

Service and Parts Manual



F R I E D R I C H



Models

Indoor Units	MW30C3G	MW36C3G
Outdoor Units	MR30C3G	MR36C3G

CUSTOMER SATISFACTION and QUALITY ASSURANCE

Friedrich is a conscientious manufacturer, concerned about customer satisfaction, product quality, and controlling warranty costs. As an Authorized Service Provider you play a vital role in these areas. By adhering to the policies and procedures you provide us with vital information on each warranty repair you complete. This information is used to identify product failure trends, initiate corrective action, and improve product quality, thereby further reducing warranty expenses while increasing customer satisfaction levels.

FRIEDRICH AUTHORIZED PARTS DEPOTS

AAA Refrigeration Service

1322 24th Street, Suite B
Kenner, Louisiana 70062
504-464-7444
877-813-7444

The Gabbert Company

6868 Ardmore
Houston, Texas 77054
713-747-4110
800-458-4110

Reeve Air Conditioning, Inc.

2501 South Park Road
Hallandale, Florida 33009
954-962-0252
800-962-3383

Alamo Service Company

1450 North Flores Street
San Antonio, Texas 78212
210-227-2450
800-328-2450

Johnstone Supply of Woodside

27-01 Brooklyn Queens Expway
Woodside, New York 11377
718-545-5464
800-431-1143

TECHNICAL SUPPORT CONTACT INFORMATION



F R I E D R I C H

FRIEDRICH AIR CONDITIONING CO.

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Email: tac@friedrich.com
www.friedrich.com

Printed in the U.S.A.

SPECIFICATIONS

ELECTRICAL DATA

TYPE	Cool only inverter	
INDOOR UNIT	MW30C3G	MW36C3G
OUTDOOR UNIT	MR30C3G	MR36C3G
COOLING CAPACITY	30,800 BTU/h 9.00 kW	33,000 BTU/h 9.70 kW
POWER SOURCE	208 V / 230 V	208 V / 230 V
FREQUENCY	60 Hz	60 Hz
RUNNING CURRENT	14.2 A	17.0 A
INPUT WATTS	3.24 kW	3.88 kW
E.E.R.	9.5 BTU/kW 2.78 kW/kW	8.5 BTU/kW 2.50 kW/kW
MOISTURE REMOVAL	9.7 Pt/h 4.6 L/hr	10.1 Pt/h 4.8 L/hr
AIR CIRCULATION HIGH	659 cfm 1,120 m3/hr	694 cfm 1,180 m3/hr
MAXIMUM CURRENT	17.0 A	18.0 A

FAN MOTOR

POWER SOURCE		230 V	230 V
INDOOR UNIT	High	1,480 r.p.m.	1,480 r.p.m.
	Medium	1,220 r.p.m.	1,220 r.p.m.
	Low	1,020 r.p.m.	1,020 r.p.m.
	Quiet	900 r.p.m.	900 r.p.m.
OUTDOOR UNIT	Cool	850 r.p.m.	850 r.p.m.
	Heat	850 r.p.m.	850 r.p.m.

NOISE LEVEL

INDOOR UNIT	High	49 dB	50 dB
	Medium	42 dB	42 dB
	Low	37 dB	37 dB
	Quiet	33 dB	33 dB
OUTDOOR UNIT		54 dB	54 dB

COMPRESSOR AND REFRIGERANT

TYPE		Hermetic type, 6 pole, DC inverter motor, Rotary	
DISCRIMINATION		N-TF30ND1A	
WEIGHT WITH OIL		34.2 lb	15.5 kg
PRECHARGED REFRIGERANT		4 lb 10 oz	2,100 g
REFRIGERANT TYPE		R410A	
FULL CHARGE	Pipe length 66 ft 20 m	4 lb 10 oz	2,100 g
	164 ft 50 m	7 lb 4 oz	3,300 g
ADDITIONAL CHARGE		0.43 oz/ft	40 g/m
MAXIMUM HEIGHT		99 ft	30 m

DIMENSIONS

INDOOR UNIT	H x W x D	12-5/8 x 39-1/4 x 9 inch	320 x 998 x 228 mm
OUTDOOR UNIT	H x W x D	32-3/4 x 35-3/8 x 13 inch	830 x 900 x 330 mm

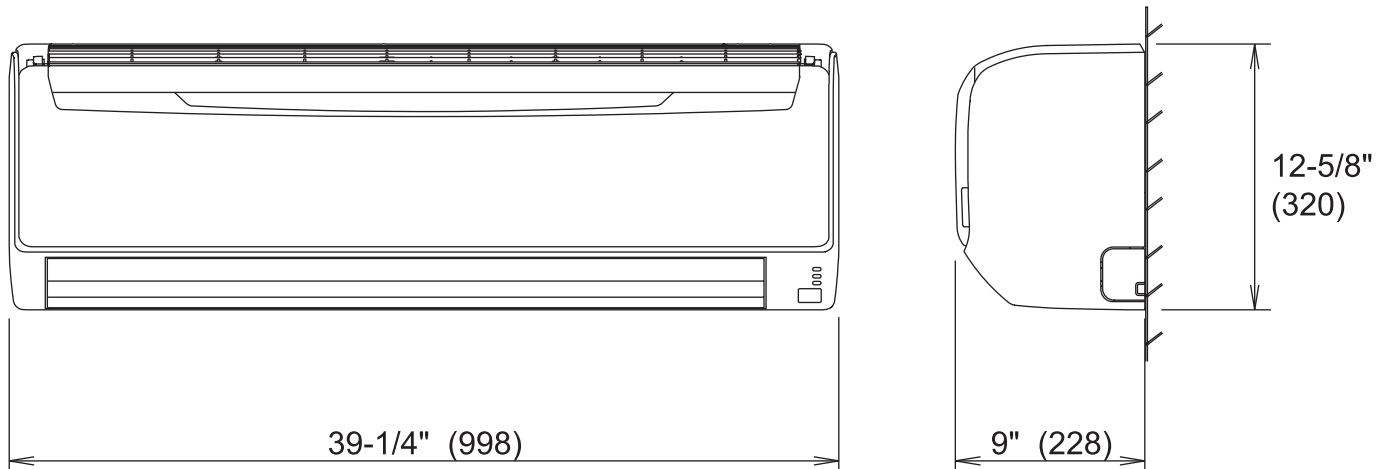
WEIGHT

INDOOR UNIT	Shipping / Net	40 lbs / 31 lbs	18 kg / 14 kg
OUTDOOR UNIT	Shipping / Net	150 lbs / 135 lbs	68 kg / 61 kg

DIMENSIONS

INDOOR UNIT

Unit : inch (mm)



Drain pipe diameter

Inside : $\frac{5}{8}$ inch (16 mm)

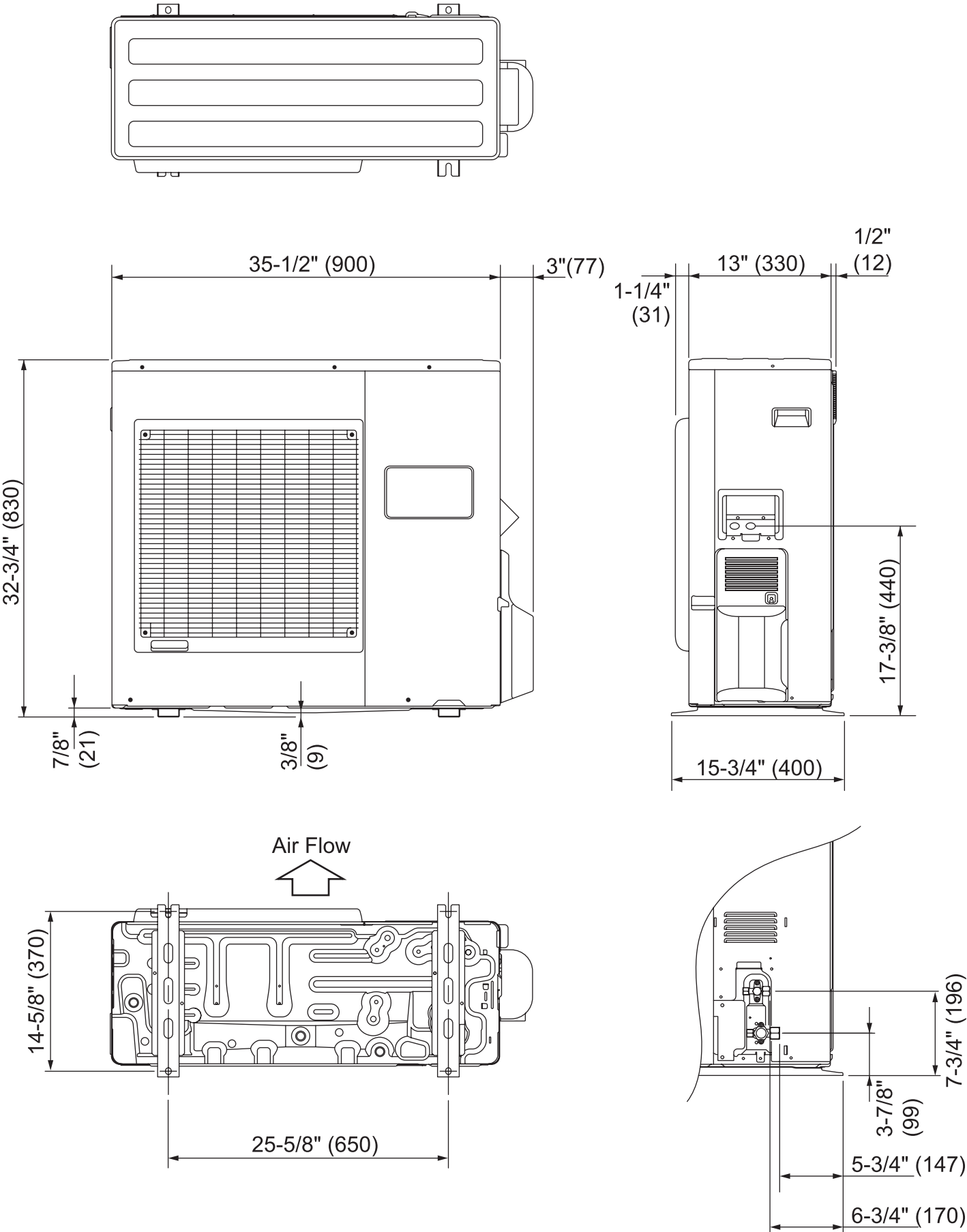
Outside : $1\frac{3}{32}$ inch (28 mm)

Liquid pipe diameter : $\frac{3}{8}$ inch (9.52 mm)

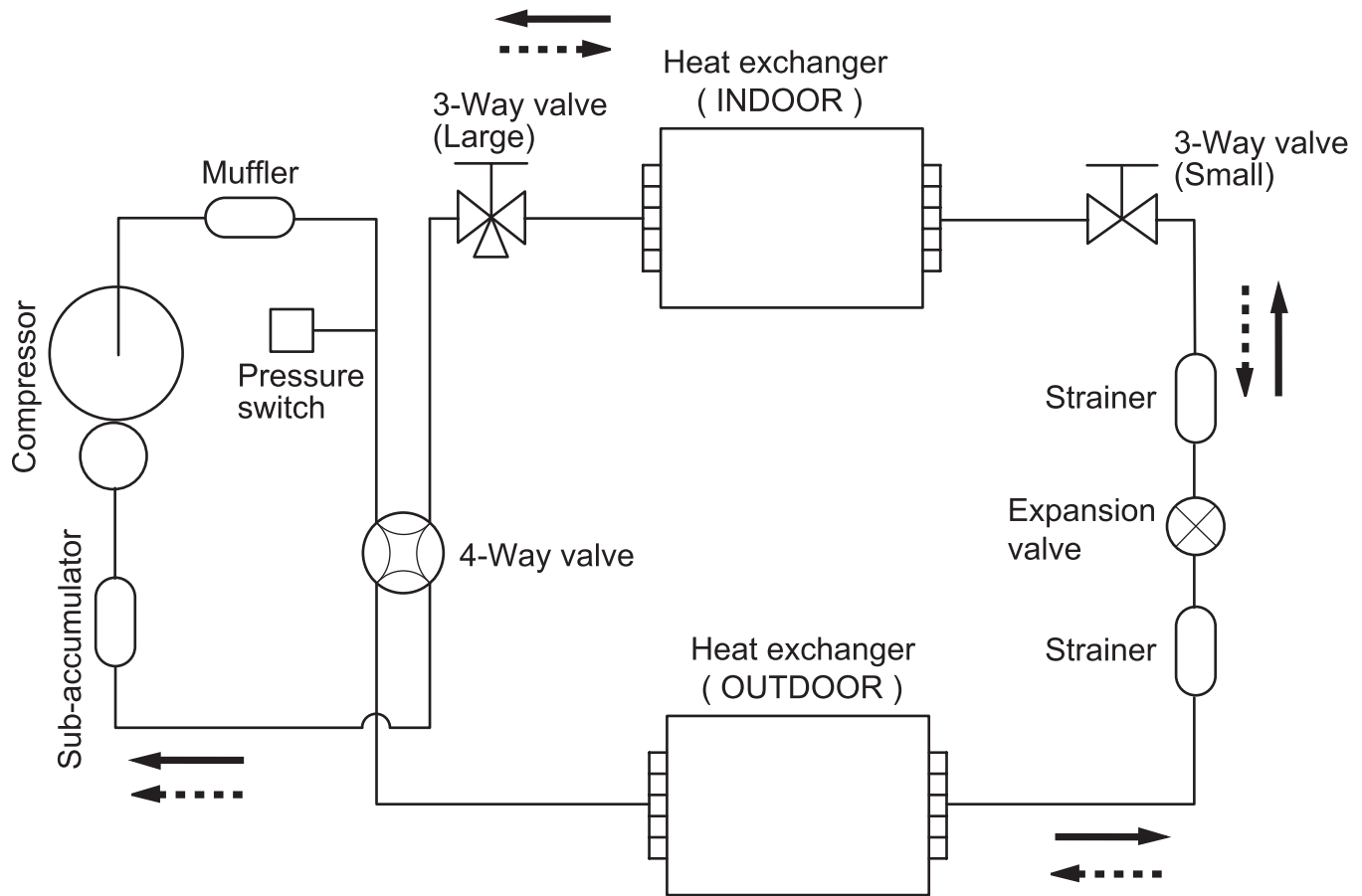
Gas pipe diameter : $\frac{5}{8}$ inch (15.88 mm)

OUTDOOR UNIT

Unit : inch (mm)



REFRIGERANT SYSTEM DIAGRAM



—————> Cooling flow
> Heating flow

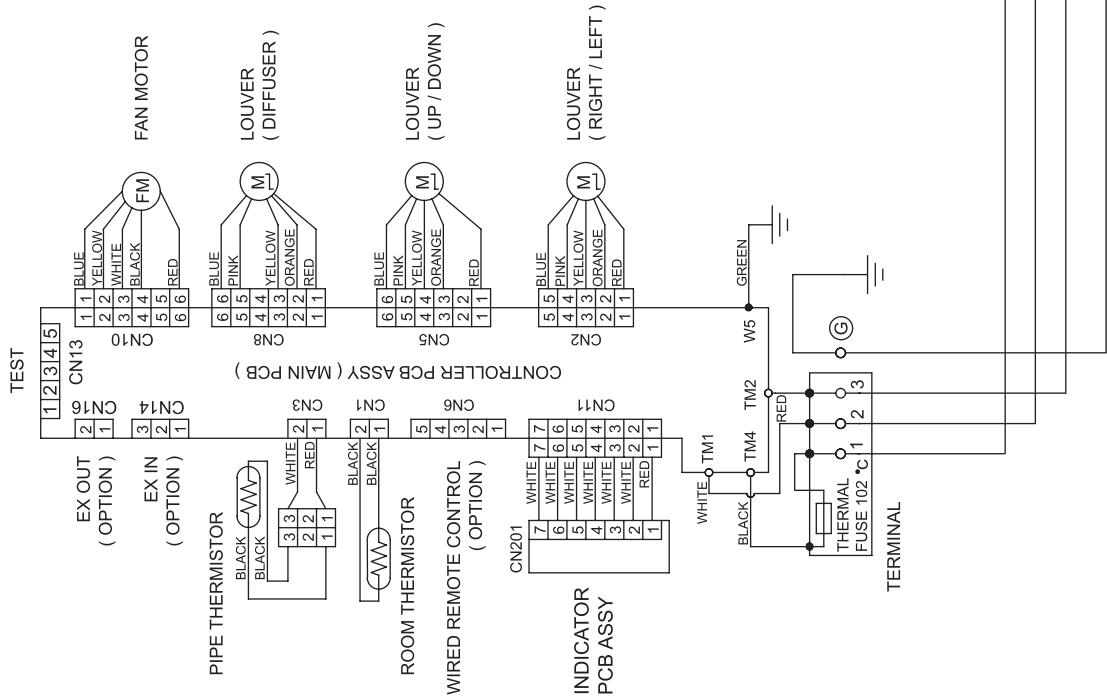
Refrigerant pipe diameter

Liquid : 3/8" (9.52 mm)

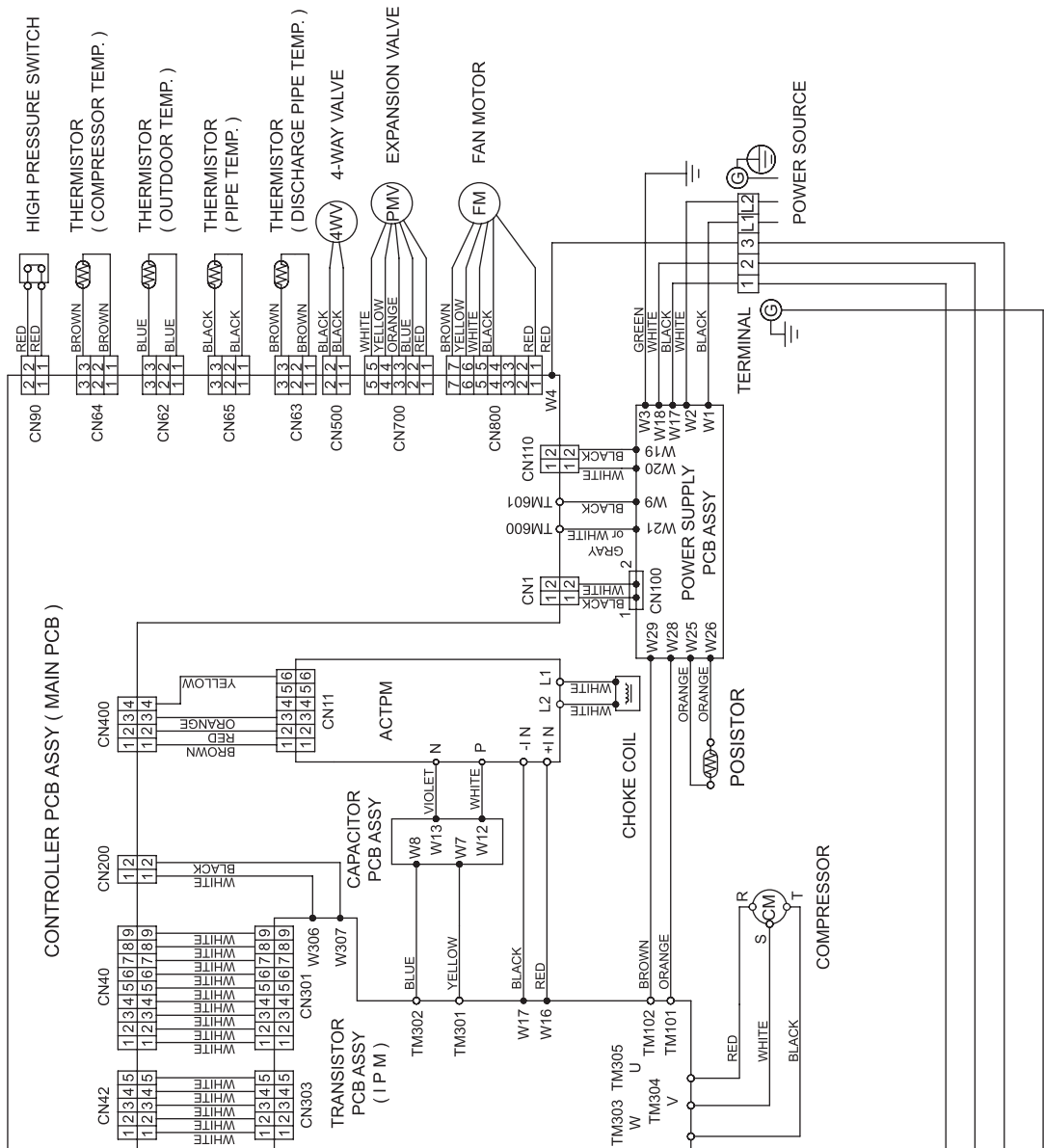
Gas : 5/8" (15.88 mm)

CIRCUIT DIAGRAM

INDOOR UNIT



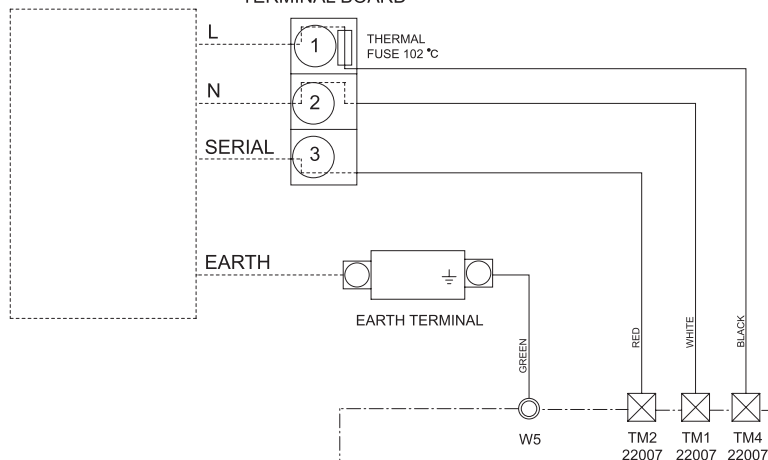
OUTDOOR UNIT



INDOOR PCB CIRCUIT DIAGRAM

OUTDOOR UNIT

TERMINAL BOARD



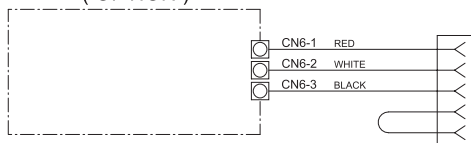
CONTROL UNIT

MW30C3G : EZ-0109WSE

MW36C3G : EZ-010AWSE

INDICATOR PCB ASSEMBLY K05CY-0500HSE-D0

WIRED REMOTE CONTROL (OPTION)



CONTROLLER PCB ASSEMBLY (MAIN PCB)

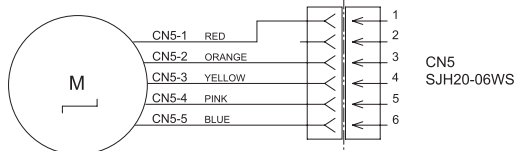
MW30C3G : K08CX-1003WSE-C1

MW36C3G : K08CX-1004WSE-C1

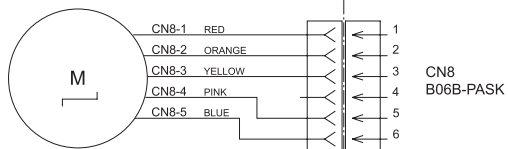
LOUVER (LEFT / RIGHT)



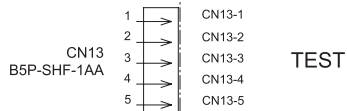
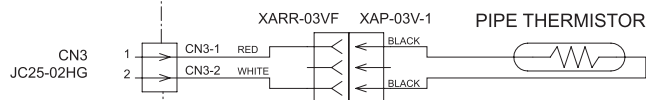
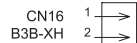
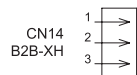
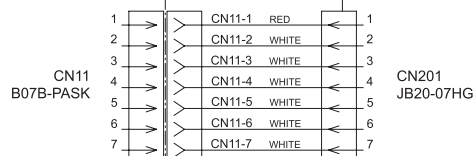
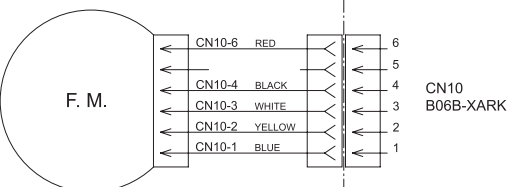
LOUVER (UP / DOWN)



DIFFUSER

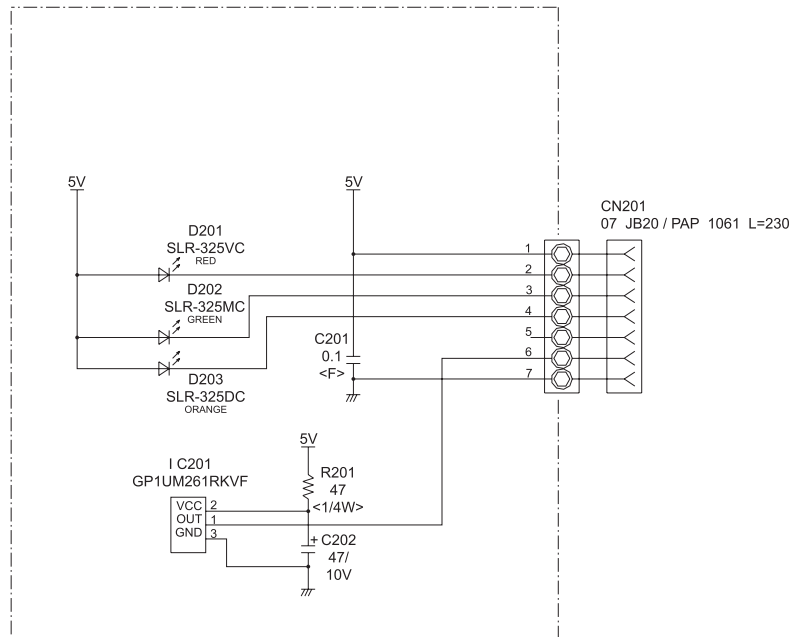


FAN MOTOR





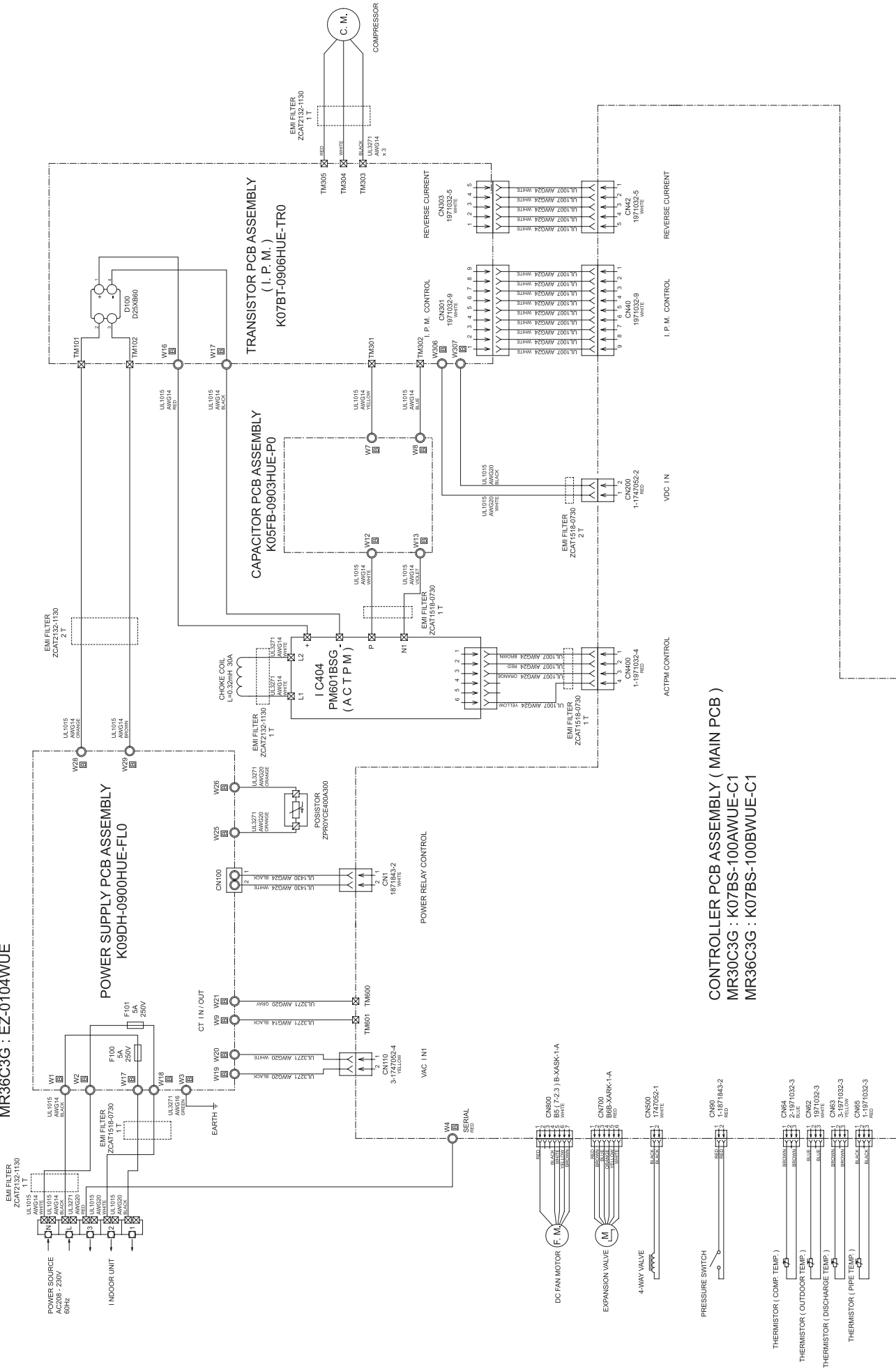
INDOOR UNIT
INDICATOR PCB ASSEMBLY
K05CY-0500HSE-D0



OUTDOOR PCB CIRCUIT DIAGRAM

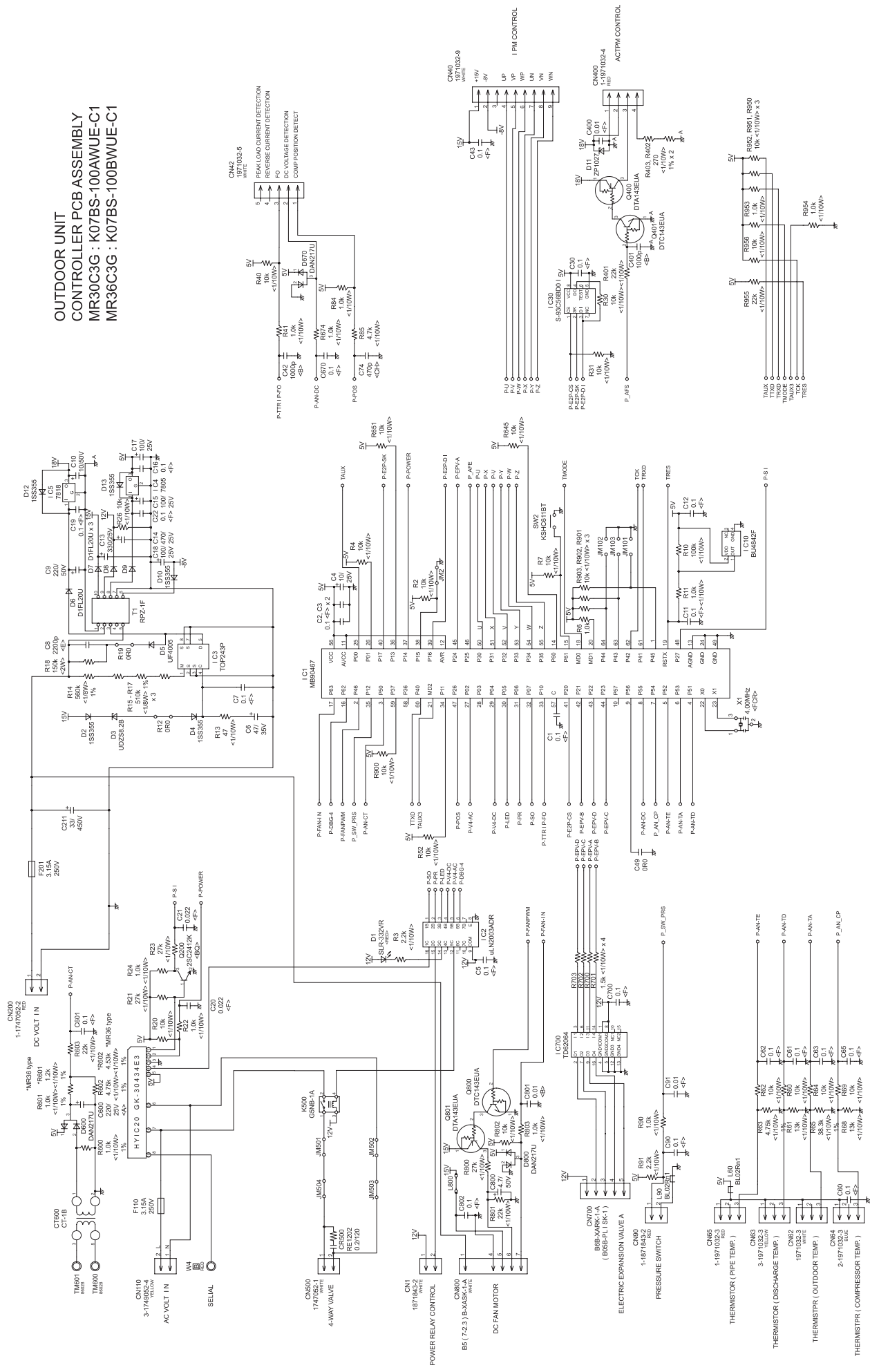
INVERTER ASSEMBLY

MR30C3G : EZ-0103WUE
MR36C3G : EZ-0104WUE



CONTROLLER PCB ASSEMBLY (MAIN PCB)

MR30C3G : K07BS-100AWUE-C1
MR36C3G : K07BS-100BWUE-C1



TM101 ORANGE

TM102 BROWN

D100 LL25XB60

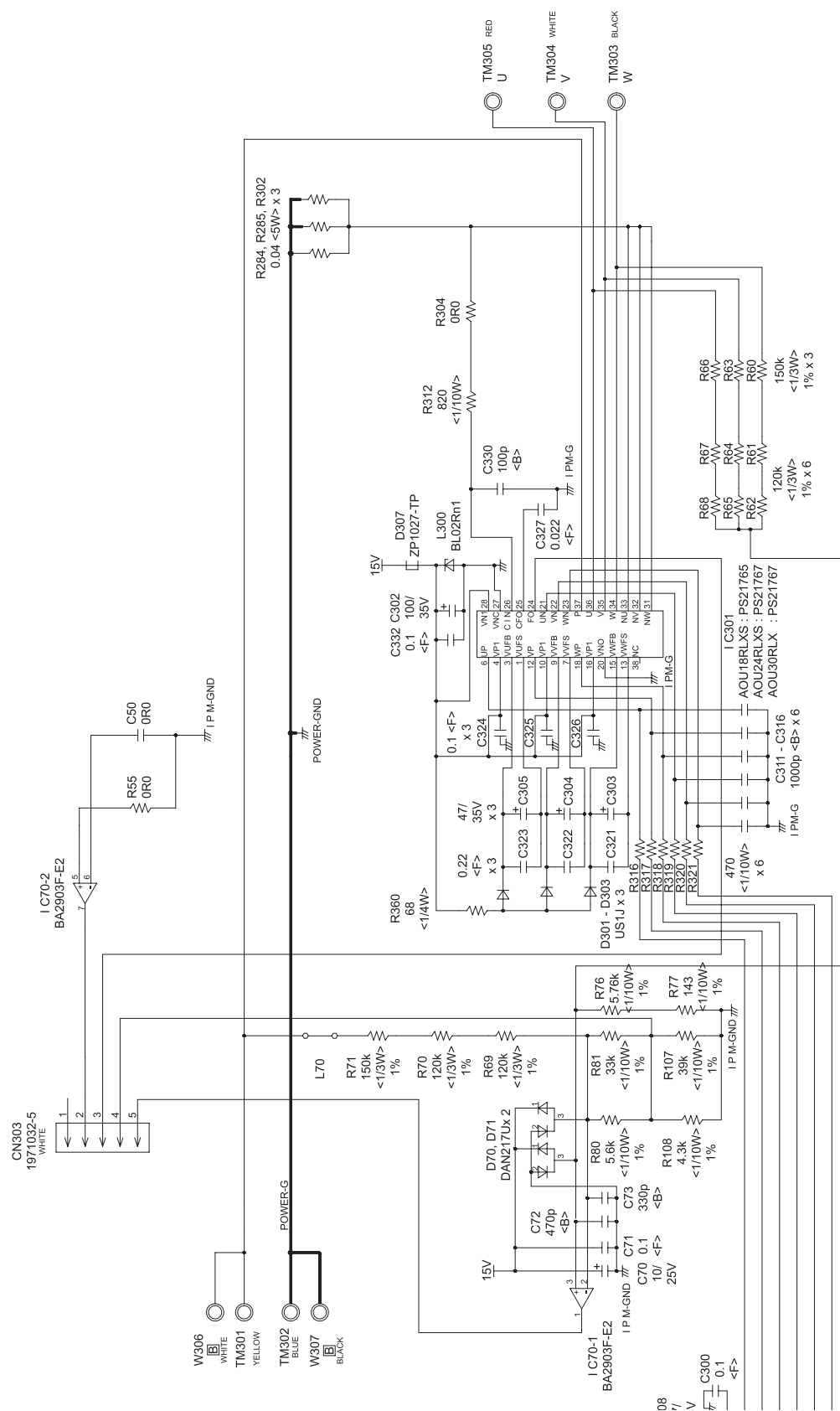
W16 RED

W17 BLACK

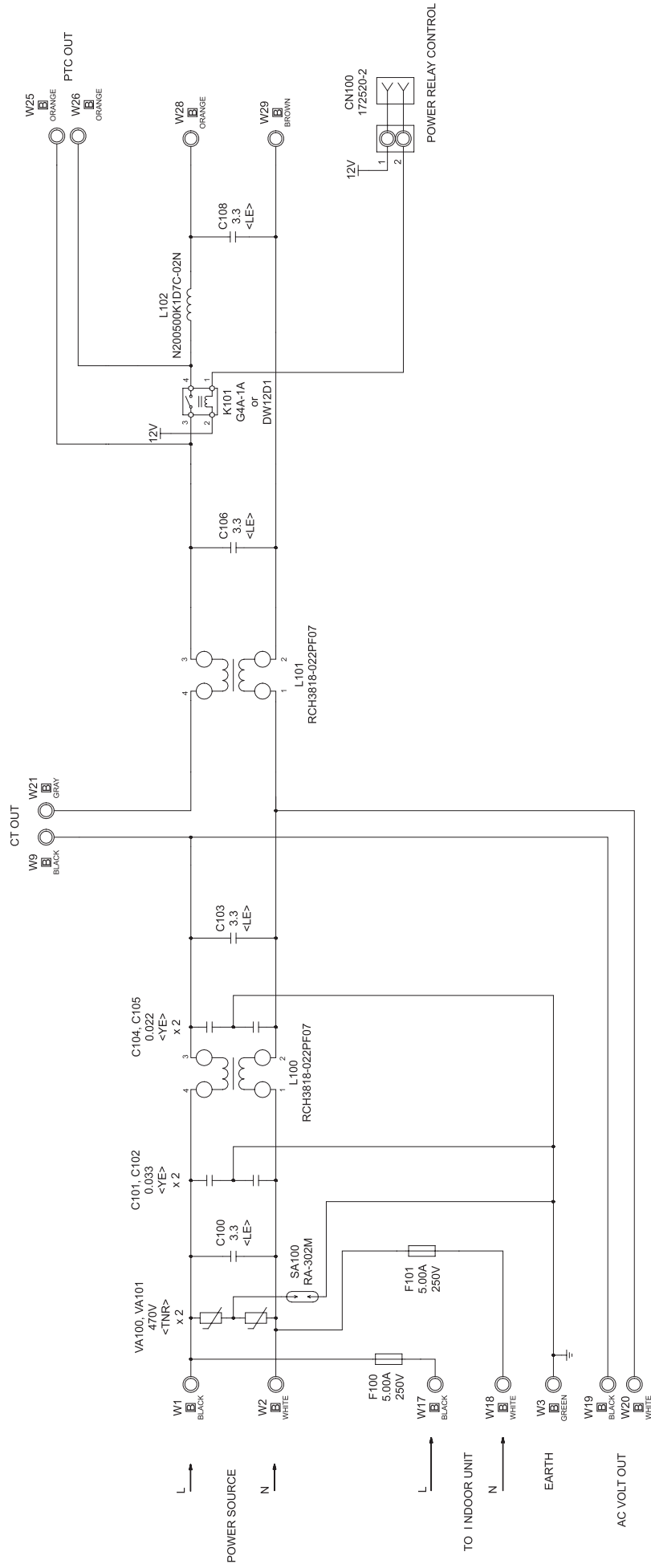
C161 0.1 <XTR>

1 + 2

3 - 4



OUTDOOR UNIT POWER SUPPLY PCB ASSEMBLY K09DH-0900HUE-FL0



ERROR DETECTION

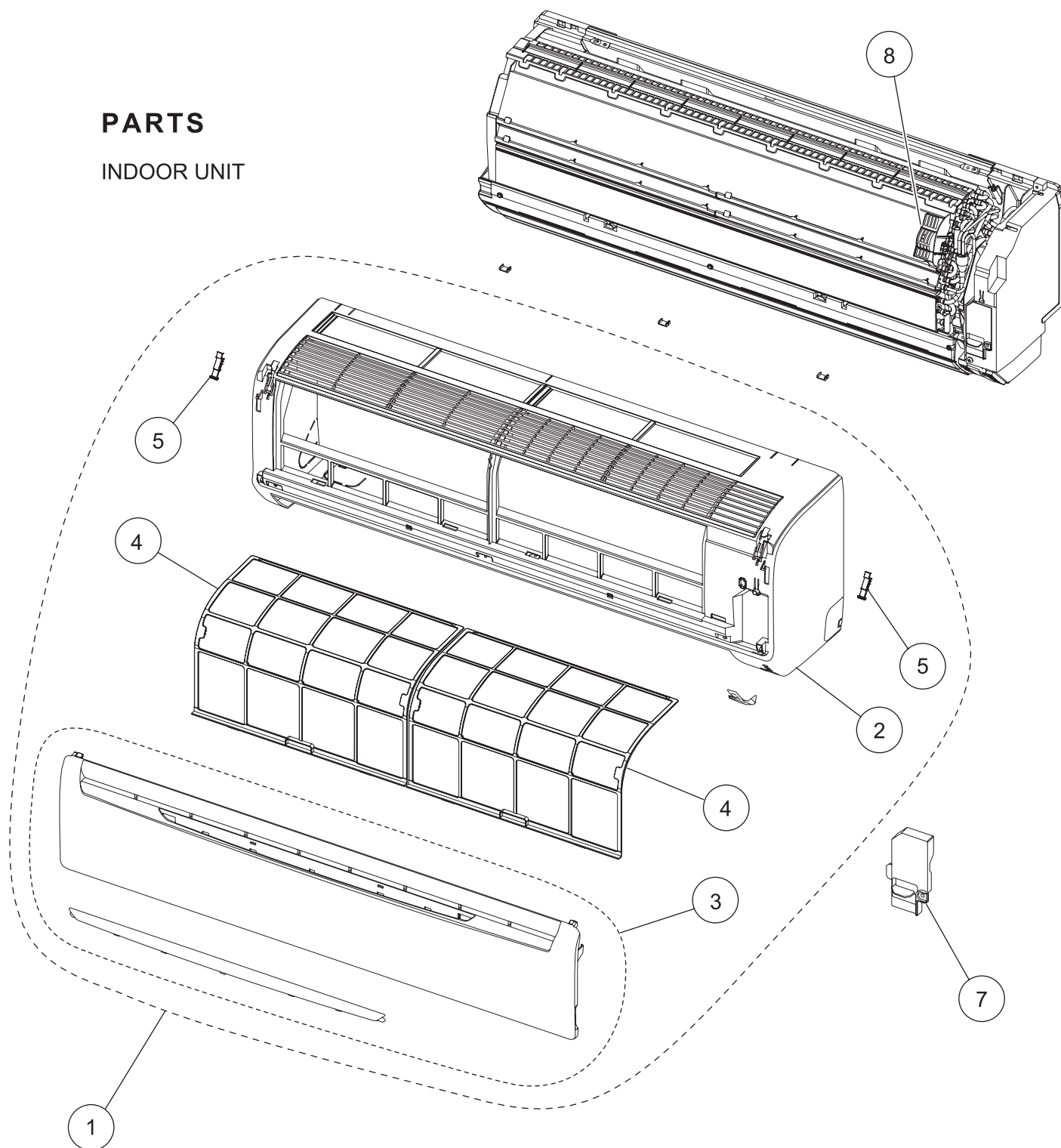
Error	Display		Error
	Operation LED	Timer LED	
Serial signal error	Normal	2 flash	Serial signal (reverse) error, at operation start up
		3 flash	Serial signal (reverse) error, during operation
		4 flash	Serial signal (forward) error, at operation start up
		5 flash	Serial signal (forward) error, during operation
		8 flash	Wired remote controller error
Indoor unit thermistor error	2 flash	2 flash	Indoor temperature thermistor open / short
		3 flash	Heat exchanger middle thermistor open / short
Outdoor unit thermistor error	3 flash	2 flash	Discharge thermistor open / short
		3 flash	Heat exchanger thermistor open
		4 flash	Outdoor temperature thermistor open / short
		8 flash	Compressor temperature thermistor open / short
Indoor unit control error	4 flash	2 flash	Forced automatic SW welded
		3 flash	Main relay welded
		4 flash	Power interruption error
		7 flash	VDD permanent stop protection
		8 flash	reverse VDD permanent stop protection
Outdoor unit control error	5 flash	2 flash	Current trip error
		3 flash	CT abnormal
		5 flash	Compressor location detection error
		6 flash	Outdoor unit fan drive system abnormal
Indoor fan motor error	6 flash	2 flash	Abnormal lock
		3 flash	Abnormal rotation
Refrigerant cycle error	7 flash	2 flash	Discharge Temperature abnormal
		3 flash	Cooling high pressure abnormal rise
		5 flash	Pressure switch trouble
Optional function error	8 flash	2 flash	Active filter voltage trouble (second time)
		3 flash	Active filter voltage trouble (first time)
		4 flash	PFC circuit error
Model information error	0.1 sec on/off	0.1 sec on/off	Model information error

OUTDOOR UNIT

LED	ERROR
on	Discharge temperature abnormal
0.5 second on / 0.5 second off	IPM overcurrent protection
0.1 second on / 0.1 second off	Thermistor abnormal
2.0 second on / 2.0 second off	CT abnormal
0.1 second on / 2.0 second off	Compressor location abnormal
5.0 second on / 5.0 second off	Fan abnormal

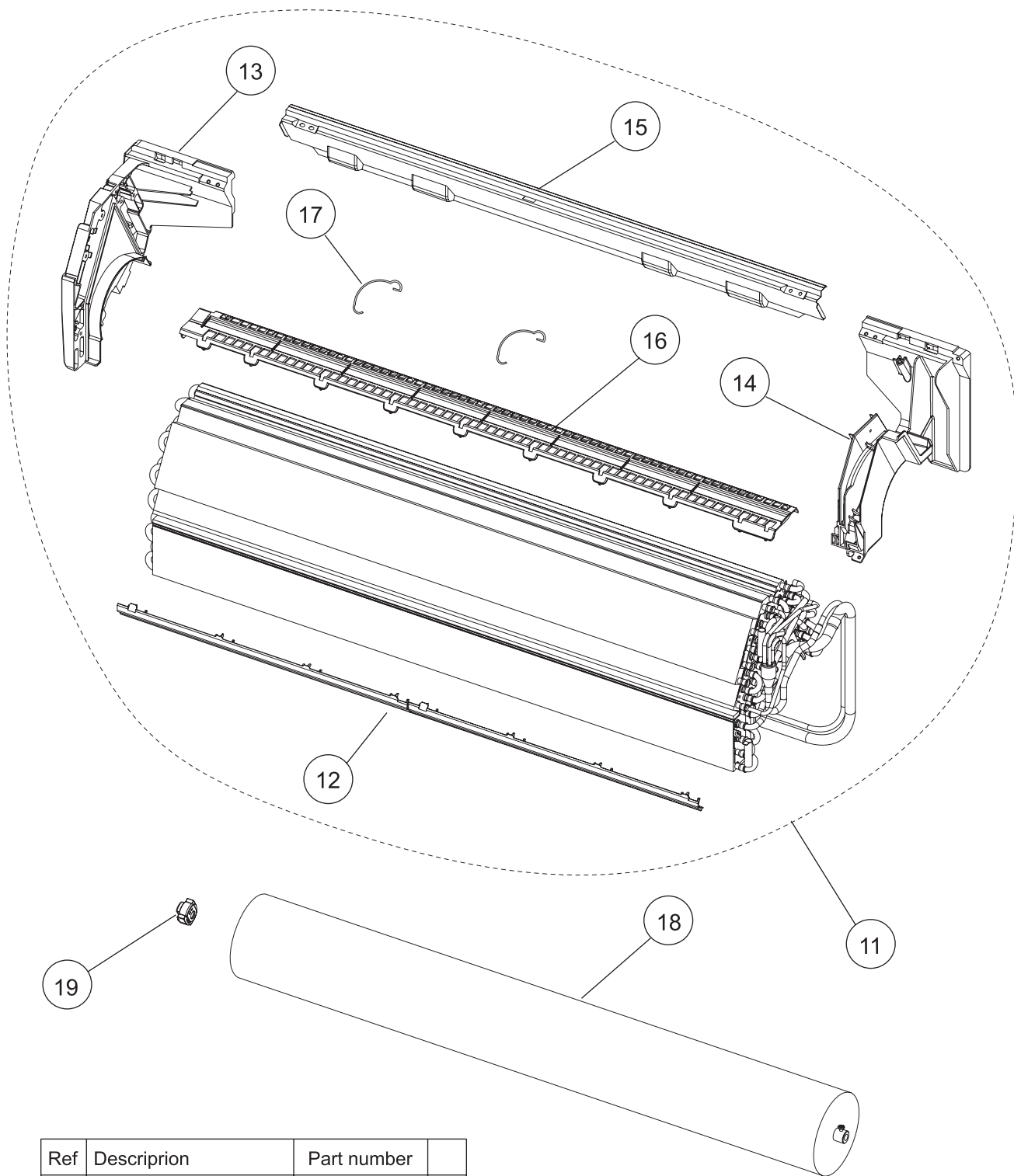
PARTS

INDOOR UNIT



Ref	Description	Part number
1	Front Panel Total Assy	67201500
2	Front Panel	67201790
3	Intake Grille Assy	67201501
4	Air Filter	67201502
5	Clamper Grille	67200936

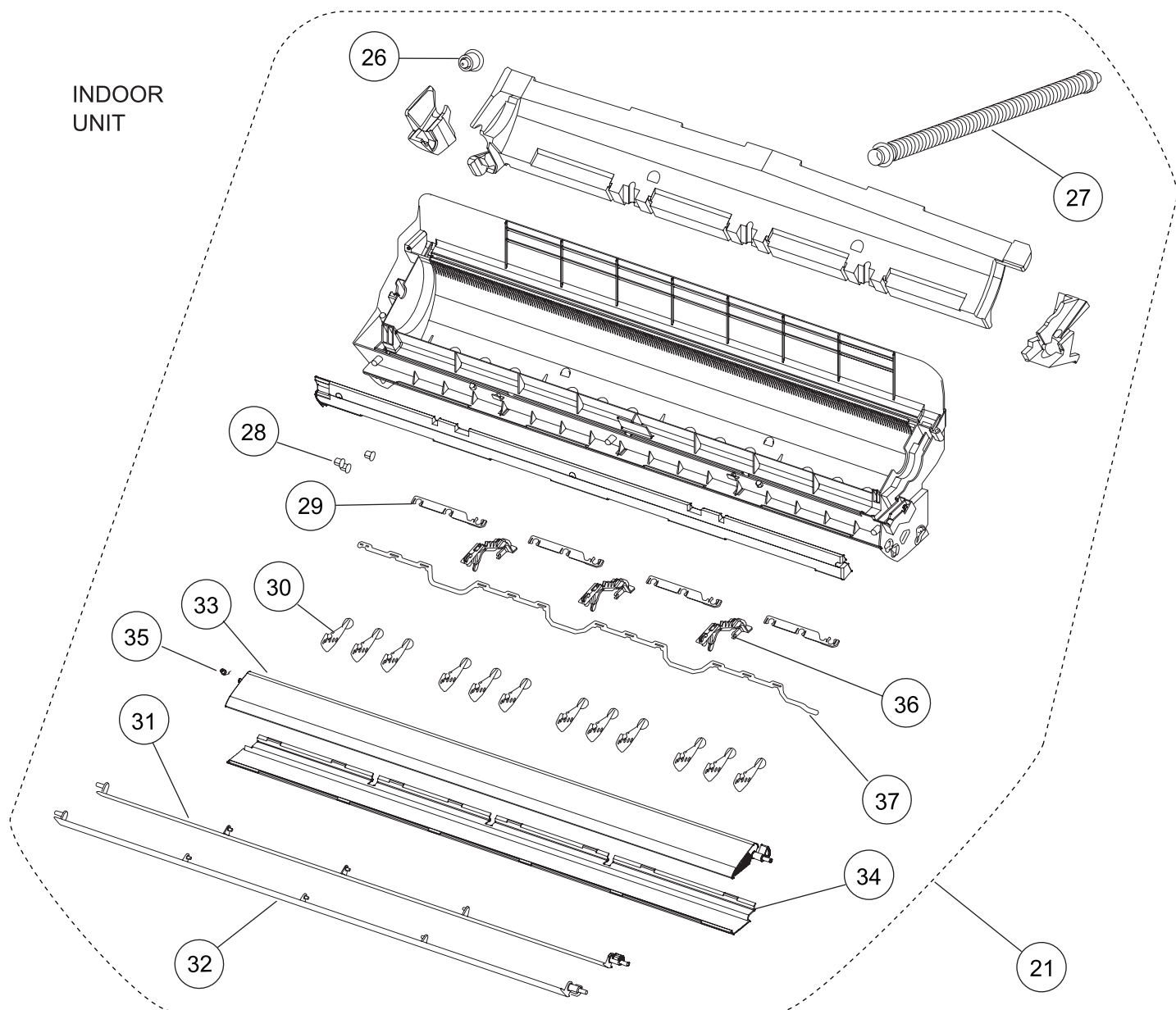
Ref	Description	Part number
7	Wire Clammer	67201279
8	Room Thermistor Holder	67201280
--	Bracket Panel	67201531
--	Remote	67201532
--	Remote Holder	67201533



INDOOR UNIT

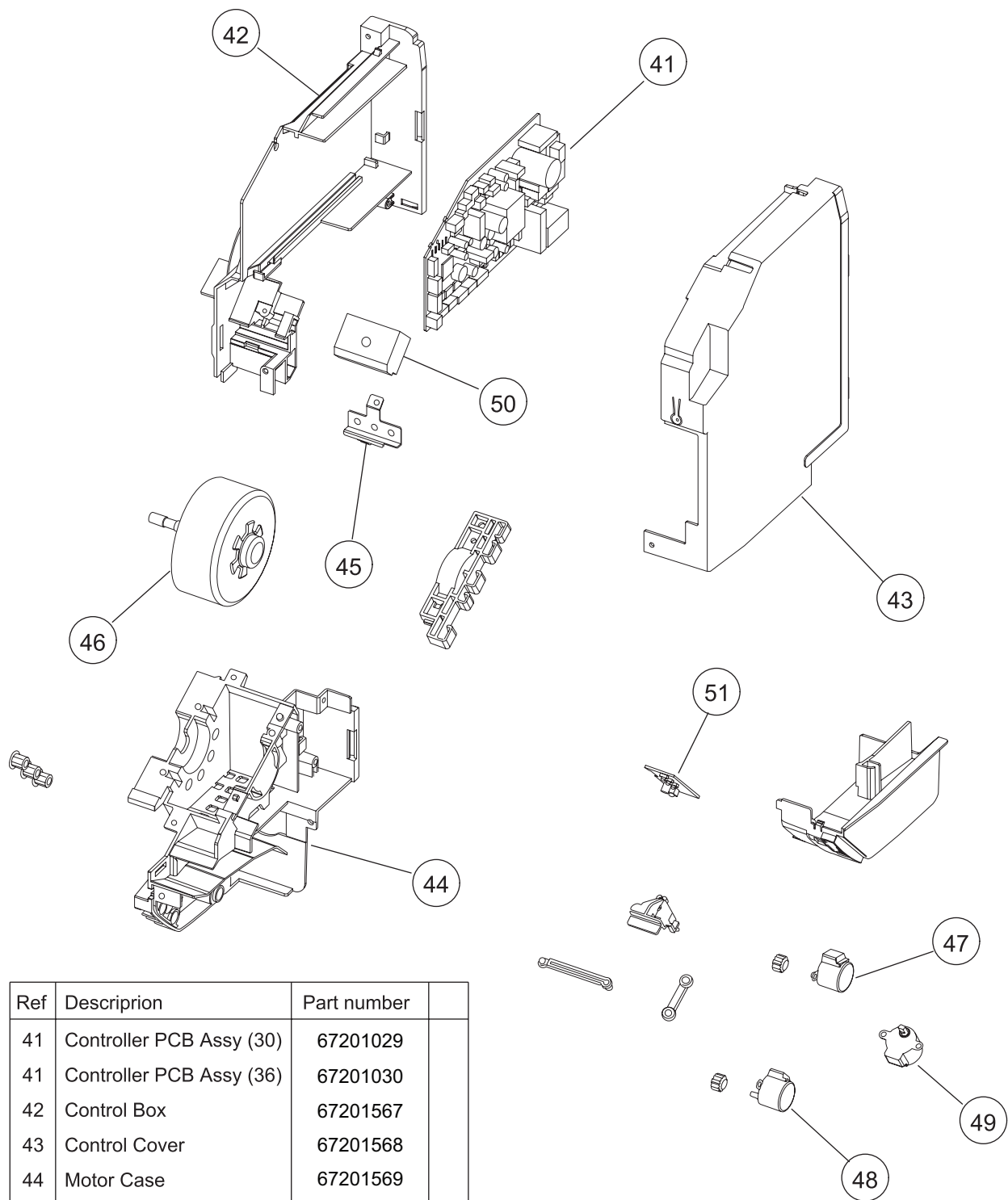
Ref	Description	Part number	
11	Evaporator Total Assy	67201283	
12	Water Seal	67201552	
13	Evaporater Holder R	67201515	
14	Evaporater Holder L	67201516	
15	Rear Bracket	67201553	
16	Filter Guide	67201554	
17	Filter Guard	67201555	
18	Crossflow Fan Assy	67201504	
19	Bearing C Assy	67200922	

INDOOR
UNIT



Ref	Description	Part number	
21	Casing Assy	67201281	
	Casing Cover B		
	Casing Cover L		
	Casing Cover R		
	Casing Cover F		
26	Drain Cap	67201509	
27	Drain Hose Assy	67201560	
28	Bush B	67201561	
29	Spacer B	67201507	
30	R and L Louver	67201506	

Ref	Description	Part number	
31	Louver U	67201565	
32	Louver Z	67201566	
33	Diffuser U	67201562	
34	Diffuser Z	67201563	
35	Spring C	67201564	
36	Pillar A	67201277	
37	Joint B	67201274	
--	Fan Guard	67201271	
--	Fan Guard Holder Right	67201289	
--	Fan Guard Holder Left	67201290	

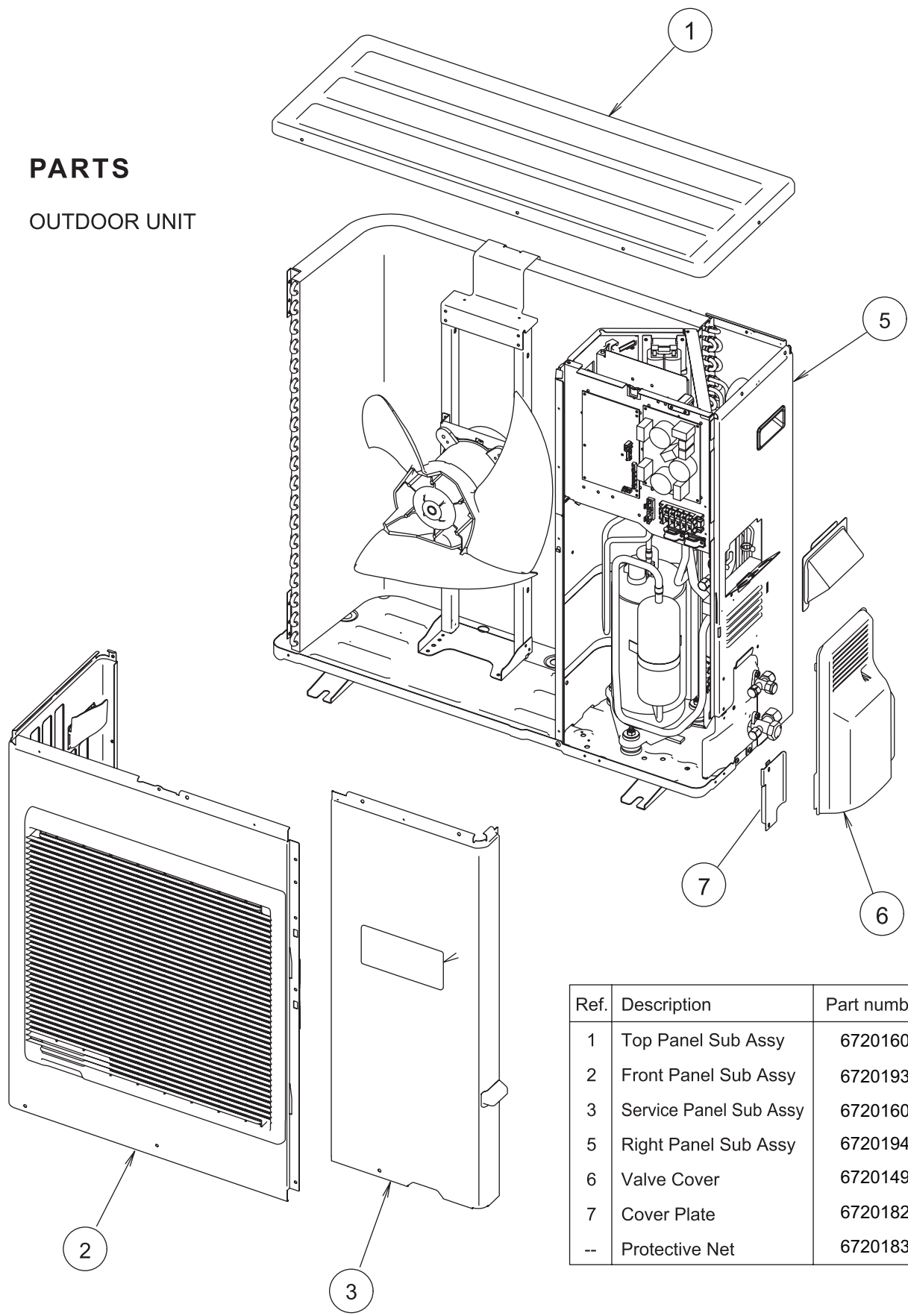


Ref	Description	Part number
41	Controller PCB Assy (30)	67201029
41	Controller PCB Assy (36)	67201030
42	Control Box	67201567
43	Control Cover	67201568
44	Motor Case	67201569
45	Terminal Earth	67201570
46	DC Brushless Motor (30)	67201571
46	DC Brushless Motor (36)	67201025
47	Motor, Step	67201526
48	Motor, Step	67201527
49	Motor, Step	67201528
50	Terminal	67201381
51	Indicator PCB Assy	67201530
--	Pipe Thermistor	67201574

INDOOR UNIT

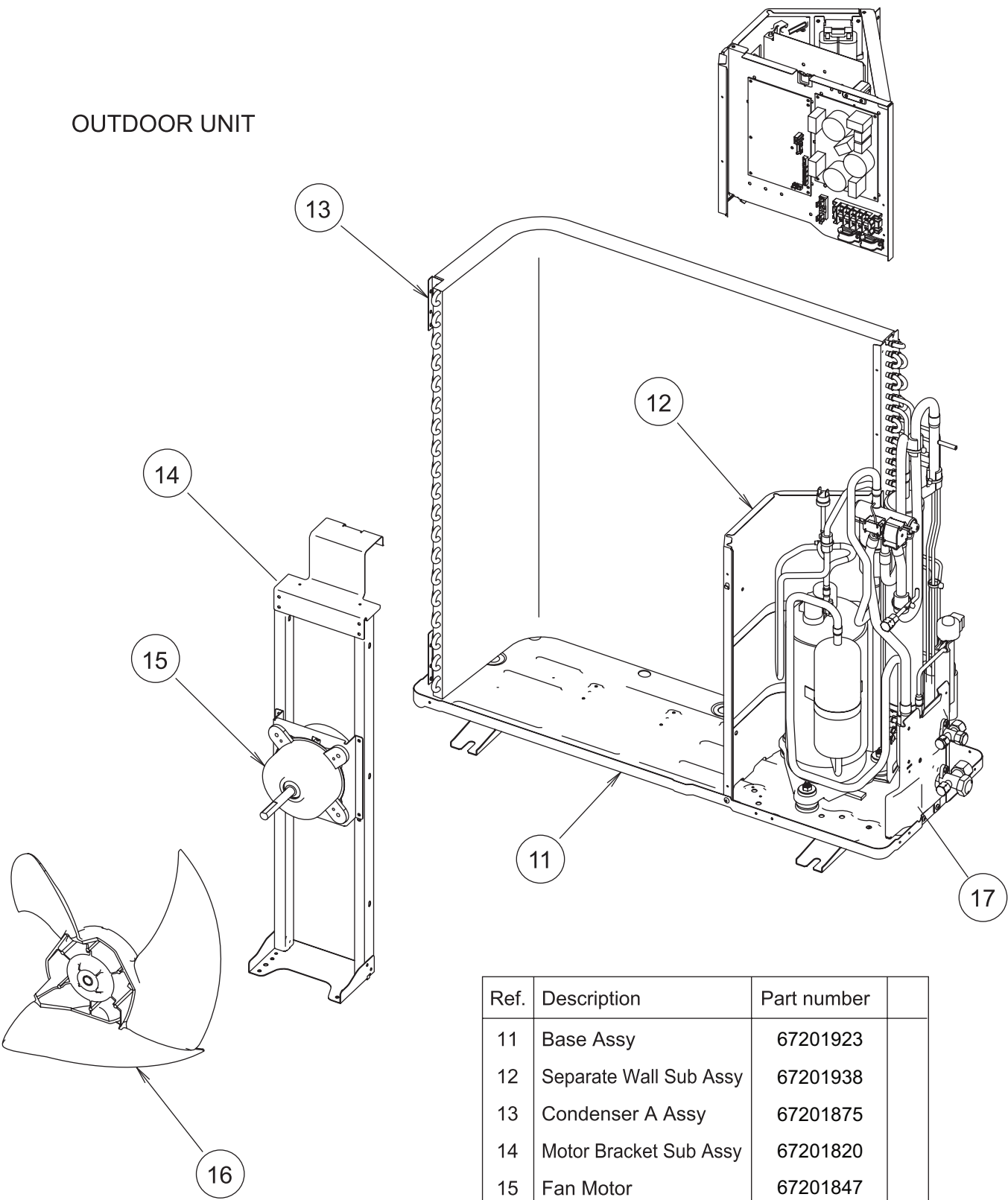
PARTS

OUTDOOR UNIT

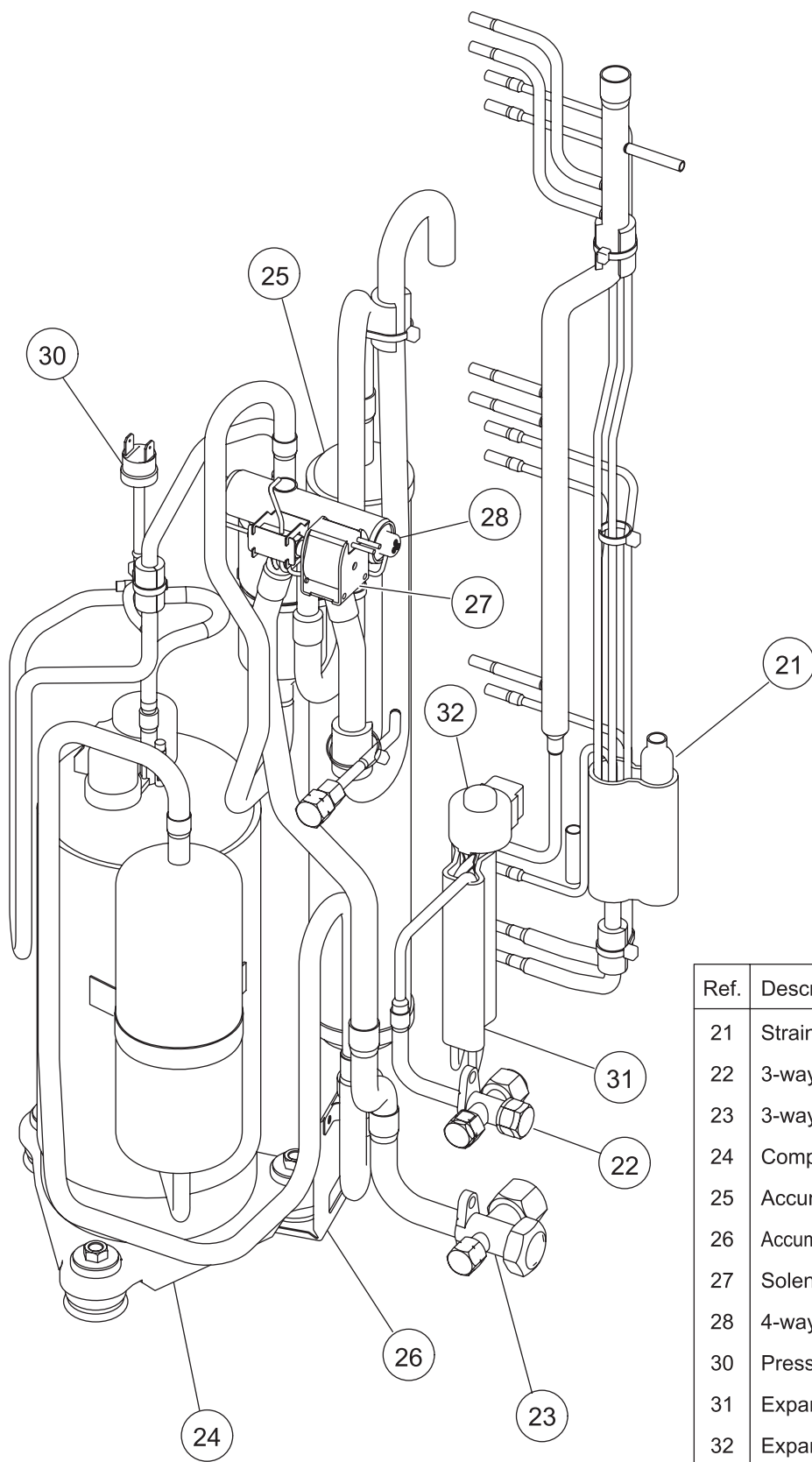


Ref.	Description	Part number	
1	Top Panel Sub Assy	67201600	
2	Front Panel Sub Assy	67201939	
3	Service Panel Sub Assy	67201604	
5	Right Panel Sub Assy	67201940	
6	Valve Cover	67201499	
7	Cover Plate	67201829	
--	Protective Net	67201836	

OUTDOOR UNIT

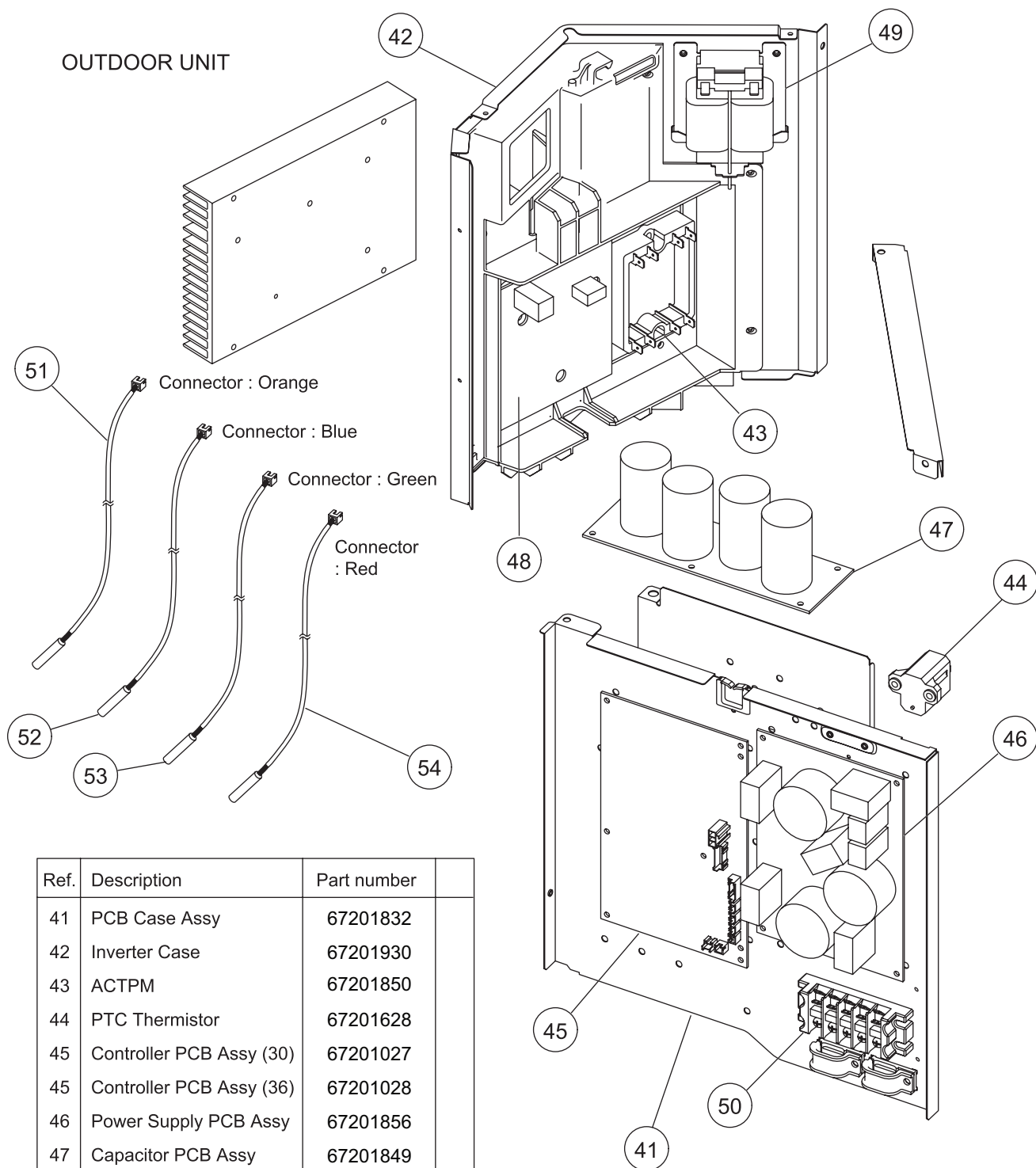


Ref.	Description	Part number	
11	Base Assy	67201923	
12	Separate Wall Sub Assy	67201938	
13	Condenser A Assy	67201875	
14	Motor Bracket Sub Assy	67201820	
15	Fan Motor	67201847	
16	Propeller Fan Assy	67201607	
17	Valve Plate	67201496	



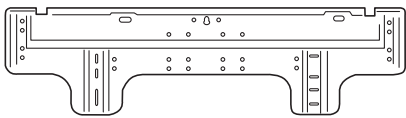
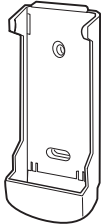
OUTDOOR UNIT

Ref.	Description	Part number	
21	Strainer Assy	67201611	
22	3-way Valve Assy	67201837	
23	3-way Valve Assy	67201876	
24	Compressor Sub Assy	67201867	
25	Accumulator	67201618	
26	Accumulator Support Assy	67201483	
27	Solenoid	67201874	
28	4-way Valve Assy	67201823	
30	Pressure Switch	67201621	
31	Expansion Valve Assy	67201488	
32	Expansion Valve Coil	67201032	



Ref.	Description	Part number
41	PCB Case Assy	67201832
42	Inverter Case	67201930
43	ACTPM	67201850
44	PTC Thermistor	67201628
45	Controller PCB Assy (30)	67201027
45	Controller PCB Assy (36)	67201028
46	Power Supply PCB Assy	67201856
47	Capacitor PCB Assy	67201849
48	Transistor PCB Assy	67201854
49	Choke Coil	67201868
50	Terminal	67201634
51	Discharge Thermistor	67201869
52	Outdoor Thermistor	67201871
53	Compressor Thermistor	67201872
54	Heat Exchanger Thermistor	67201031

ACCESSORIES

Name and Shape	Part number
Wall hook bracket 	67201531
Remote control 	67201532
Remote control holder 	67201533

TECHNICAL SUPPORT CONTACT INFORMATION



F R I E D R I C H

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