

SPLIT TYPE
ROOM AIR CONDITIONER
FLOOR TYPE

SERVICE MANUAL



Indoor unit	Outdoor unit
AGU9RLF	AOU9RLFF
AGU12RLF	AOU12RLFF

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SPECIFICATIONS

INDOOR UNIT

Type				Floor type	
				Inverter, Heat pump	
Model name				AGU9RLF	AGU12RLF
Power supply				208/230 V ~60 Hz	
Power supply intake				Outdoor unit	
Available voltage range				187—253 V	
Capacity	Cooling	Rated	kW	2.64	3.52
			Btu/h	9,000	12,000
		Min.—Max.	kW	0.90—3.80	0.90—4.20
	Heating		Btu/h	3,100—13,000	3,100—14,300
		Rated	kW	3.52	4.69
			Btu/h	12,000	16,000
	Heating (17°F)* ¹	Min.—Max.	kW	0.90—5.50	0.90—5.70
			Btu/h	3,100—18,800	3,100—19,500
	Heating (5°F)* ²	Rated	kW	2.2	3.11
			Btu/h	7,500	10,600
		Max.	kW	4.1	4.4
			Btu/h	14,000	15,000
Input power	Cooling	Rated	kW	0.56	0.91
		Min.—Max.		0.20—2.05	
	Heating	Rated	kW	0.88	1.44
		Min.—Max.		0.20—2.62	
	Heating (17°F)* ¹	Rated	kW	0.78	1.19
		Max.		1.82	2.17
	Heating (5°F)* ²	Rated	kW	2.10	2.17
		Max.		2.06	
	Cooling	Rated	A	2.9	4.2
		Min.—Max.		4.1	6.7
	Heating	Rated	kW/kW	4.71	3.87
			Btu/h	16.0	13.1
EER2	Cooling		kW/kW	4.00	3.24
			Btu/h	13.6	11.1
COP2	Heating		Btu/h	26.0	22.7
			Btu/h	11.8	11.2
SEER2	Cooling		%	84.0	94.2
			%	93.3	93.4
HSPF2	Heating		pints/h (L/h)	2.7 (1.3)	3.8 (1.8)
			A	9.3	9.3
Power factor	Cooling		A	10.8	10.8
Moisture removal	Cooling			336 (570)	
				271 (460)	
				212 (360)	
	Heating			159 (270)	
				353 (600)	
				283 (480)	
	Type × Qty			218 (370)	
				159 (270)	
				Cross flow fan × 2	
	Motor output		W	16 × 2	
				40	
				35	
Sound pressure level* ⁴	Cooling			29	
				23	
				40	
	Heating			35	
				29	
				23	
	Dimensions (H × W × D)		in (mm)	14-7/8 × 21-5/8 × 1-1/16 (378 × 550 × 26.6)	
			FPI	21	
				2 × 18	
	Pipe type			Copper tube	
				Aluminum	
				Polystyrene	
Enclosure	Material			White	
				Approximate color of Munsell N 9.25/	
Dimensions (H × W × D)	Net		in	23-5/8 × 29-1/8 × 7-7/8	
			mm	600 × 740 × 200	
	Gross		in	27-9/16 × 32-5/16 × 12-3/16	
			mm	700 × 820 × 310	
Weight	Net		lb (kg)	31 (14)	
				37 (17)	
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)	
		Gas		Ø 3/8 (Ø 9.52)	
Operation range	Method			Flare	
				64 to 90 (18 to 32)	
	Cooling		°F (°C)	80 or less	
			%RH	60 to 88 (16 to 30)	
Remote controller type	Heating		°F (°C)	Wireless (Wired [option])	
				PP + LLDPE	
Drain hose	Material			Ø 9/16 (Ø 13.8) (I.D.), Ø 5/8 to Ø 11/16 (Ø 15.8 to Ø 16.7) (O.D.)	
			in (mm)		

Type	Floor type	
	Inverter, Heat pump	
Model name	AGU9RLF	AGU12RLF
NOTES: <ul style="list-style-type: none"> Specifications are based on the following conditions: <ul style="list-style-type: none"> Cooling: Indoor temperature of 80°FDB (26.67°CDB)/67°FDB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB)/75°FDB (23.9°CWB). Heating: Indoor temperature of 70°FDB (21.11°CDB)/59°FDB (15°CWB), and outdoor temperature of 47°FDB (8.33°CDB)/43°FDB (6.11°CWB). *1: Heating (17°F): Indoor temperature of 70°FDB (21.11°CDB)/60°FDB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB)/15°FDB (-9.44°CWB). *2: Heating (5°F): Indoor temperature of 70°FDB (21.11°CDB)/60°FDB (15.56°CWB), and outdoor temperature of 5°FDB (-15.0°CDB)/4°FDB (-15.56°CWB). Test conditions are based on AHRI 210/240 2023. Pipe length: 24 ft (7.5 m.) Height difference: 0 m. (Between outdoor unit and indoor unit.) Protective function might work when using it outside the operation range. *3: Maximum current is maximum value when operated within the operation range. *4: Sound pressure level: <ul style="list-style-type: none"> Measured values in manufacturer's anechoic chamber. Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here. 		

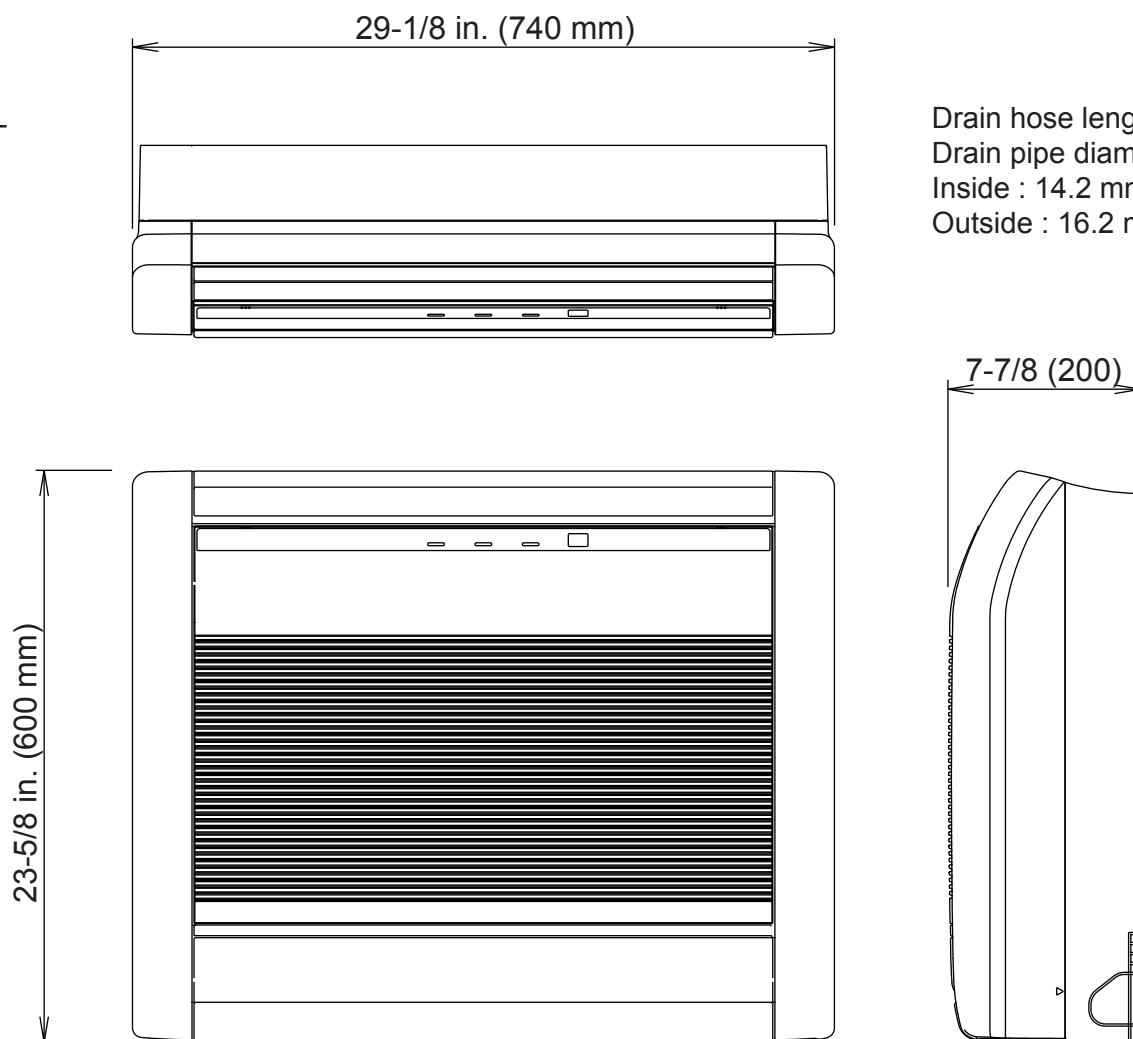
M condition									
Model name				AGU9RLF		AGU12RLF			
Capacity	Cooling	Rated	kW	2.64		3.52			
			Btu/h	9,000		12,000			
		Min.—Max.	kW	0.90—3.80		0.90—4.20			
			Btu/h	3,100—13,000		3,100—14,300			
	Heating	Rated	kW	3.52		4.69			
			Btu/h	12,000		16,000			
		Min.—Max.	kW	0.90—5.50		0.90—5.70			
			Btu/h	3,100—18,800		3,100—19,500			
	Heating (17°F)*	Rated	kW	2.2		3.11			
			Btu/h	7,500		10,600			
		Max.	kW	4.1		4.4			
			Btu/h	14,000		15,000			
Input power	Cooling	Rated	kW	0.56		0.91			
		Min.—Max.		0.20—2.05					
	Heating	Rated		0.88		1.44			
		Min.—Max.		0.20—2.62					
	Heating (17°F)*	Rated		0.78		1.19			
		Max.		1.82		2.17			
	Current	Cooling		Rated	A	2.9		4.2	
		Heating				4.1		6.7	
EER	Cooling			kW/kW	4.71		3.87		
				Btu/h	16.0		13.1		
COP	Heating			kW/kW	4.00		3.24		
				Btu/h	13.6		11.1		
SEER	Cooling			Btu/h	26.0		22.7		
HSPF	Heating			Btu/h	12.6		11.6		
Power factor	Cooling		%		84.0		94.2		
	Heating				93.3		93.4		
NOTES: Specifications are based on the following conditions: <ul style="list-style-type: none">• Cooling: Indoor temperature of 80°FDB (26.67°CDB)/67°FWB (19.44°CWB), and outdoor temperature of 95°FDB (35°CDB)/75°FWB (23.9°CWB).• Heating: Indoor temperature of 70°FDB (21.11°CDB)/59°FWB (15.56°CWB), and outdoor temperature of 47°FDB (8.33°CDB)/43°FWB (6.11°CWB).• *: Heating (17°F): Indoor temperature of 70°FDB (21.11°CDB)/60°FWB (15.56°CWB), and outdoor temperature of 17°FDB (-8.33°CDB)/15°FWB (-9.44°CWB).• Test conditions are based on AHRI 210/240 2017.• Pipe length: 25 ft (7.5 m), Height difference: 0 ft (0 m). (Between outdoor unit and indoor unit.)									

OUTDOOR UNIT

Type				Inverter heat pump	
Model name				AOU9RLFF	AOU12RLFF
Power supply				208/230 V ~ 60 Hz	
Available voltage range				187—253 V ~ 60 Hz	
Starting current			A	4.1	6.7
Fan	Airflow rate	Cooling	CFM (m³/h)	1,207 (2,050)	1,457 (2,475)
		Heating		1,207 (2,050)	1,207 (2,050)
		Type × Q'ty		Propeller fan × 1	
Motor output		W	115		
Sound pressure level *1		Cooling	dB (A)	49	53
		Heating		50	52
Heat exchanger type		Dimensions (H × W × D)	in	23-1/8 × 34-11/16 × 1-7/16	
			mm	588 × 881 × 36.4	
		Fin pitch	FPI	20	
		Rows × Stages		2 × 28	
		Pipe type		Copper	
		Fin type	Type (Material)	Corrugate (Aluminum)	
				PC Fin	
Compressor	Type × Q'ty		Rotary × 1		
	Motor output		W	850	
Refrigerant		Type	R410A		
		Charge	lb oz	2lb 10oz	
			g	1,200	
Refrigerant oil		Type	FREOL α68SZ		
		Amount	in³ (cm³)	21.4 (350)	
Enclosure		Material	Steel sheet		
		Color	Beige Approximate color of Munsell 10YR 7.5/1.0		
Dimensions (H × W × D)	Net		in	24-7/16 × 31-1/8 × 11-7/16	
			mm	620 × 790 × 290	
	Gross		in	28-1/16 × 37-3/16 × 15-9/16	
			mm	713 × 945 × 395	
Weight	Net		lb (kg)	84 (38)	
	Gross			93 (42)	
Connection pipe	Size	Liquid	in (mm)	Ø 1/4 (Ø 6.35)	
		Gas		Ø 3/8 (Ø 9.52)	
	Method		Flare		
	Pre-charge length	ft (m)	49 (15)		
	Max. length		66 (20)		
	Min. length		10 (3)		
	Max. height difference		49 (15)		
Operation range		Cooling	°F (°C)	14 to 115 (-10 to 46)	
		Heating		-5 to 75 (-21 to 24)	
NOTES:					
<div><div><div><div><div></div><div></div></div><div><div><div>• Specifications are based on the following conditions:</div><div><div><div>– Cooling: Indoor temperature of 80 °FDB (26.67 °CDB) / 67 °FDB (19.44 °CWB), and outdoor temperature of 95 °FDB (35 °CDB) / 75 °FDB (23.9 °CWB).</div><div><div>– Heating: Indoor temperature of 70 °FDB (21.11 °CDB) / 59 °FDB (15 °CWB), and outdoor temperature of 47 °FDB (8.33 °CDB) / 43 °FDB (6.11 °CWB).</div><div><div>– Pipe length: 24 ft (7.5 m), Height difference: 0 m. (Between outdoor unit and indoor unit.)</div></div></div></div><div><div><div>• Protective function might work when using it outside the operation range.</div><div><div>• *1: Sound pressure level</div><div><div>– Measured values in manufacturer's anechoic chamber.</div><div><div>– Because of the surrounding sound environment, the sound levels measured in actual installation conditions might be higher than the specified values here.</div></div></div></div></div></div></div></div></div></div></div></div>					

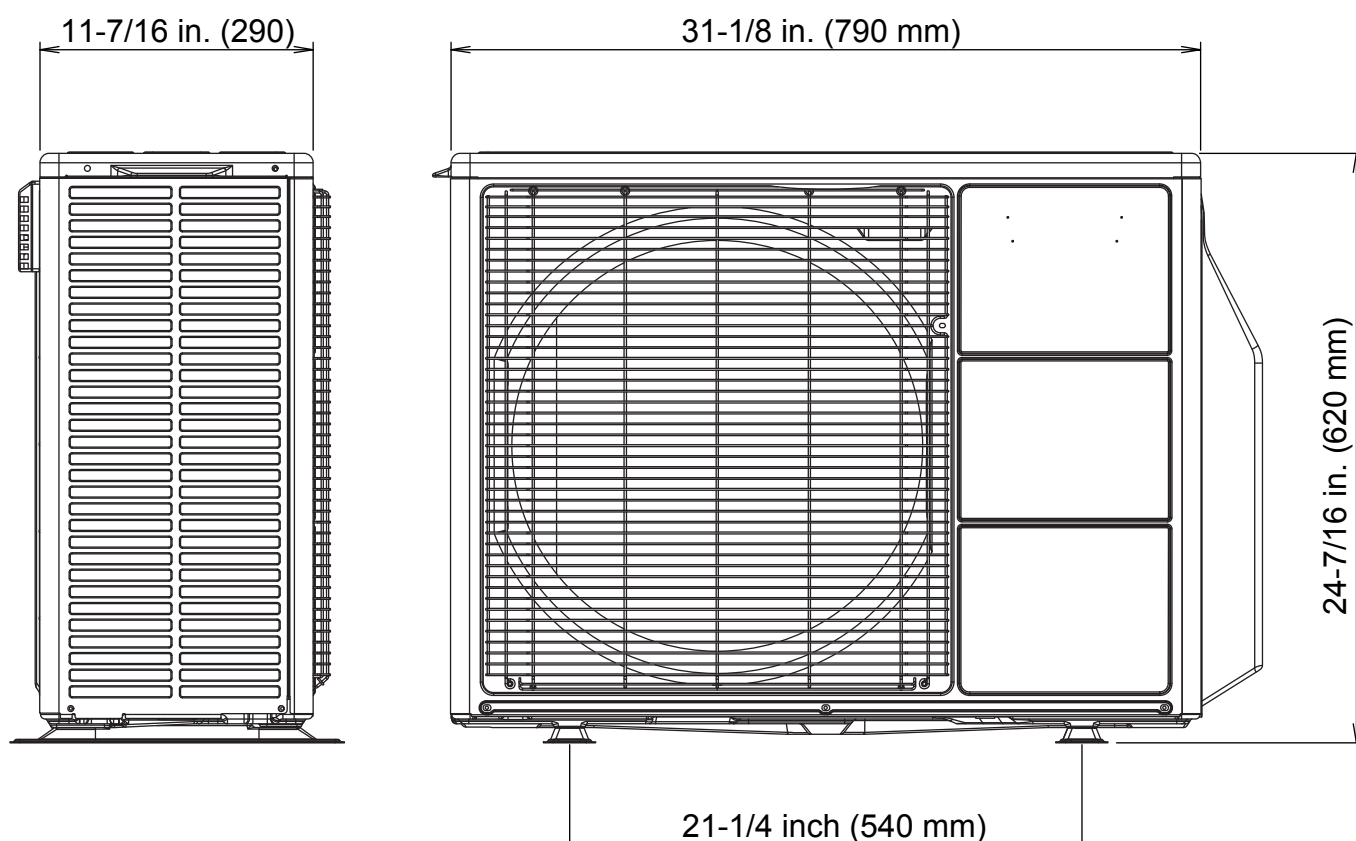
DIMENSIONS

INDOOR UNIT

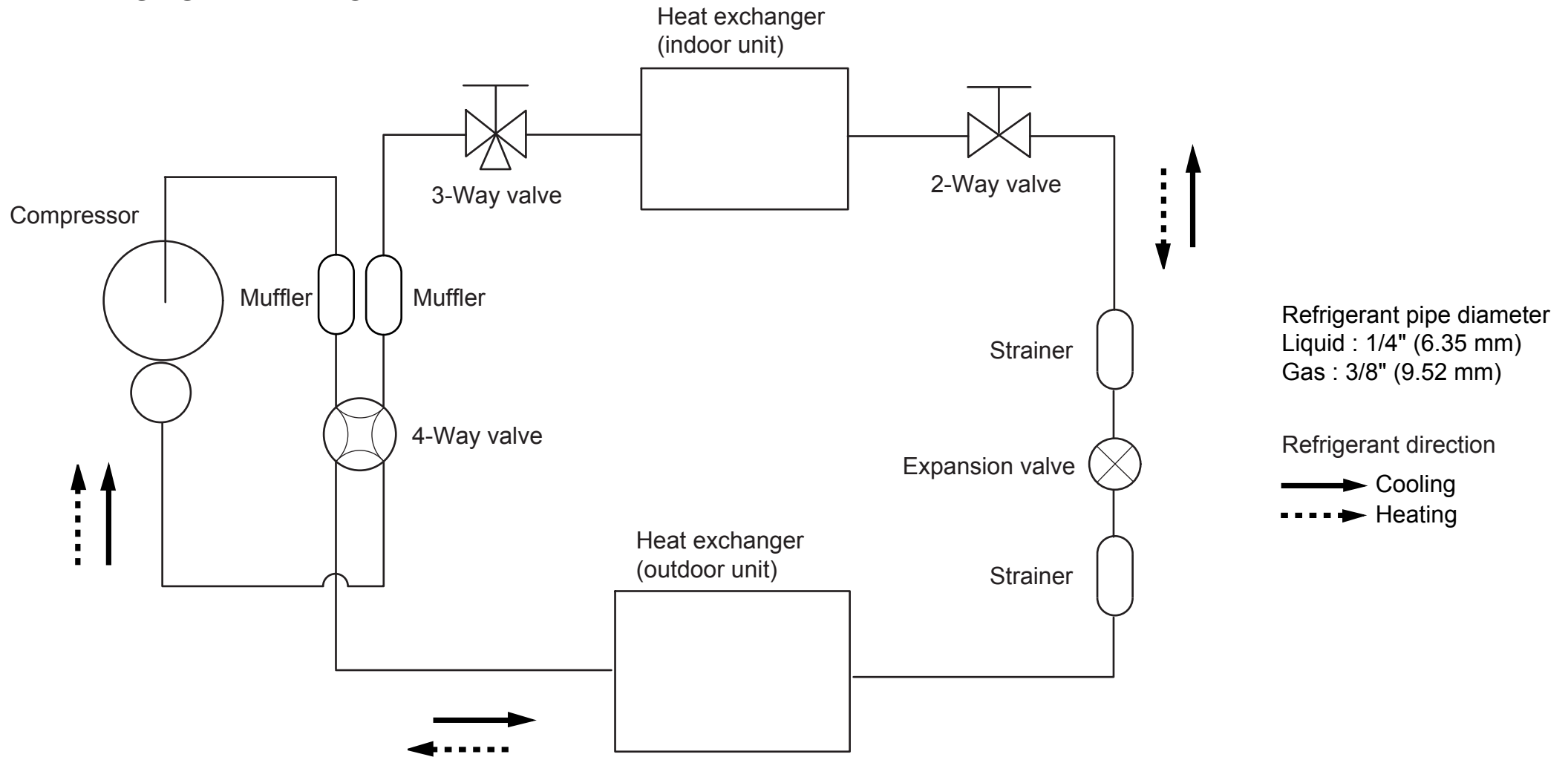


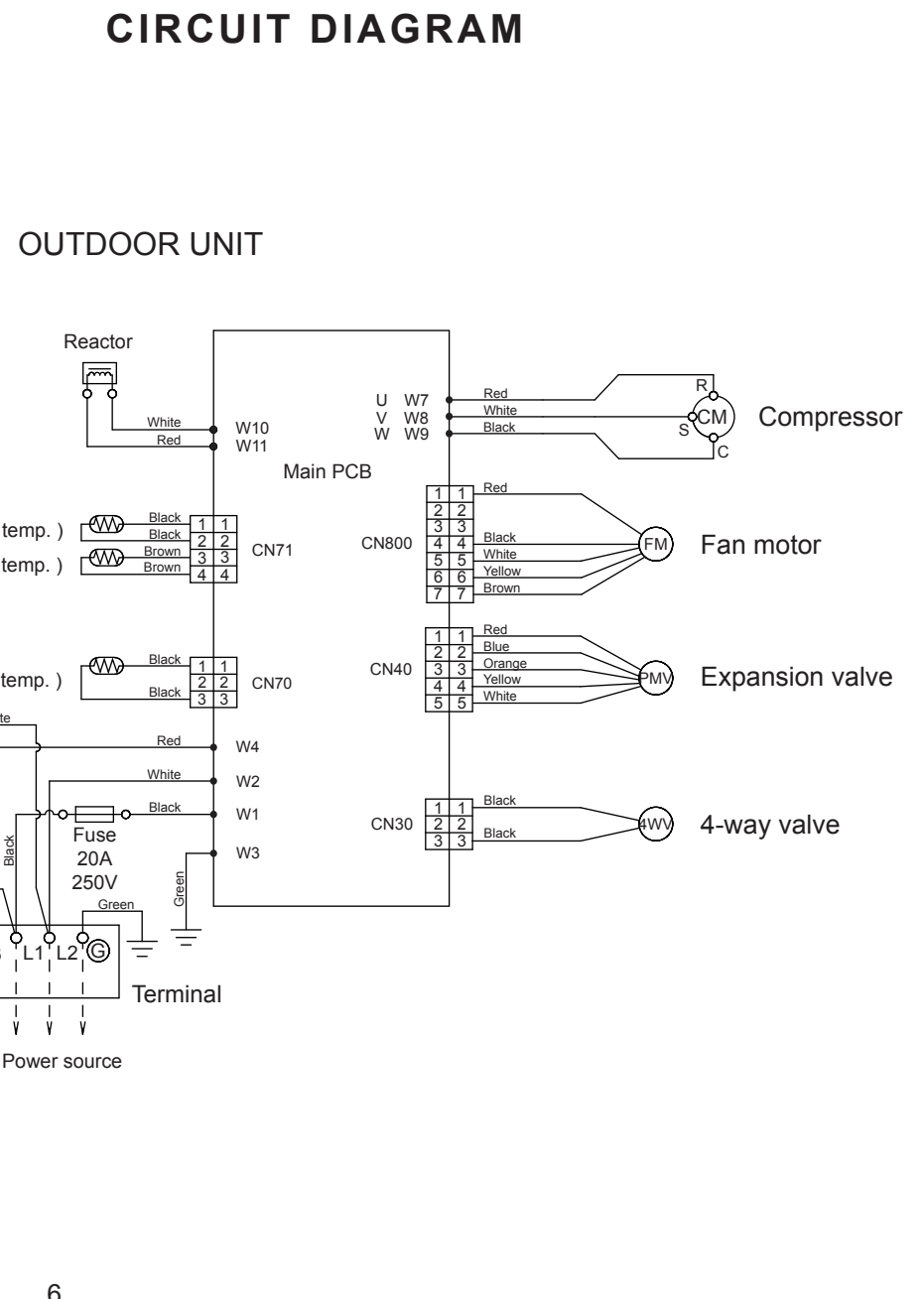
Drain hose length : 600 mm
 Drain pipe diameter
 Inside : 14.2 mm
 Outside : 16.2 mm

OUTDOOR UNIT



REFRIGERANT SYSTEM DIAGRAM

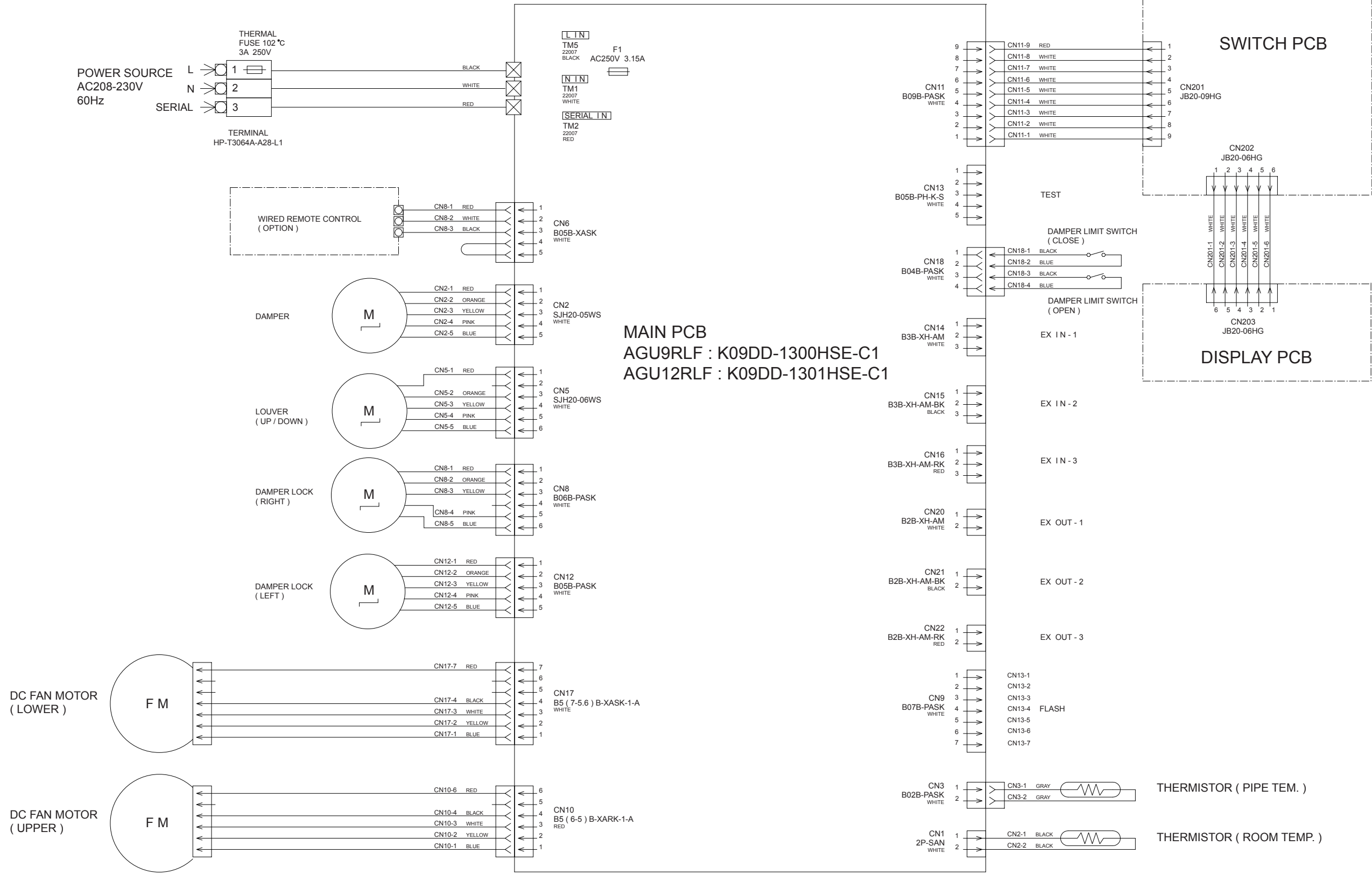




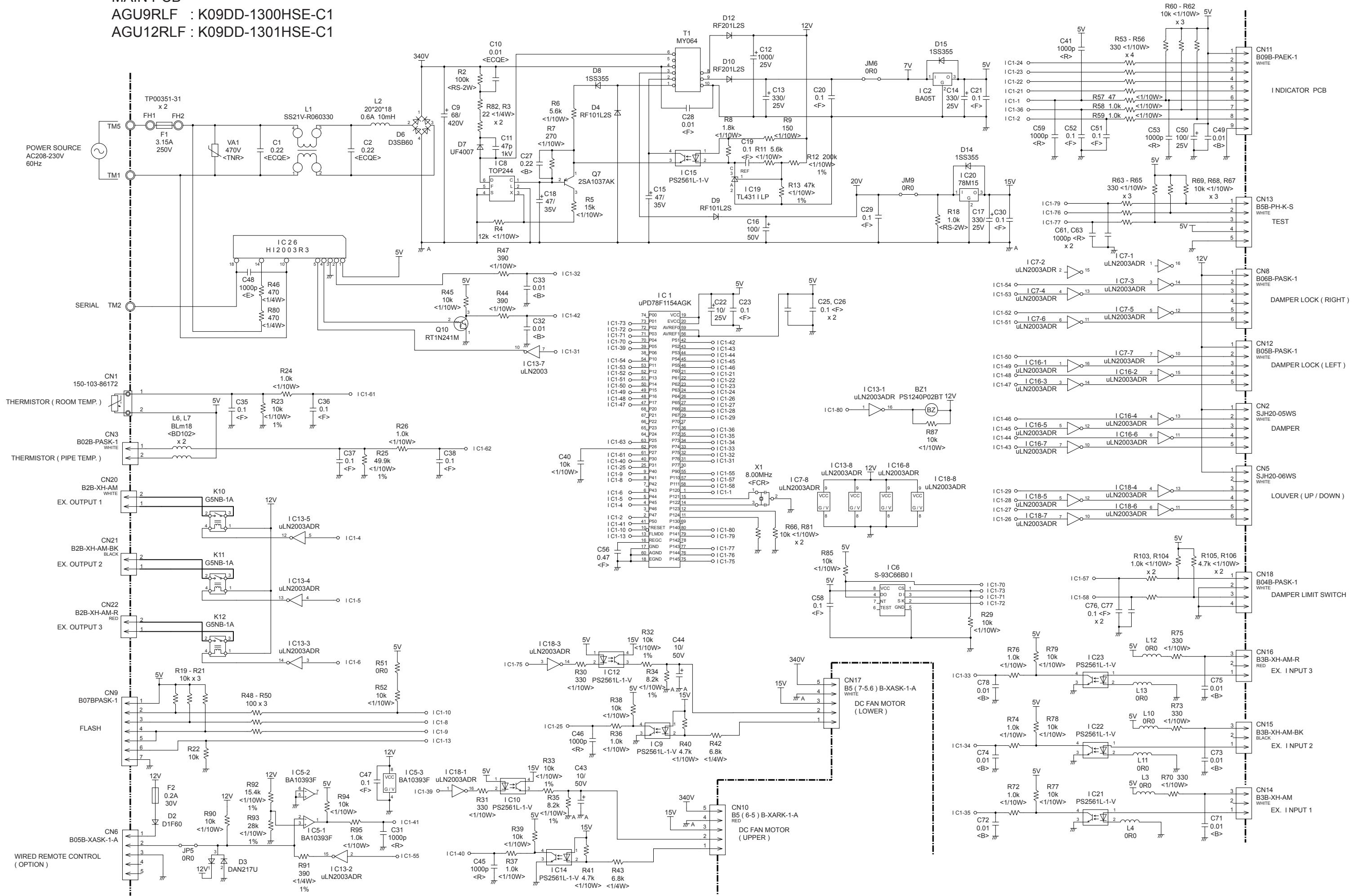
INDOOR PCB CIRCUIT DIAGRAM

CONTROL UNIT
AGU9RLF : EZ-01302HSE
AGU12RLF : EZ-01303HSE

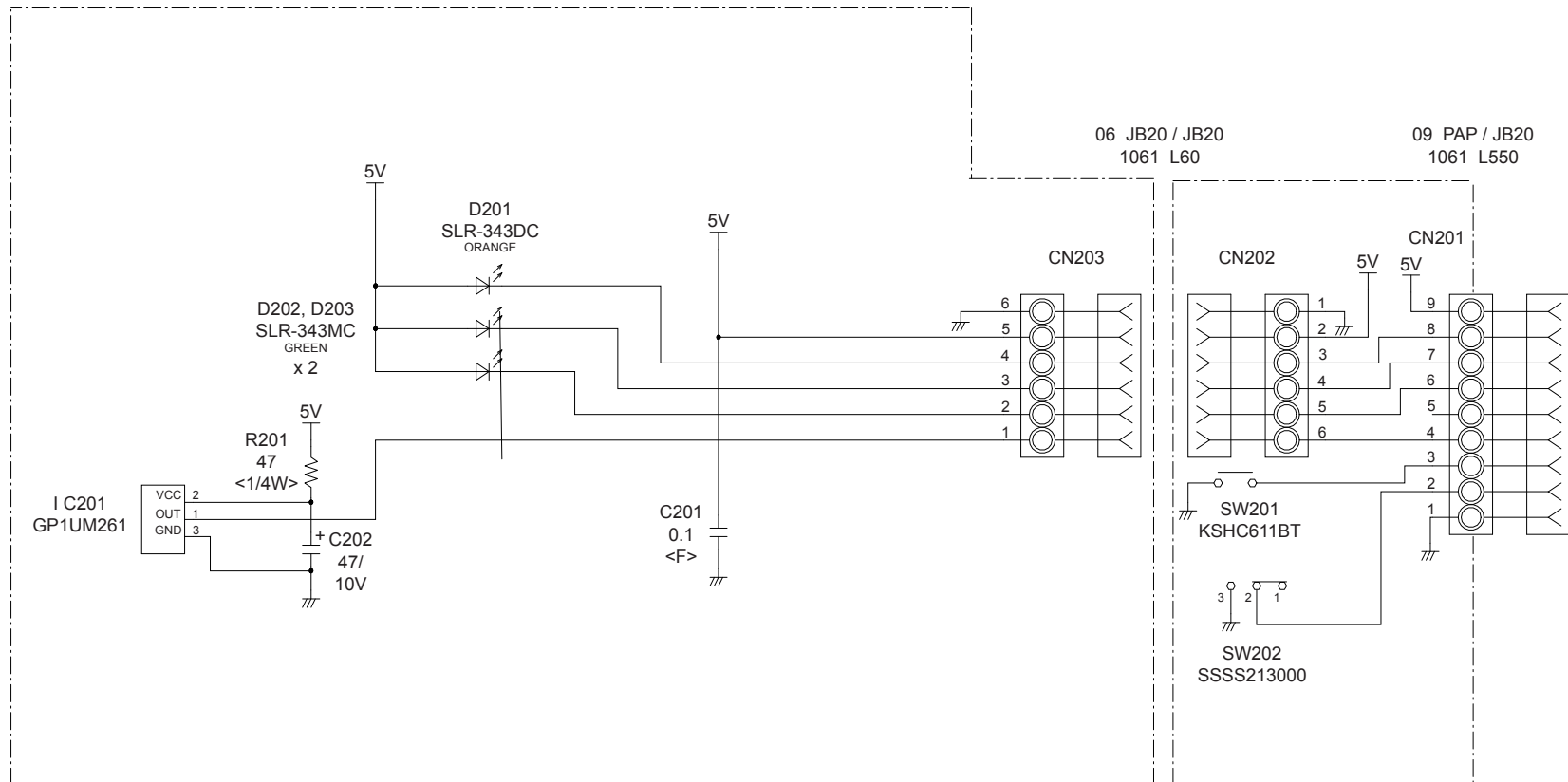
INDICATOR PCB
(SWITCH + DISPLAY)
K06DD-0801HSE-F0



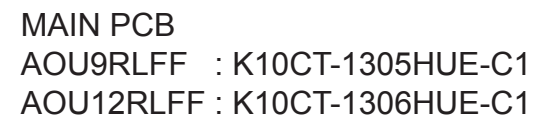
INDOOR UNIT
MAIN PCB
AGU9RLF : K09DD-1300HSE-C1
AGU12RLF : K09DD-1301HSE-C1



INDOOR UNIT
INDICATOR PCB
K06DD-0801HSE-F0



INVERTER ASSEMBLY
AOU9RLFF : EZ-01309HUE
AOU12RLFF : EZ-0130AHUE



ERROR DETECTION

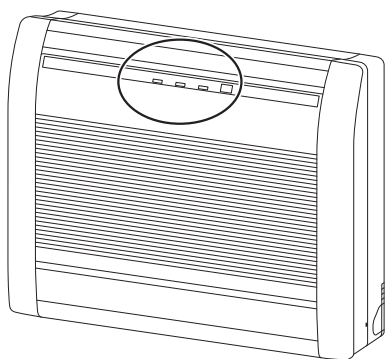
INDOOR UNIT REMOTE CONTROL

If you use a wireless remote control, the lamp on the photo detector unit will output error codes by way of blinking patterns.




If you use a wired remote control, error codes will appear on the remote control display.

See the lamp blinking patterns and error codes in the table.

An error display is displayed only during operation.



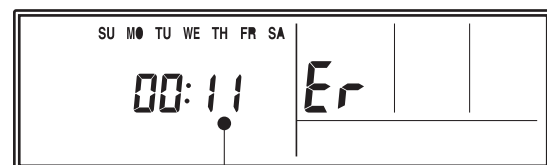
TIMER **OPERATION** **ECONOMY**

TIMER lamp (orange) OPERATION lamp (green) ECONOMY lamp (green)

Wired remote control display (Option)

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



Error code

● : 0.5s on / 0.5s off
◇ : 0.1s on / 0.1s off

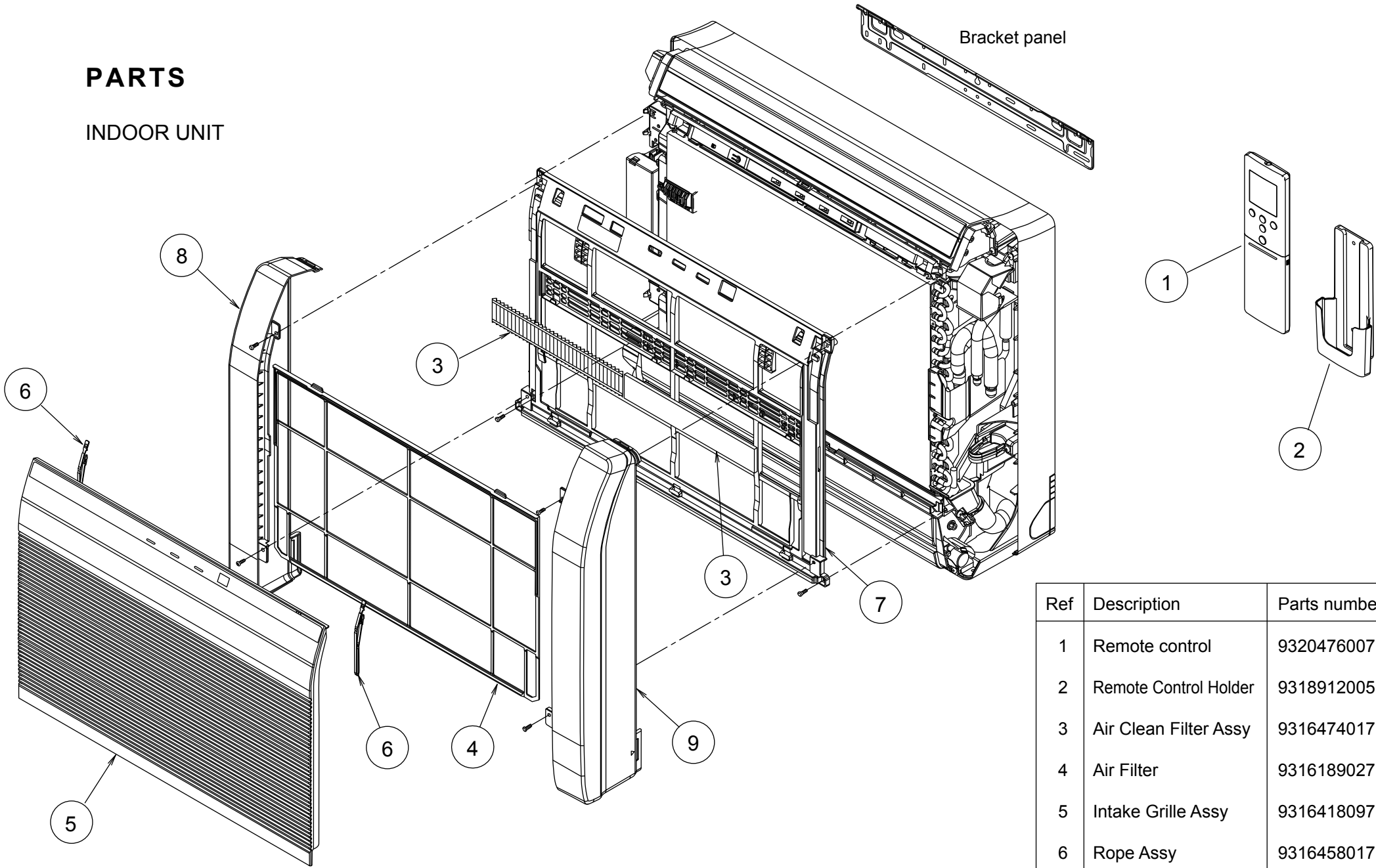
() : Number of flashing

Lamps			Wired remote control	Description
OPERATION	TIMER	ECONOMY		
● (1)	● (1)	◇	11	Serial communication error
● (1)	● (2)	◇	12	Wired remote control communication error
● (1)	● (5)	◇	15	Check run unfinished
● (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 slave unit) [Simultaneous Multi] • Connection unit number error (indoor unit or branch unit) [Flexible Multi]
● (2)	● (7)	◇	27	Master unit, slave unit set-up error [Simultaneous Multi]
● (3)	● (2)	◇	32	Indoor unit PCB model information error
● (3)	● (5)	◇	35	Manual auto switch error
● (4)	● (1)	◇	41	Room temp. sensor error
● (4)	● (2)	◇	42	Indoor unit Heat Ex. Middle temp. sensor error
● (5)	● (1)	◇	51	Indoor unit fan motor error
● (5)	● (3)	◇	53	Drain pump error
● (5)	● (7)	◇	57	Damper error
● (5)	● (15)	◇	50	Indoor unit 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

Lamps			Wired remote control	Description
OPERATION	TIMER	ECONOMY		
● (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
● (9)	● (7)	◇	97	Outdoor unit fan motor error
● (9)	● (9)	◇	99	4-way 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]

PARTS

INDOOR UNIT



Ref	Description	Parts number	
1	Remote control	9320476007	
2	Remote Control Holder	9318912005	
3	Air Clean Filter Assy	9316474017	
4	Air Filter	9316189027	
5	Intake Grille Assy	9316418097	
6	Rope Assy	9316458017	
7	Front Panel	9316185012	
8	Front Panel L	9316187016	
9	Front Panel R	9316186019	

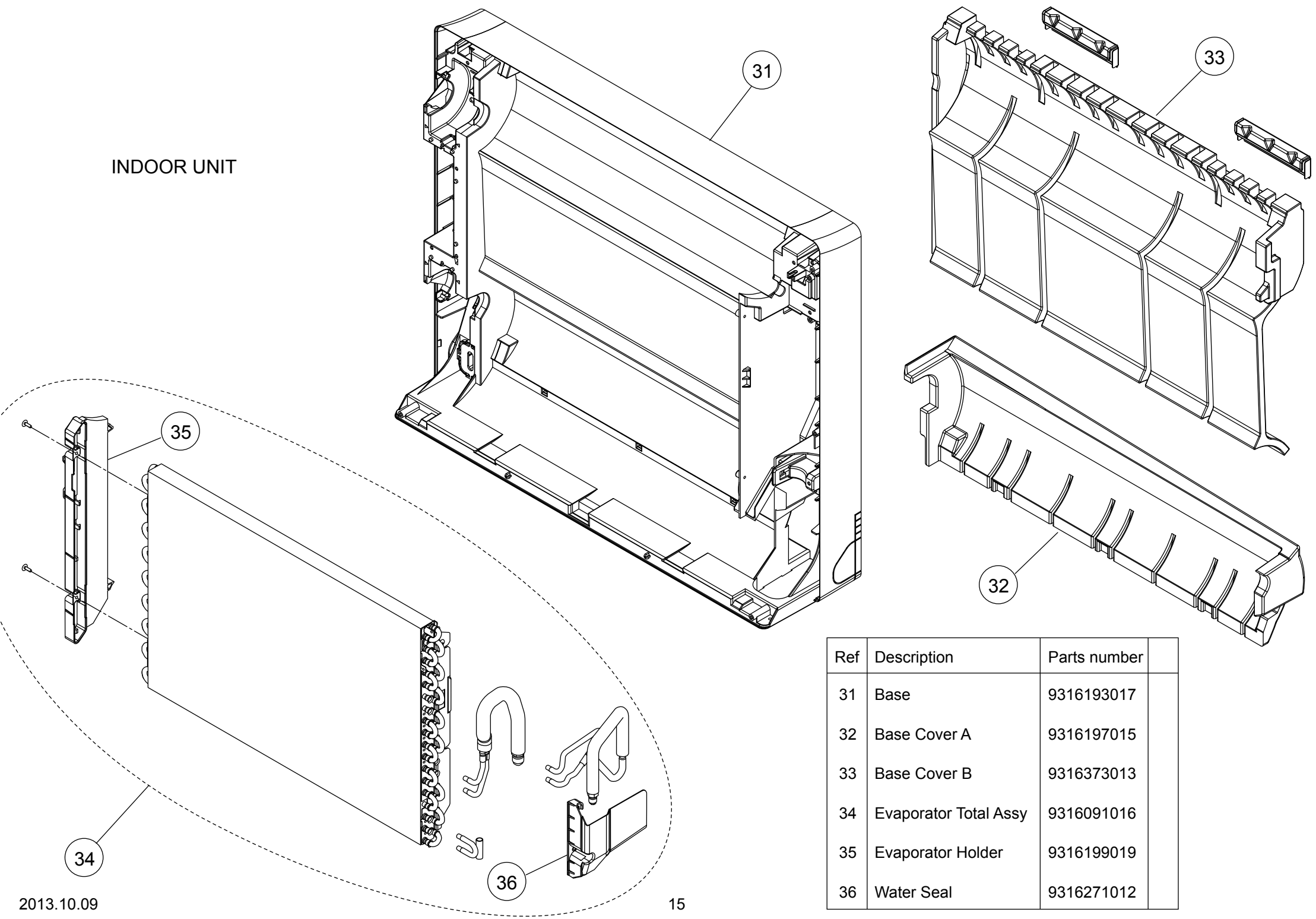
INDOOR UNIT

2013.10.15



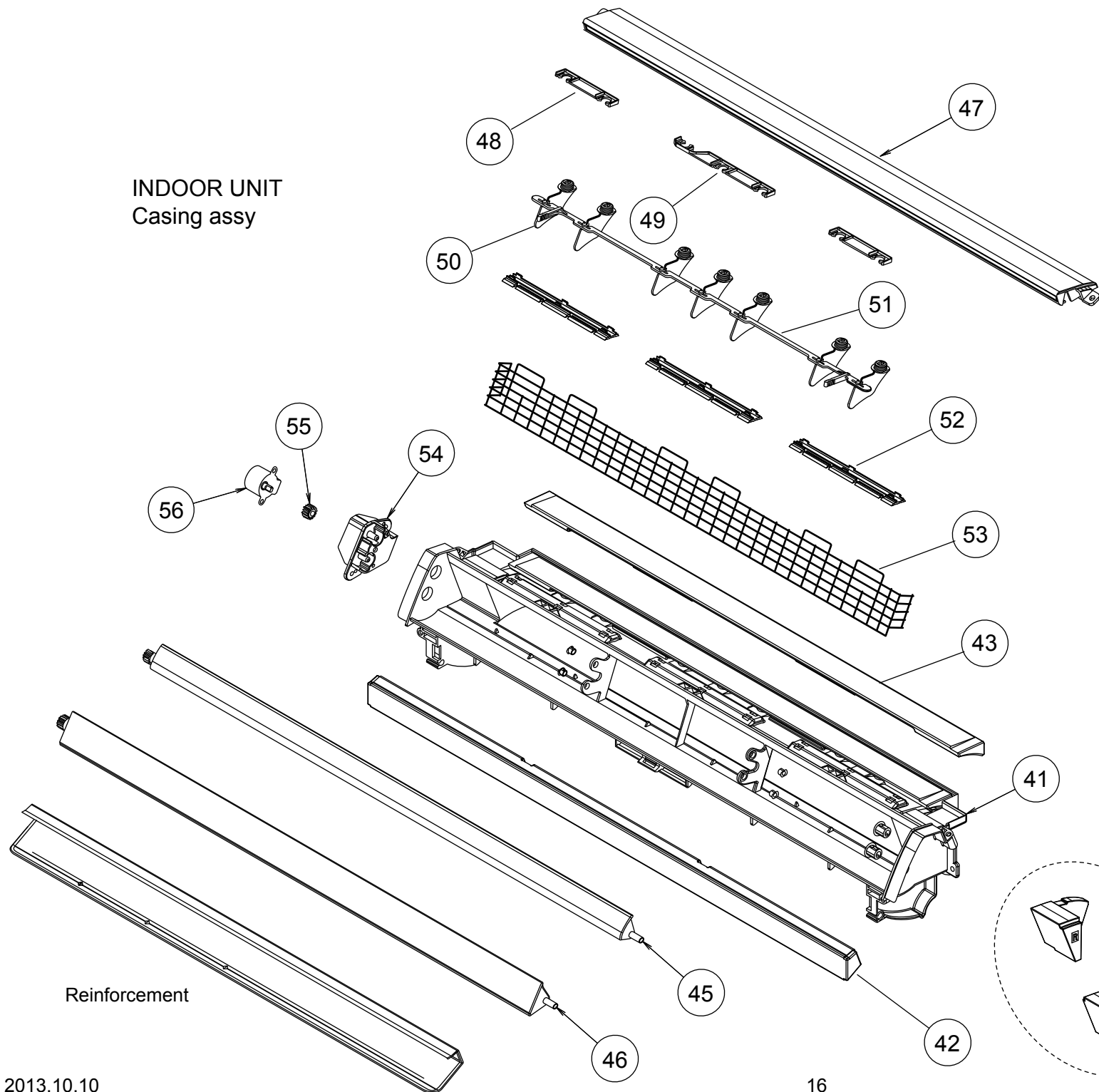
Terminal cover

INDOOR UNIT

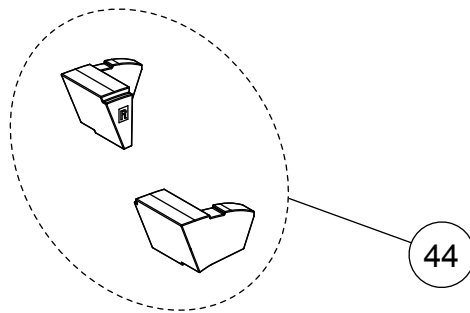


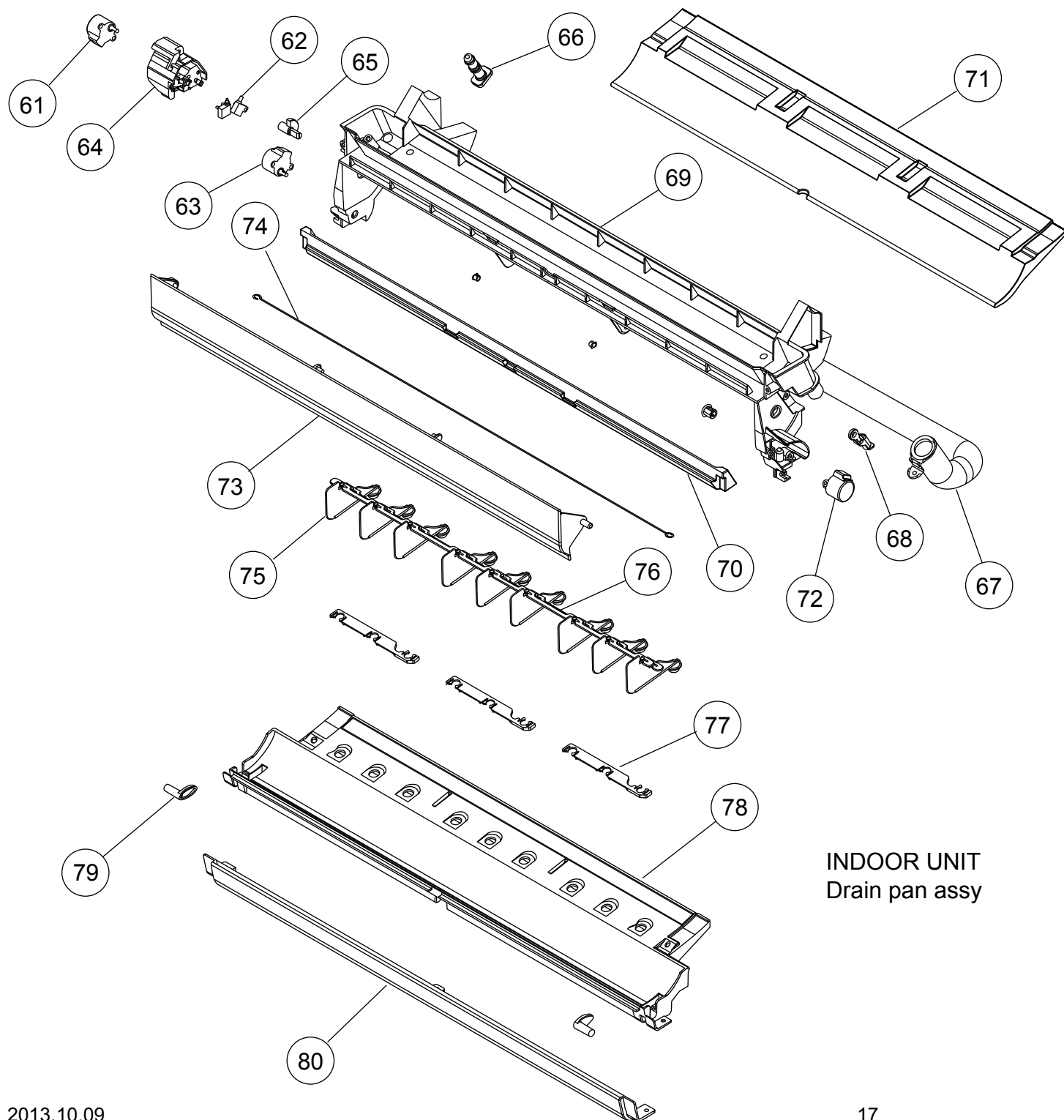
Ref	Description	Parts number	
31	Base	9316193017	
32	Base Cover A	9316197015	
33	Base Cover B	9316373013	
34	Evaporator Total Assy	9316091016	
35	Evaporator Holder	9316199019	
36	Water Seal	9316271012	

INDOOR UNIT
Casing assy



Ref	Description	Parts number	
41	Casing	9316204010	
42	Casing Cover F	9316308015	
43	Casing Cover B	9316273016	
44	Casing Cover LR	9316310018	
45	Louver U (upper)	9316205017	
46	Louver Z (lower)	9316206014	
47	Top Cover	9316207011	
48	Spacer C	9315281012	
49	Spacer D	9315282019	
50	R and L Louver U	9316208018	
51	Joint U	9316209015	
52	Guard Holder	9316210011	
53	Fan Guard	9316211018	
54	Gear Case	9316213012	
55	Gear A	9309994003	
56	Step Motor (up / down)	9900384043	

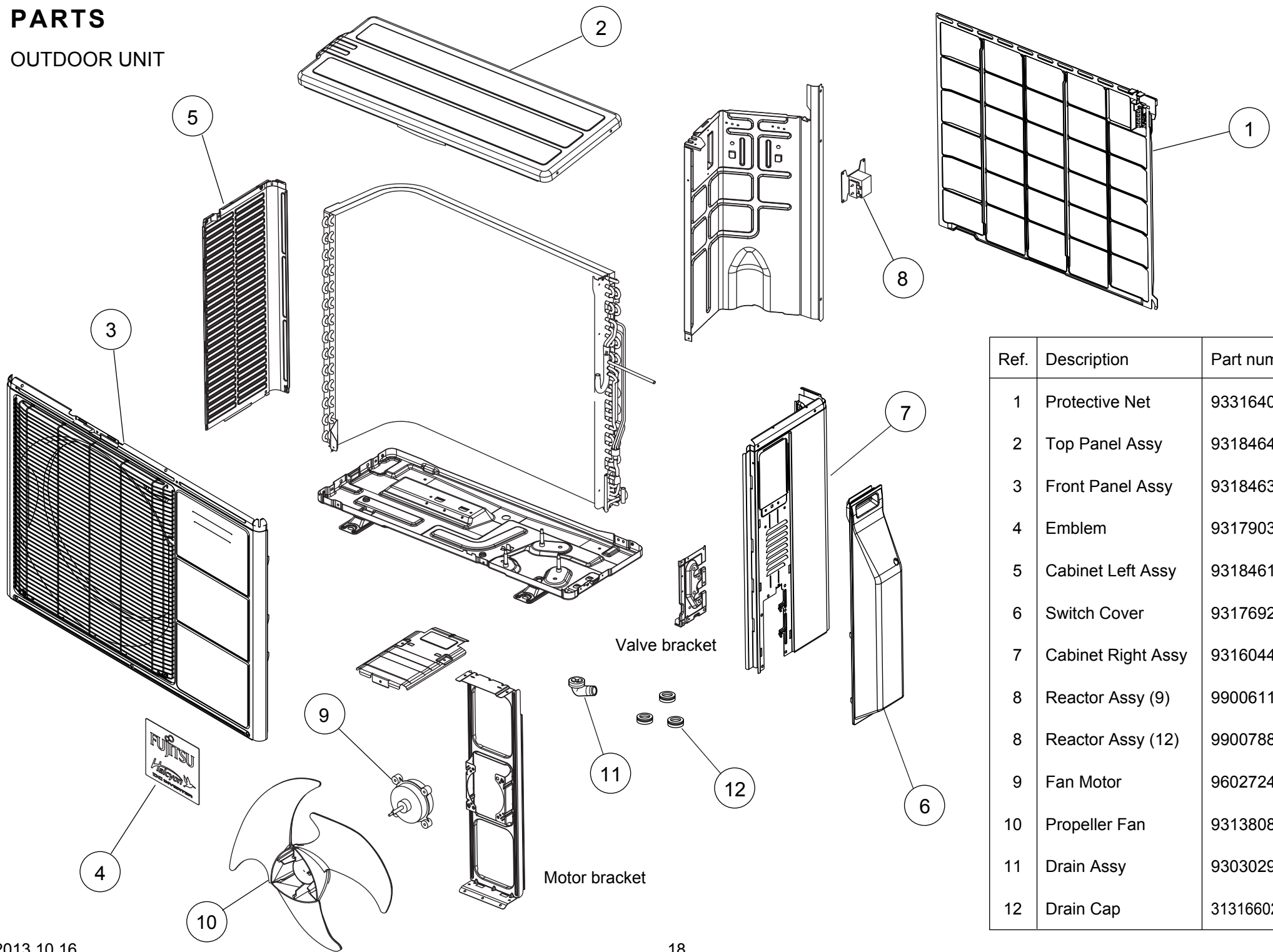




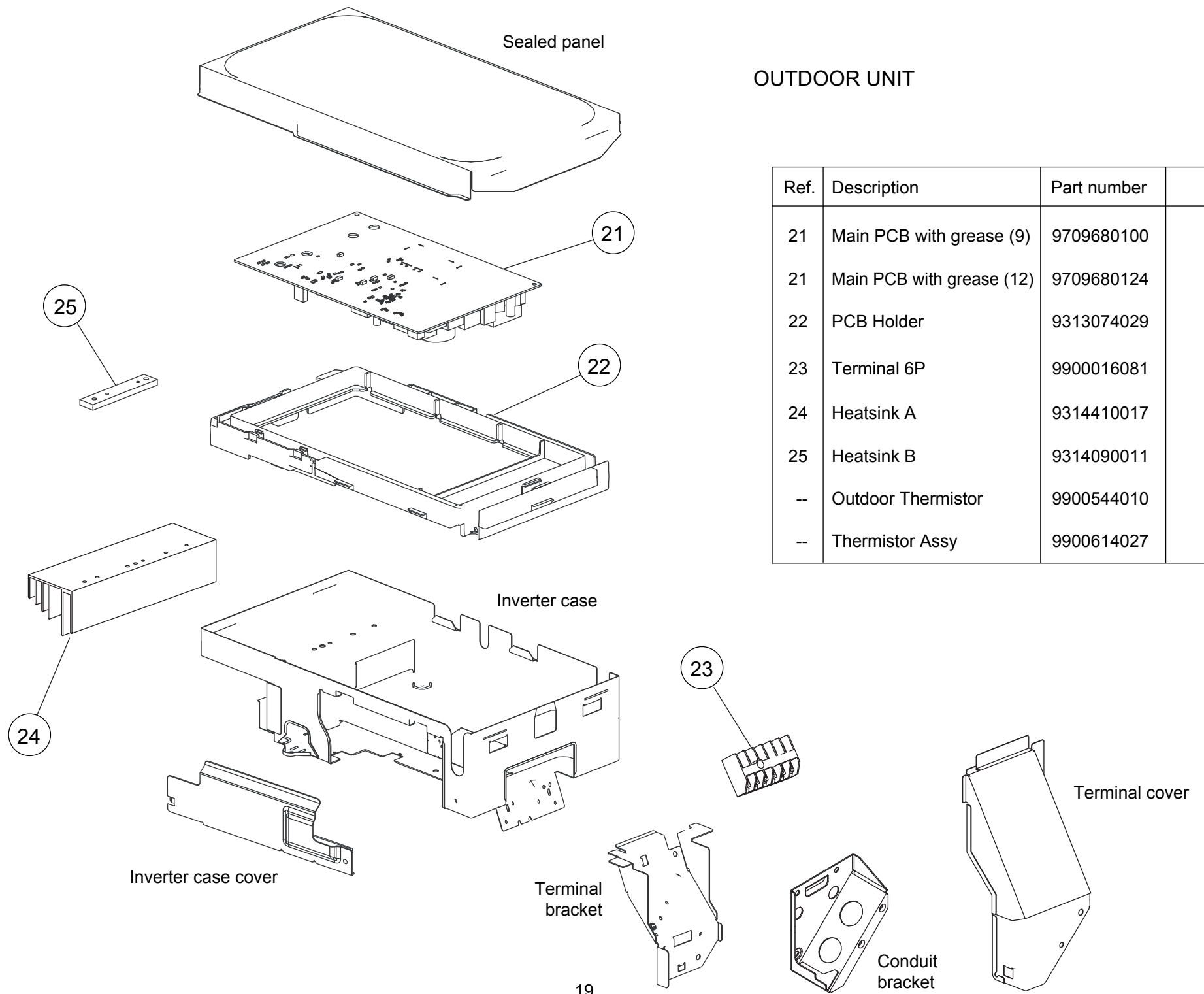
INDOOR UNIT
Drain pan assy

Ref	Description	Parts number	
61	Motor Step (Damper)	9900384050	
62	Micro Switch (Limit Switch)	9900424015	
63	Motor Step (Damper Lock Left)	9900384067	
64	Limit Switch Cover	9316217010	
65	Key Top	9316218017	
66	Drain Cap	9316177017	
67	Drain Hose Assy	9314147029	
68	Drain Holder	9316384019	
69	Drain Pan U	9316214019	
70	Drain Cover F	9316274013	
71	Drain Cover B	9316386013	
72	Step Motor (Damper Lock Right)	9900384074	
73	Damper	9316216013	
74	Fan Guard Z	9316918009	
75	R and L Louver Z	9316334014	
76	Joint Z	9316335011	
77	Spacer D	9315282019	
78	Drain Pan Z	9316215016	
79	Stopper	9316219014	
80	Under Cover	9316374010	

PARTS
OUTDOOR UNIT

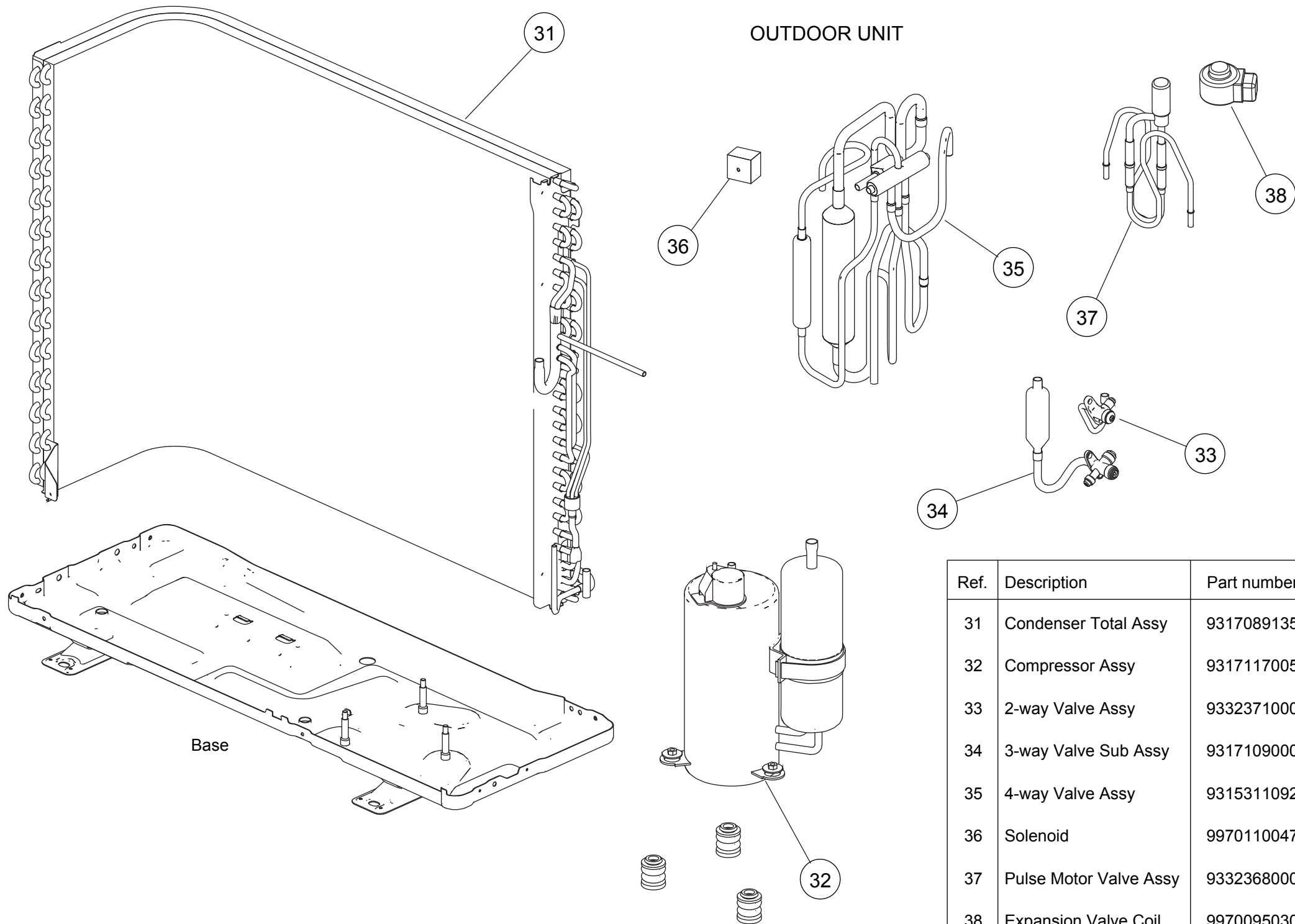


Ref.	Description	Part number
1	Protective Net	9331640008
2	Top Panel Assy	9318464023
3	Front Panel Assy	9318463026
4	Emblem	9317903011
5	Cabinet Left Assy	9318461015
6	Switch Cover	9317692021
7	Cabinet Right Assy	9316044050
8	Reactor Assy (9)	9900611019
8	Reactor Assy (12)	9900788018
9	Fan Motor	9602724017
10	Propeller Fan	9313808013
11	Drain Assy	9303029022
12	Drain Cap	313166024302



OUTDOOR UNIT

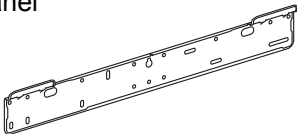
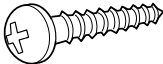
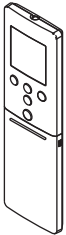


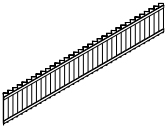
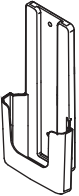
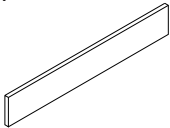
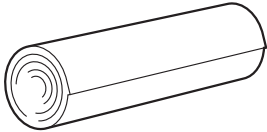

Ref.	Description	Part number	
21	Main PCB with grease (9)	9709680100	
21	Main PCB with grease (12)	9709680124	
22	PCB Holder	9313074029	
23	Terminal 6P	9900016081	
24	Heatsink A	9314410017	
25	Heatsink B	9314090011	
--	Outdoor Thermistor	9900544010	
--	Thermistor Assy	9900614027	



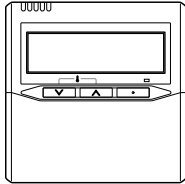

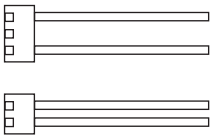
Ref.	Description	Part number
31	Condenser Total Assy	9317089135
32	Compressor Assy	9317117005
33	2-way Valve Assy	9332371000
34	3-way Valve Sub Assy	9317109000
35	4-way Valve Assy	9315311092
36	Solenoid	9970110047
37	Pulse Motor Valve Assy	9332368000
38	Expansion Valve Coil	9970095030

ACCESSORIES

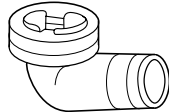

INDOOR UNIT

Name and part number	Q'ty	Name and part number	Q'ty
Bracket panel  9316272019	1	Tapping screw (big) (φ 4 x 25)  0700076046	9
Remote control  9320476007	1	Tpping screw (small) (φ 3 x 12)  0700019036	2
Battery (penlight)  0600185541	2	Electric filter  9312153015	1
Remote control holder  9318912005	1	Ion deodrant filter  9311925033	1
Cloth tape  9310519004	1	Cable tie  312300787605	1

OPTIONAL PARTS

Name and part model name
Wired remote control UTY-RNNUM 
Simple remote control UTY-RSNUM 
External connect kit UTY-XWZXZ5 

OUTDOOR UNIT

Name and part number	Q'ty
Drain assy  9303029022	1
Drain cap  313166024302	3

