

SPLIT TYPE  
AIR CONDITIONER  
DUCT TYPE (50Hz)

# SERVICE MANUAL



Indoor unit	Outdoor unit
ARYG12LHTBP	AOYG12LBLA
ARYG14LHTBP	AOYG14LBLA

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# SPECIFICATIONS

## ELECTRICAL DATA

TYPE		Inverter cooling & heating	
INDOOR UNIT		ARYG12LHTBP	ARYG14LHTBP
OUTDOOR UNIT		AOYG12LBLA	AOYG14LBLA
POWER SOURCE		Single phase 230 V 50 Hz	
Cooling	Capacity	3.50 kW	4.30 kW
	Power consumption	0.90 kW	1.18 kW
	EER	3.89 kW/kW	3.64 kW/kW
	Operating current	4.2 A	5.4 A
	Max operating current	8.0 A	9.5 A
	Dehumidification	0.7 L/h	0.9 L/h
Heating	Capacity	4.10 kW	5.00 kW
	Power consumption	1.00 kW	1.25 kW
	COP	4.10 kW/kW	4.00 kW/kW
	Operating current	4.7 A	5.7 A
	Max operating current	10.5 A	13.0 A

## FAN MOTOR DISCRIMINATION

INDOOR UNIT	MFG-ZA3VA3N
OUTDOOR UNIT	MFE-63NOM

## FAN REVOLUTION

INDOOR UNIT	High	950 rpm	1,000 rpm
	Medium	780 rpm	820 rpm
	Low	690 rpm	740 rpm
	Quiet	610 rpm	640 rpm
OUTDOOR UNIT (cool)		770 rpm	820 rpm
OUTDOOR UNIT (heat)		700 rpm	750 rpm

## AIR CIRCULATION

INDOOR UNIT	High	850 m <sup>3</sup> /h	950 m <sup>3</sup> /h
	Medium	680 m <sup>3</sup> /h	760 m <sup>3</sup> /h
	Low	590 m <sup>3</sup> /h	670 m <sup>3</sup> /h
	Quiet	510 m <sup>3</sup> /h	570 m <sup>3</sup> /h
OUTDOOR UNIT (cool)		1,780 m <sup>3</sup> /h	1,910 m <sup>3</sup> /h
OUTDOOR UNIT (heat)		1,630 m <sup>3</sup> /h	1,740 m <sup>3</sup> /h

## NOISE LEVEL

INDOOR UNIT	High	32 dB	33 dB
	Medium	27 dB	28 dB
	Low	26 dB	27 dB
	Quiet	24 dB	25 dB
OUTDOOR UNIT (cool)		47 dB	49 dB
OUTDOOR UNIT (heat)		48 dB	49 dB

## COMPRESSOR AND REFRIGERANT

COMPRESSOR TYPE	Hermetic type, 4 poles, DC motor, Twin Rotary		
DISCRIMINATION	DA130A1F-25NA		
WEIGHT (with oil)	9.6 kg		
REFRIGERANT TYPE	R410A		
PRECHARGED	1,150 g	1,250 g	
FULL CHARGE	Pipe length 15 m	1,150 g	1,250 g
	20 m	1,250 g	1,350 g
	25 m	1,350 g	1,450 g
ADDITIONAL CHARGE	20 g/m		
MAXIMUM PIPING HEIGHT	15 m		

## DIMENSIONS

INDOOR UNIT H x W x D	300 x 700 x 700 mm
OUTDOOR UNIT H x W x D	578 x 790 x 300 mm

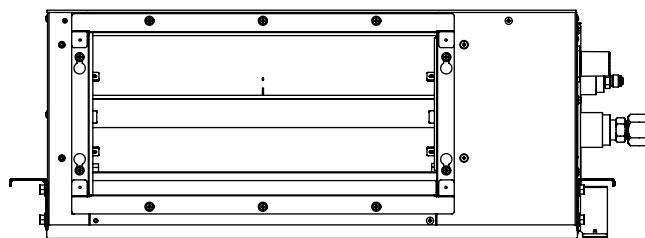
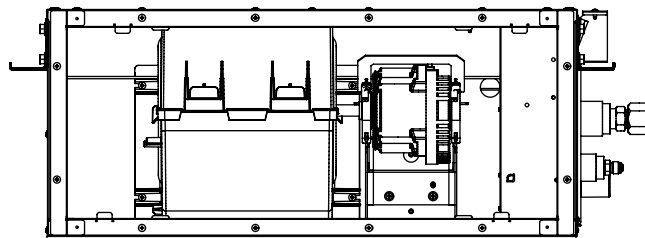
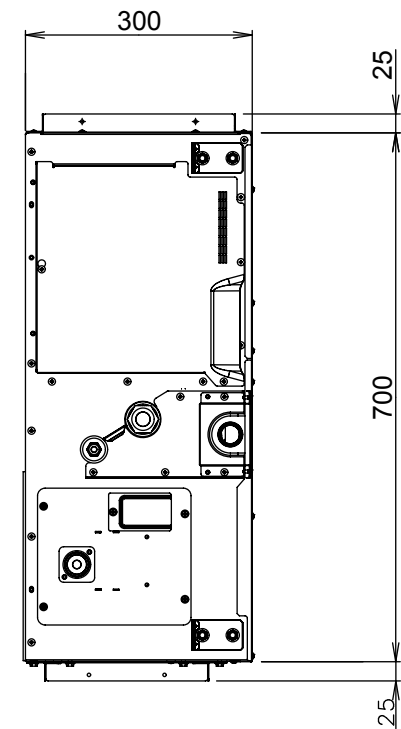
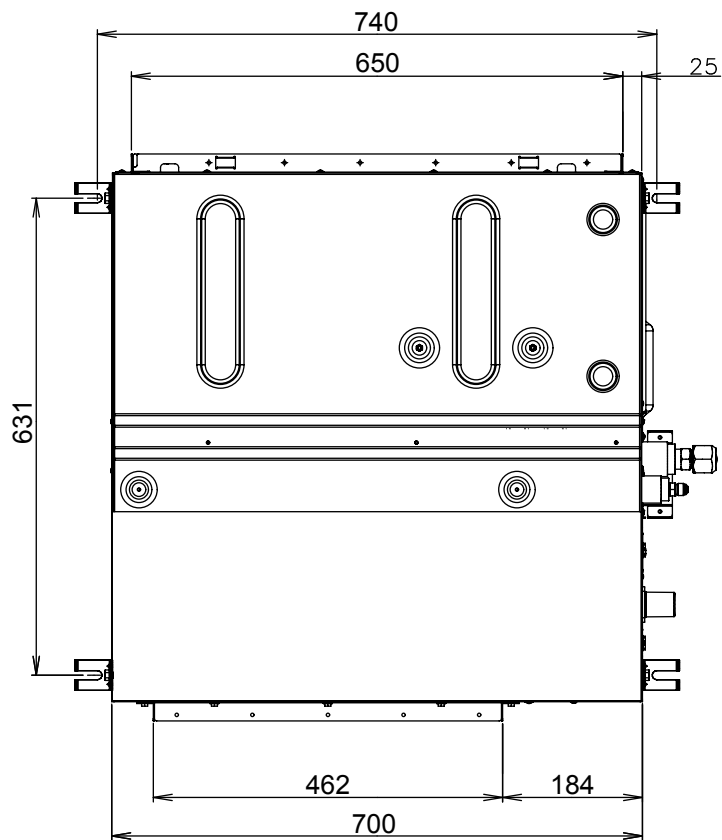
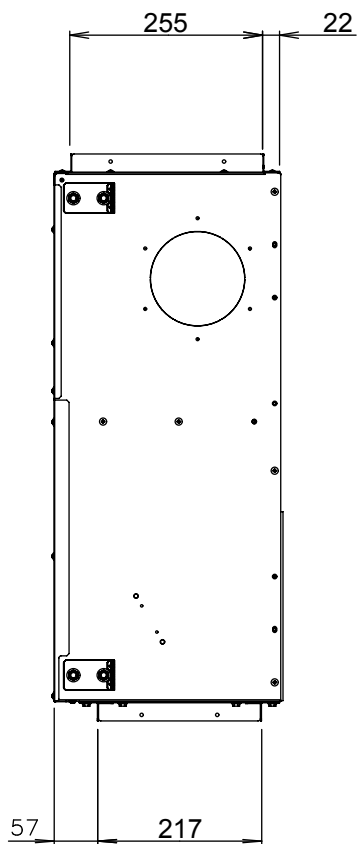
## WEIGHT

INDOOR UNIT Net / Shipping	27 kg / 34 kg
OUTDOOR UNIT Net / Shipping	40 kg / 44 kg

# DIMENSIONS

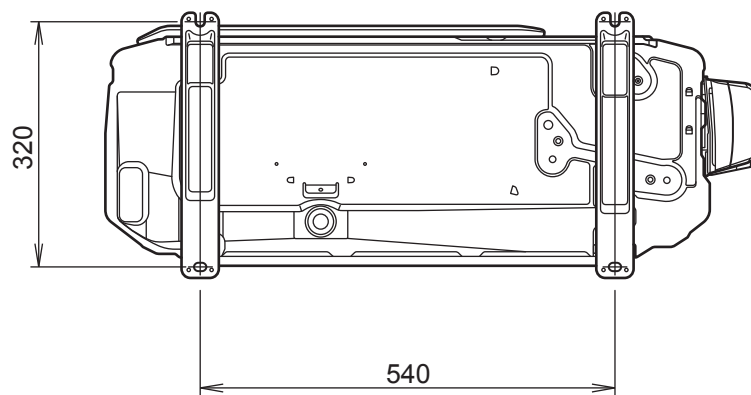
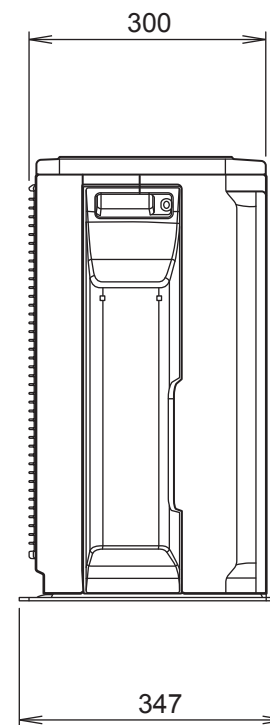
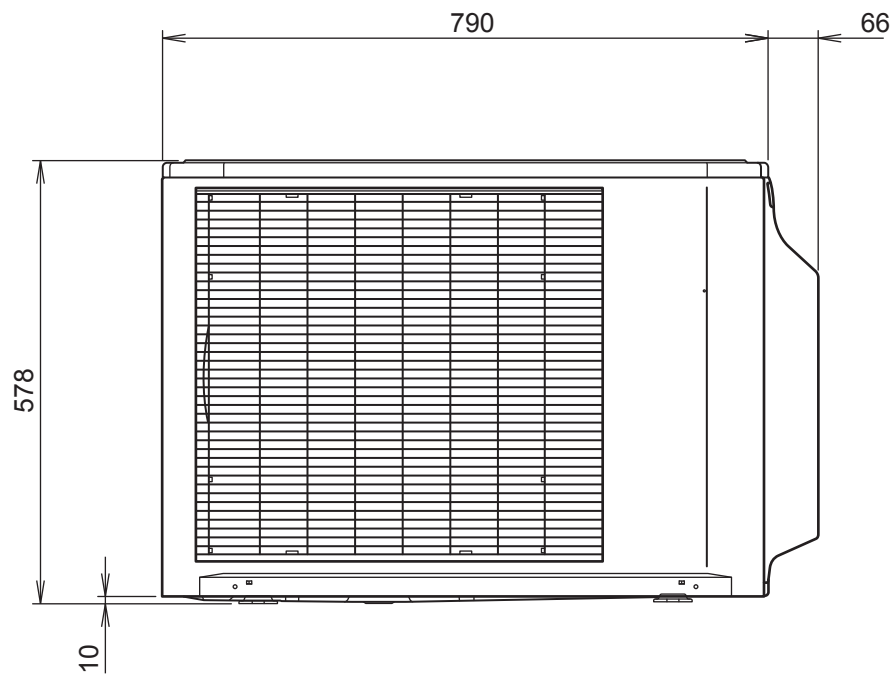
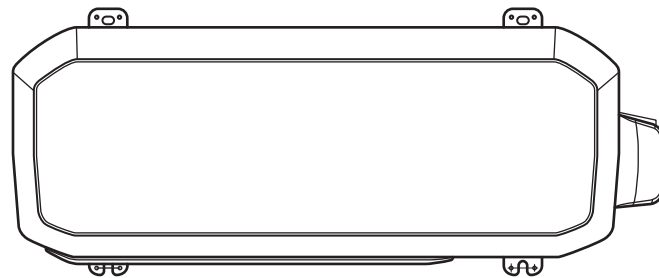
INDOOR UNIT  
ARYG12LHTBP  
ARYG14LHTBP

unit : mm



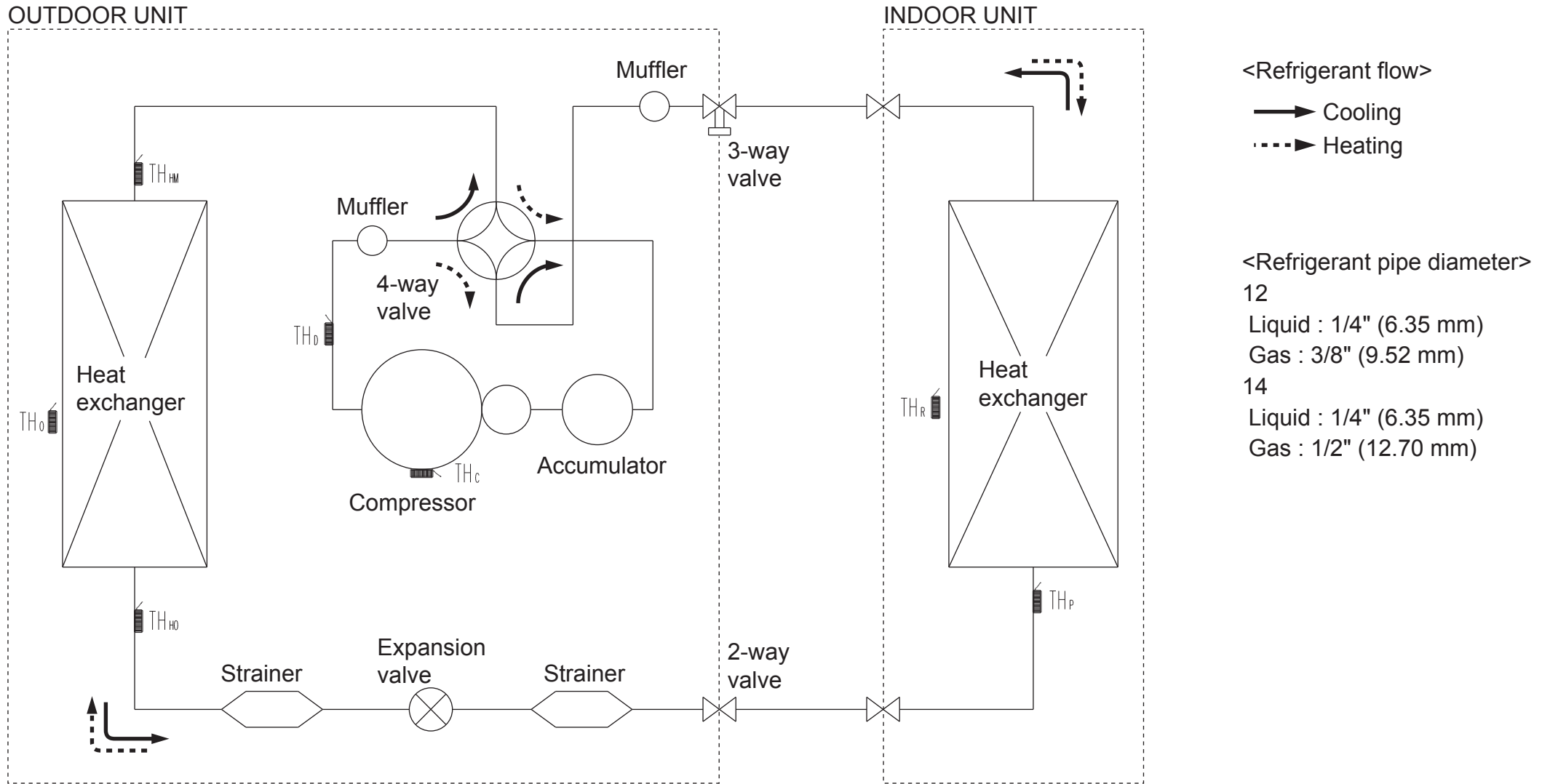
OUTDOOR UNIT  
AOYG12LBLA  
AOYG14LBLA

unit : mm





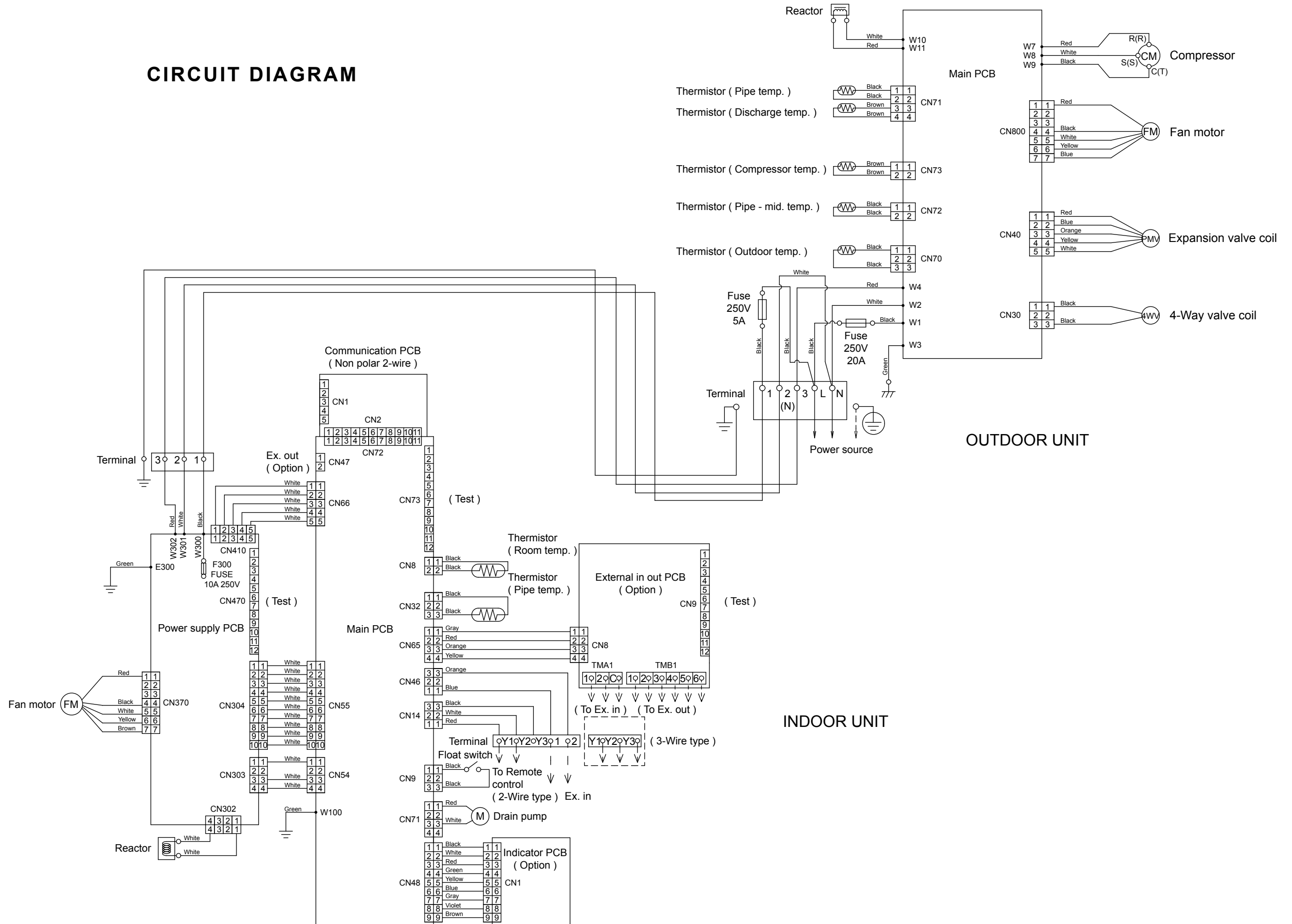
# REFRIGERANT SYSTEM DIAGRAM



$TH_c$  : Compressor thermistor  
 $TH_D$  : Discharge pipe thermistor  
 $TH_{HM}$  : Heat exchanger thermistor (Middle)  
 $TH_{HO}$  : Heat exchanger thermistor (Out)  
 $TH_o$  : Outdoor thermistor

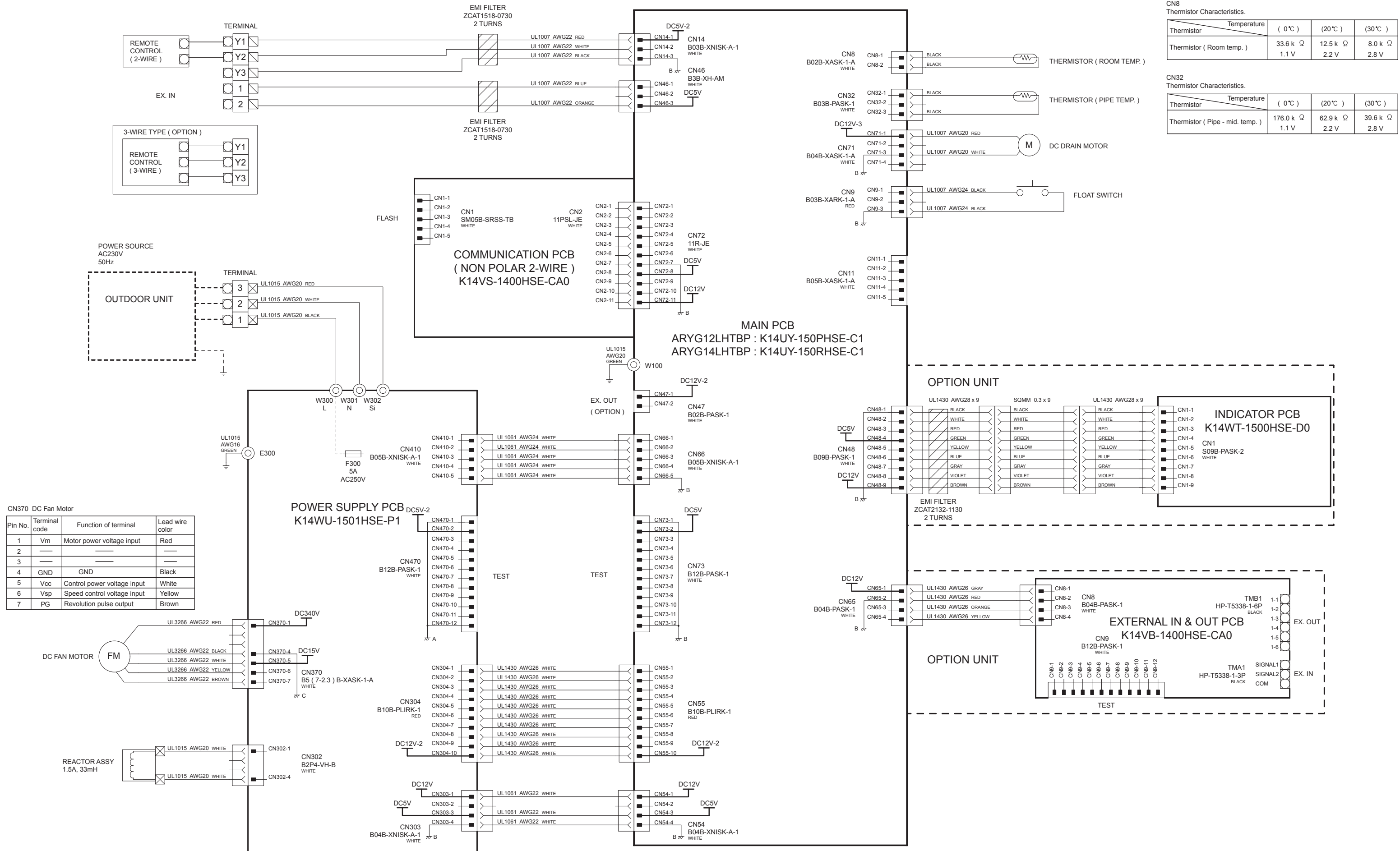
$TH_P$  : Pipe thermistor  
 $TH_R$  : Room thermistor

# CIRCUIT DIAGRAM



# PCB CIRCUIT DIAGRAM

CONTROL UNIT  
 ARYG12LHTBP : EZ-01516HSE  
 ARYG14LHTBP : EZ-01517HSE



CN8 Thermistor Characteristics.

Thermistor	Temperature	( 0°C )	(20°C )	(30°C )
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°C )	(20°C )	(30°C )
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

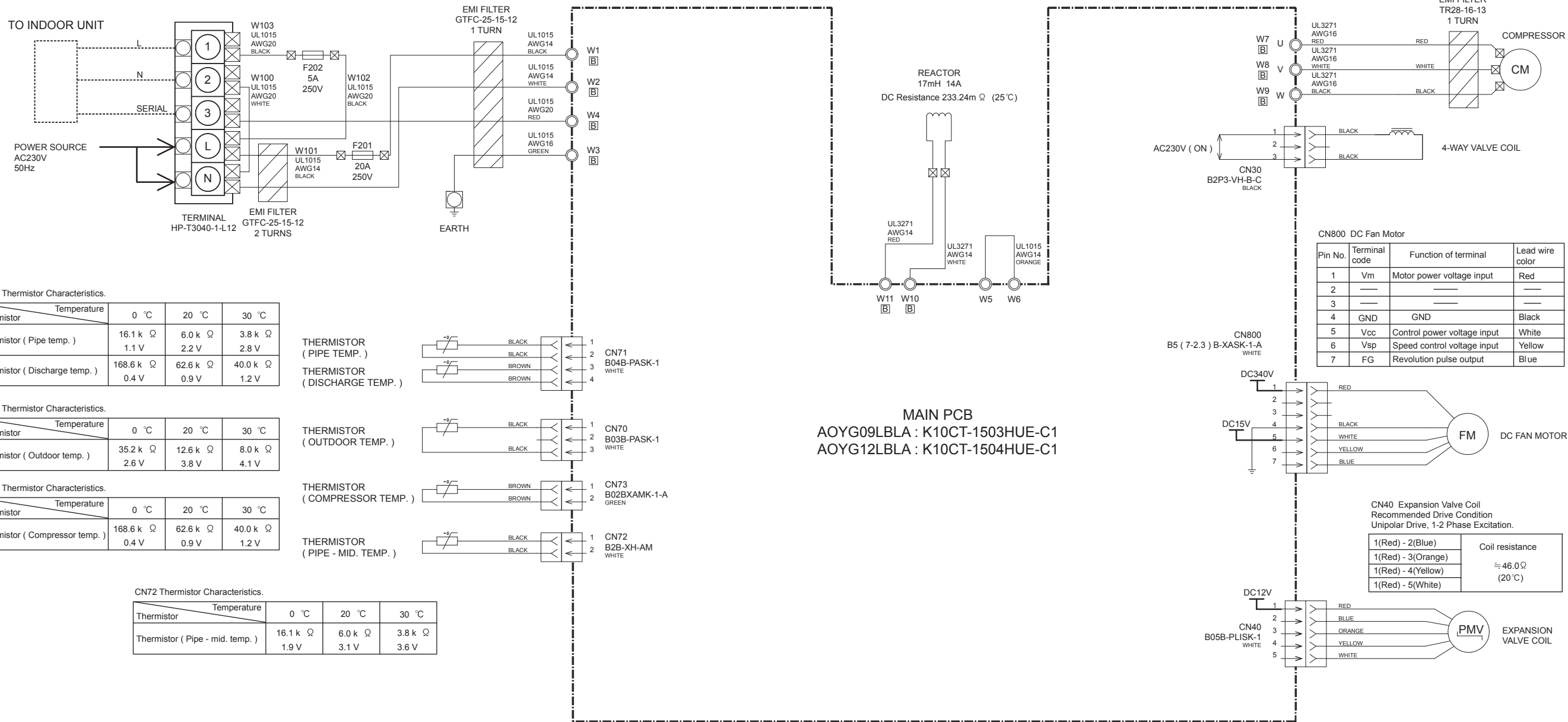
CN370 DC Fan Motor

Pin No.	Terminal code	Function of terminal	Lead wire color
1	Vm	Motor power voltage input	Red
2	—	—	—
3	—	—	—
4	GND	GND	Black
5	Vcc	Control power voltage input	White
6	Vsp	Speed control voltage input	Yellow
7	PG	Revolution pulse output	Brown

**INVERTER ASSEMBLY**  
 AOYG12LBLA : EZ-0150KHUE  
 AOYG14LBLA : EZ-0150LHUE

Compressor Winding Resistance

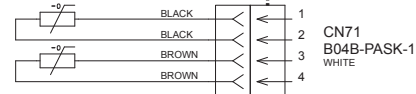
U-V	0.730 Ω (20°C)
V-W	
U-W	



CN71 Thermistor Characteristics.

Thermistor	Temperature	0 °C	20 °C	30 °C
Thermistor ( Pipe temp. )	Resistance	16.1 k Ω	6.0 k Ω	3.8 k Ω
	Voltage	1.1 V	2.2 V	2.8 V
Thermistor ( Discharge temp. )	Resistance	168.6 k Ω	62.6 k Ω	40.0 k Ω
	Voltage	0.4 V	0.9 V	1.2 V

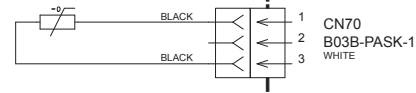
THERMISTOR ( PIPE TEMP. )  
 THERMISTOR ( DISCHARGE TEMP. )



CN70 Thermistor Characteristics.

Thermistor	Temperature	0 °C	20 °C	30 °C
Thermistor ( Outdoor temp. )	Resistance	35.2 k Ω	12.6 k Ω	8.0 k Ω
	Voltage	2.6 V	3.8 V	4.1 V

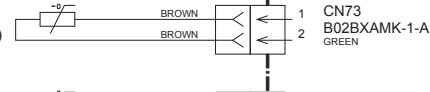
THERMISTOR ( OUTDOOR TEMP. )



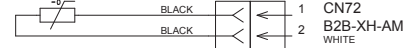
CN73 Thermistor Characteristics.

Thermistor	Temperature	0 °C	20 °C	30 °C
Thermistor ( Compressor temp. )	Resistance	168.6 k Ω	62.6 k Ω	40.0 k Ω
	Voltage	0.4 V	0.9 V	1.2 V

THERMISTOR ( COMPRESSOR TEMP. )



THERMISTOR ( PIPE - MID. TEMP. )



CN72 Thermistor Characteristics.

Thermistor	Temperature	0 °C	20 °C	30 °C
Thermistor ( Pipe - mid. temp. )	Resistance	16.1 k Ω	6.0 k Ω	3.8 k Ω
	Voltage	1.9 V	3.1 V	3.6 V

**MAIN PCB**  
 AOYG09LBLA : K10CT-1503HUE-C1  
 AOYG12LBLA : K10CT-1504HUE-C1

CN40 Expansion Valve Coil Recommended Drive Condition Unipolar Drive, 1-2 Phase Excitation.

1(Red) - 2(Blue)	Coil resistance ≈ 46.0 Ω (20°C)
1(Red) - 3(Orange)	
1(Red) - 4(Yellow)	
1(Red) - 5(White)	

# ERROR DETECTION

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. An error display is displayed only during running. For more details, refer to the installation manual of the remote control.

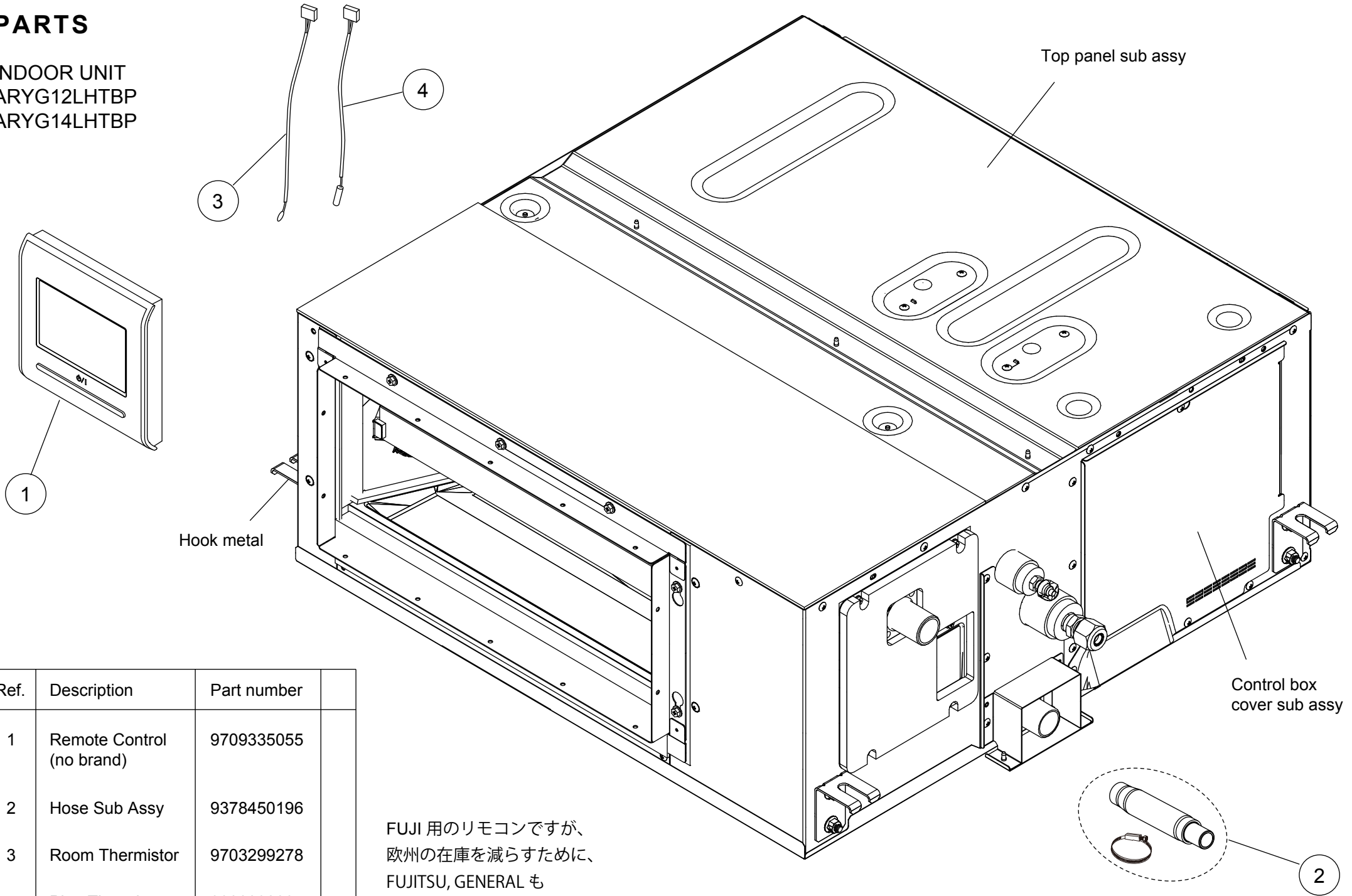
Error display			Wired remote controller Error code	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
●(1)	●(1)	◇	11	Serial communication error
●(1)	●(2)	◇	12	Wired remote controller communication error
●(1)	●(5)	◇	15	Check run unfinished Automatic airflow adjustment error
●(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

Error display			Wired remote controller Error code	Description
OPERATION lamp (green)	TIMER lamp (orange)	ECONOMY lamp (green)		
●(6)	●(3)	◇	63	Inverter error
●(6)	●(4)	◇	64	Active filter error, PFC circuit error
●(6)	●(5)	◇	65	Trip terminal L error
●(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)	◇	J2	Branch boxes error [Flexible Multi]

● : 0.5s on / 0.5s off  
◇ : 0.1s on / 0.1s off  
( ) : Number of flashing

# PARTS

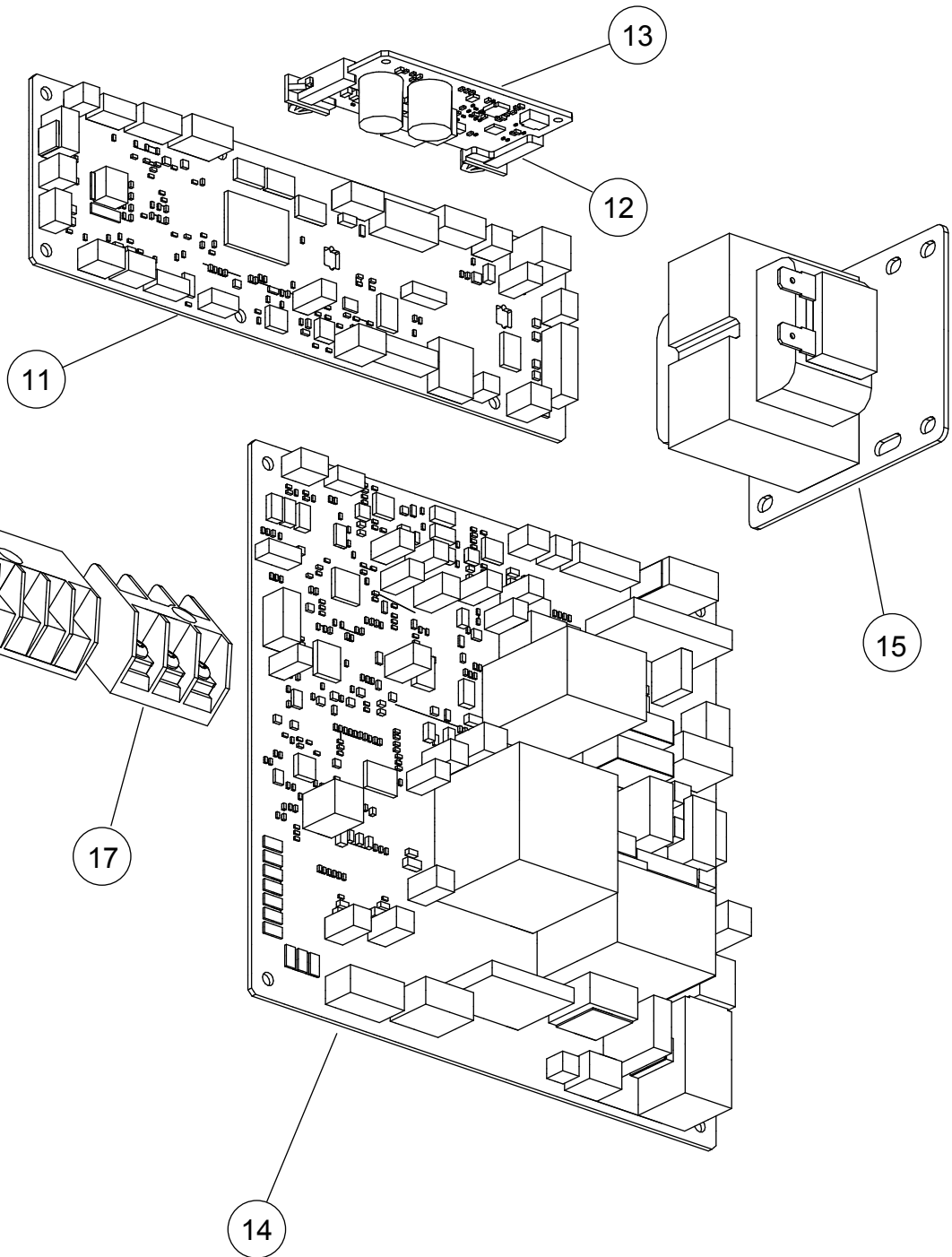
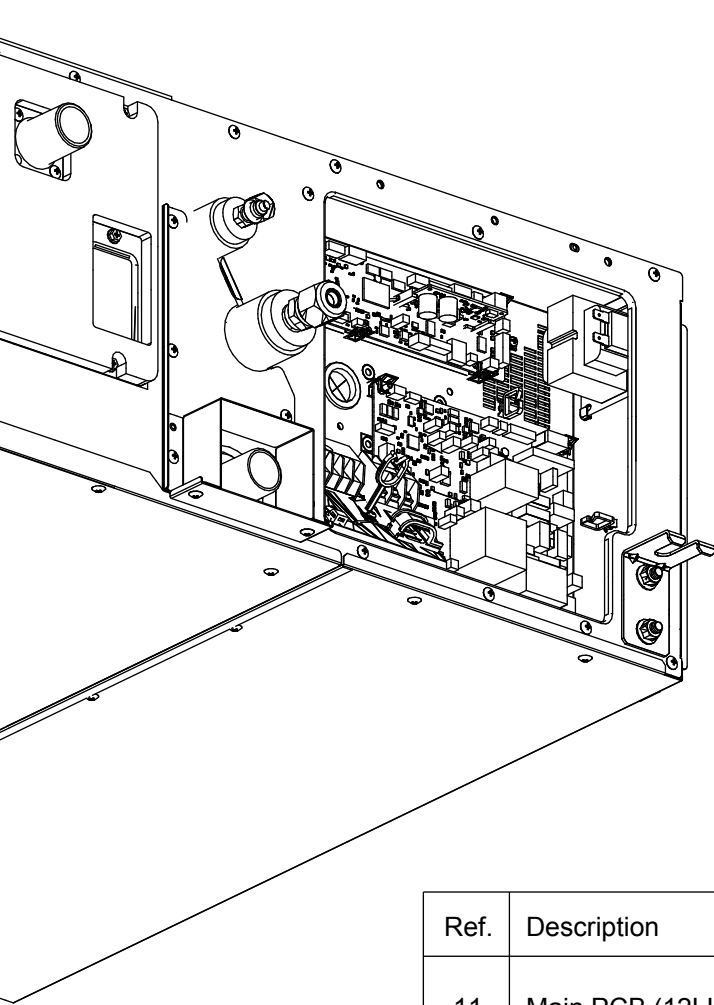
INDOOR UNIT  
ARYG12LHTBP  
ARYG14LHTBP



Ref.	Description	Part number
1	Remote Control (no brand)	9709335055
2	Hose Sub Assy	9378450196
3	Room Thermistor	9703299278
4	Pipe Thermistor	9900892005

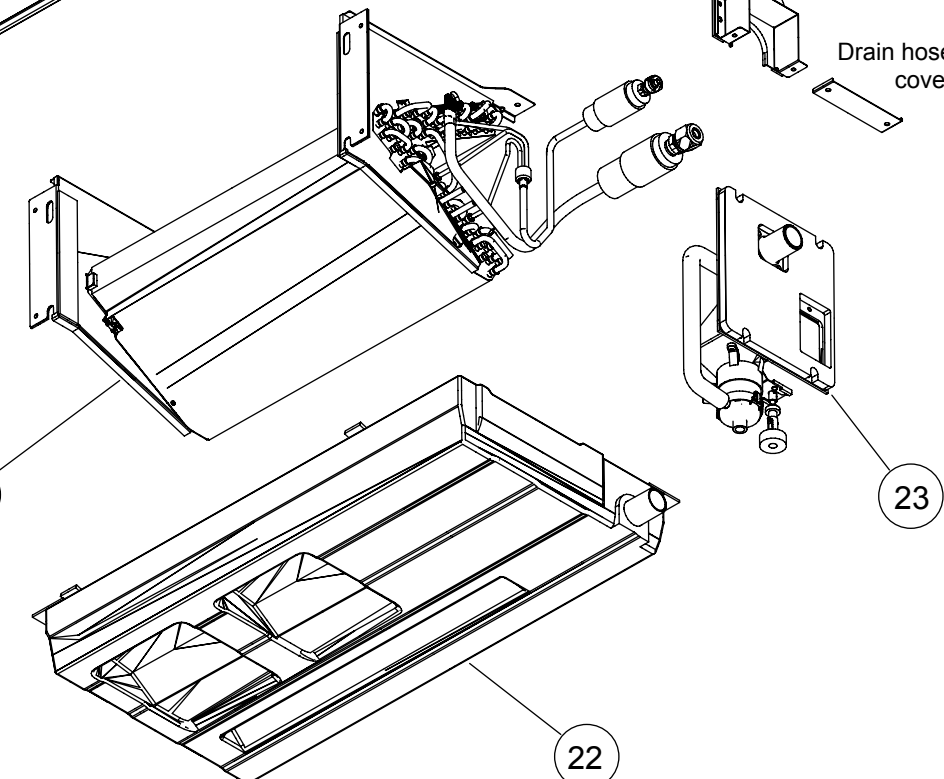
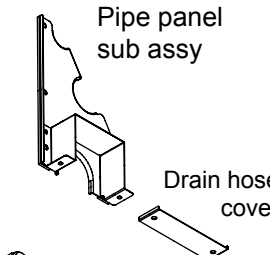
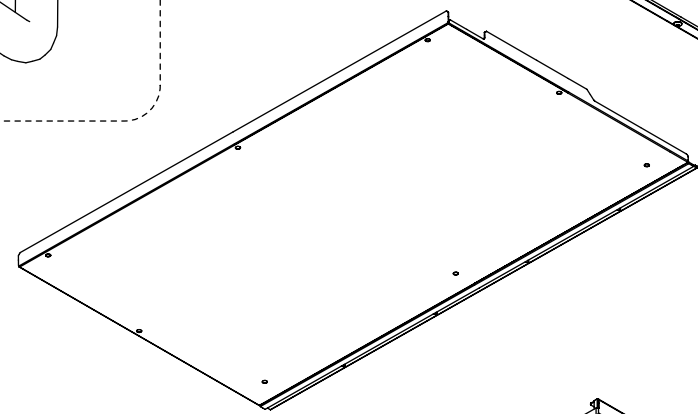
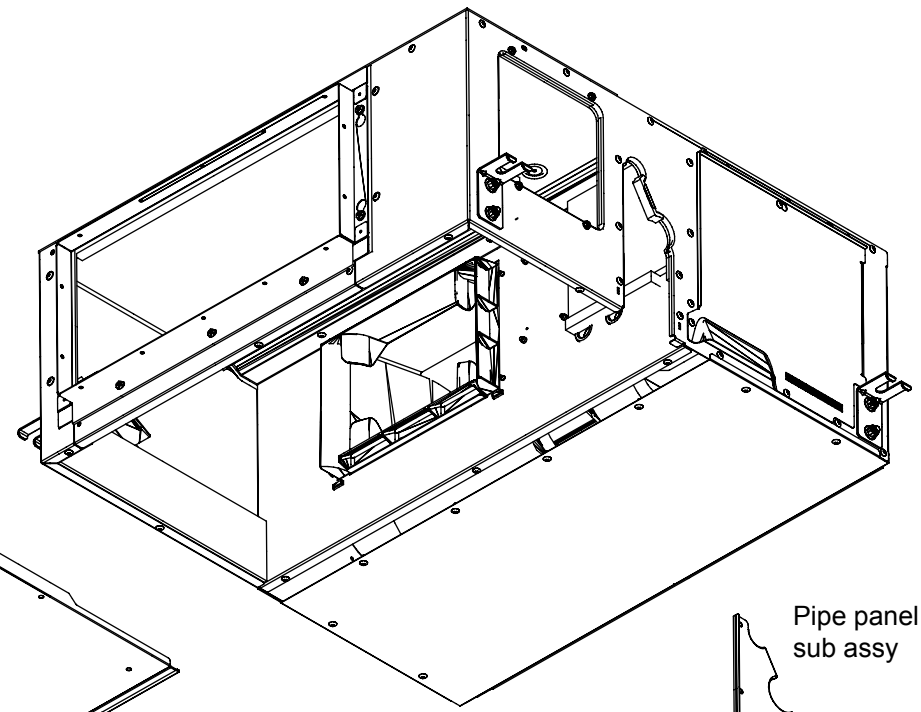
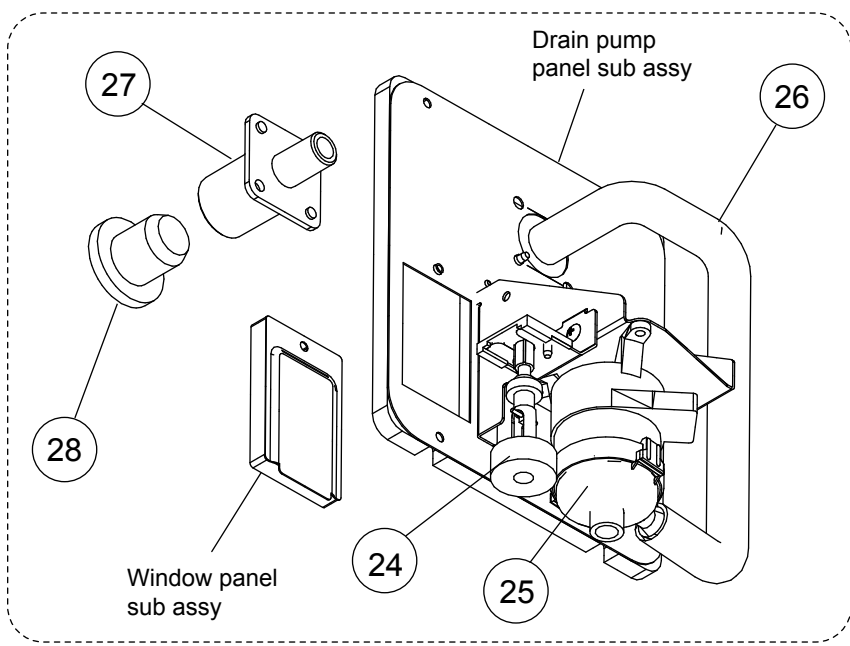
FUJI 用のリモコンですが、  
欧州の在庫を減らすために、  
FUJITSU, GENERAL も  
ブランドロゴの無いリモコンで供給します

INDOOR UNIT  
ARYG12LHTBP  
ARYG14LHTBP



Ref.	Description	Part number
11	Main PCB (12LHTBP)	9710016288
11	Main PCB (14LHTBP)	9710016295
12	Holder	0600063023
13	Communication PCB	9710019005
14	Power Supply PCB	9710032028
15	Reactor Assy	9900921019
16	Terminal (Remote)	9900896003
17	Terminal (Power)	9900568009

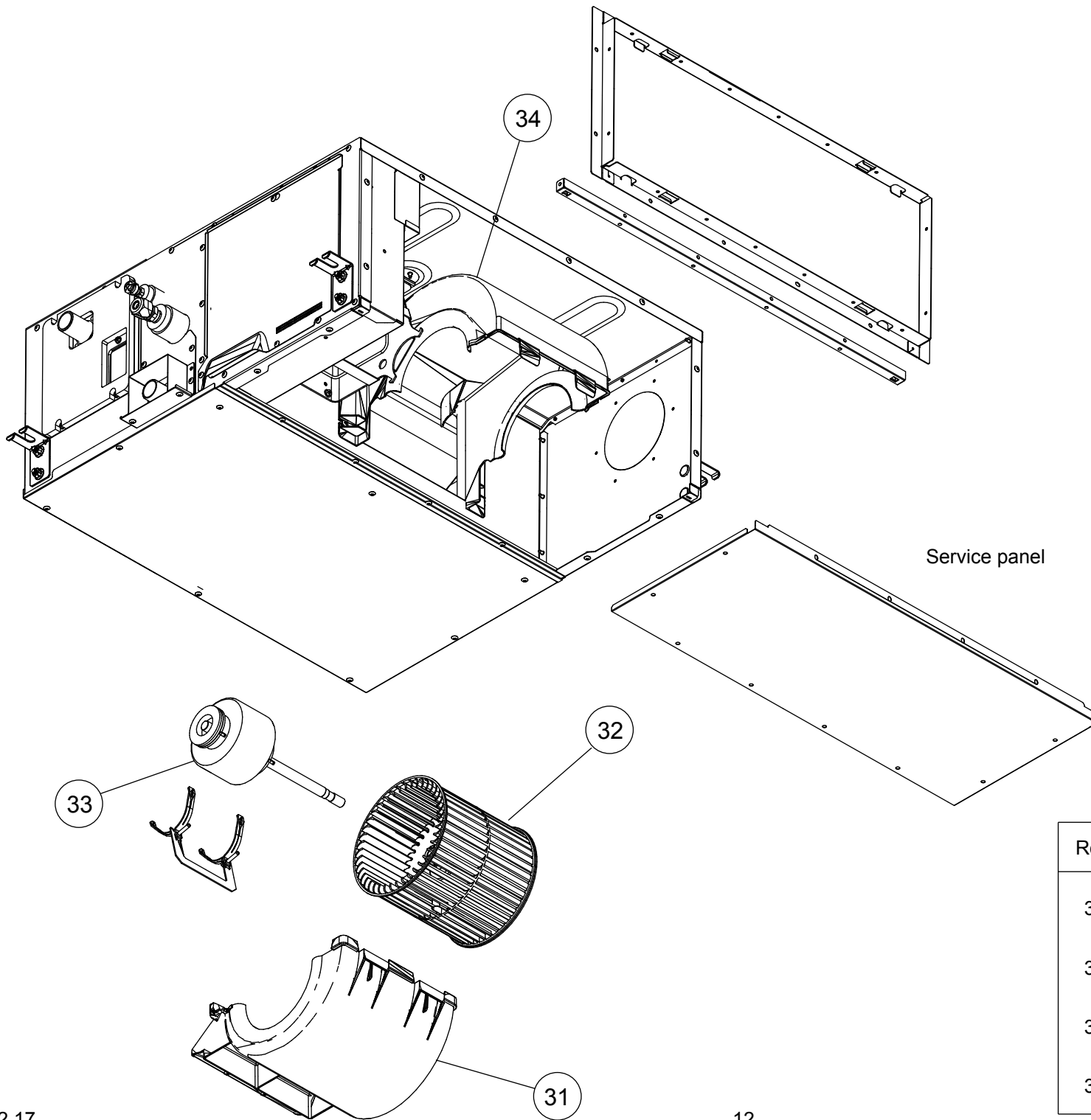
INDOOR UNIT  
ARYG12LHTBP  
ARYG14LHTBP



Ref.	Description	Part number
21	Evaporator Total Assy (12)	9374517428
21	Evaporator Total Assy (14)	9374517411
22	Drain Pan Sub Assy	9381752034
23	Drain Pump Sub Assy	9381766017
24	Float Switch	9900465070
25	Pump Assy	9900890018
26	Drain Hose	9381576005
27	Drain Port	9381565009
28	Drain Cap	9381578009



INDOOR UNIT  
 ARYG12LHTBP  
 ARYG14LHTBP

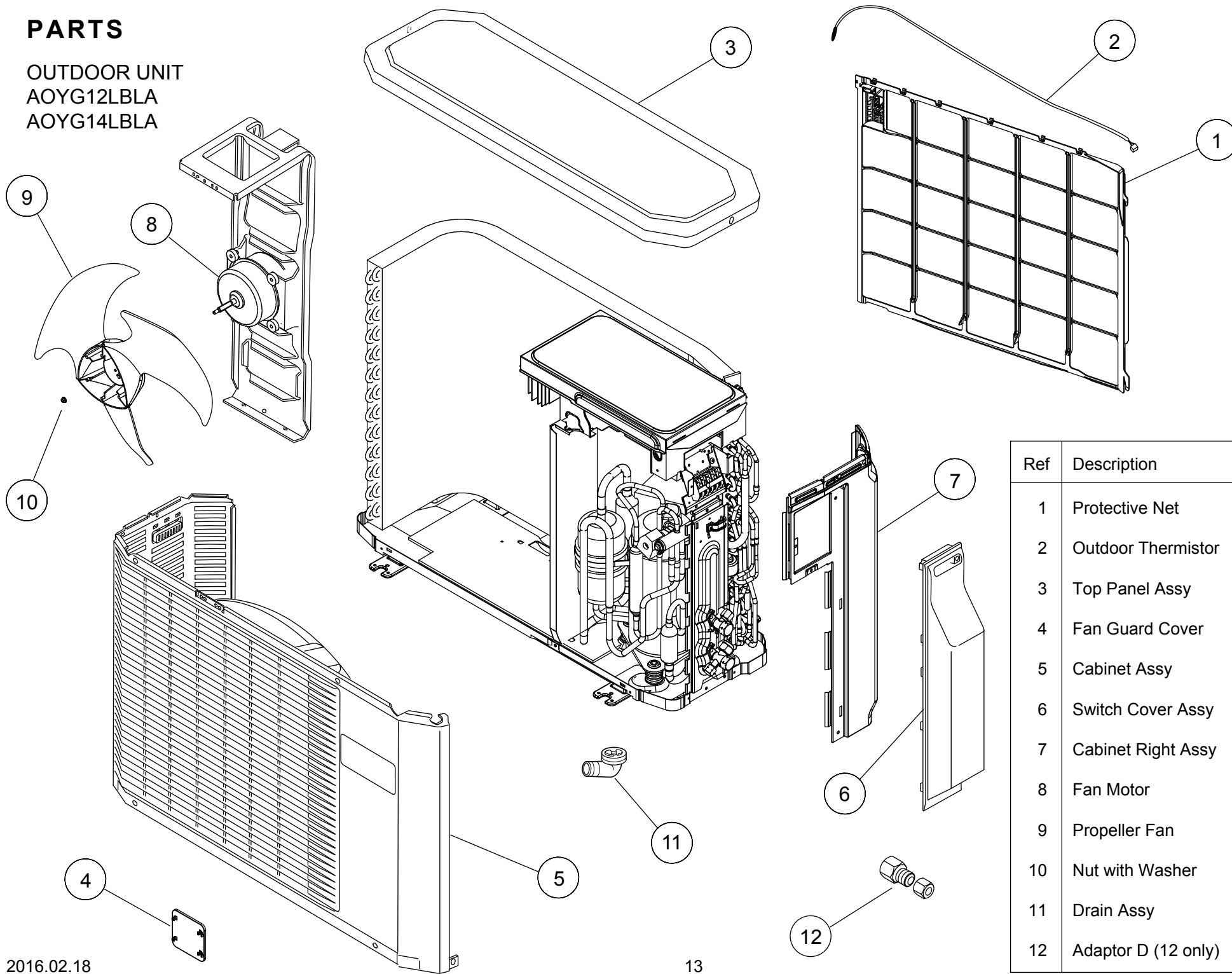


Service panel

Ref.	Description	Part number
31	Casing B Sub Assy	9381829002
32	Sirocco Fan Assy	9381302000
33	Fan Motor	9603514006
34	Casing A	9381587001

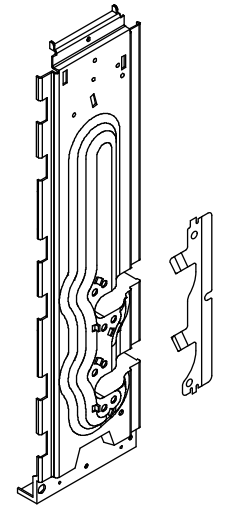
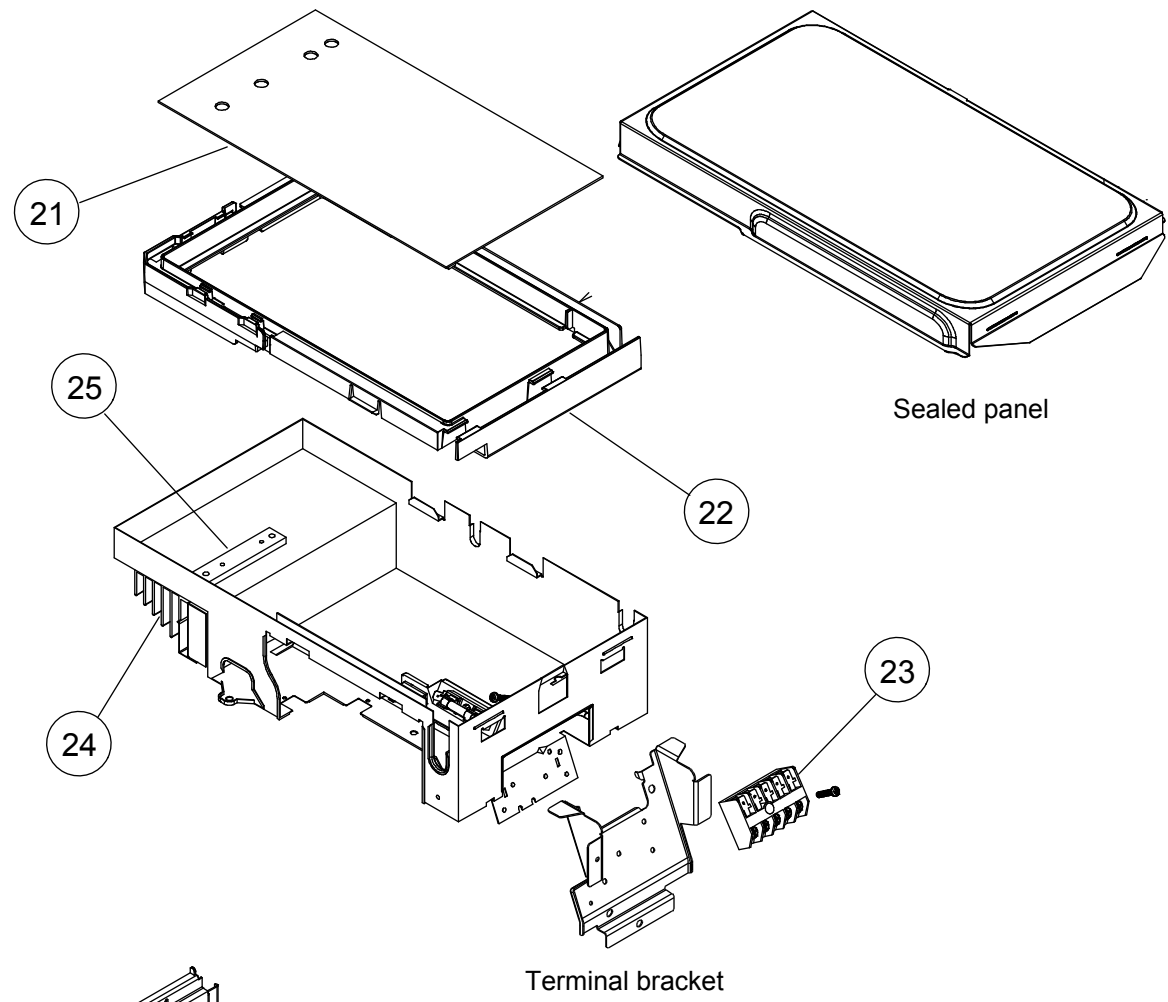
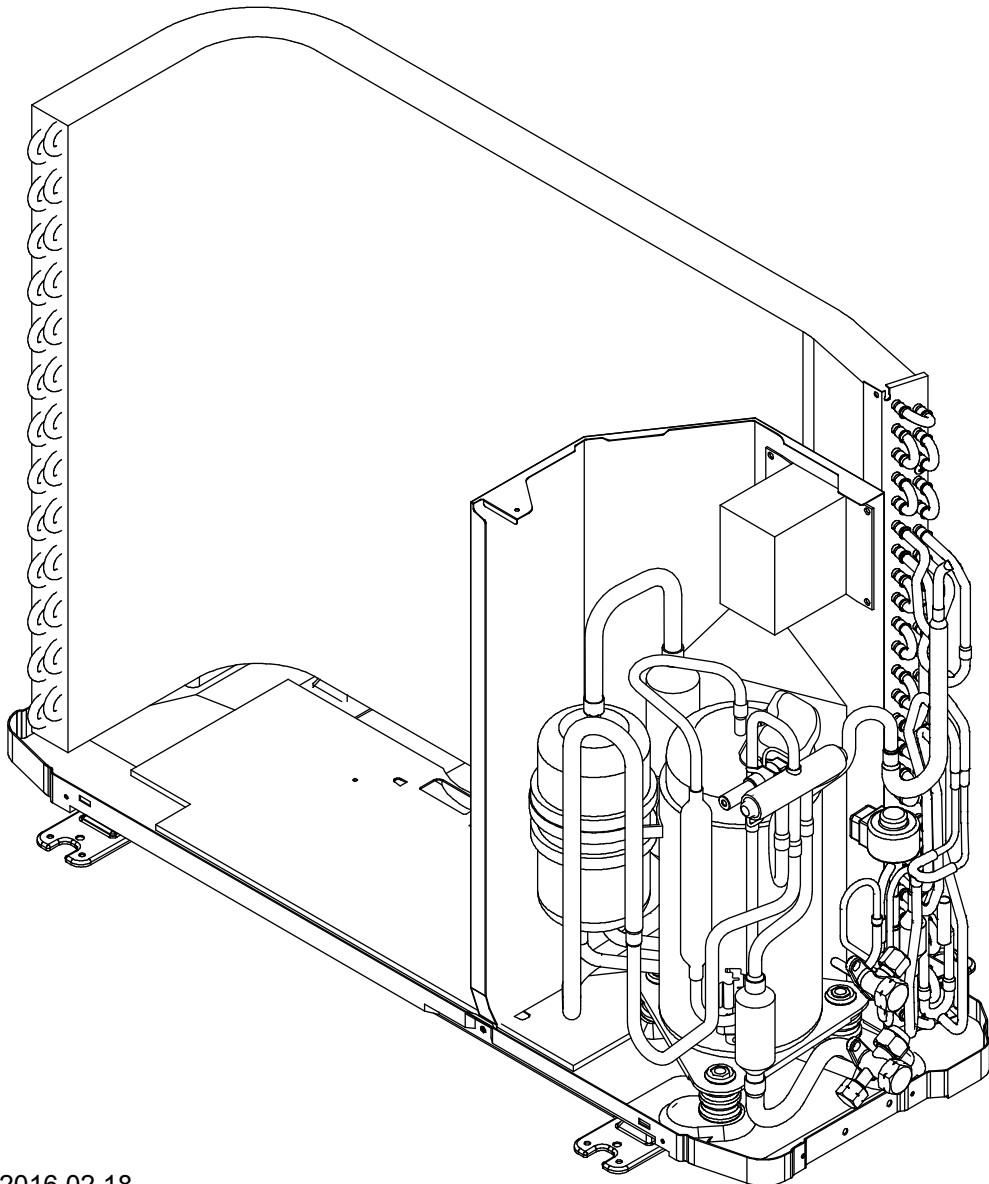
# PARTS

OUTDOOR UNIT  
AOYG12LBLA  
AOYG14LBLA

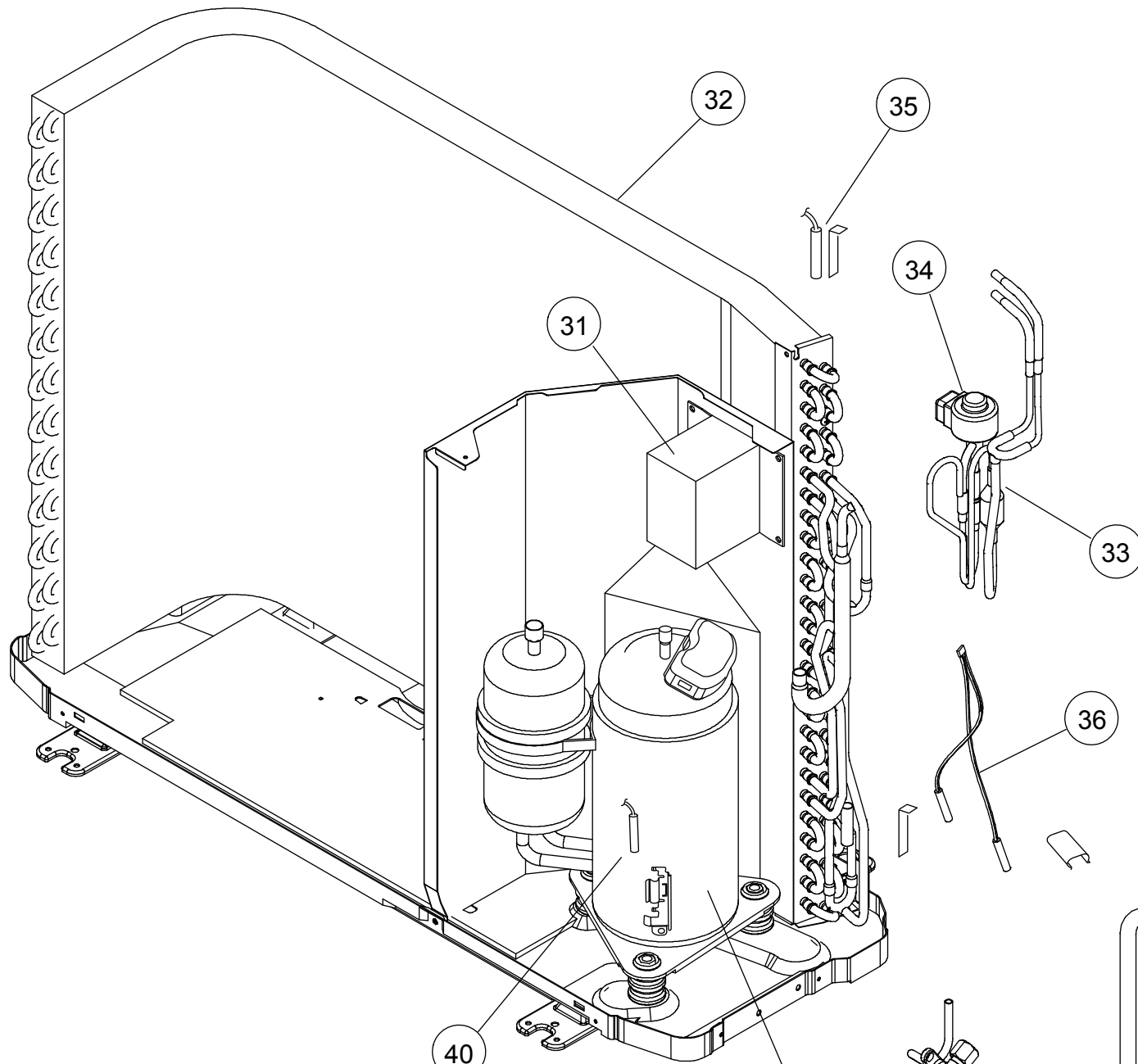


Ref	Description	Parts number
1	Protective Net	9315319036
2	Outdoor Thermistor	9900820008
3	Top Panel Assy	9309230057
4	Fan Guard Cover	9378110014
5	Cabinet Assy	9312799404
6	Switch Cover Assy	9309237032
7	Cabinet Right Assy	9309236059
8	Fan Motor	9601725015
9	Propeller Fan	9309909014
10	Nut with Washer	9304902003
11	Drain Assy	9303029015
12	Adaptor D (12 only)	9370244007

OUTDOOR UNIT  
 AOYG12LBLA  
 AOYG14LBLA

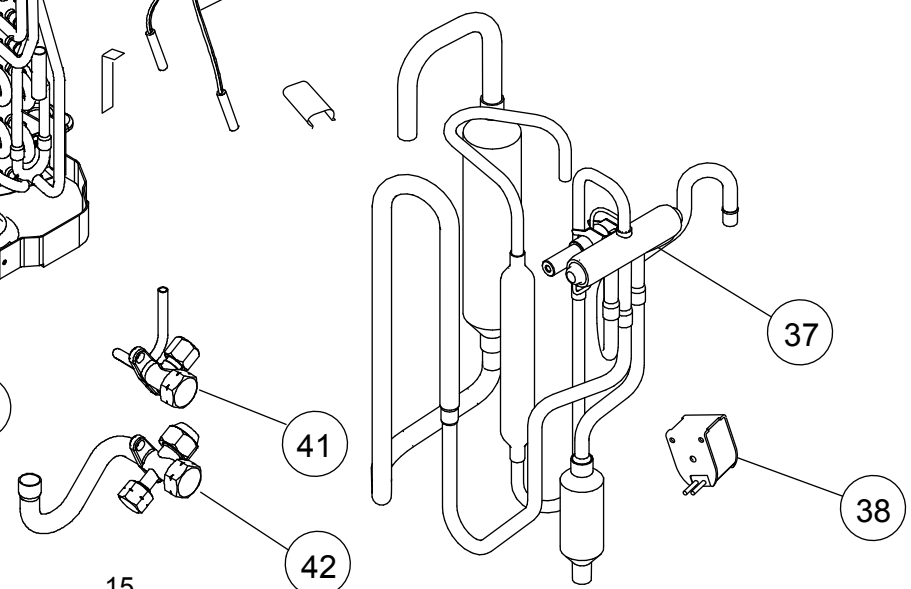


Ref	Description	Parts number
21	Main PCB (Service unit) (12)	9709681190
21	Main PCB (Service unit) (14)	9709681206
22	PCB Holder	9313074029
23	Terminal	9703874031
24	Heat Sink A	9314410017
25	Heat Sink B	9314090011







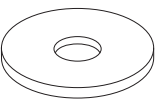

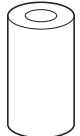
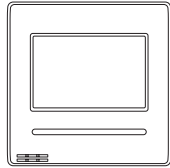

Ref	Description	Parts number
31	Reactor Assy	9900641016
32	Condenser Total Assy	9311381068
33	Pulse Motor Valve Assy	9311641018
34	Expansion Valve Coil	9970095030
35	Heat Exchanger Thermistor	9900821005
36	Thermistor Assy	9900818005
37	4-way Valve Assy	9315311030
38	Solenoid	9970033018
39	Compressor Assy	9313763039
40	Compressor Thermistor	9900819002
41	2-way Valve Assy	9970093012
42	3-way Valve Assy	9970092015

OUTDOOR UNIT  
 AOYG12LBLA  
 AOYG14LBLA

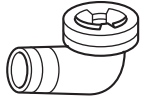
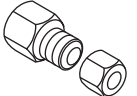


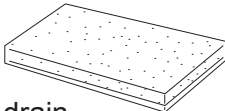

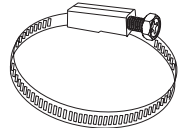
# ACCESSORIES

## INDOOR UNIT

Parts	Q'ty	Parts	Q'ty
Special nut A (large flange) 	4	Cable tie (large) 	4
For suspending the indoor unit from ceiling		For fixing the heat insulation	
Special nut B (small flange) 	4	Cable tie (medium) 	1
For suspending the indoor unit from ceiling		For fixing the remote control cable	
Washer 	8	Cable tie (small) 	1
For suspending the indoor unit from ceiling		For fixing the remote control cable	
Coupler heat insulation (large) 	1	Remote control (WEC type) 	1
For indoor side pipe joint (gas pipe)		For air conditioner operation	
Coupler heat insulation (small) 	1	Remote control accessories See installation manual for remote control	1 set
For indoor side pipe joint (liquid pipe)			

## OUTDOOR UNIT

Parts	Q'ty
Drain pipe 9303029015 	1
For drain piping work	
Adapter assy 9370244007 	1
(AOYG12LBLA only)	

Parts	Q'ty
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	

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