

SPLIT TYPE  
ROOM AIR CONDITIONER  
WALL MOUNTED TYPE

# SERVICE MANUAL



Indoor unit	Outdoor unit
ASY9LSBCW	AOY9LFBC
ASY12LSBCW	AOY12LFBC

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# SPECIFICATIONS

## ELECTRICAL DATA

TYPE		COOL & HEAT INVERTER	
INDOOR UNIT		ASY9LSBCW	ASY12LSBCW
OUTDOOR UNIT		AOY9LFBC	AOY12LFBC
COOLING CAPACITY		2.60 kW	3.50 kW
HEATING CAPACITY		3.60 kW	4.80 kW
POWER SOURCE		230 V	230 V
FREQUENCY		50 Hz	50 Hz
RUNNING CURRENT	COOLING	3.0 A	4.3 A
	HEATING	3.8 A	5.6 A
INPUT WATTS	COOLING	0.62 kW	0.92 kW
	HEATING	0.82 kW	1.23 kW
E.E.R.	COOLING	4.19 kW/kW	3.80 kW/kW
COP	HEATING	4.39 kW/kW	3.90 kW/kW
MOISTURE REMOVAL		1.3 L/hr	1.8 L/hr
AIR CIRCULATION HIGH (m <sup>3</sup> /hr)		C 595 H 645	C 635 H 670

## FAN MOTOR

POWER SOURCE		230 V	
INDOOR UNIT (r.p.m.)	HI-SPEED	C 1,300 H 1,390	C 1,370 H 1,440
	MED-SPEED	C 1,120 H 1,200	C 1,150 H 1,200
	LO-SPEED	C 950 H 1,000	C 950 H 1,000
	QUIET	C 700 H 760	C 700 H 760
OUTDOOR UNIT	(r.p.m.)	C 840 H 840	C 830 H 830

## NOISE LEVEL

INDOOR UNIT	C 42 dB H 42 dB	C 43 dB H 43 dB
OUTDOOR UNIT	C 47 dB H 48 dB	C 47 dB H 49 dB

## COMPRESSOR AND REFRIGERANT

TYPE	Hermetic type, 4 pole, 3 phase, DC inverter motor, Rotary		
DISCRIMINATION	DA 89 X 1F - 20F		
PRECHARGED REFRIGERANT	950 g	1,050 g	
REFRIGERANT TYPE	R410A		
FULL CHARGE	Pipe length 15 m	950 g	1,050 g
	20 m	1,050 g	1,150 g
ADDITIONAL CHARGE	20 g / m		

## DIMENSIONS

INDOOR UNIT	H x W x D	275 x 790 x 215 mm
OUTDOOR UNIT	H x W x D	540 x 790 x 290 mm

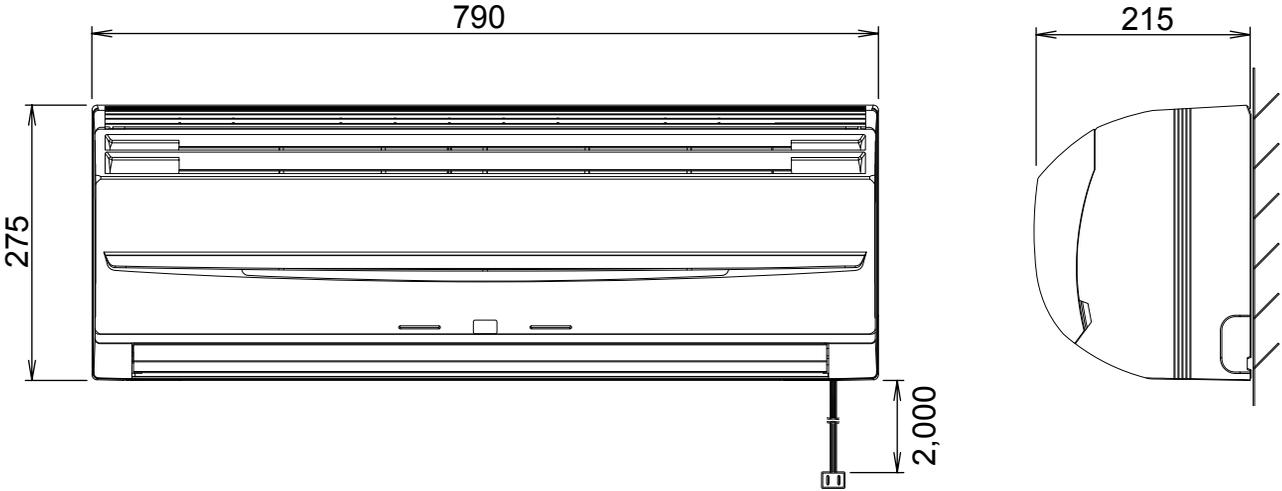
## WEIGHT

INDOOR UNIT	Shipping / Net	12 kg / 9 kg
OUTDOOR UNIT	Shipping / Net	39 kg / 35 kg    42 kg / 38 kg

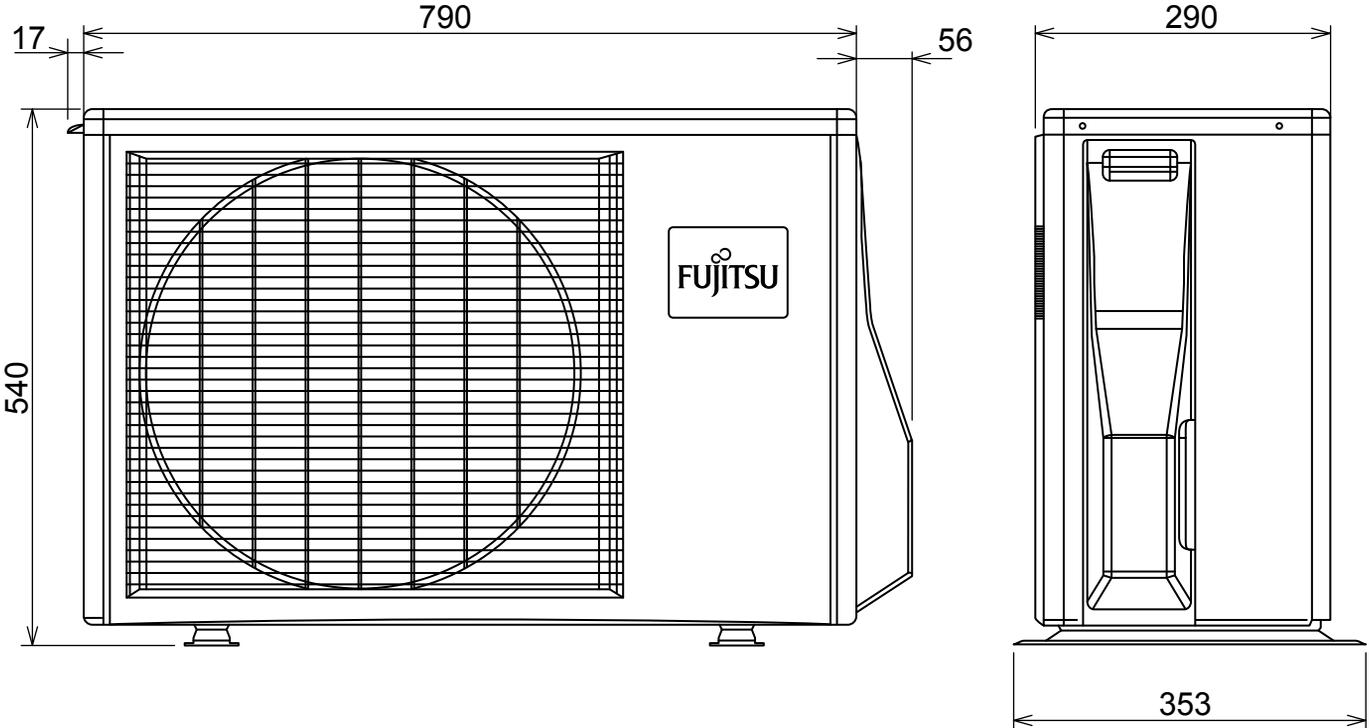
# DIMENSIONS

(unit : mm)

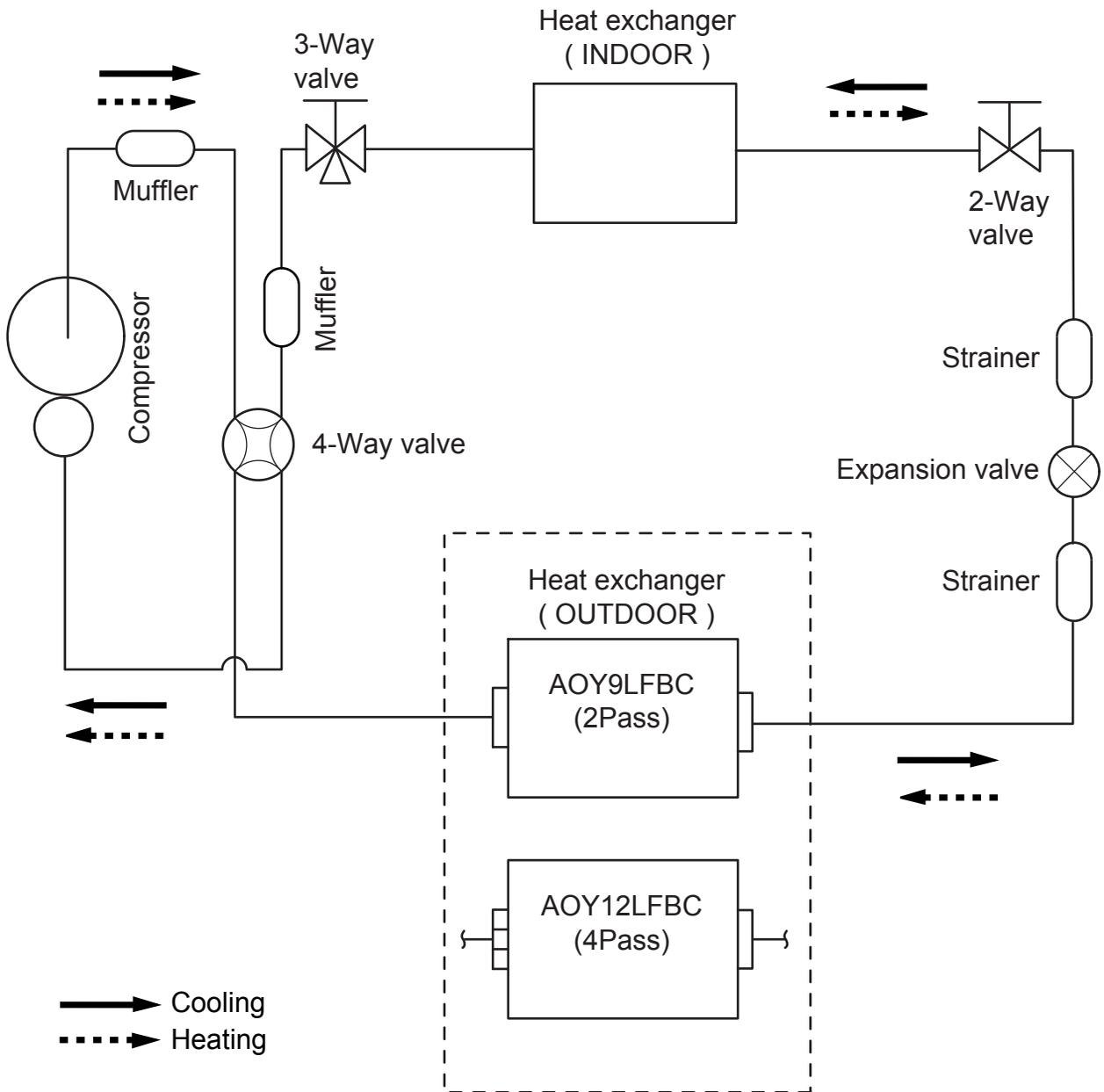
## INDOOR UNIT



## OUTDOOR UNIT



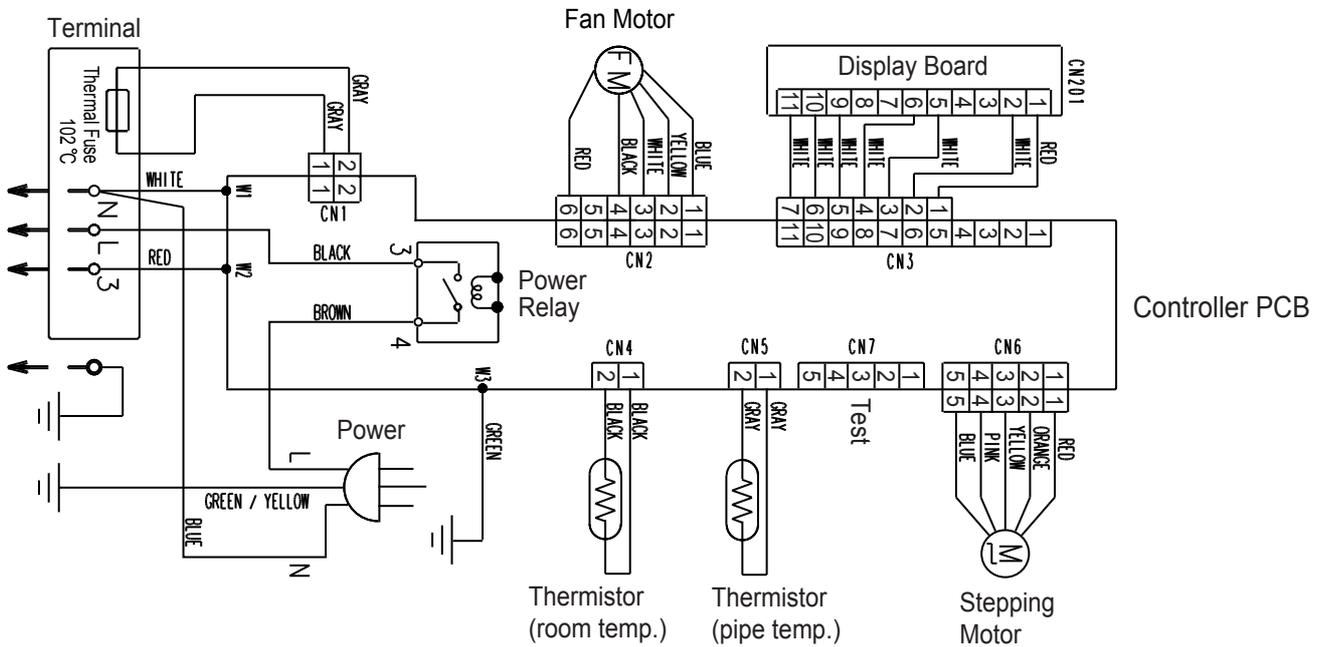
# REFRIGERANT SYSTEM DIAGRAM



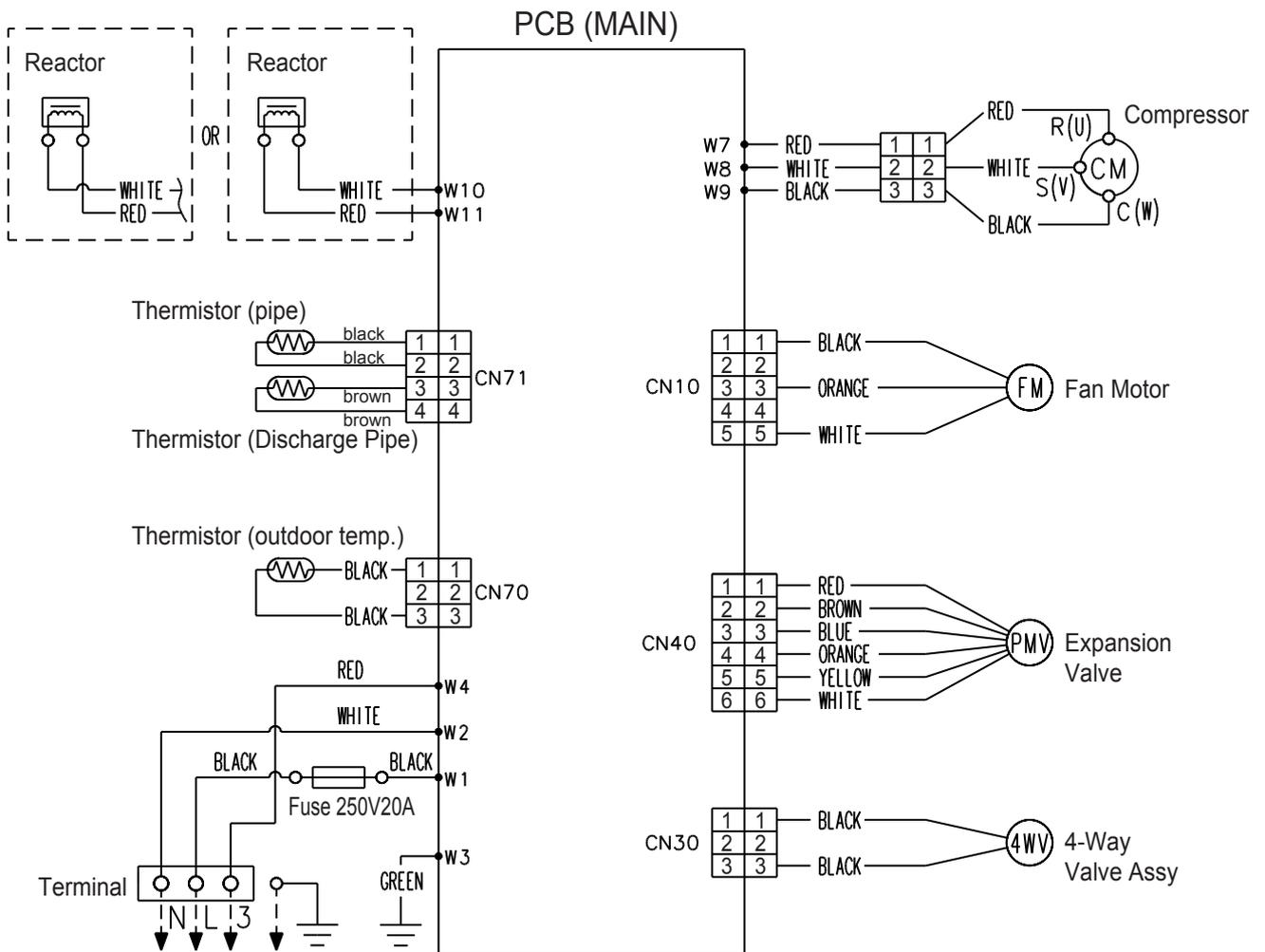
Refrigerant pipe diameter  
 Liquid : 1/4" (6.35 mm)  
 Gas : 3/8" (9.52 mm)

# CIRCUIT DIAGRAM

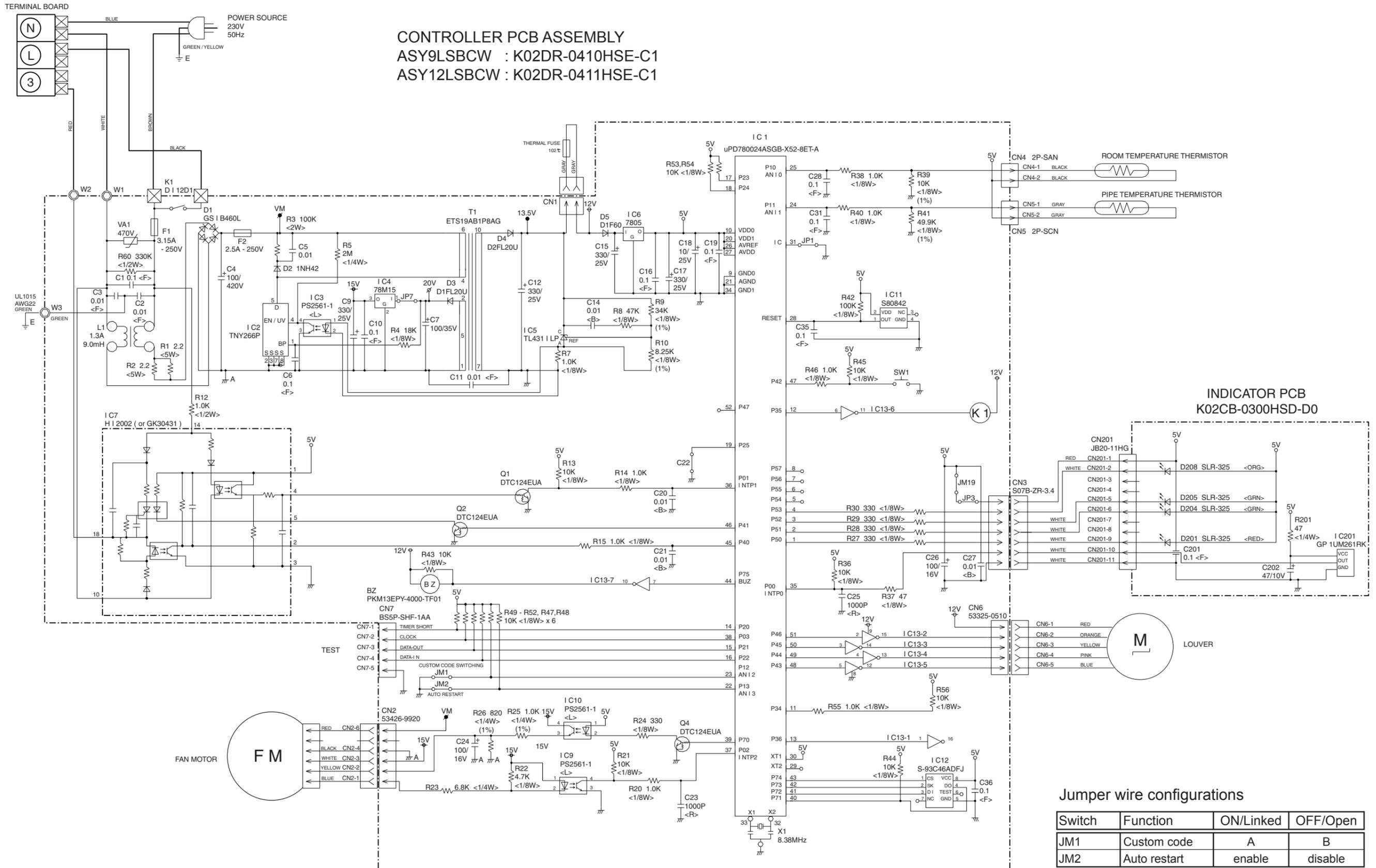
## INDOOR UNIT



## OUTDOOR UNIT



# INDOOR PCB CIRCUIT DIAGRAM



CONTROLLER PCB ASSEMBLY  
 ASY9LSBCW : K02DR-0410HSE-C1  
 ASY12LSBCW : K02DR-0411HSE-C1

Jumper wire configurations

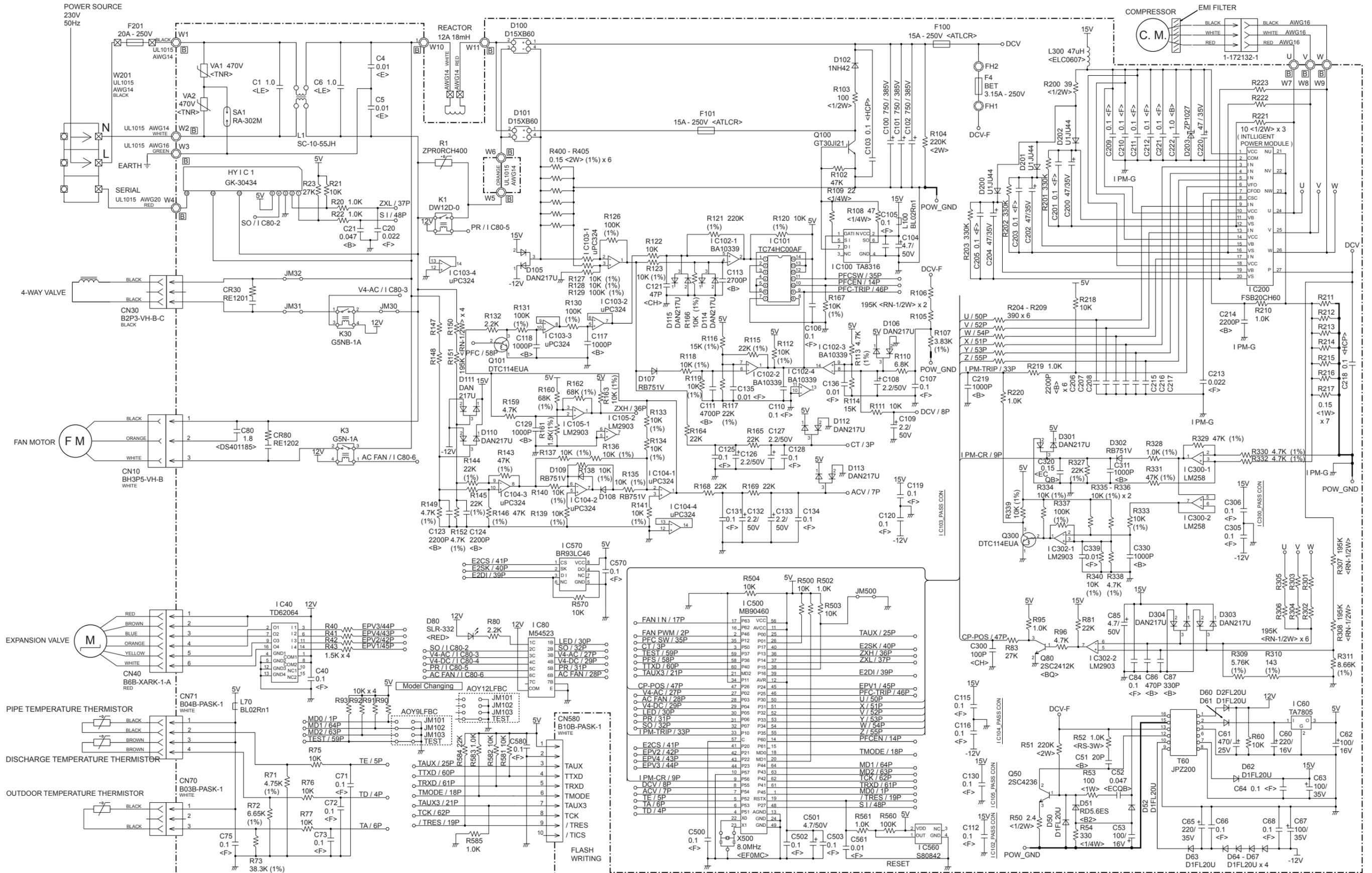
Switch	Function	ON/Linked	OFF/Open
JM1	Custom code	A	B
JM2	Auto restart	enable	disable

# OUTDOOR PCB CIRCUIT DIAGRAM

Controller PCB Assy

AOY9LFBC : K04DT-0400HUE-C1

AOY12LFBC : K04DT-0401HUE-C1



# ERROR CONTENTS

## Self-diagnosis function table (Flashing LED Display)

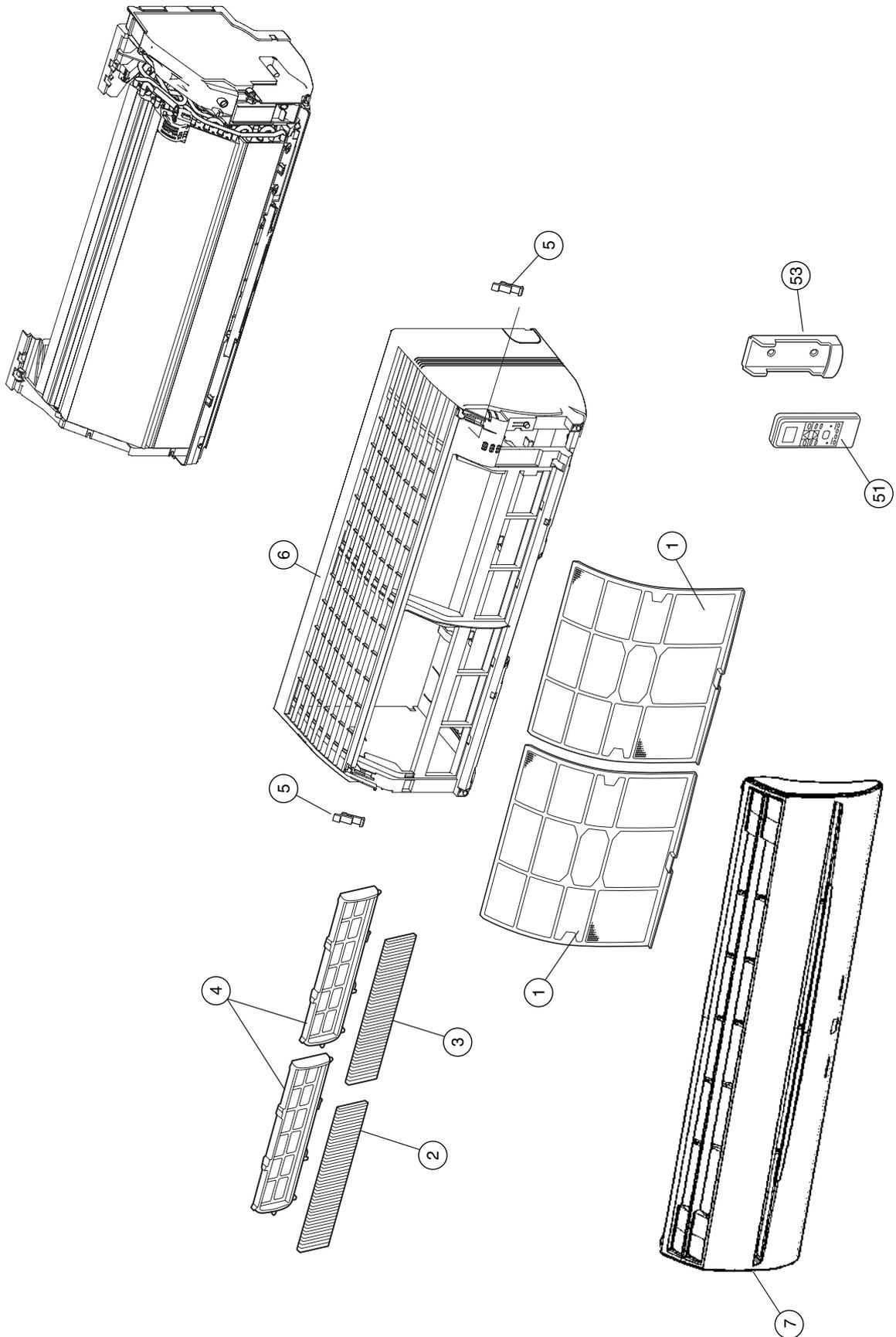
\* Detailed Trouble Display (secondary level) can be indicated by pressing Test Operation button.

Trouble Display (primary)			Detailed Trouble Display (by Test Button)			Detailed Error Item
Error	Operation	Timer	Error	Operation	Timer	
Serial signal error	Normal	1 sec blinking	Serial reverse signal error at operation start up	0.1sec blinking	0.5sec 2 times	When a signal is not read continuously for 10 secs from power relay ON immediately after operation starts >>Cooling 0 code transmission, automatic reset When a signal is not read for 20 secs thereafter >>Trouble display continues and power relay OFF >>Permanent stop
			Signal reverse signal error during operation	0.1sec blinking	0.5sec 3 times	When a signal is not read continuously for 10 secs from power relay ON immediately after operation starts >>Cooling 0 code transmission, automatic reset When a signal is not read for 20 secs thereafter >>Trouble display continues and power relay OFF >>Permanent stop
			Serial forward signal error at operation start up	0.1sec blinking	0.5 sec 4 times	Normal Serial Forward Signal can not be received more than 10 secs  >>Releases when it becomes normal
			Serial forward signal error during operation	0.1sec blinking	0.5sec 5 times	Normal Serial Forward Signal can not be received more than 10 secs ( after receiving effective forward transfer signal) >>Releases when it becomes normal
Indoor unit thermistor error	0.5sec 2 times	0.1sec blinking	Indoor temperature thermistor open	0.1sec blinking	0.5sec 2 times	Indoor Thermistor detection value is open when AC plug is inserted  >>Releases when value becomes normal
			Pipe thermistor open or short	0.1sec blinking	0.5sec 3 times	Indoor Thermistor detection value is open or short when AC plug is inserted  >>Releases when value becomes normal
Outdoor unit thermistor error	0.5sec 3 times	0.1sec blinking	Discharge thermistor open or short	0.1sec blinking	0.5sec 2 times	Outdoor Thermistor detection value is open or short  >>Outdoor unit stops Releases when it becomes normal
			Heat exchanger thermistor open	0.1sec blinking	0.5sec 3 times	Outdoor Thermistor detection value is open  >>Outdoor unit stops Releases when it becomes normal
			Outdoor temperature thermistor open or short	0.1sec blinking	0.5sec 4 times	Outdoor Thermistor detection value is open or short  >>Outdoor unit stops Releases when it becomes normal
Indoor unit control error	0.5sec 4 times	0.1sec blinking	Forced automatic SW welded	0.1sec blinking	0.5sec 2 times	Indoor Forced Auto SW is ON for more than 10 secs continuously  >>Error is indicated while it is ON Normal Operation other than error indication
			Main relay welded	0.1sec blinking	0.5sec 3 times	Indoor Serial Reverse Signal is received 1 min. after Main relay becomes OFF  >>Error is indicated while serial reverse signal is input on normal operation Normal operation except error indication
			Power interruption error	0.1sec blinking	0.5sec 4 times	Indoor 50/60Hz is not detected after 4 secs of power ON.  >>Error is indicated and unit is stopped

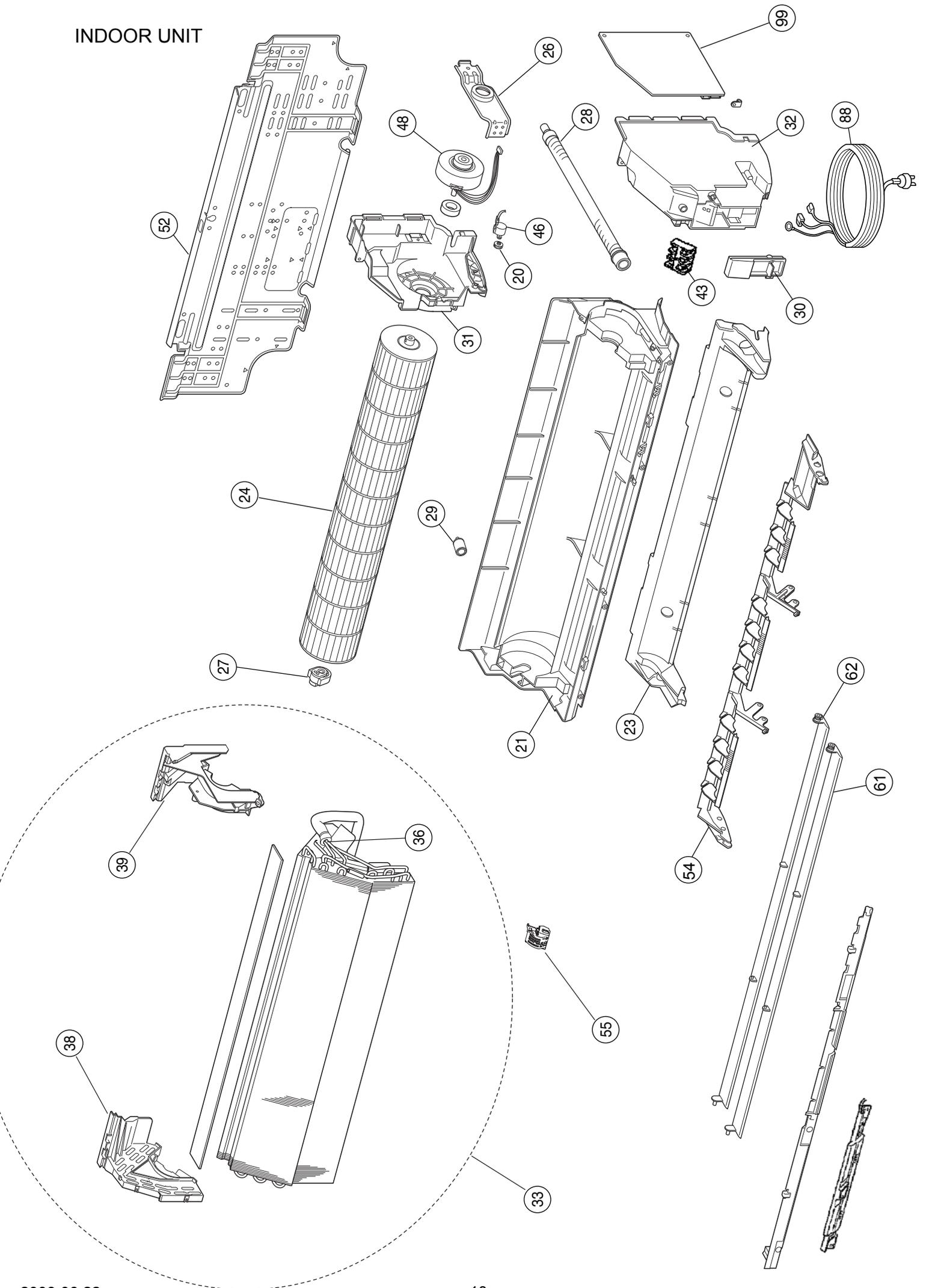
Trouble Display (primary)			Detailed Trouble Display (by Test Button)				Detailed Error Item
Error	Operation	Timer	Error	Operation	Timer		
Outdoor unit control error	0.5sec 5 times	0.1sec blinking	Current trip	0.1sec blinking	0.5sec 2 times	Outdoor	Current trip error is 2nd time within start up  >>Permanent stop
			CT abnormal	0.1sec blinking	0.5sec 3 times	Outdoor	Current detection value is 0A for more than 1 sec when compressor is operated at more than 56rps  >>Automatic release after 3 min. ST
			Compressor rotation error	0.1sec blinking	0.5sec 5 times	Outdoor	Compressor location detection error (incl. failed start up) for 3 times  >>Permanent stop
			Outdoor unit fan drive system abnormal	0.1sec blinking	0.5sec 6 times	Outdoor	When outdoor fan abnormal • fan motor duty abnormal operated 5 times  >>Permanent stop
Indoor fan motor error	0.5sec 6 times	0.1sec blinking	Abnormal lock	0.1sec blinking	0.5sec 2 times	Indoor	Detected rotation is 0 r.p.m. at start up or at 56 secs after Fan mode is selected  >>Permanent stop
			Abnormal rotation	0.1sec blinking	0.5sec 3 times	Indoor	Detected rotation is 1/3 of target r.p.m. at start up or at 56 secs after Fan mode is selected  >>Permanent stop
Refrigerant cycle error	0.5sec 7 times	0.1sec blinking	Discharge temperature abnormal	0.1sec blinking	0.5sec 2 times	Outdoor	Discharge Temperature protection (Discharge temperature is 110degC) operated 2 times  >>Permanent stop
			Cooling high pressure abnormal rise	0.1sec blinking	0.5sec 3 times	Outdoor	High pressure rise protection (Outdoor heat exchanger temperature is 65degC) operated  >>Comp. OFF (releases after 3min.ST) Error is indicated while 3 min.ST
Optional function error	0.5sec 8 times	0.1sec blinking	Active filter voltage abnormal (3rd time)	0.1sec blinking	0.5sec 2 times	Outdoor	Active Filter voltage error operated 3 times  >>Permanent stop
			Active filter foltage abnormal (1st time)	0.1sec blinking	0.5sec 3 times	Outdoor	Active Filter Module error or open detection protection operated  >>Automatic release after 3 min. ST
			PFC circuit abnormal	0.1sec blinking	0.5sec 4 times	Outdoor	  >>Permanent stop

# DISASSEMBLY ILLUSTRATION

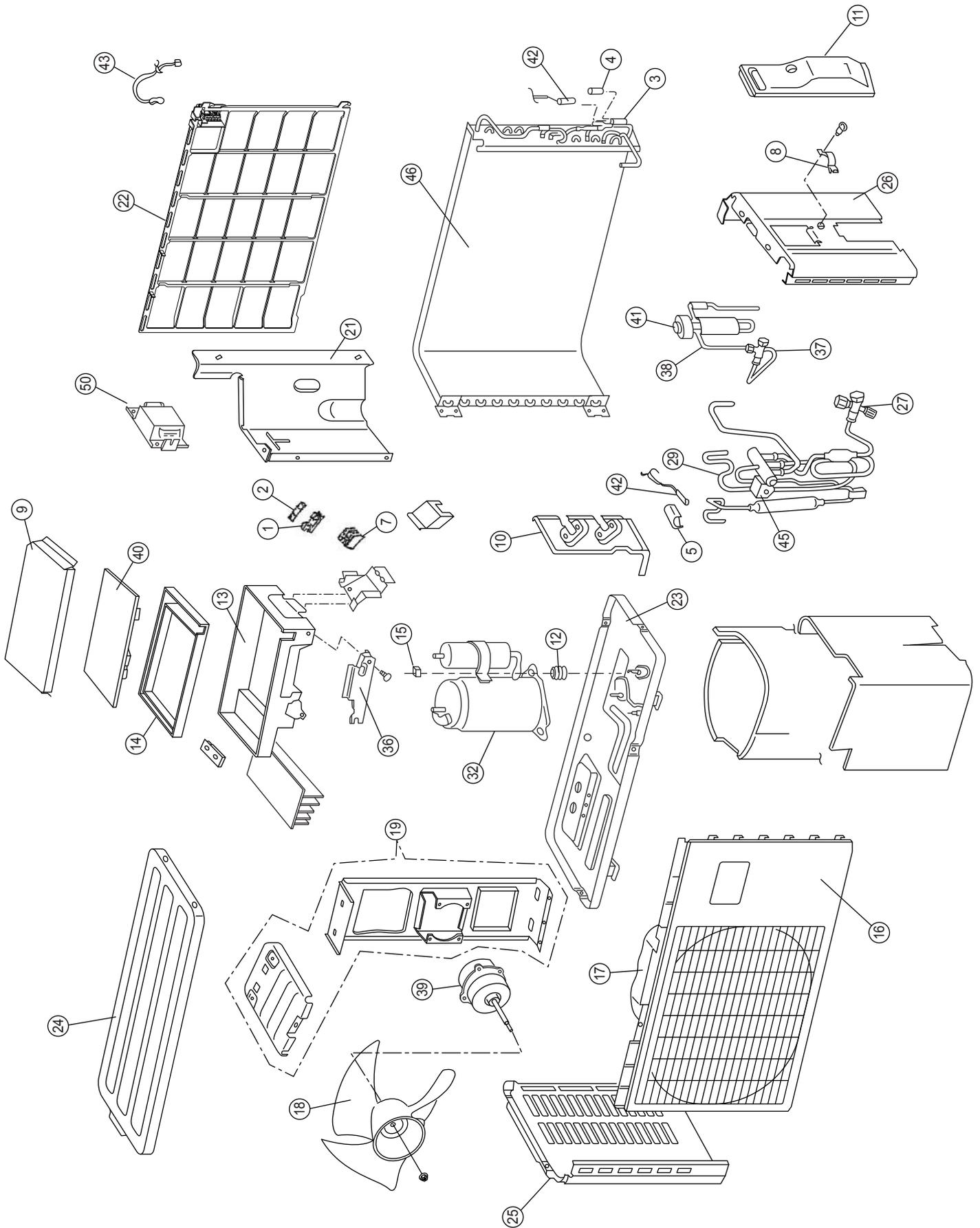
## INDOOR UNIT



INDOOR UNIT



# OUTDOOR UNIT



# PARTS LIST

## INDOOR UNIT

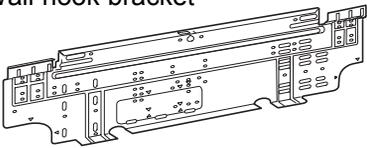
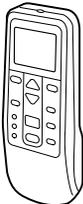
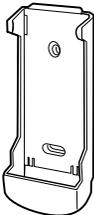
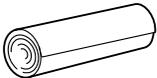
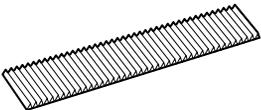
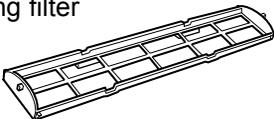
Ref.	Description	Part number
1	Air Filter	9309997011
2	Filter (Electric)	9312153015
3	Filter (ION)	9311925033
4	Holder (Filter)	9306602017
5	Clamper (Grille)	9306755010
6	Front Panel Total Assy	9313130091
7	Intake Grille Assy	9313131050
20	Gear-A	9309994003
21	Casing Assy	9312112081
23	Cover (Casing)-B	9311916017
24	Crossflow Fan Assy	9307836015
26	Clamp (Motor)	9310102008
27	Shaft Holder-C Assy	9306628017
28	Drain Hose Assy	9310357019
29	Drain Cap Assy	9304150008
30	Wire Clamper	9311946014
31	Box (Switch)	9309996014
32	Cover (Switch)	9311863014
33	Evaporator Sub Assy	9313098018
36	Joint Pipe Assy	9331471015
38	Holder (Evaporator) L	9309982017
39	Holder (Evaporator) R	9309983014
43	Terminal	9701955077
46	Step Motor	9900139025
48	Fan Motor Assy	9601814016
51	Remote Control	9314973017
52	Bracket Panel	9310001004
53	Remote Control Holder	9305642014
54	Louver Holder	9309993013
55	Holder (Room Thermistor)	9311948018
61	Flow Control Panel-U	9309991033
62	Flow Control Panel-Z	9309992030
88	Power Cord (9)	9702595067
88	Power Cord (12)	9900157012
99	Controller PCB Assy (9)	9705656055
		(K02DR-0410HSE-C1)
99	Controller PCB Assy (12)	9705656062
		(K02DR-0411HSE-C1)
--	Pipe Thermistor	9702039042
--	Room Thermistor	9700801108
--	Indicator PCB Assy	9705039032

OUTDOOR UNIT

Ref.	Description	Part number	
		AOY9LFBC	AOY12LFBC
1	Fuse Holder	0501454012	0501454012
2	Fuse	0600382018	0600382018
3	Thermister Holder Pipe	313714262805	313714262805
4	Thermistor Spring-A	313728262708	313728262708
5	Thermistor Spring	9300089012	9300089012
7	Terminal	9306489038	9306489038
8	Cord Clamp	9307271014	9307271014
9	Cover (Case)	9309913011	9309913011
10	Bracket Valve	9310229026	9310229026
11	Cover (Switch)	9310979013	9310979013
12	Rubber Cushion	9312680016	9312680016
13	Inverter Case Assy	9312972029	9312972029
15	Nut Special Assy	9313452018	9313452018
16	Front Panel	9313806026	9313806026
17	Fan Ring	9313807016	9313807016
18	Propeller Fan	9313808013	9313808013
19	Bracket (Motor) Assy	9313990015	9313990015
21	Separator B	9313815011	9313815011
22	Protective Net	9313941017	9313941017
23	Base Assy	9313987015	9313987015
24	Top Panel	9313989026	9313989026
25	Cabinet Left	9313992019	9313992019
26	Cabinet Right	9313995027	9313995027
27	3-Way Valve Assy	9314022012	9314022012
29	4-Way Valve Assy	9314093012	9314093012
32	Compressor Assy	9314278013	9314278013
36	Inverter Case Cover	9314507014	9314507014
37	2-Way Valve Assy	9314554018	9314554018
38	Pulse Motor Valve Assy	9314557019	9314557019
39	Motor	9601859017	9601859017
40	Inverter PCB Assy	9705706019	9705706026
41	Expansion Valve Coil	9900057039	9900057039
42	Thermistor Assy	9900148027	9900148027
43	Thermistor (Outdoor Temp)	9900210038	9900210038
45	Solenoid	9970033018	9970033018
46	Condenser Total Assy	9314107016	9314032011
50	Reactor Assy	9900246013	9900246013
--	Emblem Rear	9312633029	9312633029

# ACCESSORIES

## INDOOR UNIT

Name and Shape	Part No.
Wall hook bracket 	9312752010
Remote control 	9314973017
Remote control holder 	9305642014
Battery (penlight) 	0600185534
Cloth tape 	9310519004
Tapping screw (big) (φ 4 x 25) 	0700076046
Tapping screw (small) (φ 3 x 12) 	0700019036
Air cleaning filter 	9312153015 9311925033
Air cleaning filter frame 	9306602017

0412G2714