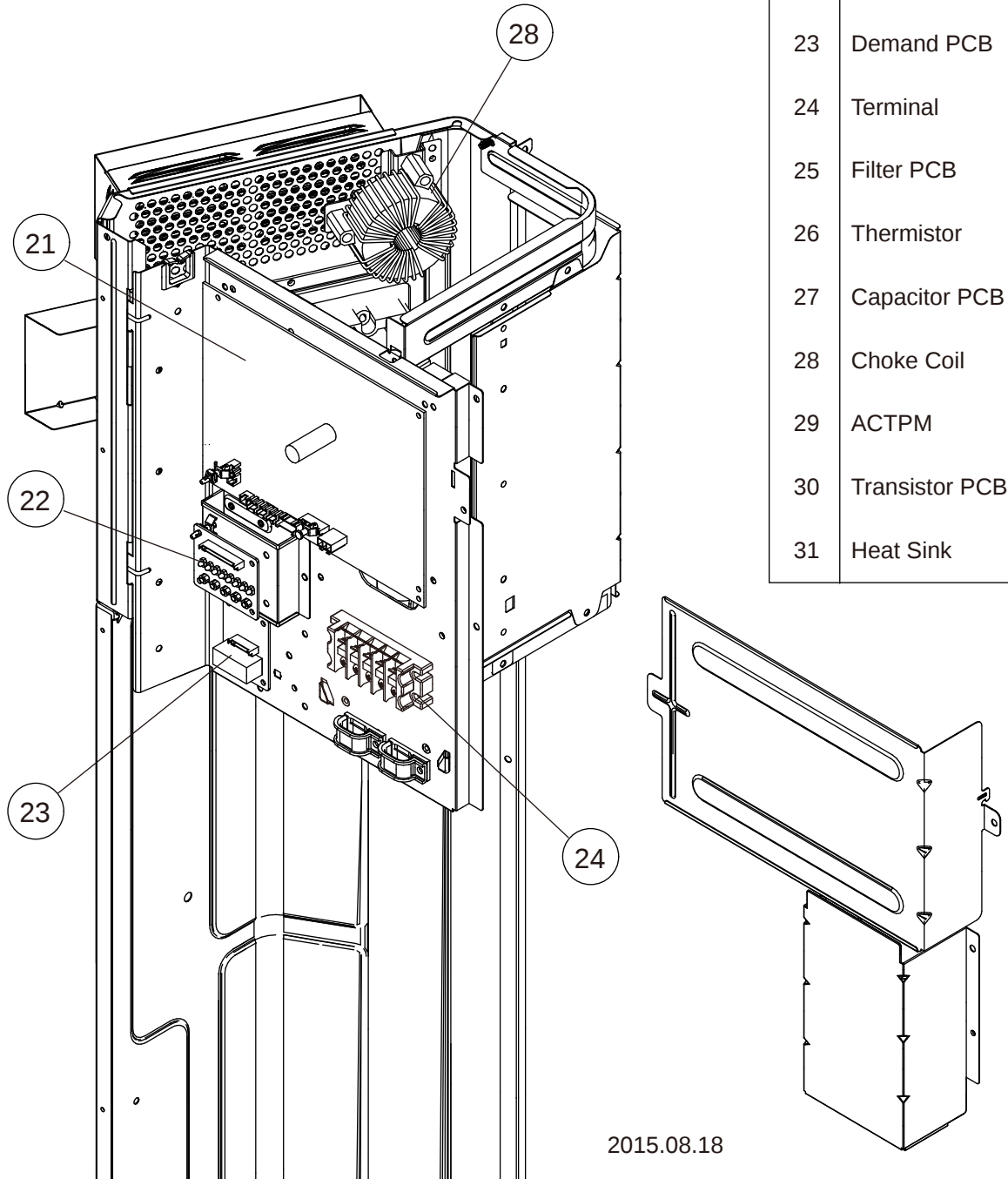


PARTS

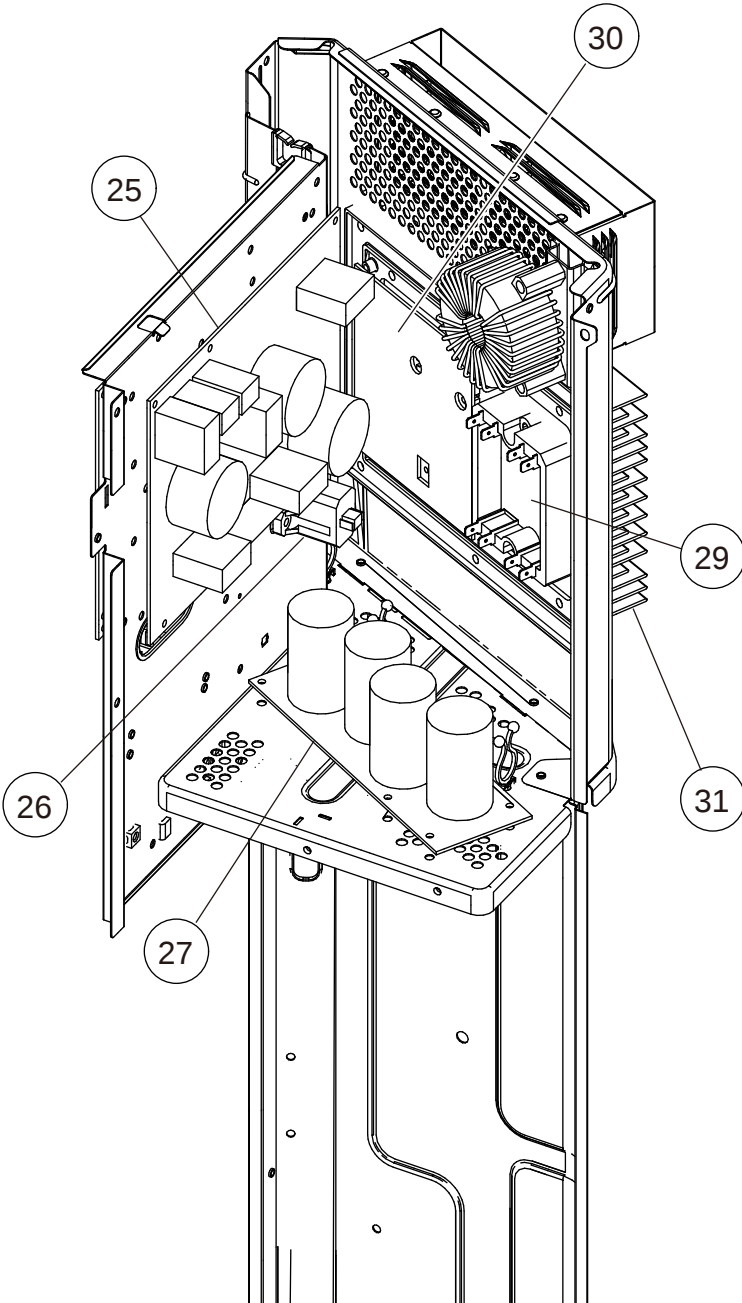
OUTDOOR UNIT AOTG60LBTA

Ref.	Description	Parts number	
1	Drain Assy	9303029015	
2	Drain Cap	313166024302	
3	Protective Net	9375381042	
4	Thermo Holder	9375211011	
5	Top Panel Sub Assy	9374417056	
6	Front Panel Sub Assy	9374414154	
7	Sevice Panel Sub Assy	9374415090	
8	Emblem Rear	9351355005	
9	Pipe Cover Front	9378861015	
10	Right Panel Sub Assy	9374416264	
11	Motor DC Brushless	9602843039	
12	Propeller Fan Assy	9366378020	
13	Outdoor Thermistor	9900210069	

OUTDOOR UNIT
AOTG60LBTA
Control box

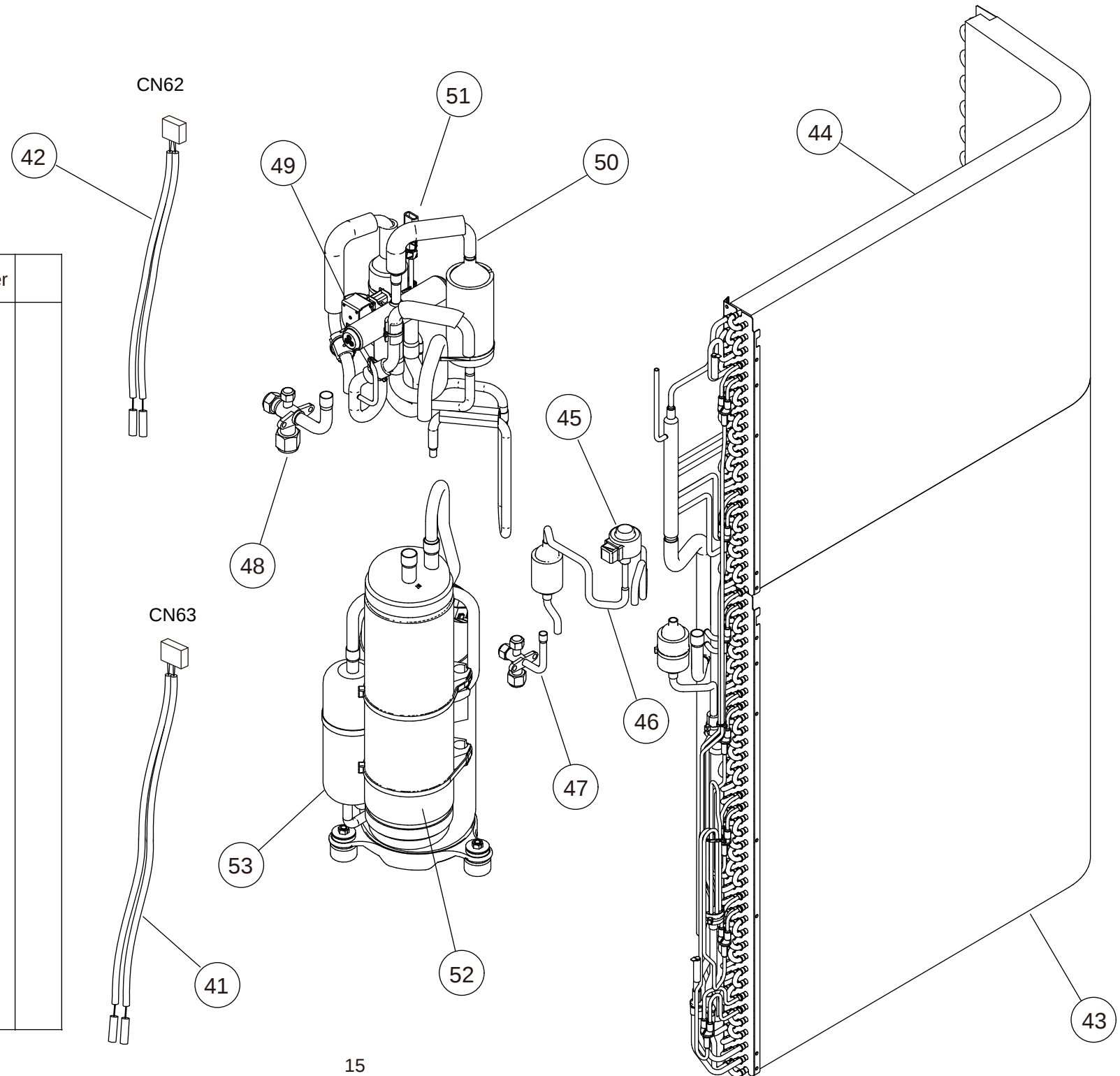


Ref.	Description	Parts number
21	Main PCB	9709904251
22	Indicator PCB	9708678016
23	Demand PCB	9709315026
24	Terminal	9900428020
25	Filter PCB	9709903049
26	Thermistor	9704265012
27	Capacitor PCB	9709894101
28	Choke Coil	9900624019
29	ACTPM	9707592016
30	Transistor PCB	9708646121
31	Heat Sink	9380358008



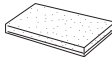
OUTDOOR UNIT
AOTG60LBTA

Ref.	Description	Parts number	
41	Thermistor Assy (5 pins)	9900599027	
42	Thermistor Assy (4 pins)	9900598013	
43	Condenser A Sub Assy	9374420537	
44	Condenser B Sub Assy	9374422135	
45	Expansion Valve Coil	9970098062	
46	Expansion Valve Assy	9370947182	
47	3-way Valve Assy	9379077002	
48	3-way Valve Assy	9379079006	
49	Solenoid	9970113055	
50	4-way Valve Assy	9374425273	
51	Sensor	9900505080	
52	Accumulator Assy	9375250096	
53	Compressor Sub Assy	9374423262	

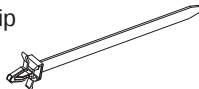
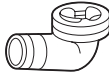


ACCESSORIES

INDOOR UNIT

Name and Shape	Q'ty	Description
Special nut A (large flange) 	4	For suspending the indoor unit from ceiling
Special nut B (small flange) 	4	
Washer 	8	
Coupler heat insulation (large) 	1	For indoor side pipe joint (gas pipe)
Coupler heat insulation (small) 	1	For indoor side pipe joint (liquid pipe)
Cable tie (large) 	4	For fixing the heat insulation
Cable tie (medium) 	1	For fixing the remote control cable
Cable tie (small) 	1	For fixing the remote control cable
Remote controller (WDD type) 	1	For air conditioner operation
Remote controller accessories	1 set	See Installation manual for remote control
Drain hose insulation 	1	Insulates the drain hose and vinyl hose
Drain hose 	1	For installing drain pipe VP25 (O.D.32, I.D.25)
Hose Band 	1	For installing drain hose

OUTDOOR UNIT

Name and shape	Q'ty	Description
Cable tie with clip 	1	For binding power supply cable and connection cable
Drain pipe 	1	For outdoor unit drain piping work (May not be supplied, depending on the model.)
Drain cap 	2	
One-touch bush 	2	For power supply cable and connection cable installation

Parts list for demand control PCB kit

Name and shape	Q'ty	Description
Cable ties (small) 	1	For fixing the EMI core and the signal transmission cable.
EMI core 	1	Attached to the signal transmission cable.
Insulation 	2*	For attaching the EMI core.
One-touch bush 	1*	For attaching the signal cable. (for connecting to the demand response cable)

* (May not be used, depending on the model.)

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