

# Service and Parts Manual



F R I E D R I C H



## Models

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Indoor Units	MW09Y3H	MW12Y3H
Outdoor Units	MR09Y3H	MR12Y3H

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## **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.**

10001 Reunion Place, Ste. 500, San Antonio, TX 78216  
(210) 546-0500 877-599-5665 x 261 FAX (210) 546-0630  
Email: [tac@friedrich.com](mailto:tac@friedrich.com)  
[www.friedrich.com](http://www.friedrich.com)

Printed in the U.S.A.

# SPECIFICATIONS

## ELECTRICAL DATA

TYPE		Cool & heat inverter	
INDOOR UNIT		MW09Y3H	MW12Y3H
OUTDOOR UNIT		MR09Y3H	MR12Y3H
COOLING CAPACITY		8,500 BTU/h (2.50 kW)	11,500 BTU/h (3.40 kW)
HEATING CAPACITY		10,000 BTU/h (2.93 kW)	14,000 BTU/h (4.11 kW)
POWER SOURCE		208 / 230 V	208 / 230 V
FREQUENCY		60 Hz	60 Hz
RUNNING CURRENT	Cooling	3.3 A	4.3 A
	Heating	3.6 A	5.2 A
INPUT WATTS	Cooling	0.68 kW	0.92 kW
	Heating	0.76 kW	1.12 kW
E.E.R.	Cooling	12.5 BTU/Wh (3.68 kW/kW)	12.5 BTU/Wh (3.69 kW/kW)
	Heating	13.16 BTU/Wh (3.86 kW/kW)	12.5 BTU/Wh (3.67 kW/kW)
MOISTURE REMOVAL		2.7 Pts/h (1.3 L/h)	3.8 Pts/h (1.8 L/h)
AIR CIRCULATION HIGH		447 cfm (760 m <sup>3</sup> /h)	
MAXIMUM CURRENT	Cooling	6.0 A	6.5 A
	Heating	7.5 A	9.0 A

## FAN MOTOR

POWER SOURCE		230 V	
INDOOR UNIT Cooling	High speed	1,300 r.p.m.	
	Middle speed	1,130 r.p.m.	
	Low speed	900 r.p.m.	
	Quiet	650 r.p.m.	
INDOOR UNIT Heating	High speed	1,300 r.p.m.	
	Middle speed	1,130 r.p.m.	
	Low speed	950 r.p.m.	
	Quiet	680 r.p.m.	
OUTDOOR UNIT Cooling		730 r.p.m.	860 r.p.m.
OUTDOOR UNIT Heating		650 r.p.m.	760 r.p.m.

## NOISE LEVEL

INDOOR UNIT Cooling	High speed	43 dB	43 dB
	Middle speed	38 dB	38 dB
	Low speed	33 dB	33 dB
	Quiet	22 dB	22 dB
INDOOR UNIT Heating	High speed	43 dB	43 dB
	Middle speed	38 dB	38 dB
	Low speed	33 dB	33 dB
	Quiet	22 dB	22 dB
OUTDOOR UNIT Cooling		46 dB	49 dB
OUTDOOR UNIT Heating		46 dB	49 dB

## COMPRESSOR AND REFRIGERANT

COMPRESSOR TYPE		Hermetic type, 4 pole, 3 phase, DC inverter motor, Rotary	
DISCRIMINATION		5SS072XAA	DA89X1C-20FZ2
WEIGHT (with oil)		13 lb (5.9 kg)	20 lb (9.2 kg)
PRECHARGED REFRIGERANT		25 oz (700 g)	30 oz (850 g)
REFRIGERANT TYPE		R410A	R410A
FULL CHARGE	Pipe length 49 ft (15 m)	25 oz (700 g)	30 oz (850 g)
	66 ft (20 m)	28 oz (800 g)	34 oz (950 g)
ADDITIONAL REFRIGERANT		0.21 oz/ft (20 g/m)	
MAXIMUM PIPING HEIGHT		49 ft (15 m)	

## DIMENSIONS

INDOOR UNIT	H x W x D	11-1/32 x 31-3/32 x 7-25/32 inch (280 x 790 x 198 mm)
OUTDOOR UNIT	H x W x D	21-1/4 x 25-31/32 x 11-13/32 inch (540 x 660 x 290 mm)

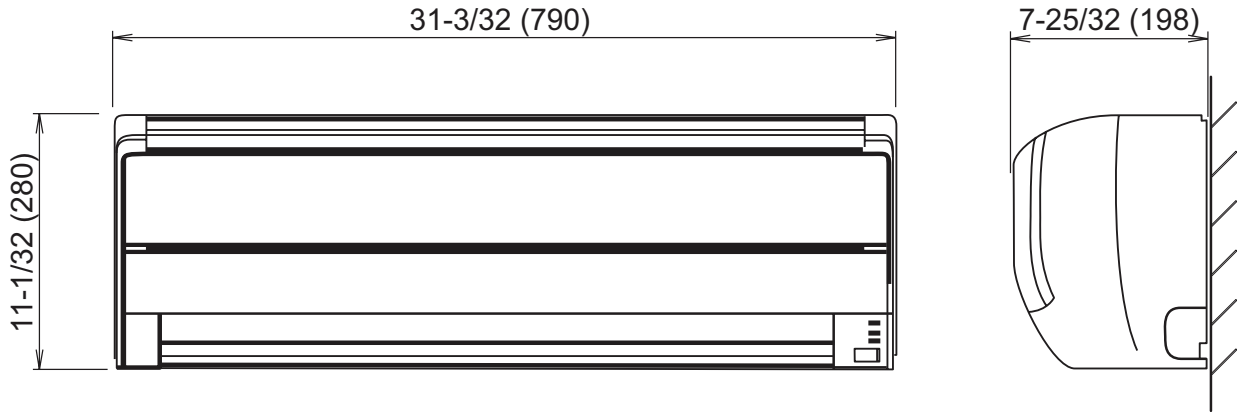
## WEIGHT

INDOOR UNIT Shipping / Net	21 lb / 16.5 lb (9.5 kg / 7.5 kg)	
OUTDOOR UNIT Shipping / Net	62 lb / 55 lb (28 kg / 25 kg)	75 lb / 68 lb (34 kg / 31 kg)

# DIMENSIONS

unit : inch (mm)

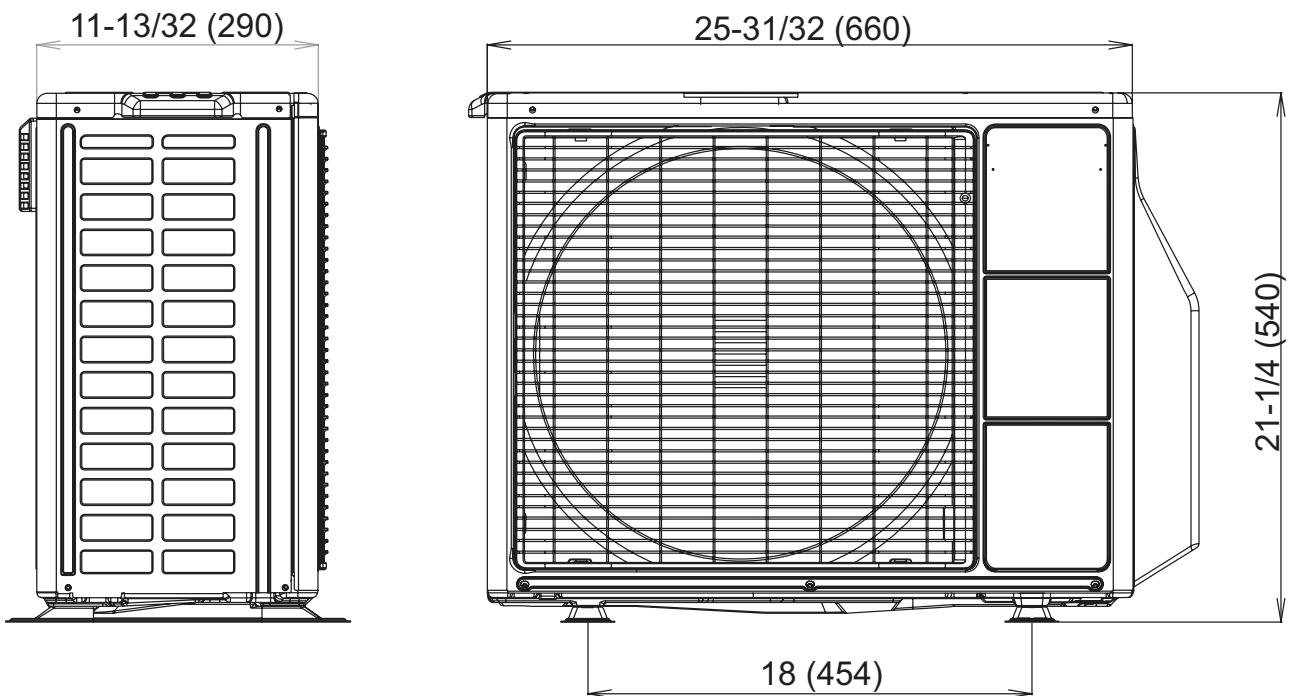
## INDOOR UNIT



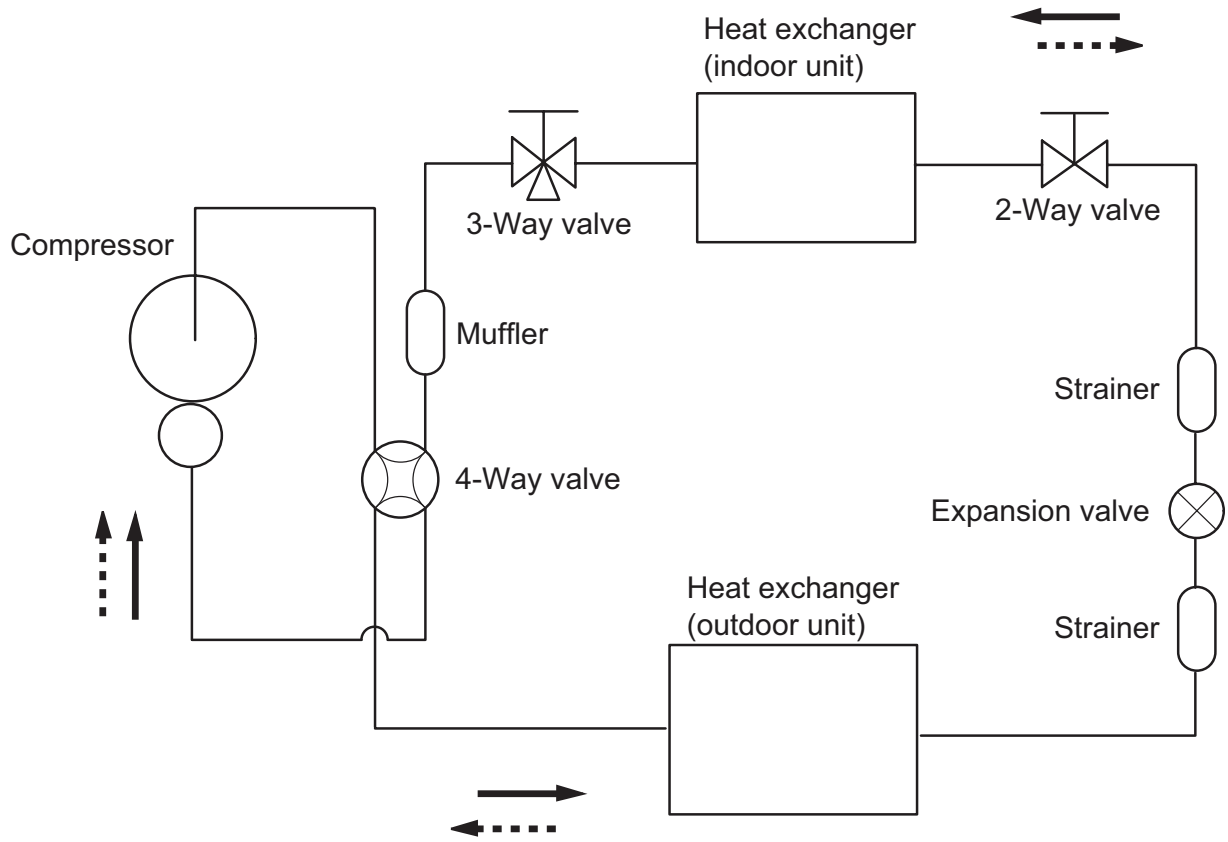
Refrigerant pipe length  
Liquid :  $15-3/16$  inch (386 mm)  
Gas :  $12-15/16$  inch (329 mm)

Drain hose length :  $23-5/8$  inch (600 mm)  
Drain pipe diameter  
Inside :  $5/8$  inch (15.8 mm)  
Outside :  $1-9/64$  inch (29 mm)

## OUTDOOR UNIT



# REFRIGERANT SYSTEM DIAGRAM



Refrigerant direction

—————▶ Cooling flow

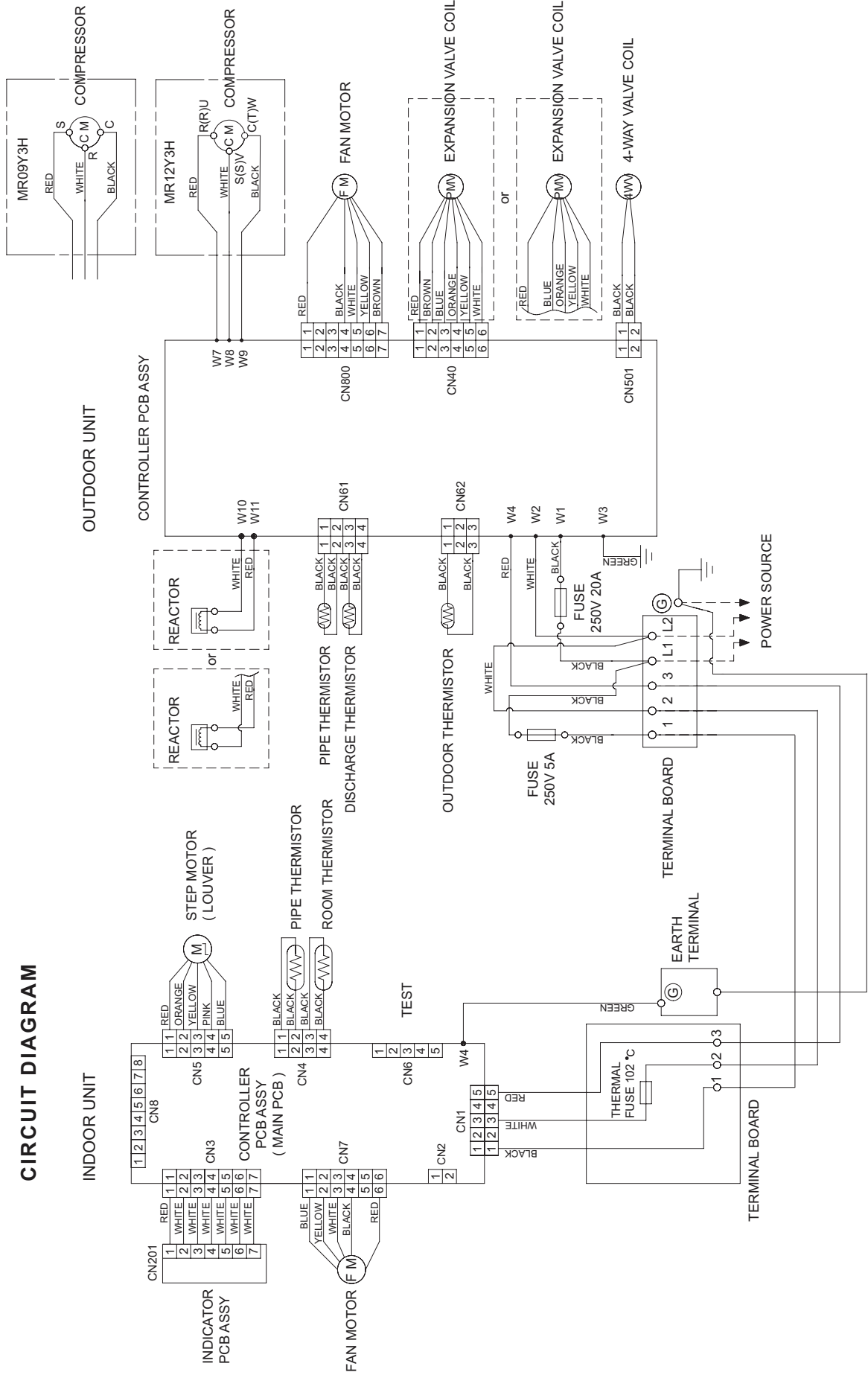
.....▶ Heating flow

Refrigerant pipe diameter

Liquid : 1/4" (6.35 mm)

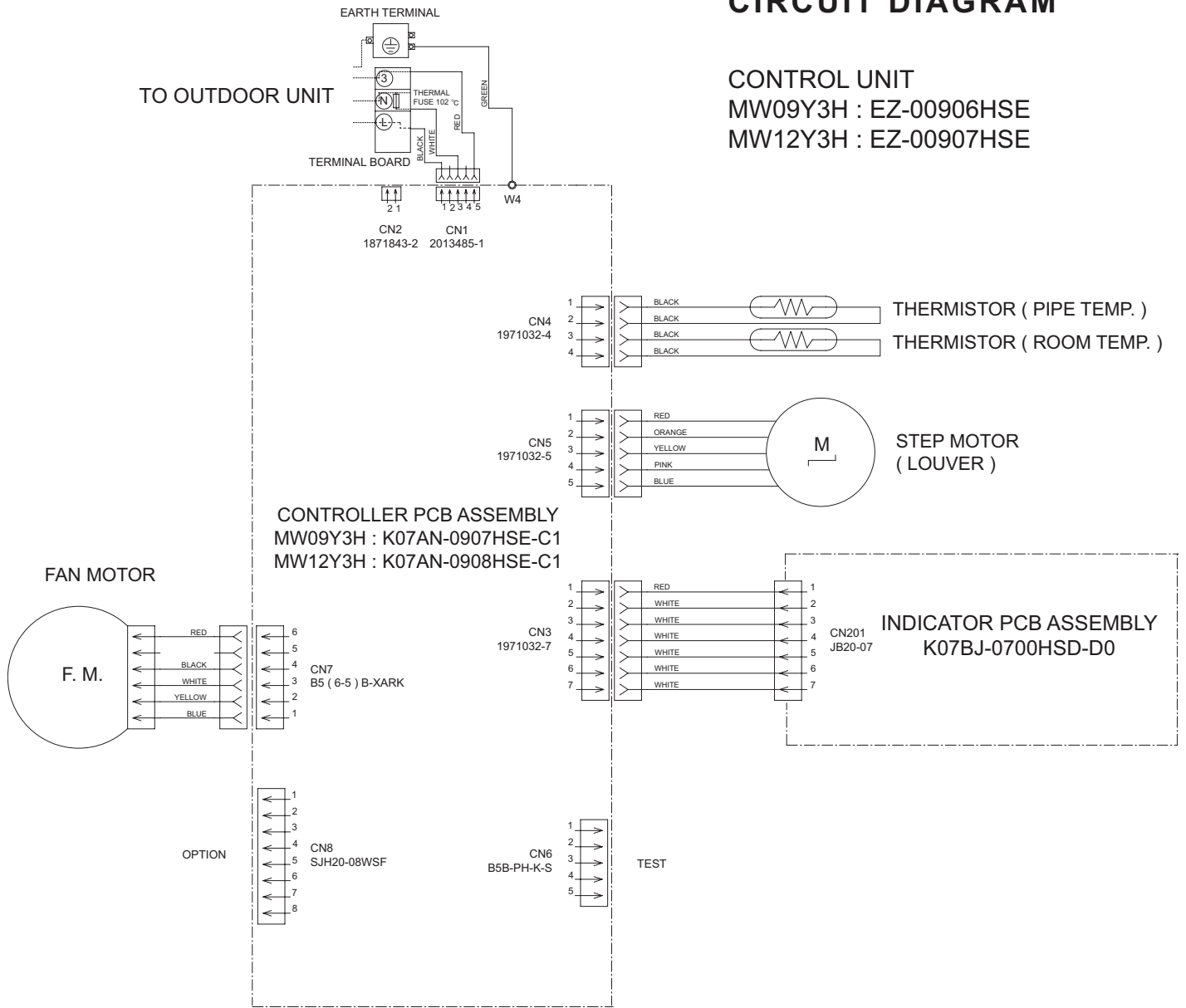
Gas : 3/8" (9.52 mm)

# CIRCUIT DIAGRAM

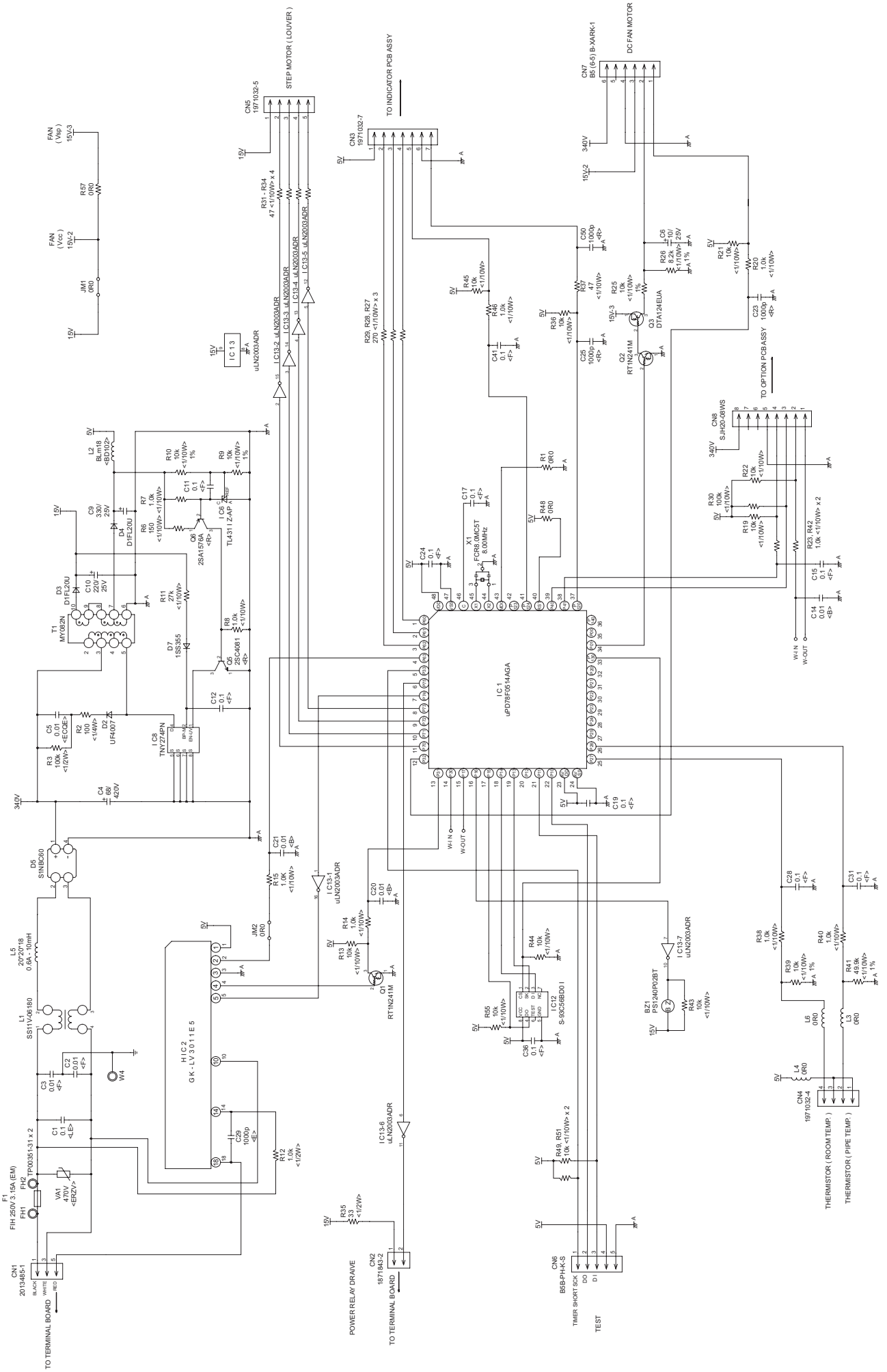


# INDOOR PCB CIRCUIT DIAGRAM

CONTROL UNIT  
 MW09Y3H : EZ-00906HSE  
 MW12Y3H : EZ-00907HSE

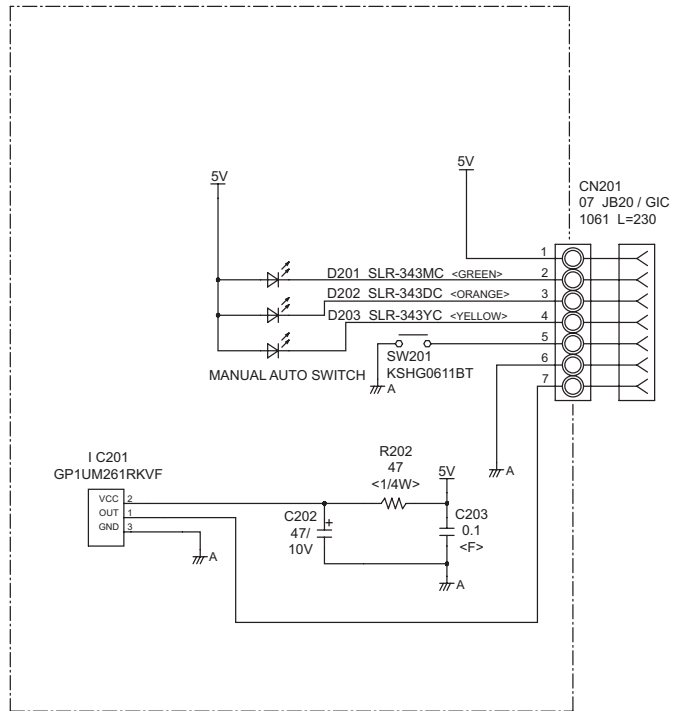


**INDOOR UNIT  
CONTROLLER PCB ASSEMBLY ( MAIN PCB )  
MW09Y3H : K07AN-0907HSE-C1  
MW12Y3H : K07AN-0908HSE-C1**

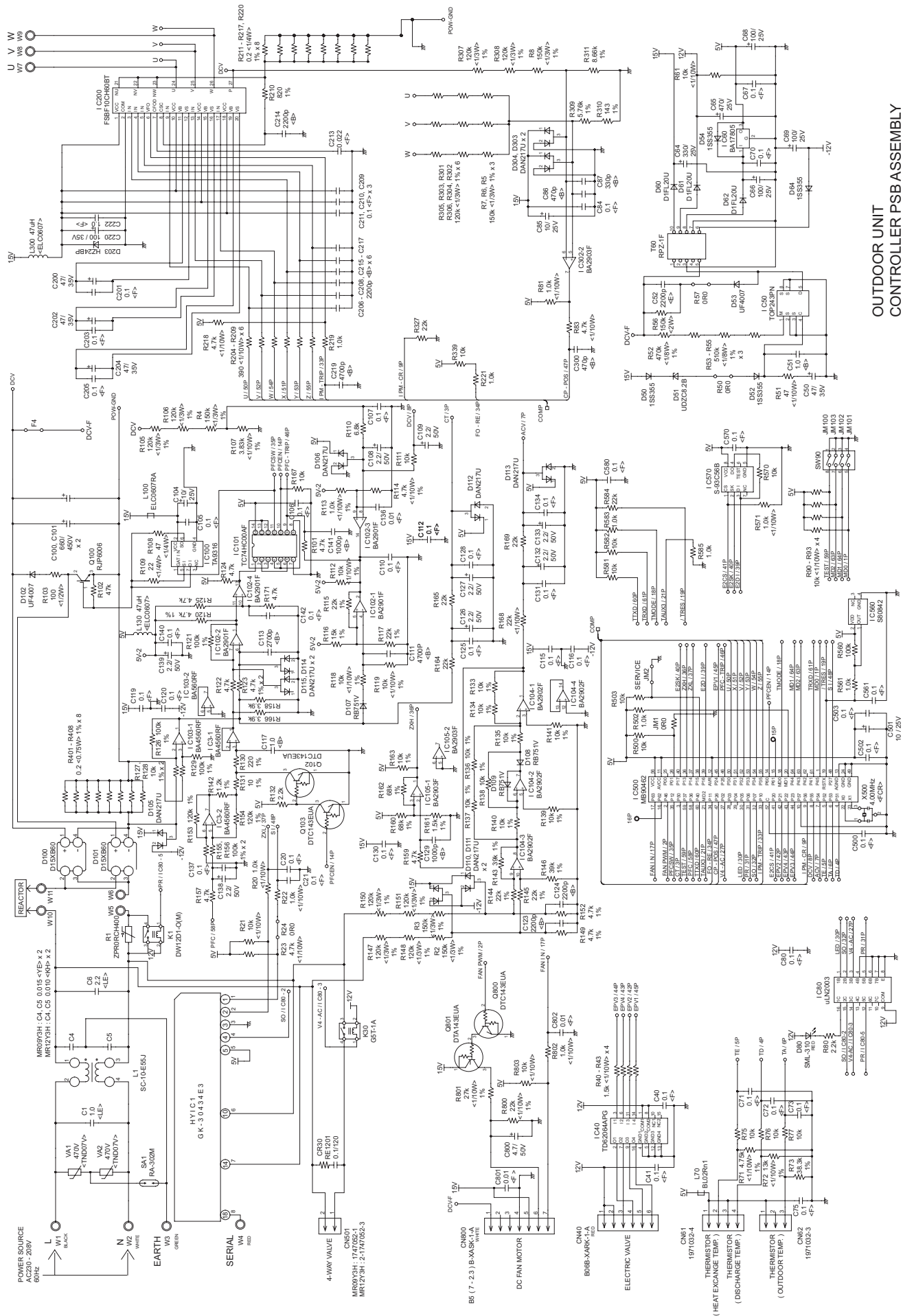




INDOOR UNIT  
 INDICATOR PCB ASSEMBLY  
 K07BJ-0700HSD-D0







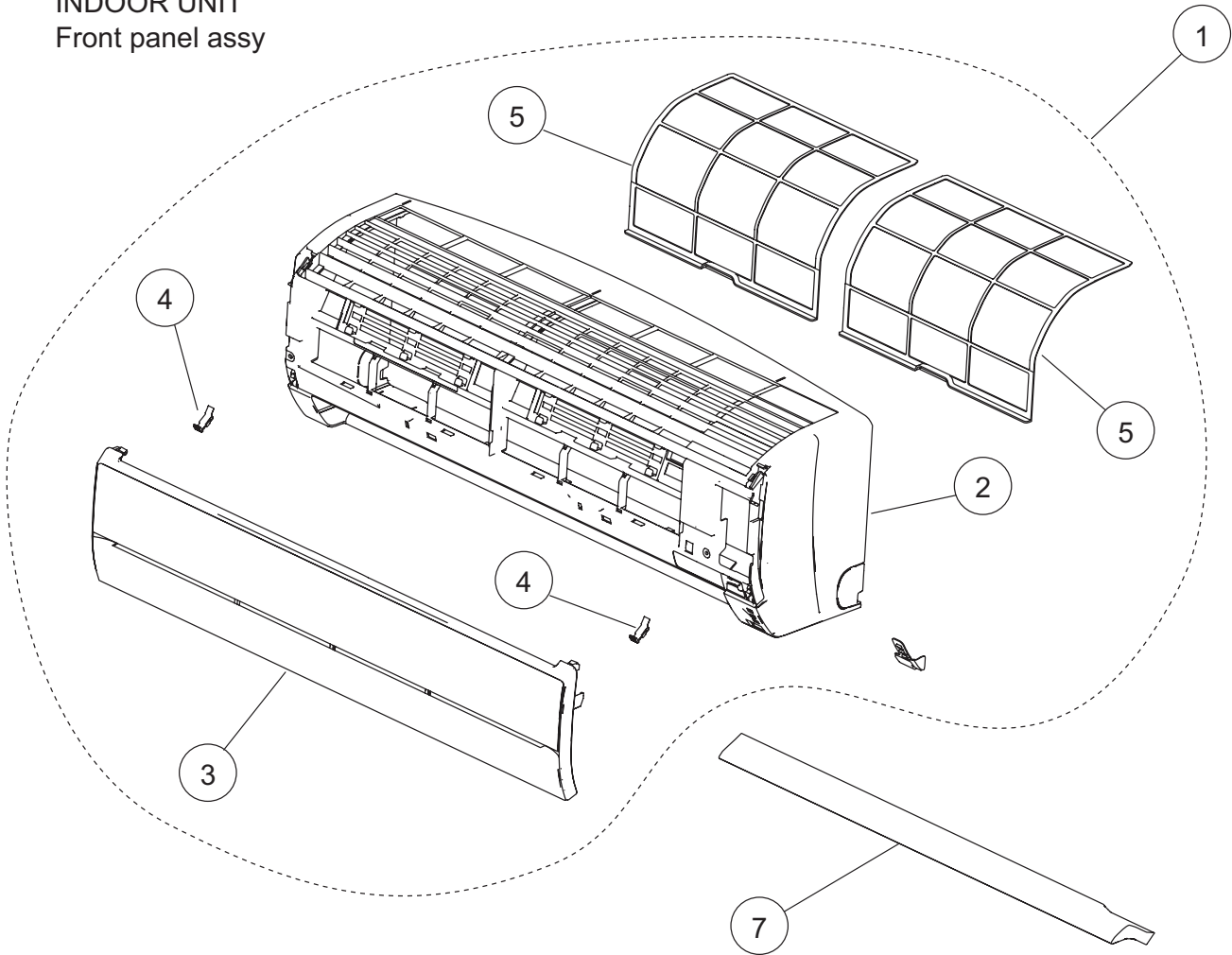
OUTDOOR UNIT  
 CONTROLLER PSB ASSEMBLY  
 MR09Y3H : K07CJ-0925HUE-C1  
 MR12Y3H : K07CJ-0926HUE-C1

## ERROR DETECTION

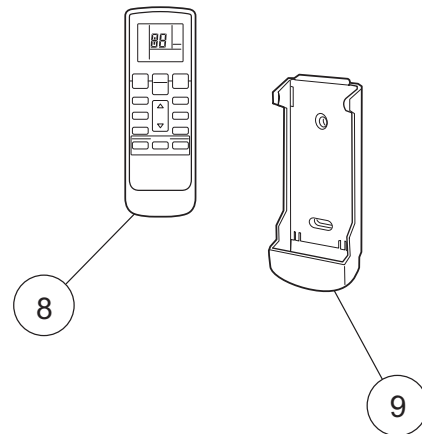
Error	Indoor unit LED			Wired remote control	Error
	Operation LED	Timer LED	Coil dry LED		
Serial signal error	Off	2 flash	off	01	Serial signal (reverse) error, at operation start up
		3 flash	off	01	Serial signal (reverse) error, during operation
		4 flash	off	13	Serial signal (forward) error, at operation start up
		5 flash	off	13	Serial signal (forward) error, during operation
		8 flash	off	00	Wired remote control error
Indoor unit thermistor error	2 flash	2 flash	off	02	Indoor air thermistor error
		3 flash	off	04	Heat exchanger middle thermistor error
Outdoor unit thermistor error	3 flash	2 flash	off	0C	Discharge pipe thermistor error
		3 flash	off	06	Heat exchanger thermistor error
		4 flash	off	0A	Outdoor air thermistor error
Indoor unit control error	4 flash	2 flash	off	20	Manual auto button welded
Outdoor unit control error	5 flash	2 flash	off	17	Current trip error
		3 flash	off	18	CT abnormal
		5 flash	off	1A	Compressor location detection error
		6 flash	off	1B	Outdoor unit fan drive system abnormal
Indoor fan motor error	6 flash	2 flash	off	12	Abnormal lock (upper fan motor)
		3 flash	off	12	Abnormal rotation (upper fan motor)
Refrigerant cycle error	7 flash	2 flash	off	0F	Discharge temperature abnormal
		3 flash	off	24	Cooling high pressure abnormal rise
Optional function error	8 flash	2 flash	off	19	Active filter abnormal (first time)
		3 flash	off	19	Active filter abnormal (second time)
		4 flash	off	25	PFC circuit error
Model information error	0.1 sec on/off	0.1 sec on/off	0.1 sec on/off	11	Model information error

# PARTS

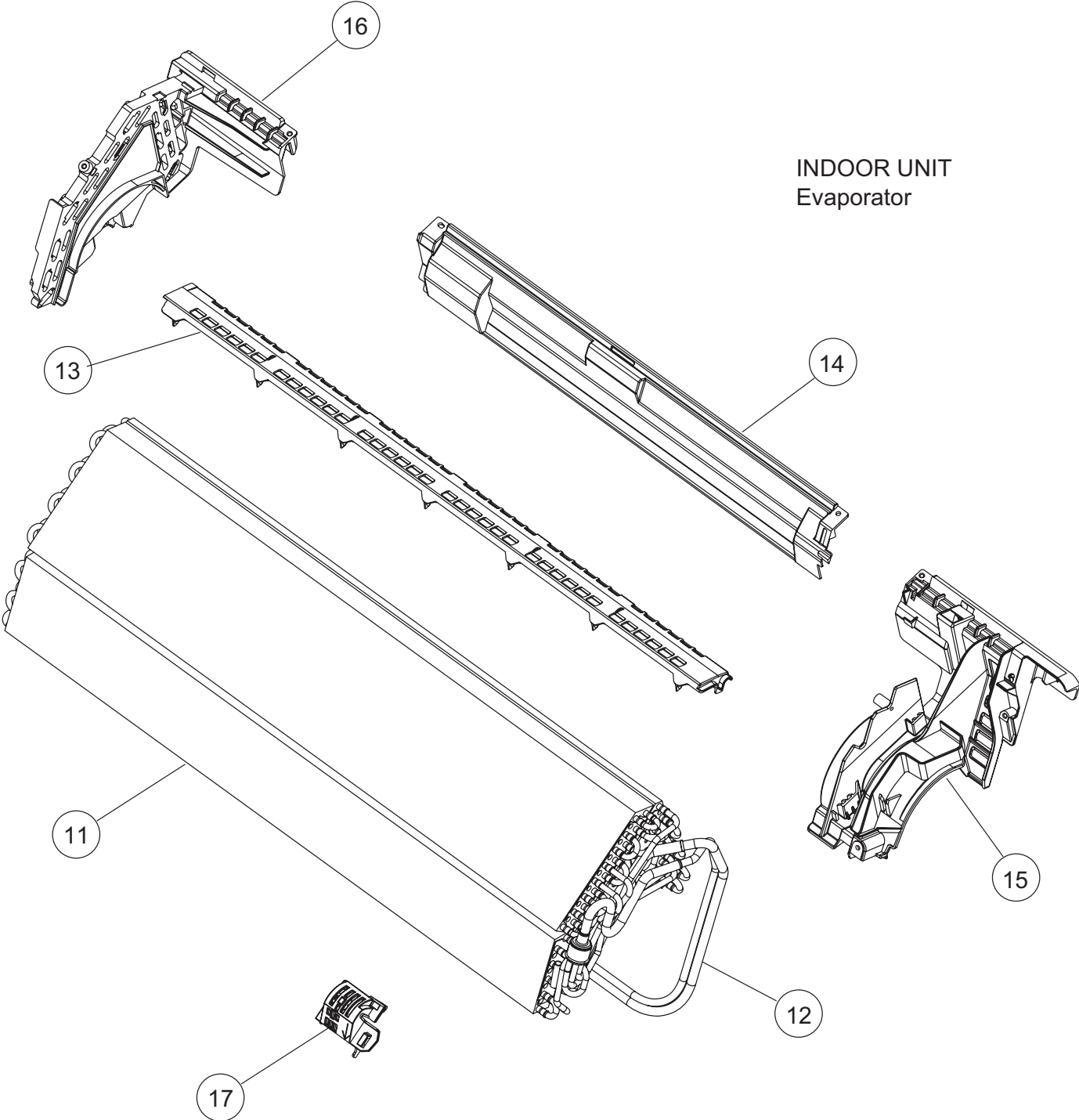
INDOOR UNIT  
Front panel assy



Ref.	Description	Part number
1	Front Panel Assy	67202083
3	Intake Grille Assy	67202067
4	Clamper (Grille)	67202003
5	Air Filter	67202066
7	Panel Cover	67202215
8	Remote Control	67202007
9	Remote Control Holder	67201533
--	Wire Cover	67202076
--	Wire Shield	67202077

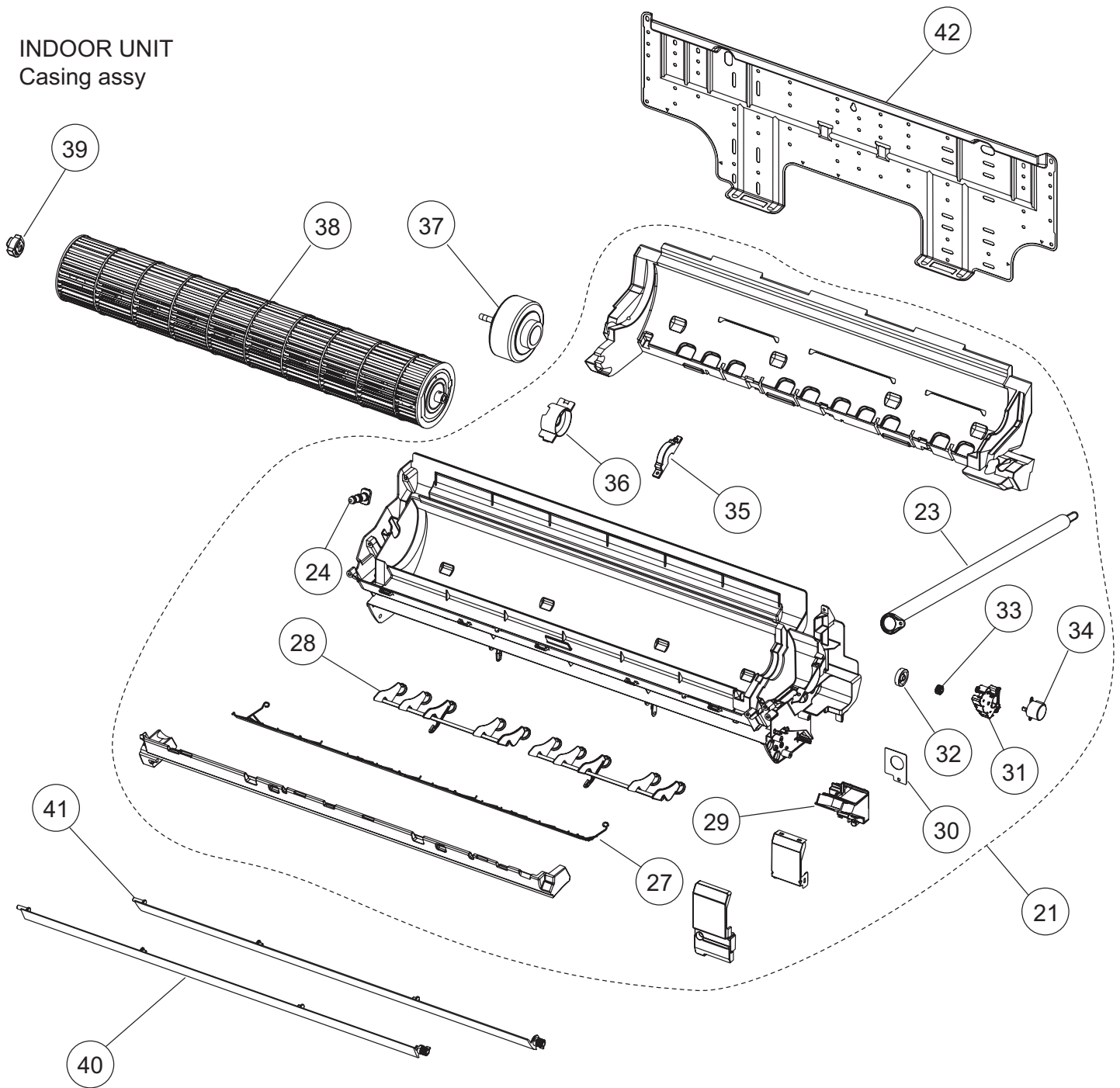


INDOOR UNIT  
Evaporator



Ref.	Description	Part number
11	Evaporator Total Assy	67202082
12	Joint Pipe Assy	67202084
13	Filter Guide	67202072
14	Rear Bracket	67202071
15	Evaporator Holder R	67202070
16	Evaporator Holder L	67202069
17	Room Thermistor Holder	67202018

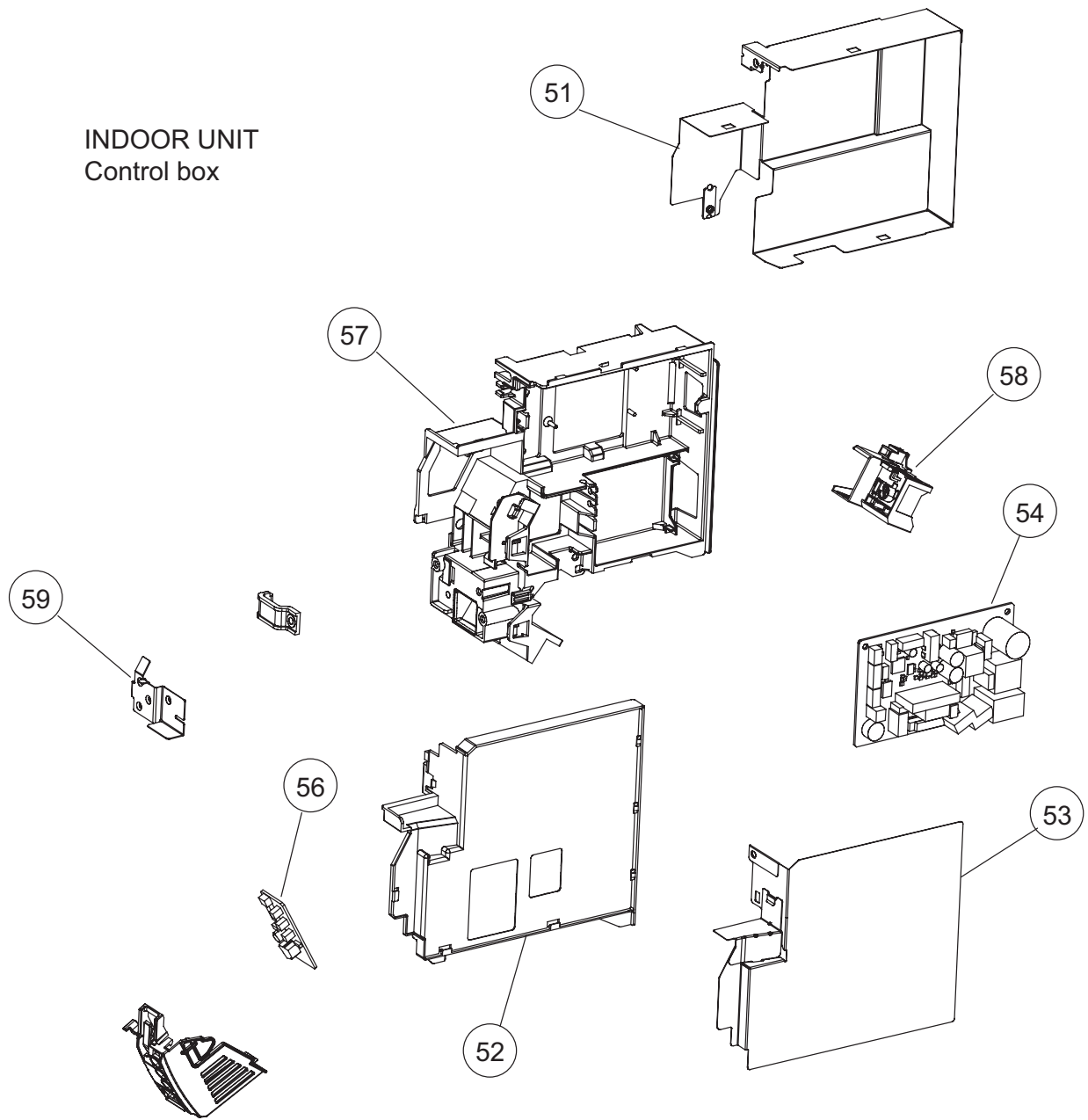
INDOOR UNIT  
Casing assy



Ref.	Description	Part number
21	Casing Assy	67202080
23	Drain Hose Assy	67202030
24	Drain Cap	67202031
27	Fan Guard	67202098
28	R and L Louver B	67202063
29	Cable Guide	67202023
30	Conduit Holder	67202038
31	Louver Gear Holder	67202079

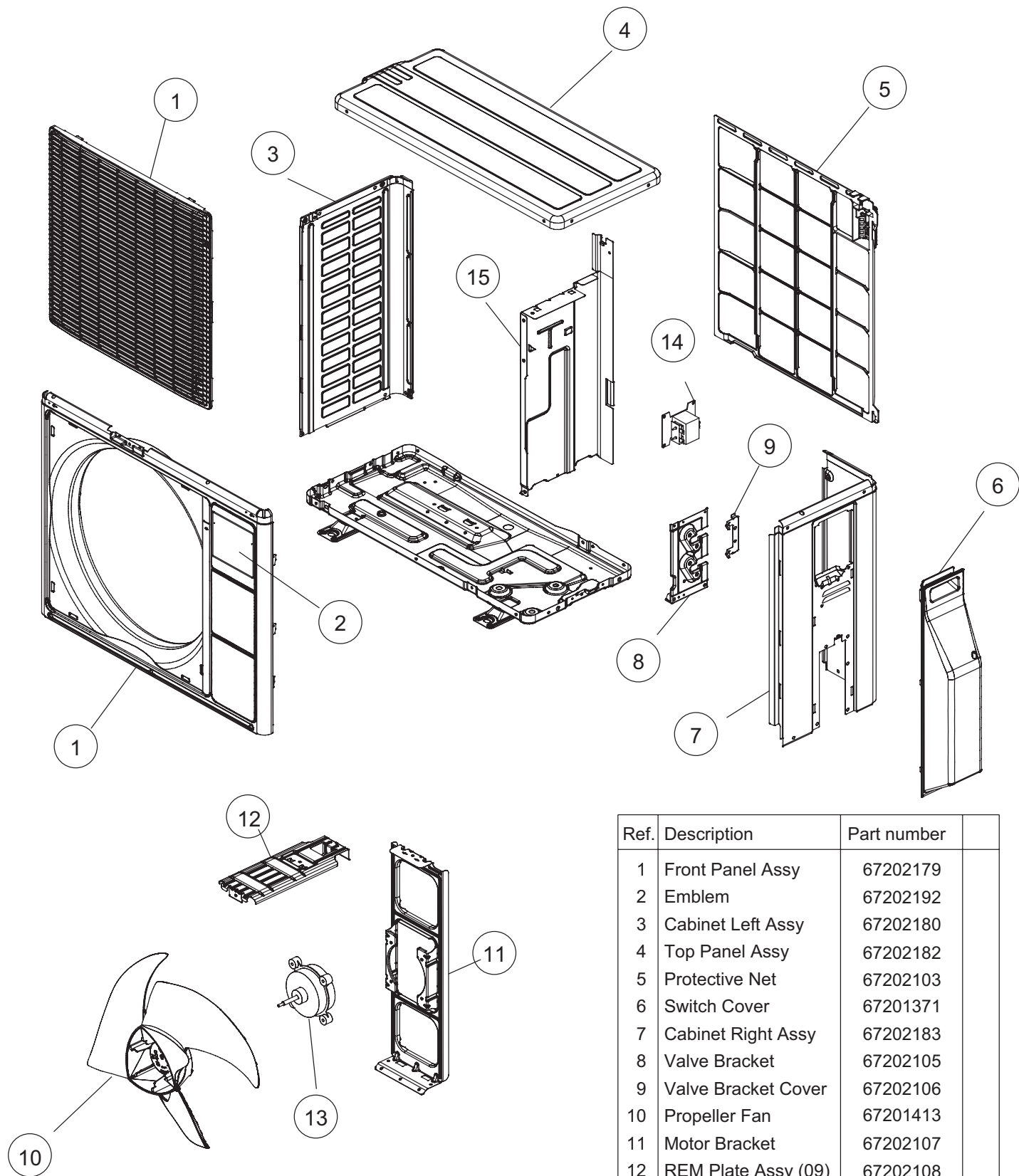
Ref.	Description	Part number
32	Louver Gear	67202068
33	Gear A	67201206
34	Motor Step	67202097
35	Motor Cover (1)	67202062
36	Motor Cover (2)	67202022
37	Fan Motor	67202033
38	Crossflow Fan Assy	67202034
39	Shaft Holder C	67200922
40	Louver U	67202073
41	Louver Z	67202074
42	Bracket Panel	67202078

INDOOR UNIT  
Control box



Ref.	Description	Part number
51	Box Shield Assy	67202065
52	Control Cover	67202075
53	Cover Shield Assy	67202090
54	Controller PCB Assy (09)	67202094
54	Controller PCB Assy (12)	67202095
56	Display PCB Assy	67202045
57	Control Box	67202091
58	Terminal	67202048
59	Earth Terminal	67202061
--	Thermistor Assy	67202019

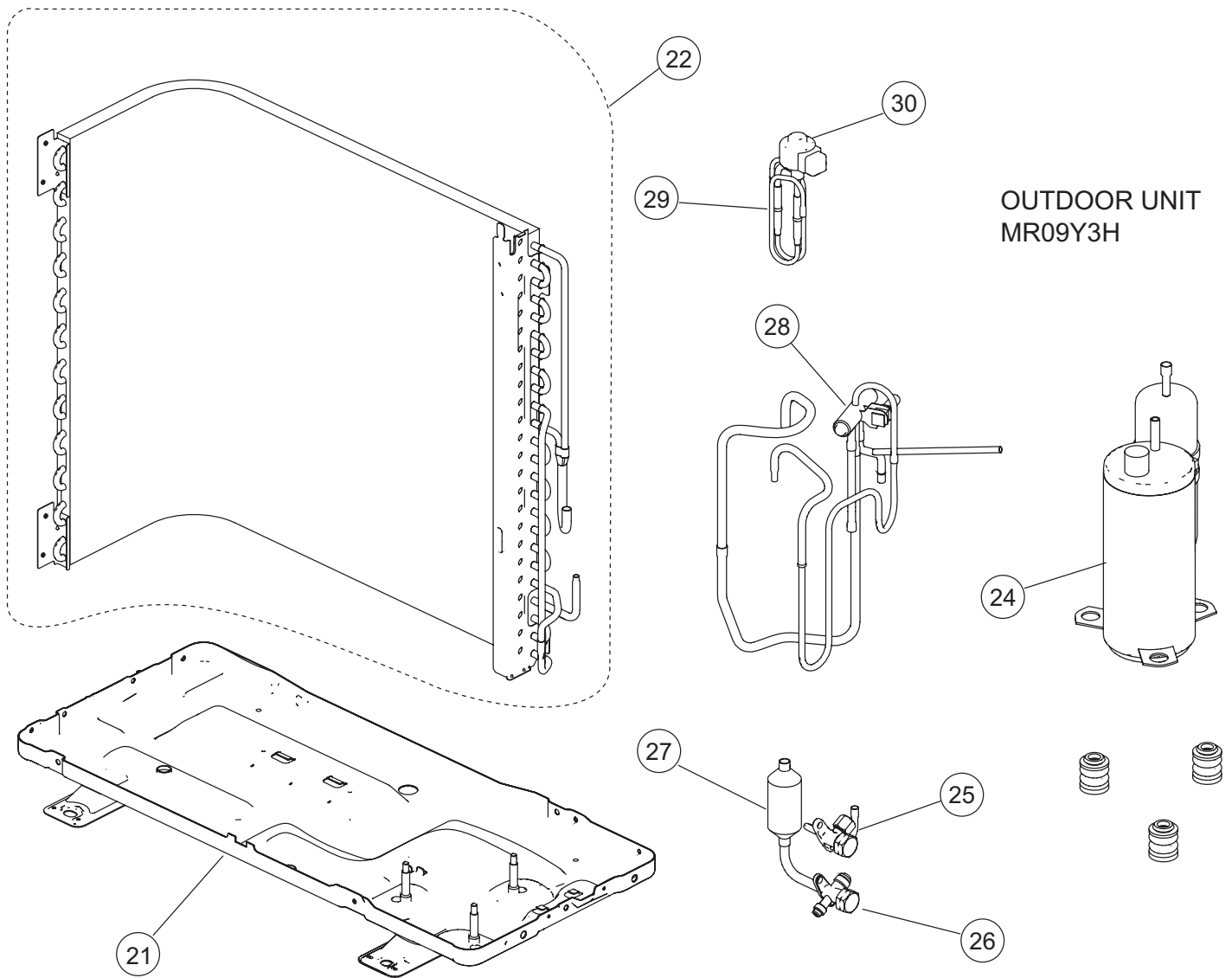




## PARTS

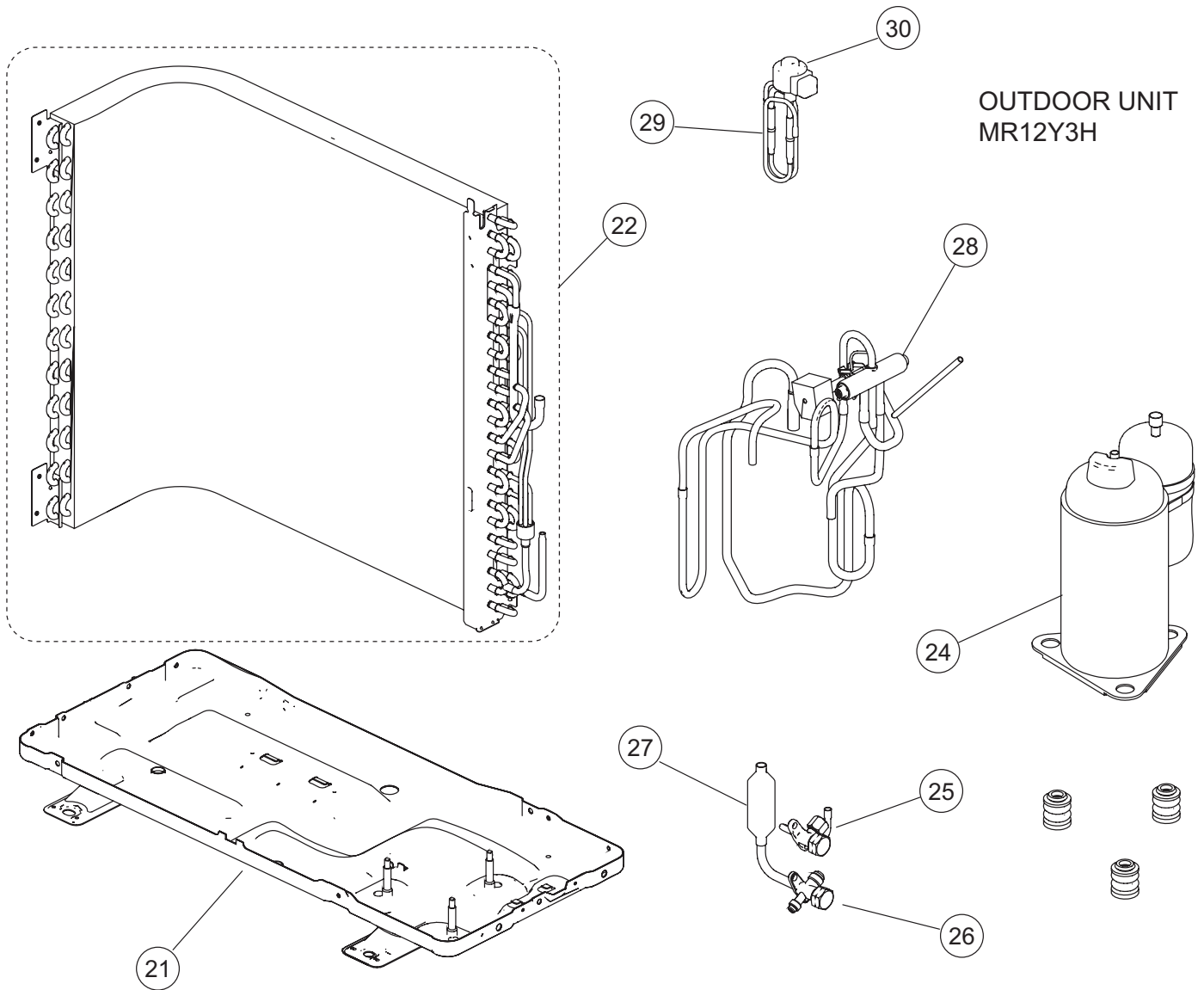
OUTDOOR UNIT  
MR09Y3H  
MR12Y3H

Ref.	Description	Part number
1	Front Panel Assy	67202179
2	Emblem	67202192
3	Cabinet Left Assy	67202180
4	Top Panel Assy	67202182
5	Protective Net	67202103
6	Switch Cover	67201371
7	Cabinet Right Assy	67202183
8	Valve Bracket	67202105
9	Valve Bracket Cover	67202106
10	Propeller Fan	67201413
11	Motor Bracket	67202107
12	REM Plate Assy (09)	67202108
12	REM Plate Assy (12)	67202109
13	Fan Motor (09)	67202184
13	Fan Motor (12)	67202111
14	Reactor Assy	67202112
15	Separator Assy	67202181
--	Drain Pipe	67201709



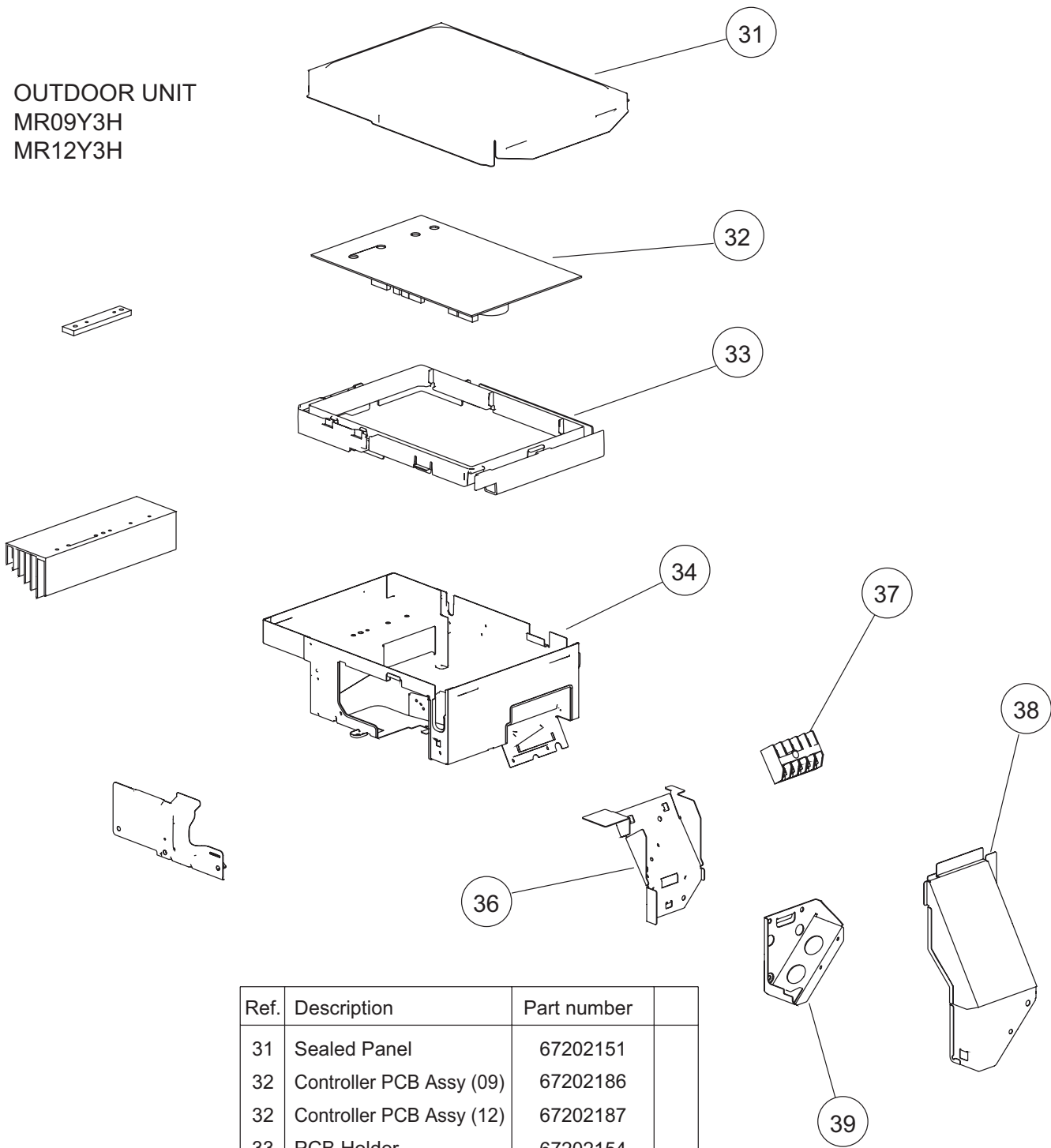
Ref.	Description	Part number
21	Base Assy	67202163
22	Condenser Total Assy	67202141
24	Compressor Assy	67202119
25	2 way Valve Assy	67202127
26	3 way Valve Assy	67202129
27	Muffler	67202130
28	4 way Valve	67202131
29	Pulse Motor Valve Assy	67202139
30	Expansion Valve Coil	67201422
--	Solenoid	67202140

OUTDOOR UNIT  
MR12Y3H



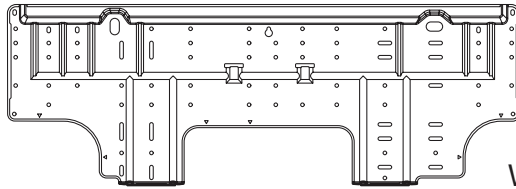
Ref.	Description	Part number
21	Base Assy	67202164
22	Condenser Total Assy	67202145
24	Compressor Assy	67202125
25	2 way Valve Assy	67202127
26	3 way Valve Assy	67202129
27	Muffler	67202133
28	4 way Valve	67202134
29	Pulse Motor Valve Assy	67202139
30	Expansion Valve Coil	67201422
--	Solenoid	67202144

OUTDOOR UNIT  
MR09Y3H  
MR12Y3H



Ref.	Description	Part number
31	Sealed Panel	67202151
32	Controller PCB Assy (09)	67202186
32	Controller PCB Assy (12)	67202187
33	PCB Holder	67202154
34	Inverter Case Assy	67202155
36	Terminal Bracket	67202157
37	Terminal 5P	67201450
38	Terminal Cover Assy	67202158
39	Bracket Conduit	67202160
--	Outdoor Thermistor	67202161
--	Thermistor Assy	67202162

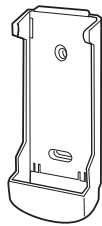
## ACCESSORIES



Wall hook bracket  
67202078



Remote control  
67202007



Remote control holder  
67201533





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