



# SERVICE MANUAL



Indoor unit	42QHF009DS* 42QHF012DS* 42QHF018DS* 42QHF022DS*
Outdoor unit	38QUS009DS* 38QUS012DS* 38QUS018DS* 38QUS022DS*

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PART - 1

GENERAL INFORMATION

# PRODUCT LINEUP

<b>42QHF009DS*</b> <b>38QUS009DS*</b>	<b>42QHF012DS*</b> <b>38QUS012DS*</b>	<b>42QHF018DS*</b> <b>38QUS018DS*</b>	<b>42QHF022DS*</b> <b>38QUS022DS*</b>
 <p data-bbox="495 596 851 628">800x188x275mm (W*D*H)</p>		 <p data-bbox="1240 596 1420 628">940x205x275</p>	 <p data-bbox="1671 596 1872 628">1045x235x315</p>
 <p data-bbox="360 951 539 983">780x250x540</p>	 <p data-bbox="934 951 1290 983">810x310x558mm (W*D*H)</p>		 <p data-bbox="1677 951 1861 983">845x320x700</p>

# UNIT MODEL IDENTIFICATION

42	Q	U	S	018	D	S	2	*
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42, IDU
38, ODU

D, DC inverter
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Q, Heat pump
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S, Single phase
T, Three phase

U, CDU
H, High wall
S, Duct
T, Cassette
Z, Under-ceiling
F, Console

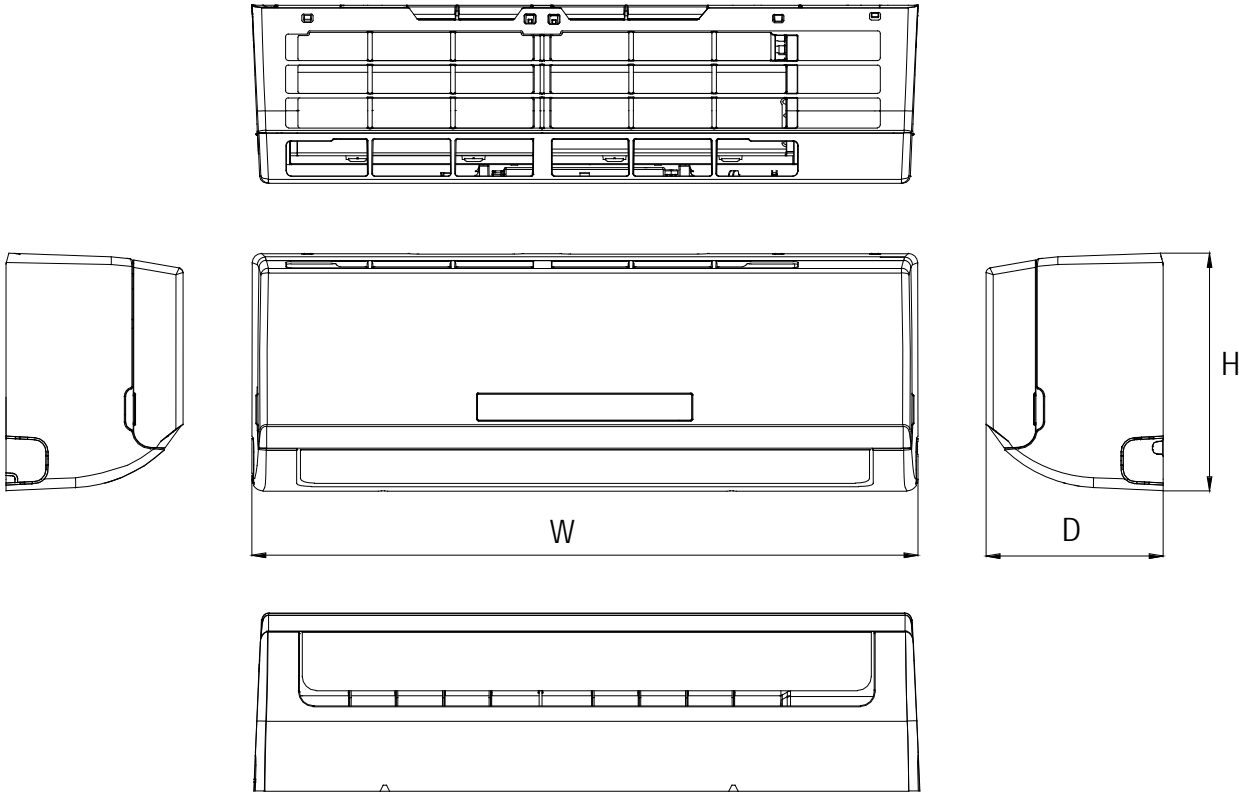
2/3/4, Multi
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<b>Customer Code</b>
G, Germany
N, Nordic Model
...

<b>Series name</b>
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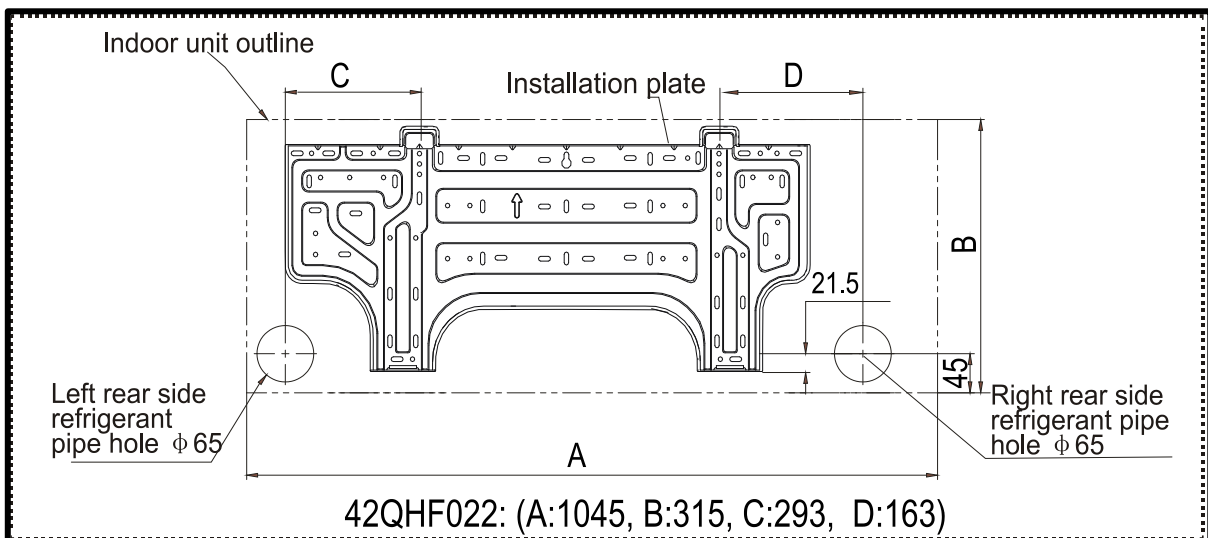
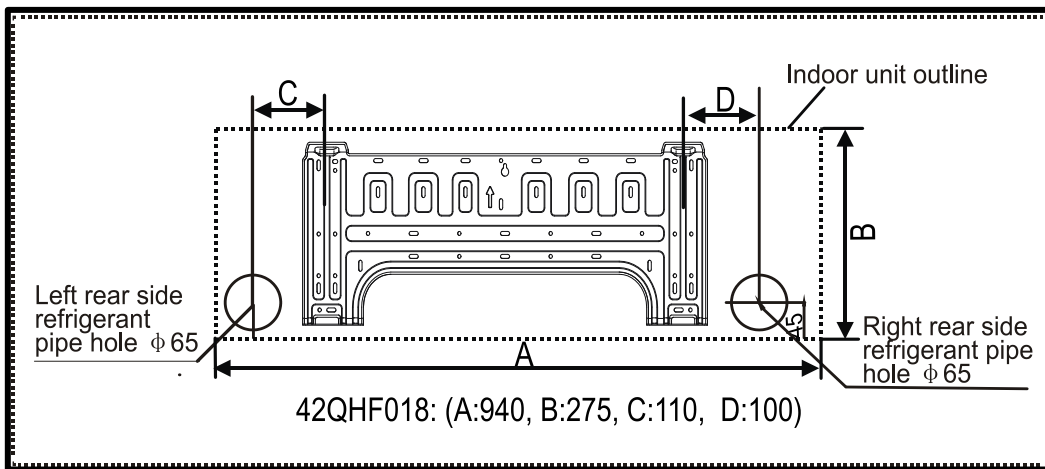
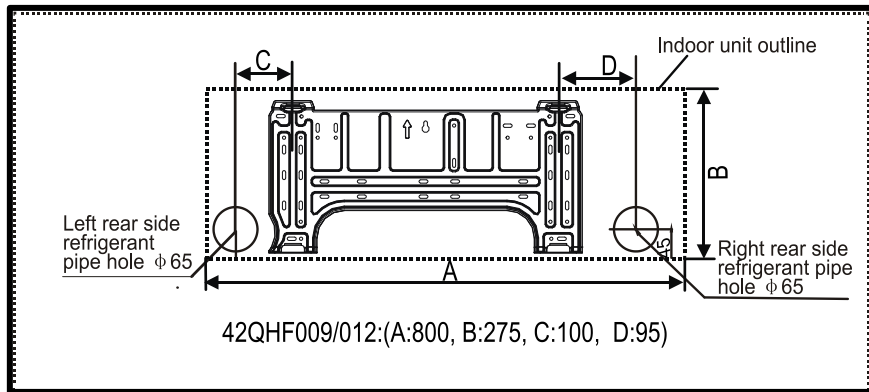
Capacity (KBtu/h)
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# DIMENSIONS

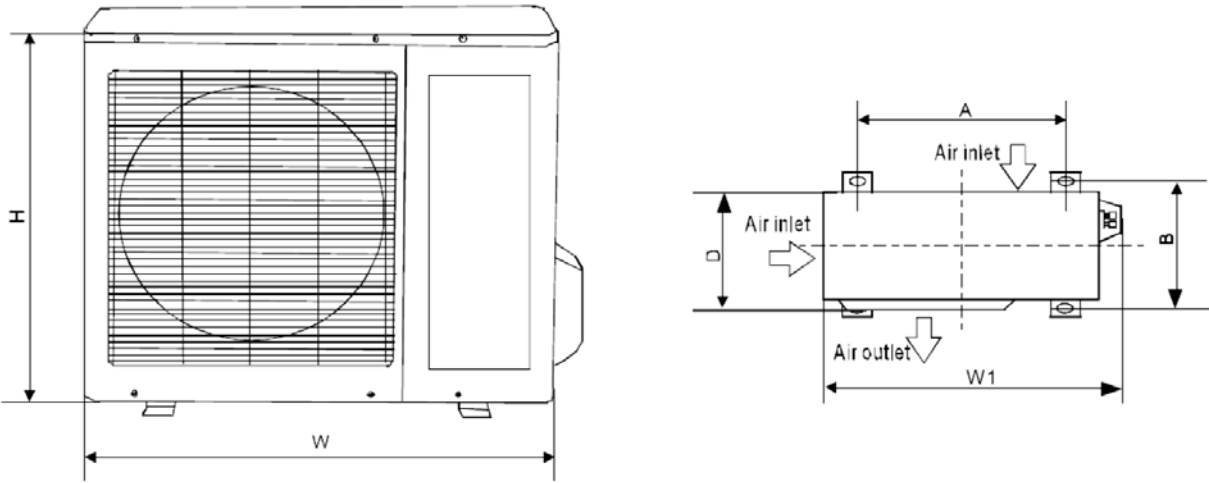


Model	W	D	H
42QHF009/12DS	800	188	275
42QHF018DS	940	205	275
42QHF022DS	1045	235	315

# DIMENSIONS



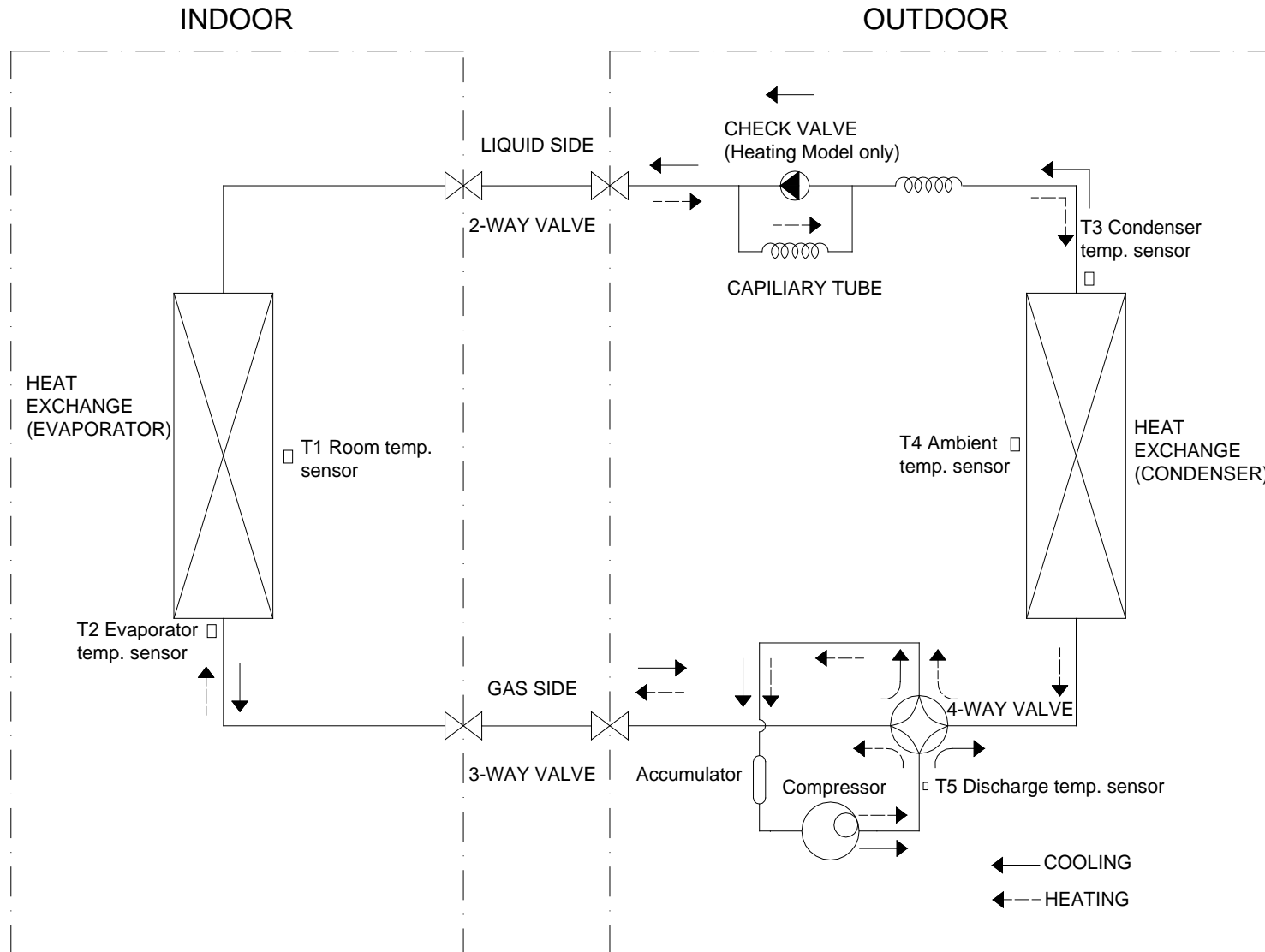
# DIMENSIONS



Model	W	D	H	W1	A	B
38QUS009DS	780	250	540	843	549	276
38QUS012/18DS	810	310	558	874	549	325
38QUS022DS	845	320	700	908	560	335



# REFRIGERANT CYCLE DIAGRAM

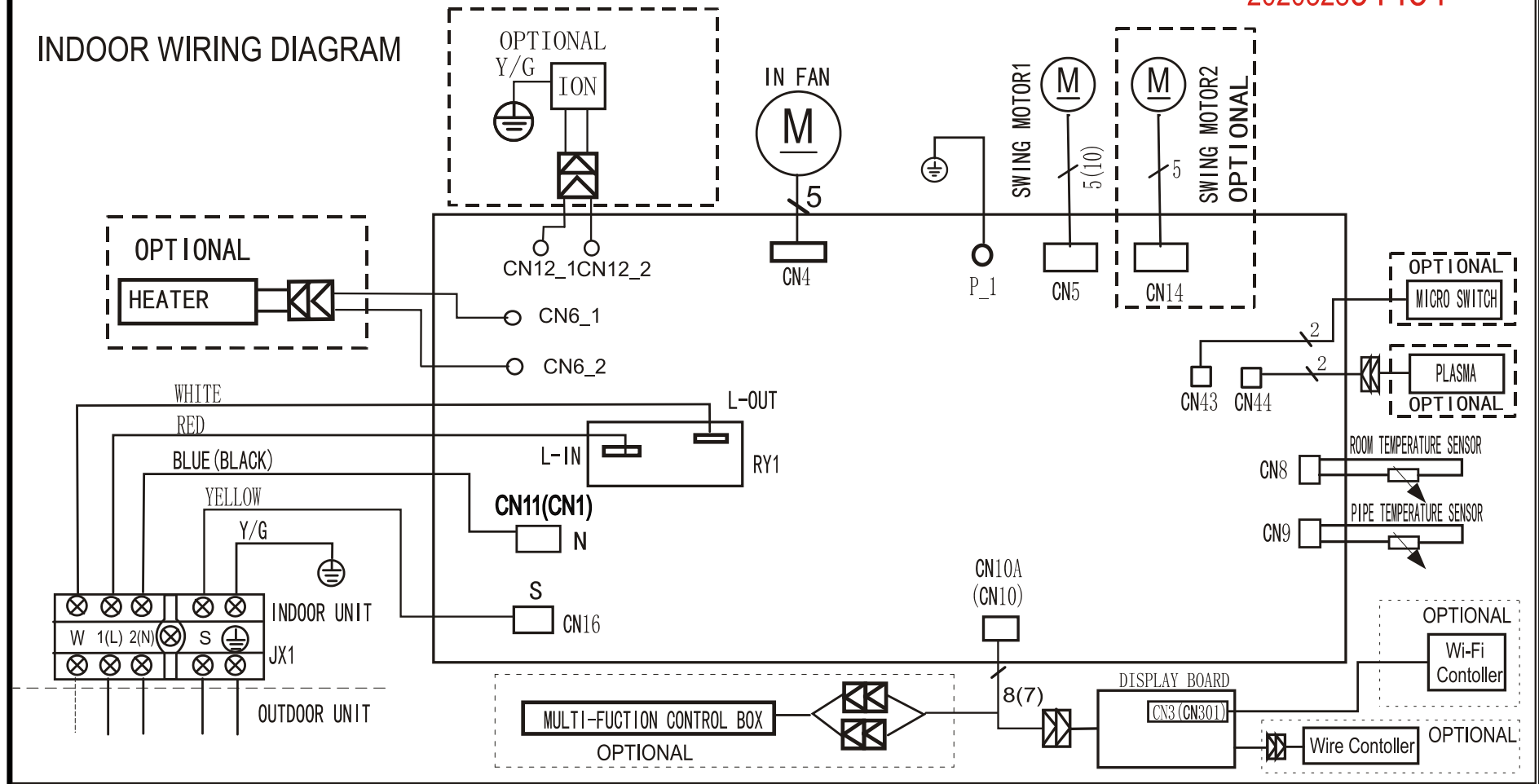


PART - 2  
ELECTRICAL DIAGRAM

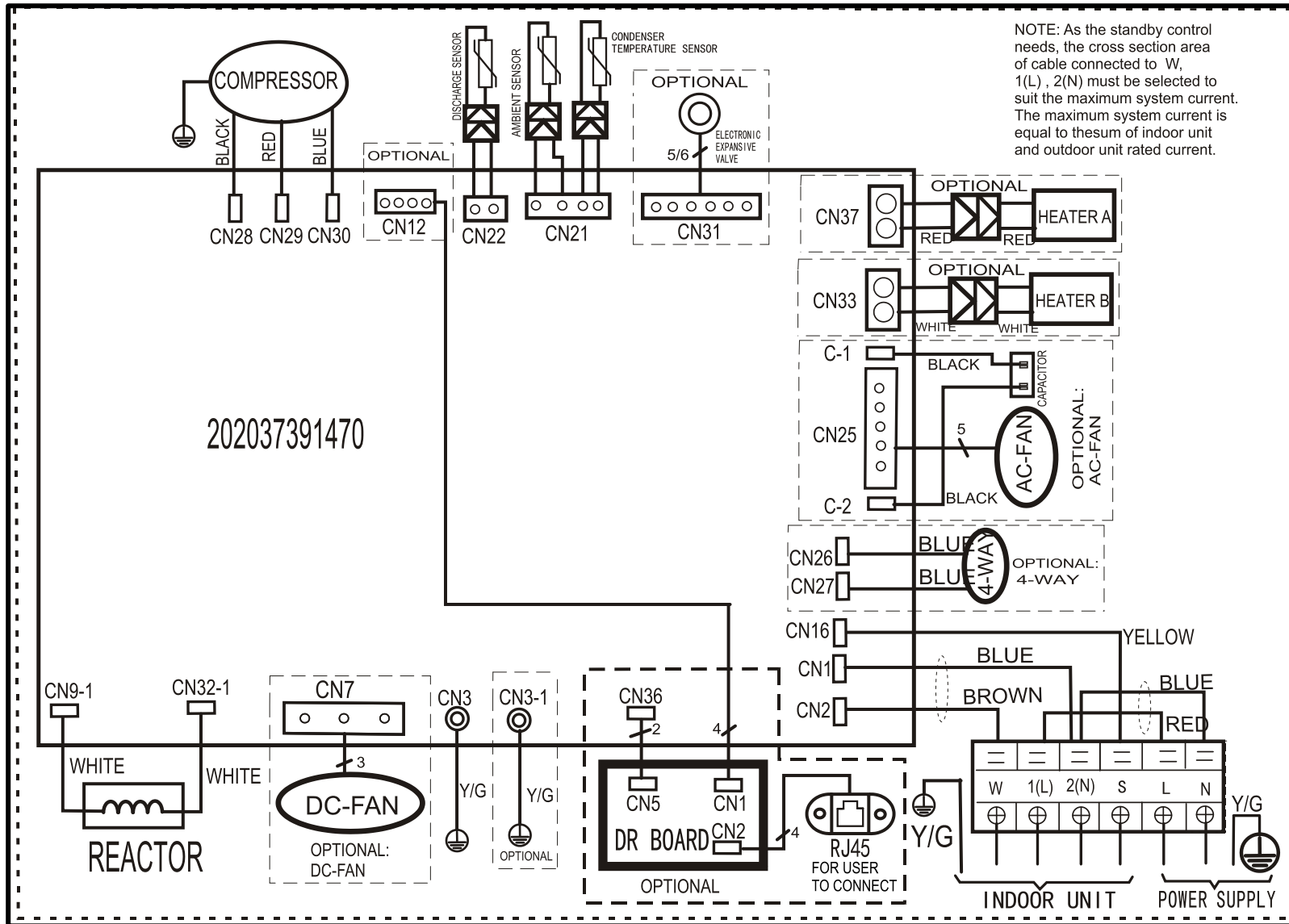
# WIRING DIAGRAM - 42QHF009/12/18/22DS

NOTE: If used as MONO unit, for the standby control needs, the cross section area of cable connected to W, 1(L) must be sufficient for the maximum system current. The maximum system current is equal to the sum of indoor unit and outdoor unit rated current. If used as MULTI unit, W on the terminal block does not need to be connected.

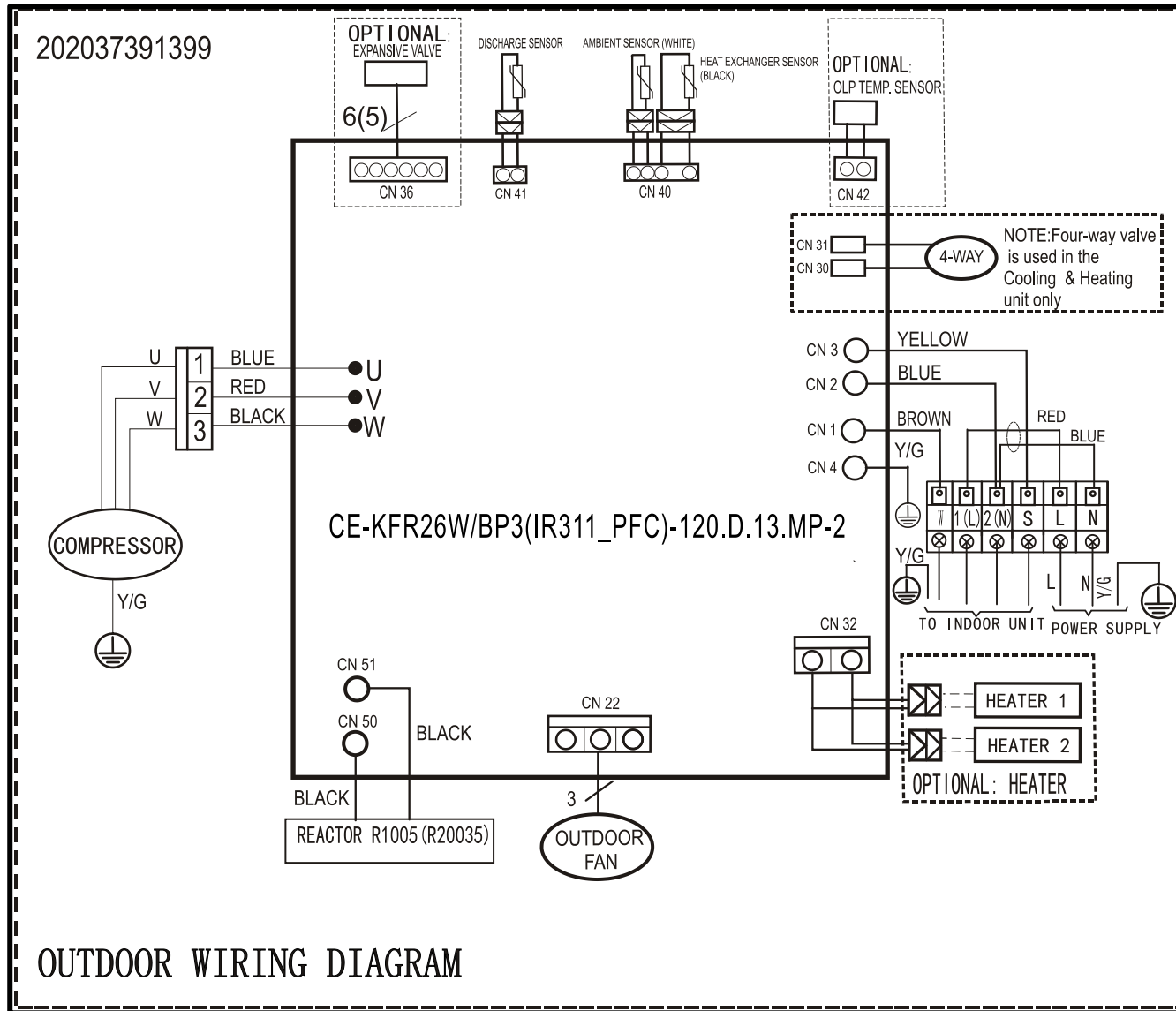
202032891454



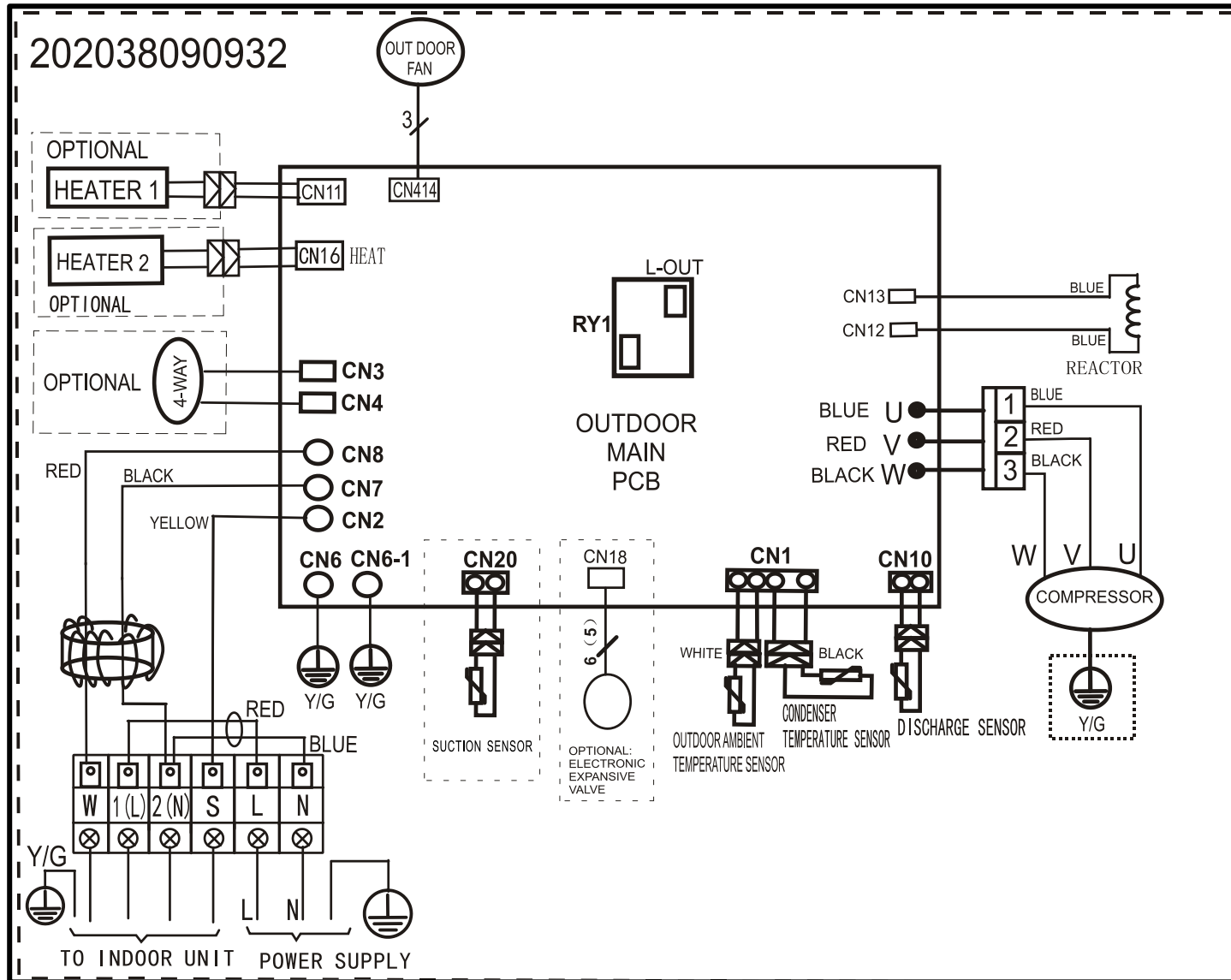
# WIRING DIAGRAM – 38QUS009/12DS



# WIRING DIAGRAM – 38QUS018DS



# WIRING DIAGRAM - 38QUS022DS

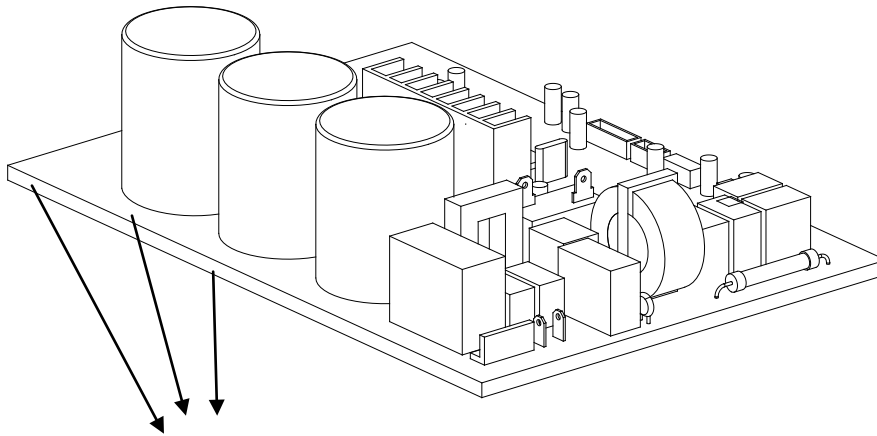


**PART – 3**

**TROUBLE SHOOTING**

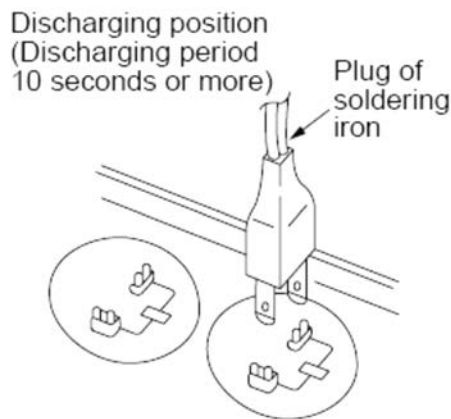
# SAFETY CAUTION

Electricity power is still kept in capacitors even the power supply is shut off. Do not forget to discharge the electricity power in capacitor.



**Electrolytic Capacitors**  
**(HIGH VOLTAGE! CAUTION!)**

Connect discharge resistance (approx.100Ω 40W) or soldering iron (plug) between +, - terminals of the electrolytic capacitor on the contrary side of the outdoor PCB.



**Note: The picture above is only for reference. The plug of your side may be different.**



# ERROR CODE

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## **Abbreviation**

T1: Indoor ambient temperature

T2: Coil temperature of indoor heat exchanger middle.

T3: Coil temperature of outdoor heat exchanger

T4: Outdoor ambient temperature

T5: Compressor discharge temperature

## Indoor Unit

Operation lamp	Timer lamp	Digital Display	Led Status	Remark
☆ 1 time	X	<b>E0</b>	Indoor unit EEPROM parameter error	
☆ 2 times	X	<b>E1</b>	Indoor / outdoor units communication error	
☆ 3 times	X	<b>E2</b>	Zero crossing signal detection error	Only available for AC motor of high-wall
☆ 4 times	X	<b>E3</b>	Indoor fan speed has been out of control	
☆ 5 times	X	<b>E4</b>	Open circuit or short circuit of indoor room temperature T1 sensor	
☆ 6 times	X	<b>E5</b>	Open circuit or short circuit of evaporator coil temperature T2 sensor	
☆ 7 times	X	<b>EC</b>	Refrigerant Leakage Detection	Only available for single split
☆ 8 times	X	<b>EE</b>	Water-level alarm malfunction	Only available for unit with drain pump
☆ 1 time	O	<b>F0</b>	Operation current protection	
☆ 2 times	O	<b>F1</b>	Open circuit or short circuit of outdoor ambient T4 temperature sensor	
☆ 3 times	O	<b>F2</b>	Open circuit or short circuit of condenser coil temperature T3 sensor	
☆ 4 times	O	<b>F3</b>	Open circuit or short circuit of compressor discharge T5 temperature sensor	
☆ 5 times	O	<b>F4</b>	Outdoor unit EEPROM parameter error	
☆ 6 times	O	<b>F5</b>	Outdoor fan speed has been out of control	
☆ 7 times	O	<b>F6</b>	Open or short circuit of T2B temperature sensor	Only available for multi-split outdoor unit
☆ 1 times	☆	<b>P0</b>	IPM malfunction or IGBT over-strong current protection	
☆ 2 times	☆	<b>P1</b>	Over voltage or over low voltage protection	
☆ 3 times	☆	<b>P2</b>	High temperature protection of compressor top	Only for 38QUS022/24DS
☆ 5 times	☆	<b>P4</b>	Inverter compressor drive error	
☆ 6 times	☆	<b>P5</b>	Mode conflict	Only available for multi-split

O (light)

X (off)

☆ (flash)

## Trouble Shooting of Indoor Error Code

### 1 EEPROM parameter error diagnosis and solution (E0/F4)

Error Code	<b>E0/F4</b>
Malfunction decision conditions	Indoor or outdoor PCB main chip does not receive feedback from EEPROM chip.
Supposed causes	<ul style="list-style-type: none"><li>● Installation mistake</li><li>● PCB faulty</li></ul>

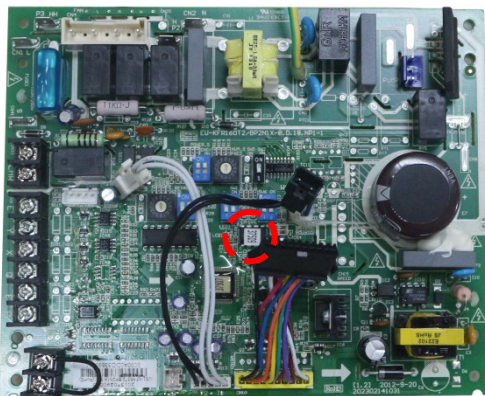
#### Trouble shooting:

Power off, then restart the unit 2 minutes later.

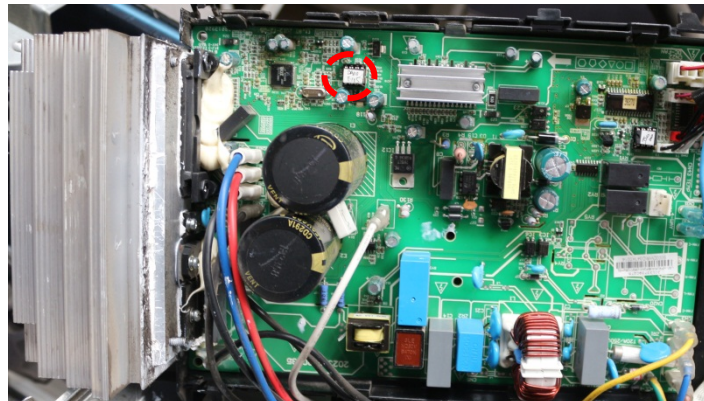
Yes

Replace the indoor/outdoor main PCB.

EEPROM: An electrically erasable programmable read-only memory whose contents can be erased and reprogrammed using a pulsed voltage.



Indoor PCB

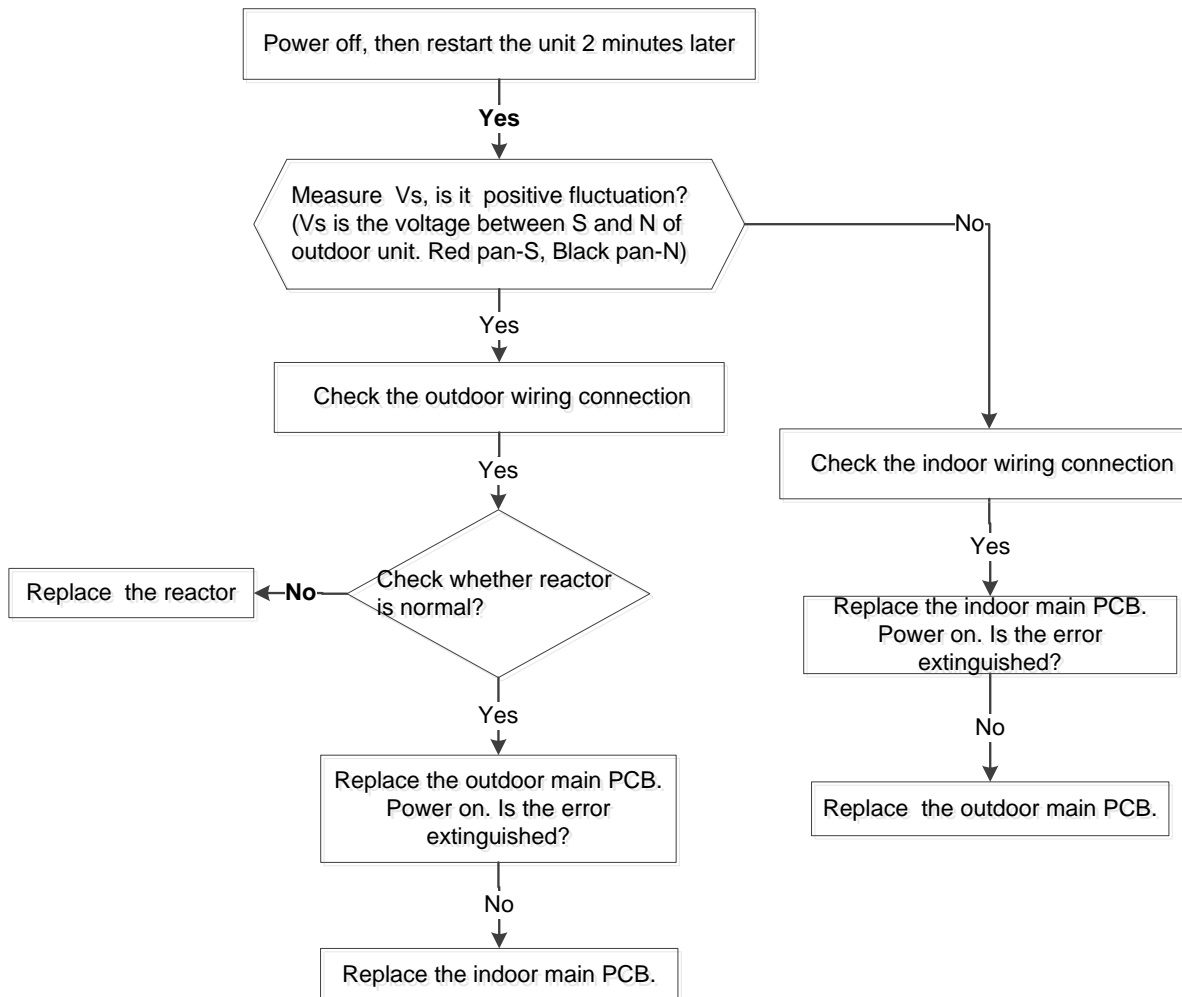


Outdoor PCB

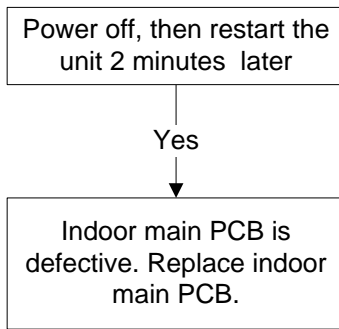
**Note: The two photos above are only for reference, it may be not same totally with the ones on your side.**

## 2 Indoor unit and outdoor unit communication protection error diagnosis and solution (E1)

<b>Error Code</b>	<b>E1</b>
<b>Malfunction decision conditions</b>	<b>Indoor unit does not receive the feedback from outdoor unit during 110 seconds and this condition happens four times continuously.</b>
<b>Supposed causes</b>	<ul style="list-style-type: none"> <li>● <b>Wiring mistake</b></li> <li>● <b>Indoor or outdoor PCB faulty</b></li> </ul>



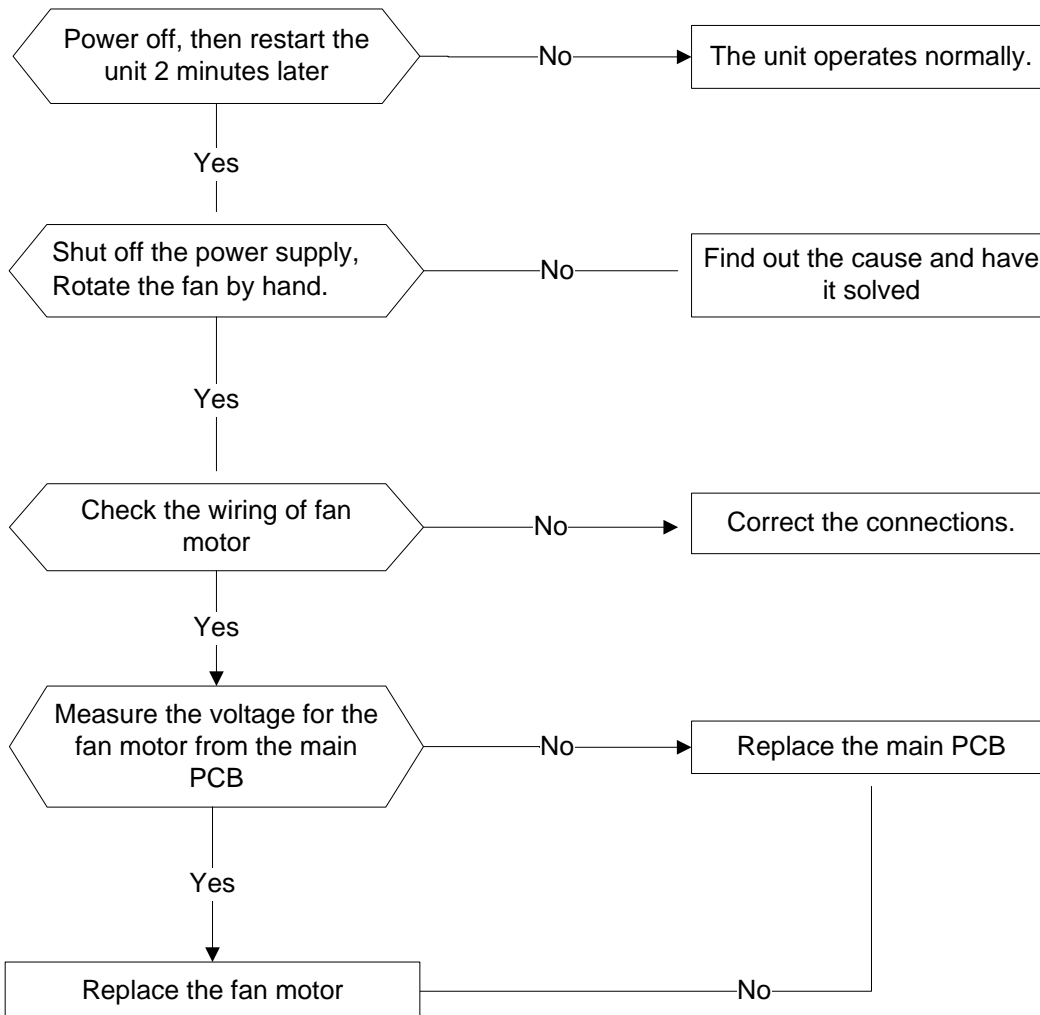
### 3 Zero crossing detection error diagnosis and solution (E2)



Only available for AC motor of high-wall.

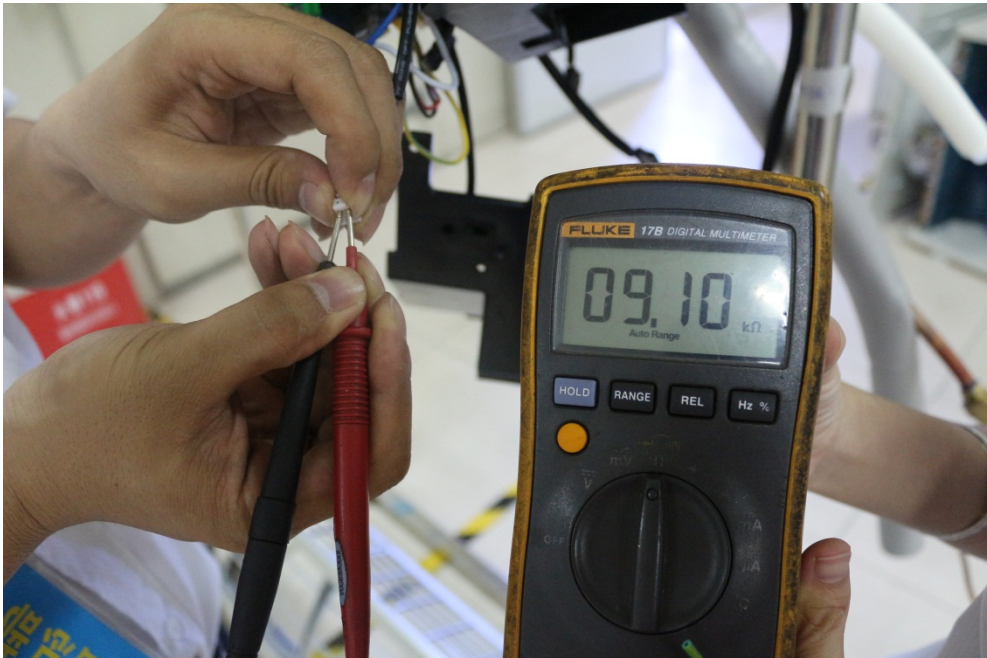
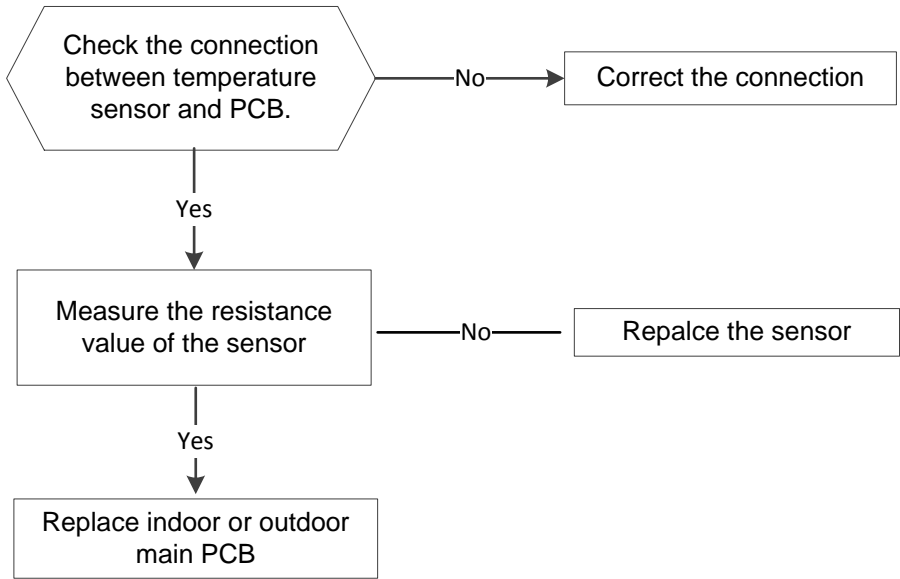
#### 4 Fan speed has been out of control diagnosis and solution (E3/F5)

<b>Error Code</b>	<b>E3/F5</b>
<b>Malfunction decision conditions</b>	<b>When indoor fan speed keeps too low (300RPM) for certain time, the unit will stop and the LED will display the failure.</b>
<b>Supposed causes</b>	<ul style="list-style-type: none"> <li>● <b>Wiring mistake</b></li> <li>● <b>Fan ass'y faulty</b></li> <li>● <b>Fan motor faulty</b></li> <li>● <b>PCB faulty</b></li> </ul>



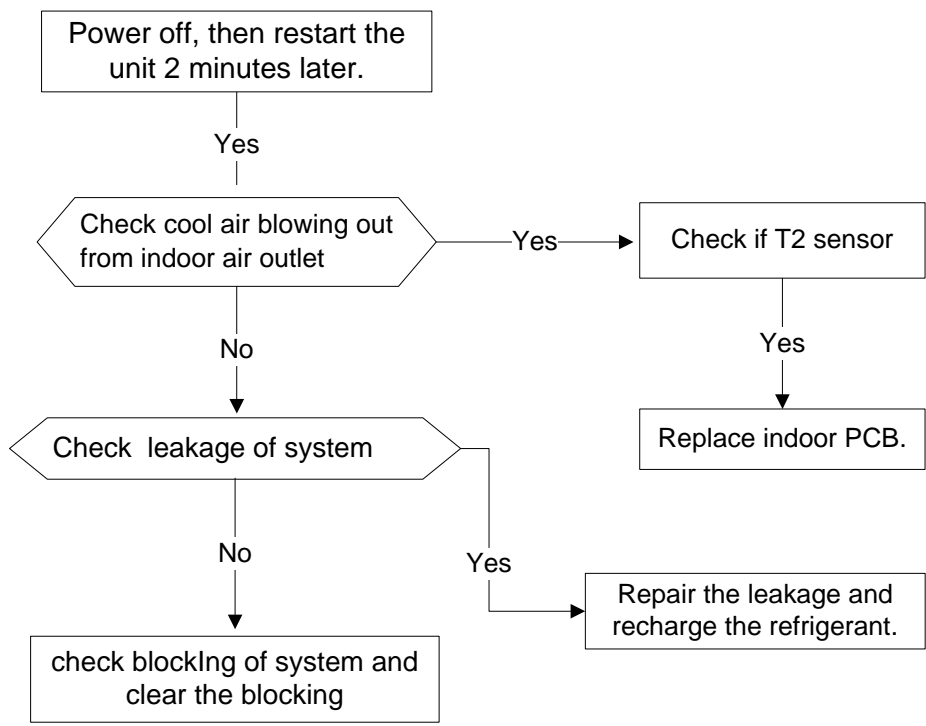
### 5 Open circuit or short circuit of temperature sensor diagnosis and solution (E4/E5/F1/F2/F3)

Error Code	E4/E5/F1/F2/F3
Malfunction decision conditions	If the sampling voltage is lower than 0.06V or higher than 4.94V, the LED will display the failure.
Supposed causes	<ul style="list-style-type: none"><li>● Wiring mistake</li><li>● Sensor faulty</li></ul>



### 6 Refrigerant Leakage Detection diagnosis and solution (EC)

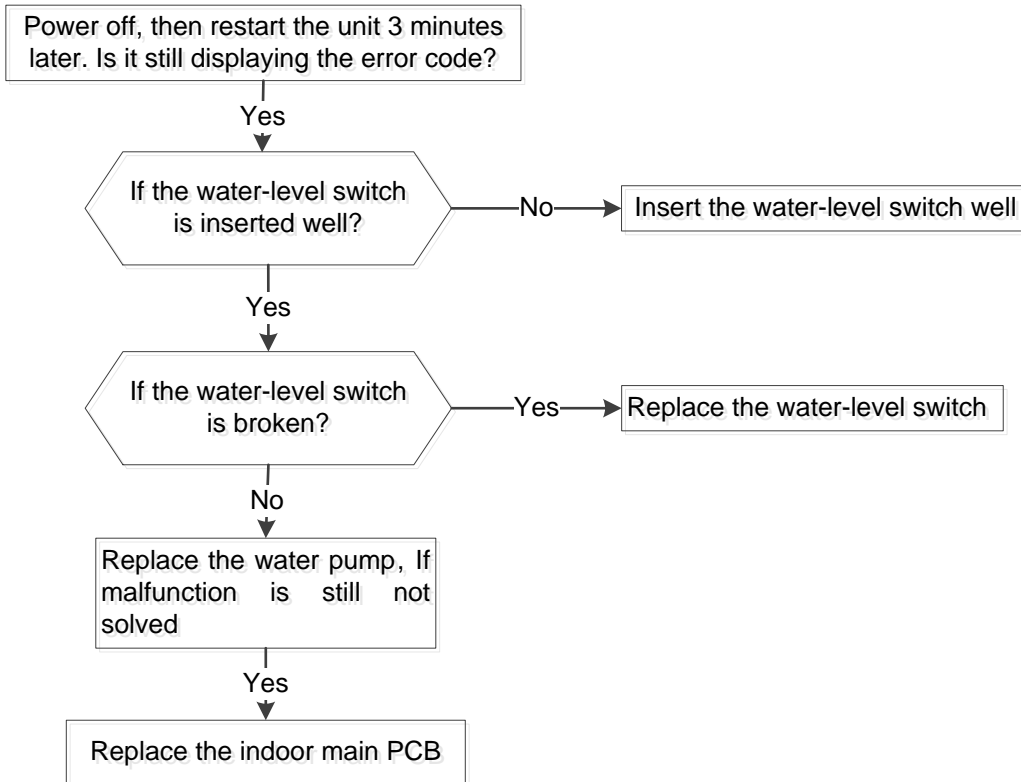
<b>Error Code</b>	<b>EC</b>
<b>Malfunction decision conditions</b>	<p>Define the evaporator coil temp.T2 of the compressor just starts running as Tcool.</p> <p>In the beginning 5 minutes after the compressor starts up, if <math>T2 &lt; T_{cool} - 2^{\circ}\text{C}</math> does not keep continuous 4 seconds and this situation happens 3 times, the display area will show “EC” and AC will turn off.</p>
<b>Supposed causes</b>	<ul style="list-style-type: none"> <li>● T2 sensor faulty</li> <li>● Indoor PCB faulty</li> <li>● System problems, such as leakage or blocking.</li> </ul>



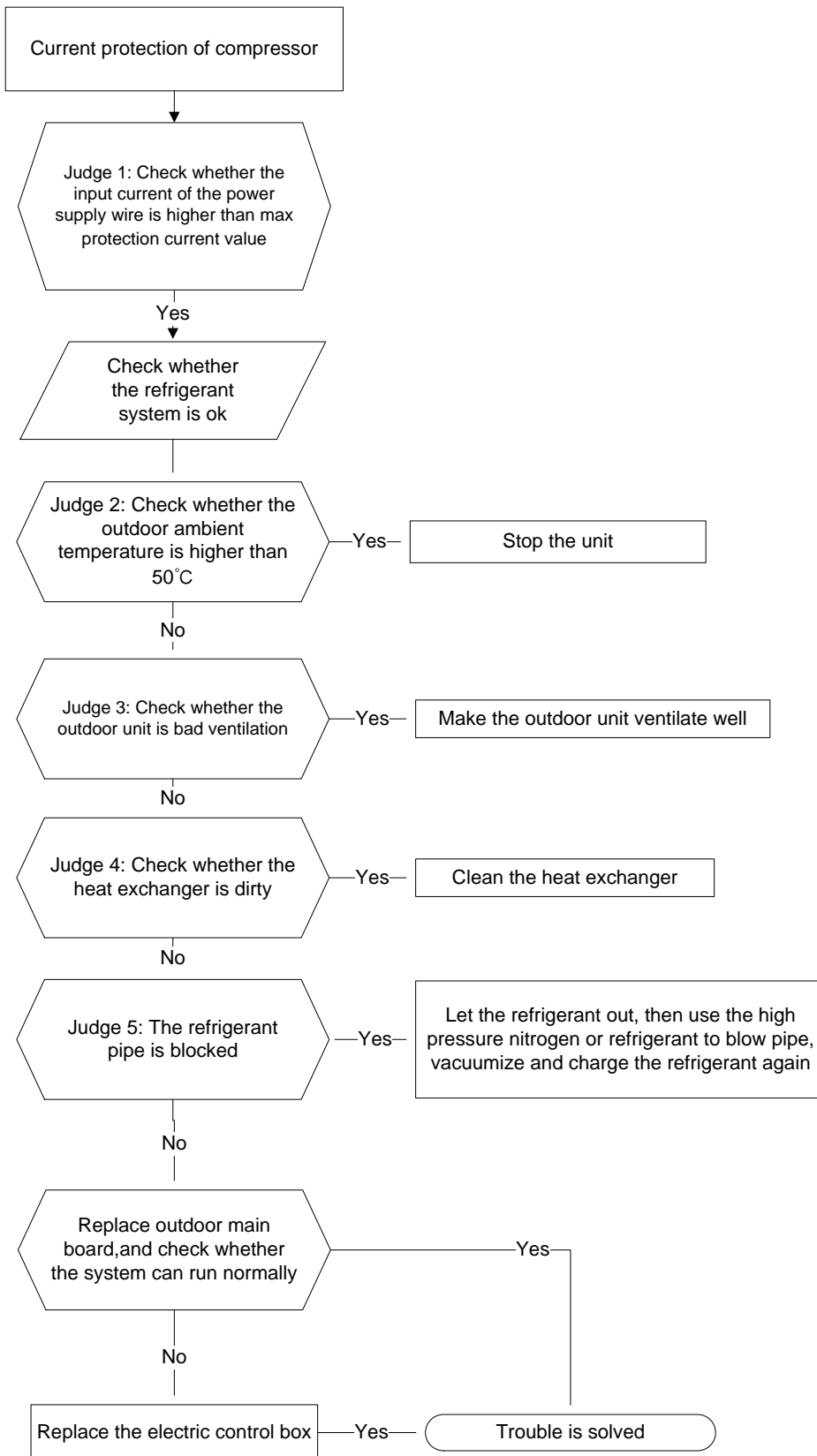


## 7 Water-level alarm malfunction diagnosis and solution

<b>Error Code</b>	<b>EE</b>
<b>Malfunction decision conditions</b>	If the sampling voltage is not 5V, the LED will display the failure.
<b>Supposed causes</b>	<ul style="list-style-type: none"> <li>● Wiring mistake</li> <li>● Water-level switch faulty</li> <li>● Water pump faulty</li> <li>● Indoor PCB faulty</li> </ul>

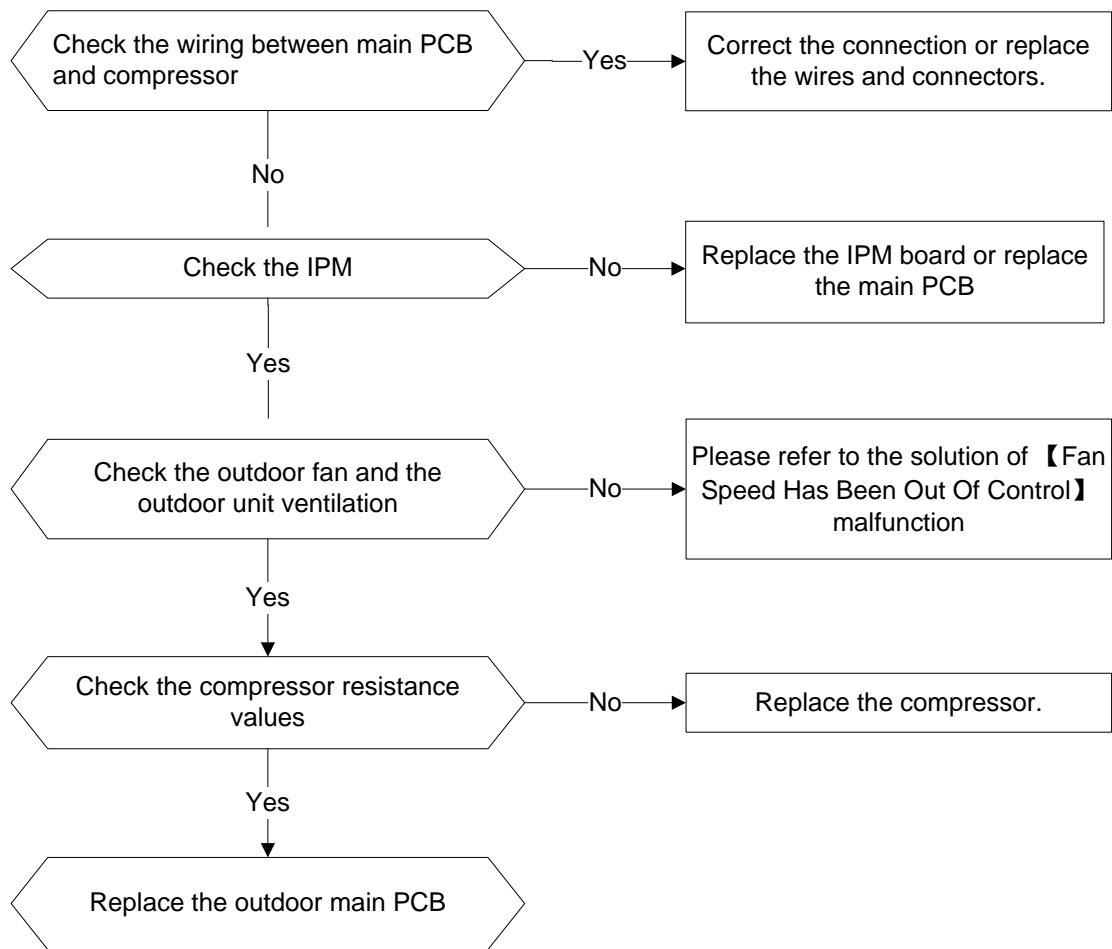


## 8 Operation current protection (F0)



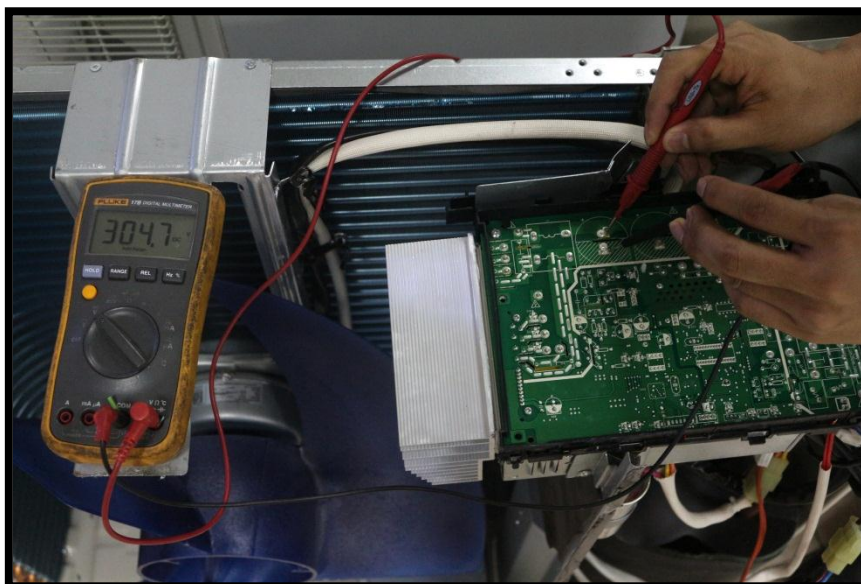
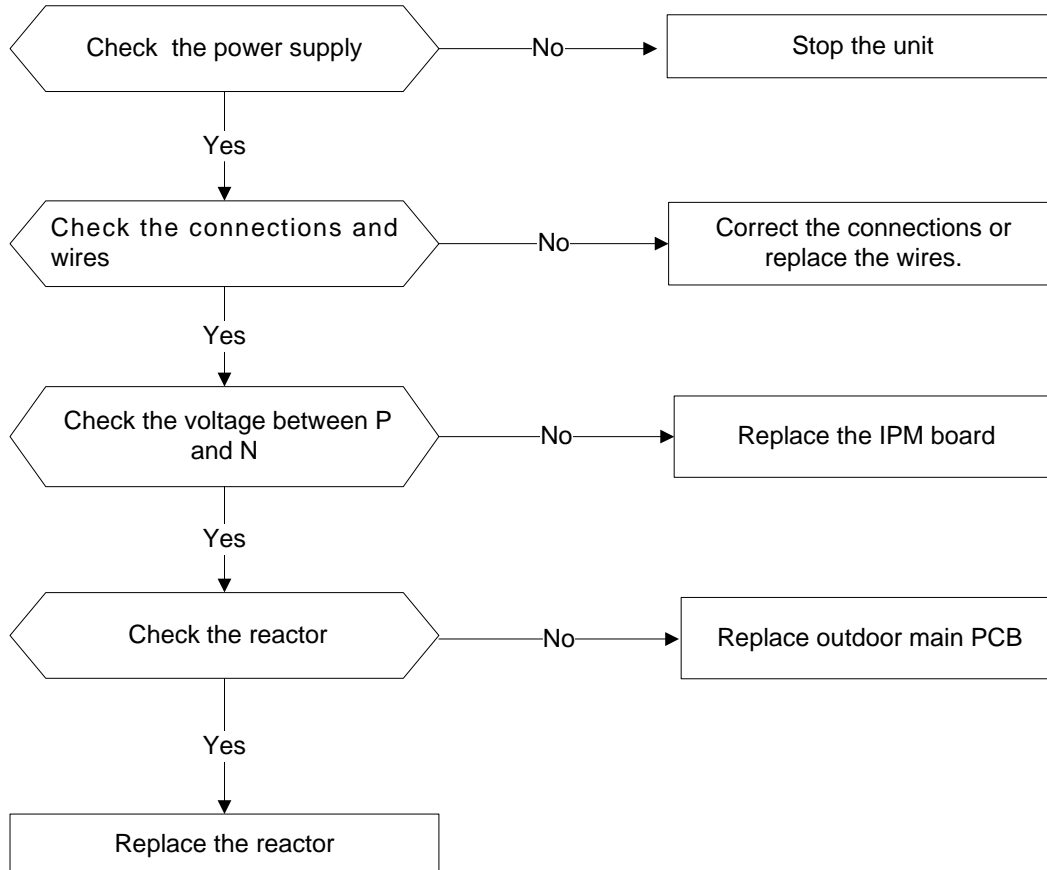
9 IPM malfunction or IGBT over-strong current protection diagnosis and solution (P0)

<b>Error Code</b>	<b>P0</b>
<b>Malfunction decision conditions</b>	<b>When the voltage signal that IPM send to compressor drive chip is abnormal, the display LED will show “P0” and AC will turn off.</b>
<b>Supposed causes</b>	<b>Wiring mistake; IPM malfunction; Outdoor fan ass’y faulty Compressor malfunction; Outdoor PCB faulty</b>



## 10 Over voltage or too low voltage protection diagnosis and solution (P1)

<b>Error Code</b>	<b>P1</b>
<b>Malfunction decision conditions</b>	An abnormal voltage rise or drop is detected by checking the specified voltage detection circuit.
<b>Supposed causes</b>	<ul style="list-style-type: none"> <li>● Power supply problems.</li> <li>● System leakage or block</li> <li>● PCB faulty</li> </ul>

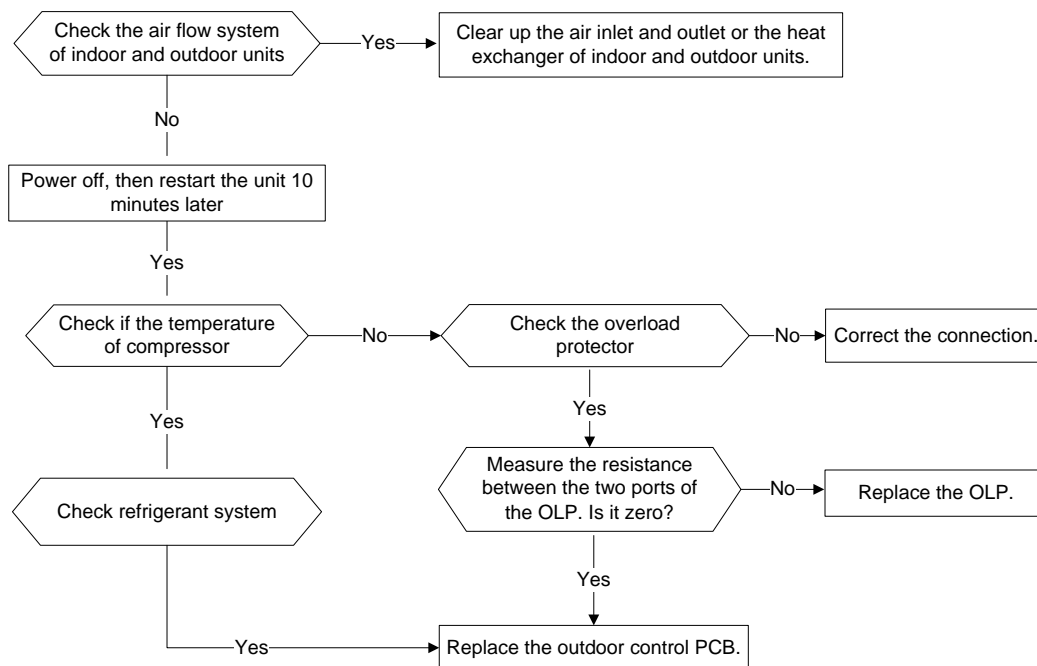


**Remark:**

Measure the DC voltage between P and N port. The normal value should be around 310V.

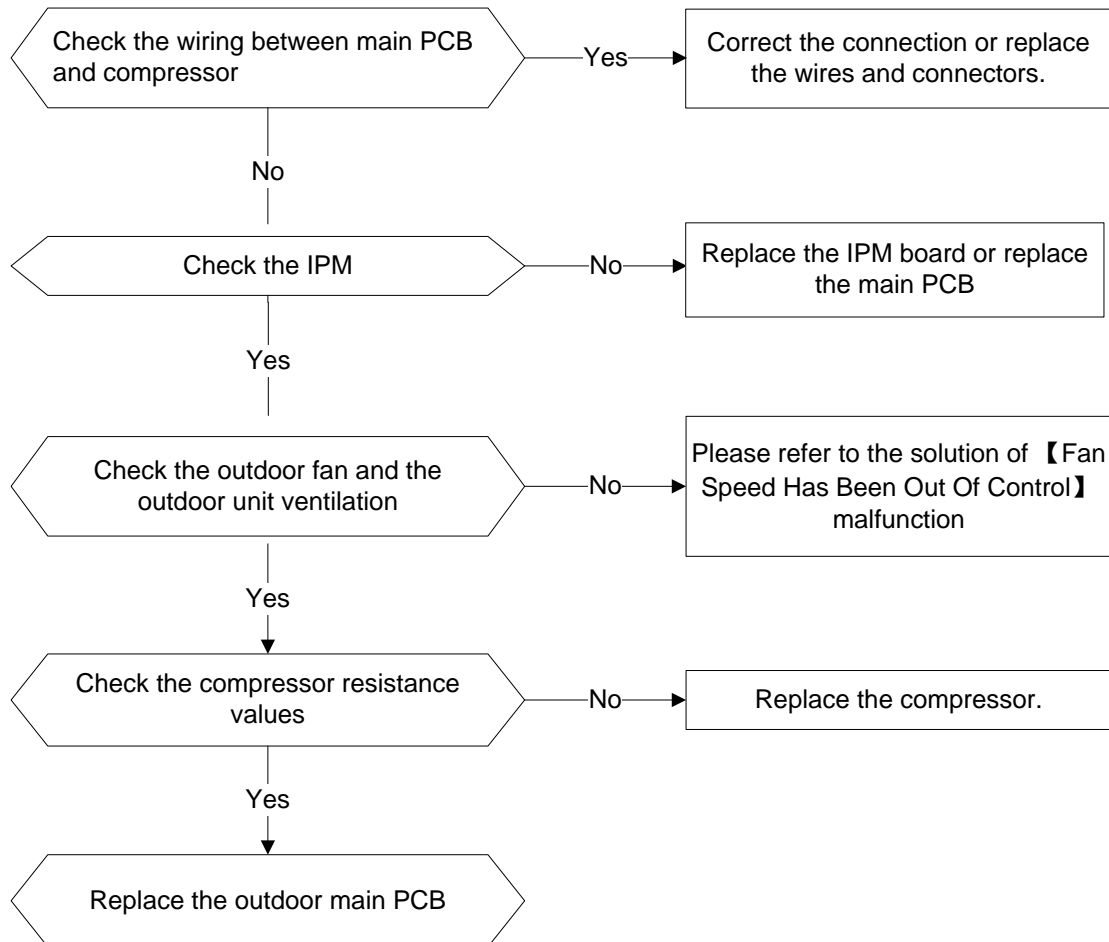
### 11 High temperature protection of compressor top diagnosis and solution (P2)

<b>Error Code</b>	<b>P2</b>
<b>Malfunction decision conditions</b>	<b>If the sampling voltage is not 5V, the LED will display the failure.</b>
<b>Supposed causes</b>	<ul style="list-style-type: none"> <li>● <b>Power supply problems.</b></li> <li>● <b>System leakage or block</b></li> <li>● <b>PCB faulty</b></li> </ul>



## 12 Inverter compressor drive error diagnosis and solution (P4)

Error Code	P4
Malfunction decision conditions	An abnormal inverter compressor drive is detected by a special detection circuit, including communication signal detection, voltage detection, compressor rotation speed signal detection and so on.
Supposed causes	Wiring mistake; IPM malfunction; Outdoor fan ass'y faulty Compressor malfunction; Outdoor PCB faulty



# APPENDIX 1

Temperature Sensor Resistance Value Table, B=4100K

°C	K Ohm	°C	K Ohm	°C	K Ohm	°C	K Ohm
-20	115.266	20	12.6431	60	2.35774	100	0.62973
-19	108.146	21	12.0561	61	2.27249	101	0.61148
-18	101.517	22	11.5000	62	2.19073	102	0.59386
-17	96.3423	23	10.9731	63	2.11241	103	0.57683
-16	89.5865	24	10.4736	64	2.03732	104	0.56038
-15	84.2190	25	10.000	65	1.96532	105	0.54448
-14	79.3110	26	9.55074	66	1.89627	106	0.52912
-13	74.5360	27	9.12445	67	1.83003	107	0.51426
-12	70.1698	28	8.71983	68	1.76647	108	0.49989
-11	66.0898	29	8.33566	69	1.70547	109	0.48600
-10	62.2756	30	7.97078	70	1.64691	110	0.47256
-9	58.7079	31	7.62411	71	1.59068	111	0.45957
-8	56.3694	32	7.29464	72	1.53668	112	0.44699
-7	52.2438	33	6.98142	73	1.48481	113	0.43482
-6	49.3161	34	6.68355	74	1.43498	114	0.42304
-5	46.5725	35	6.40021	75	1.38703	115	0.41164
-4	44.0000	36	6.13059	76	1.34105	116	0.40060
-3	41.5878	37	5.87359	77	1.29078	117	0.38991
-2	39.8239	38	5.62961	78	1.25423	118	0.37956
-1	37.1988	39	5.39689	79	1.21330	119	0.36954
0	35.2024	40	5.17519	80	1.17393	120	0.35982
1	33.3269	41	4.96392	81	1.13604	121	0.35042
2	31.5635	42	4.76253	82	1.09958	122	0.3413
3	29.9058	43	4.57050	83	1.06448	123	0.33246
4	28.3459	44	4.38736	84	1.03069	124	0.32390
5	26.8778	45	4.21263	85	0.99815	125	0.31559
6	25.4954	46	4.04589	86	0.96681	126	0.30754
7	24.1932	47	3.88673	87	0.93662	127	0.29974
8	22.5662	48	3.73476	88	0.90753	128	0.29216
9	21.8094	49	3.58962	89	0.87950	129	0.28482
10	20.7184	50	3.45097	90	0.85248	130	0.27770
11	19.6891	51	3.31847	91	0.82643	131	0.27078
12	18.7177	52	3.19183	92	0.80132	132	0.26408
13	17.8005	53	3.07075	93	0.77709	133	0.25757
14	16.9341	54	2.95896	94	0.75373	134	0.25125
15	16.1156	55	2.84421	95	0.73119	135	0.24512
16	15.3418	56	2.73823	96	0.70944	136	0.23916
17	14.6181	57	2.63682	97	0.68844	137	0.23338
18	13.9180	58	2.53973	98	0.66818	138	0.22776
19	13.2631	59	2.44677	99	0.64862	139	0.22231

# APPENDIX 2

Compressor Discharge Temperature Sensor Resistance Value Table, B=3950K

°C	K Ohm	°C	K Ohm	°C	K Ohm	°C	K Ohm
-20	542.7	20	68.66	60	13.59	100	3.702
-19	511.9	21	65.62	61	13.11	101	3.595
-18	483	22	62.73	62	12.65	102	3.492
-17	455.9	23	59.98	63	12.21	103	3.392
-16	430.5	24	57.37	64	11.79	104	3.296
-15	406.7	25	54.89	65	11.38	105	3.203
-14	384.3	26	52.53	66	10.99	106	3.113
-13	363.3	27	50.28	67	10.61	107	3.025
-12	343.6	28	48.14	68	10.25	108	2.941
-11	325.1	29	46.11	69	9.902	109	2.86
-10	307.7	30	44.17	70	9.569	110	2.781
-9	291.3	31	42.33	71	9.248	111	2.704
-8	275.9	32	40.57	72	8.94	112	2.63
-7	261.4	33	38.89	73	8.643	113	2.559
-6	247.8	34	37.3	74	8.358	114	2.489
-5	234.9	35	35.78	75	8.084	115	2.422
-4	222.8	36	34.32	76	7.82	116	2.357
-3	211.4	37	32.94	77	7.566	117	2.294
-2	200.7	38	31.62	78	7.321	118	2.233
-1	190.5	39	30.36	79	7.086	119	2.174
0	180.9	40	29.15	80	6.859	120	2.117
1	171.9	41	28	81	6.641	121	2.061
2	163.3	42	26.9	82	6.43	122	2.007
3	155.2	43	25.86	83	6.228	123	1.955
4	147.6	44	24.85	84	6.033	124	1.905
5	140.4	45	23.89	85	5.844	125	1.856
6	133.5	46	22.89	86	5.663	126	1.808
7	127.1	47	22.1	87	5.488	127	1.762
8	121	48	21.26	88	5.32	128	1.717
9	115.2	49	20.46	89	5.157	129	1.674
10	109.8	50	19.69	90	5	130	1.632
11	104.6	51	18.96	91	4.849		
12	99.69	52	18.26	92	4.703		
13	95.05	53	17.58	93	4.562		
14	90.66	54	16.94	94	4.426		
15	86.49	55	16.32	95	4.294		
16	82.54	56	15.73	96	4.167		
17	78.79	57	15.16	97	4.045		
18	75.24	58	14.62	98	3.927		
19	71.86	59	14.09	99	3.812		



PART – 4  
PONIT CHECK

# PONIT CHECK

Press the “LED DISPLAY” button of remote controller three times (“Swing button” for some remote controllers) and then press “AIR DIRECTION” button three times, the air conditioner will enter the “information enquiry” status. After that, press the “LED DISPLAY” button to enquiry the next one information and press the “AIR DIRECTION” button to enquiry the last one information.

Table:

Enquiry information	Displaying code	Display value	Meaning	Remark
T1	T1	-1F,-1E,-1d,-1c,-1b,-1A	-25,-24,-23,-22,-21,-20	1. All the displaying temperature is actual value. 2. All the temperature is °C no matter what kind of remote controller is used. 3. T1,T2,T3,T4,T2B display range:-25~70, TP display range:-20~130. 4. Frequency display range: 0~159HZ. 5. If the actual value exceeds the range, it will display the maximum value or minimum value.
T2	T2			
T3	T3	-19—99	-19—99	
T4	T4	A0,A1,...A9	100,101,...109	
T2B	Tb	b0,b1,...b9	110,111,...119	
TP	TP	c0,c1,...c9	120,121,...129	
TH	TH	d0,d1,...d9	130,131,...139	
Targeted Frequency	FT	E0,E1,...E9	140,141,...149	
Actual Frequency	Fr	F0,F1,...F9	150,151,...159	
Indoor fan speed /Outdoor fan speed	IF OF	0	OFF	
		1,2,3,4	Low speed, Medium speed, High speed, Turbo	For some big capacity motors.
		14-FF	Actual fan speed=Display value turns to decimal value and then multiply 10. The unit is RPM.	For some small capacity motors, display value is from 14-FF(hexadecimal), the corresponding fan speed range is from 200-2550RPM.
EXV opening angle	LA	0-FF	Actual EXV opening value=Display value turns to decimal value and then multiply 2.	
Compressor continuous running time	CT	0-FF	0-255 minutes	If the actual value exceeds the range, it will display the maximum value or minimum value.
Causes of compressor stop.	ST	0-99	For the detailed meaning, please consult with engineer	Decimal display

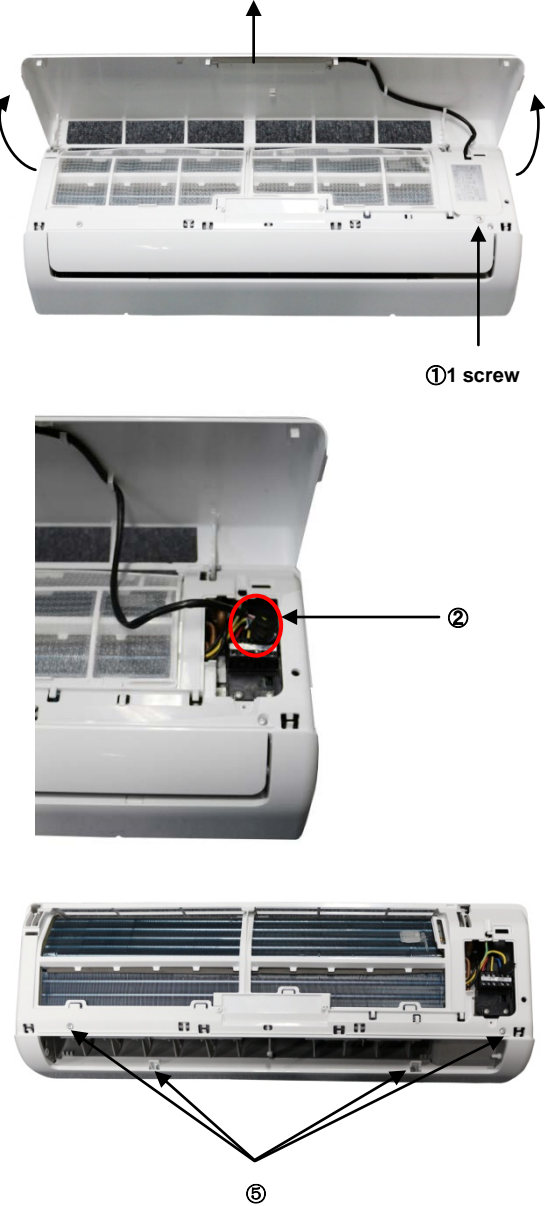
Indoor unit status 0	A0	0-FF	For the detailed meaning, please consult with engineer	
Indoor unit status 1	A1	0-FF	For the detailed meaning, please consult with engineer	
Outdoor unit status	b0	0-FF	For the detailed meaning, please consult with engineer	
Outdoor unit protection status 1	b1	0-FF	For the detailed meaning, please consult with engineer	
Outdoor unit protection status 2	b2	0-FF	For the detailed meaning, please consult with engineer	
Outdoor unit protection status 3	b3	0-FF	For the detailed meaning, please consult with engineer	
Outdoor unit protection status 4	b4	0-FF	For the detailed meaning, please consult with engineer	
Outdoor unit protection status 5	b5	0-FF	For the detailed meaning, please consult with engineer	
Outdoor unit protection status 6	b6	0-FF	For the detailed meaning, please consult with engineer	
Current	dL	0-FF		
AC voltage	Ac	0-FF		
DC voltage	Uo	0-FF		
Td temperature	Td	0-FF	Display value=Td actual valuex2+50	

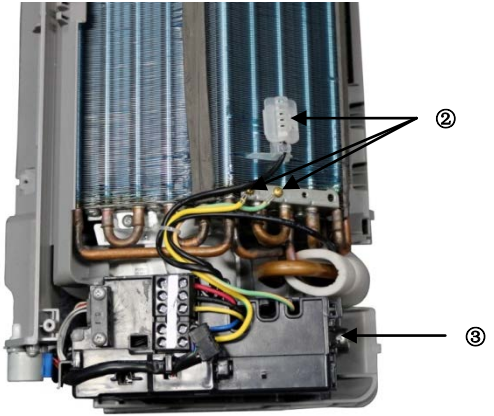
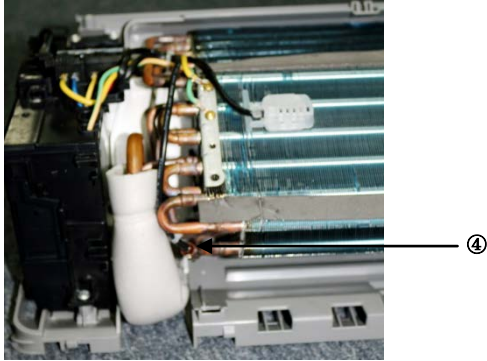
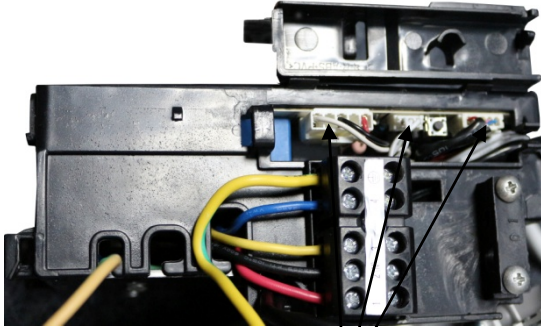
# PART – 5

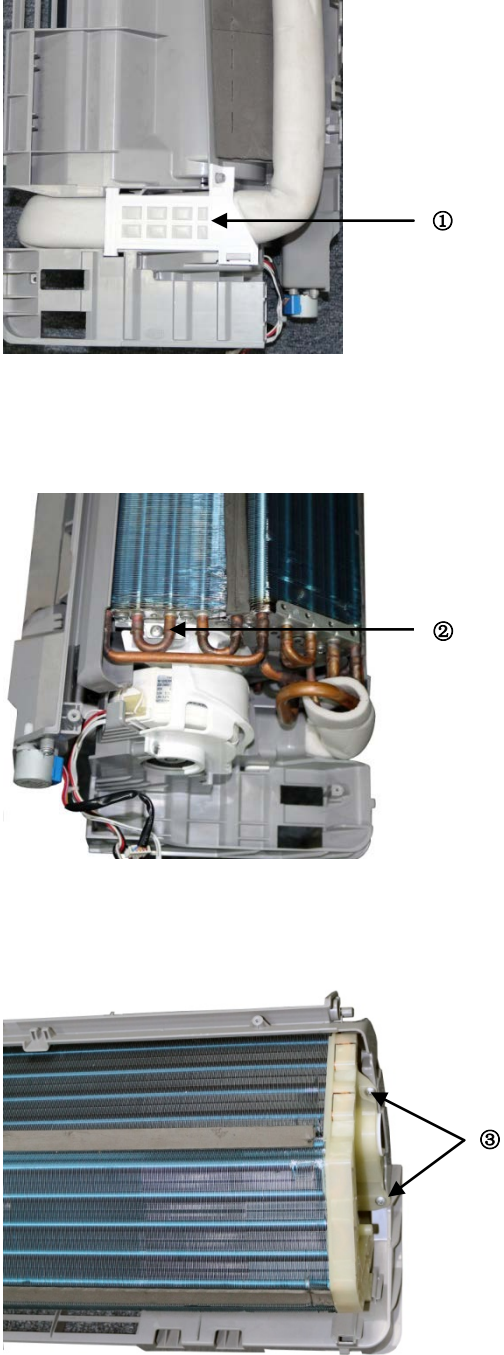
## DISASSEMBLY INSTRUCTION

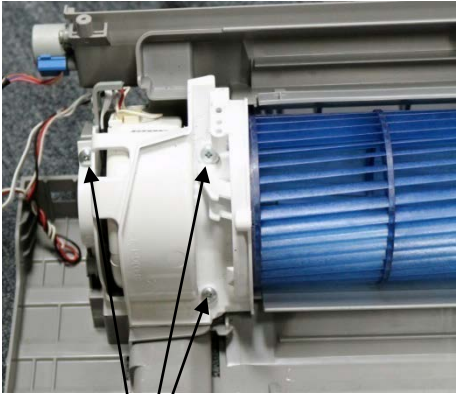
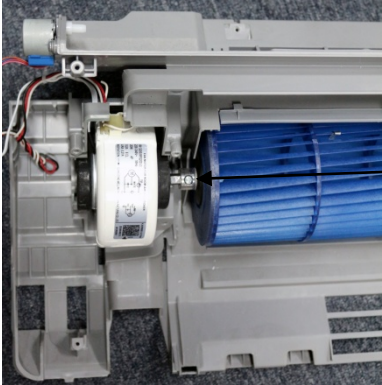
1. Indoor unit

42QHF009/12DS:

No.	Parts name	Procedures	Remarks
1	Front panel	<p>How to remove the front panel.</p> <p>1) Pull the below side of the panel toward you and remove screw of the cover.</p> <p>2) Release the connector of the display ass'y.</p> <p>3) Release the two clips and then remove the panel.</p> <p>4) Remove the filter and the horizontal louver.</p> <p>5) Remove the four screws and then remove the panel ass'y.</p>	 <p>The 'Remarks' column contains three sequential photographs illustrating the removal process. The top photo shows the front panel being pulled down, with an arrow pointing up from the top edge and another arrow pointing down from the bottom edge. A screw at the bottom right is labeled '1 screw'. The middle photo shows the internal display connector being released, with a red circle around it and an arrow pointing to it labeled '2'. The bottom photo shows the front panel assembly with four screws being removed, indicated by arrows pointing to the screws and labeled '5'.</p>


2	Electrical parts	<p>How to remove the electrical parts.</p> <ol style="list-style-type: none"> <li>1) Remove the front panel from procedure 1.</li> <li>2) Pull out the room temp. sensor (T1). Remove the two screws for the ground connection.</li> <li>3) Remove the fixing screw.</li> <li>4) Pull out the coil temp. sensor.</li> </ol> <ol style="list-style-type: none"> <li>5) From the side direction, open the electronic control box cover fixing by clips. Pull out the fan motor connector and swing motor connector. Then remove the electronic control box.</li> </ol>	  
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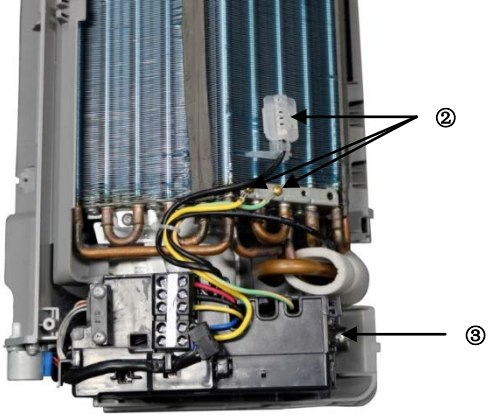
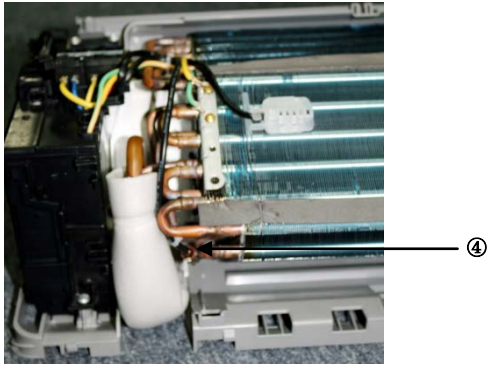
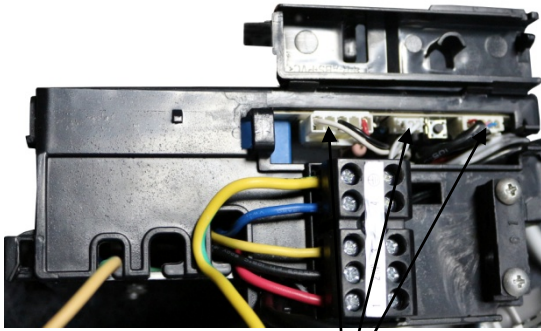
3	Evaporator	<p>How to remove the evaporator.</p> <p>1) After remove the electrical parts from procedure 2, disassemble the pipe holder at the rear side of the unit.</p> <p>2) Remove the screw on the evaporator at the fixed plate.</p> <p>3) Remove the two screws on the evaporator at the base bearing side.</p> <p>4) Then pull out the evaporator.</p>	
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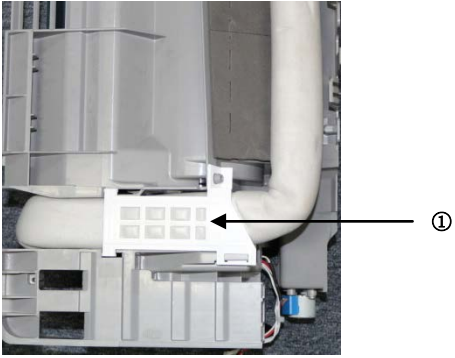
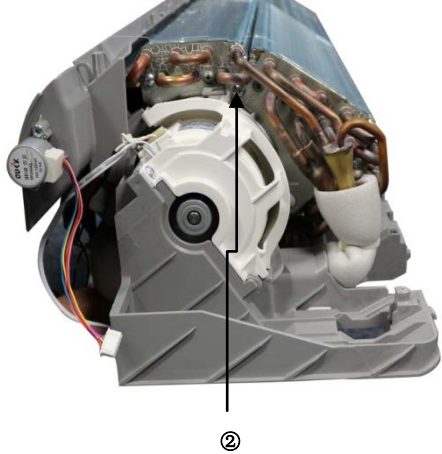
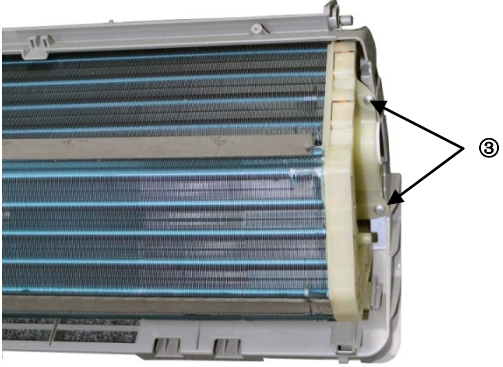
4	Fan motor and Fan	<p>How to remove the fan motor.</p> <ol style="list-style-type: none"><li>1) Remove the front panel, electrical parts and evaporator following procedure 1-3.</li><li>2) Remove the three screws and remove the fixing board of fan motor.</li><li>3) Remove the fixing screw .</li><li>4) Pull out the fan motor and fan ass'y from the side direction.</li></ol>	 <p>②</p>  <p>③</p>
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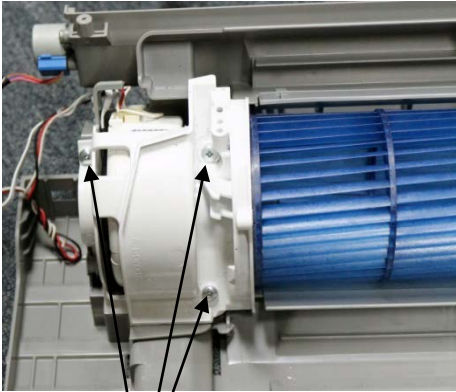
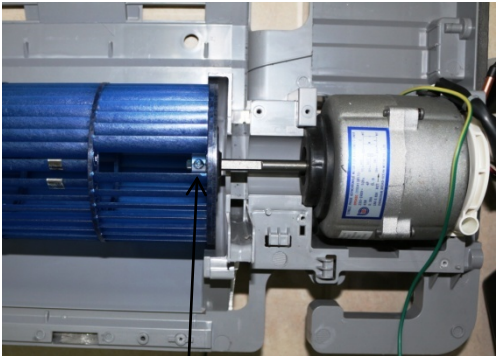


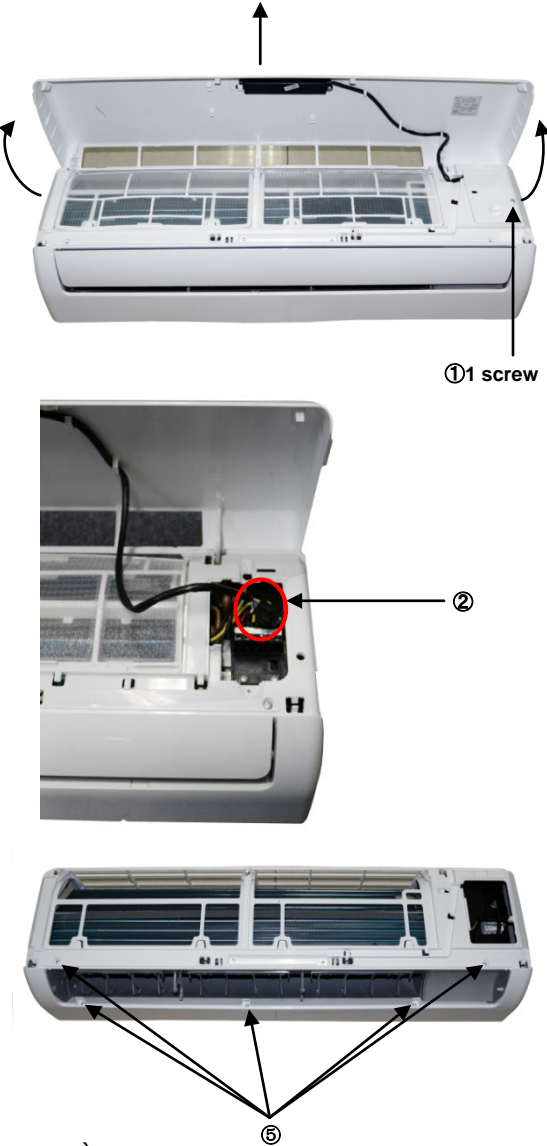
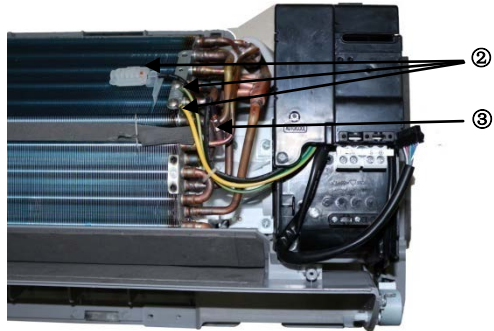
42QHF018DS:

No.	Parts name	Procedures	Remarks
1	Front panel	<p>How to remove the front panel.</p> <p>1) Pull the below side of the panel toward you and remove screw of the cover.</p> <p>2) Release the connector of the display ass'y.</p> <p>3) Release the three clips and then remove the panel.</p> <p>4) Remove the filter and the horizontal louver.</p> <p>5) Remove the four screws and then remove the panel ass'y.</p>	 <p>The 'Remarks' column contains three photographs illustrating the removal process. The top photo shows the front panel being pulled down, with an arrow pointing up and another pointing down. A screw is indicated by an arrow and labeled '① screw'. The middle photo shows the display assembly connector being released, circled in red and labeled '②'. The bottom photo shows the front panel assembly being removed from the unit, with arrows pointing to the four screws and labeled '⑤'.</p>

2	Electrical parts	<p>How to remove the electrical parts.</p> <ol style="list-style-type: none"> <li>1) Remove the front panel from procedure 1.</li> <li>2) Pull out the room temp. sensor (T1). Remove the two screws for the ground connection.</li> <li>3) Remove the fixing screw.</li> <li>4) Pull out the coil temp. sensor.</li> </ol> <ol style="list-style-type: none"> <li>5) From the side direction, open the electronic control box cover fixing by clips. Pull out the fan motor connector and swing motor connector. Then remove the electronic control box.</li> </ol>	  
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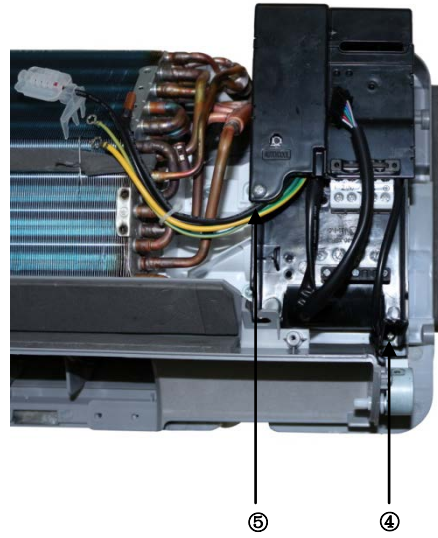
3	Evaporator	<p>How to remove the evaporator.</p> <p>1) After remove the electrical parts from procedure 2, disassemble the pipe holder at the rear side of the unit.</p> <p>2) Remove the screw on the evaporator at the fixed plate.</p> <p>3) Remove the two screws on the evaporator at the base bearing side.</p> <p>4) Then pull out the evaporator.</p>	  
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4	Fan motor and Fan	<p>How to remove the fan motor.</p> <ol style="list-style-type: none"><li>1) Remove the front panel, electrical parts and evaporator following procedure 1-3</li><li>2) Remove the three screws and remove the fixing board of fan motor.</li><li>3) Remove the fixing screw .</li><li>4) Pull out the fan motor and fan ass'y from the side direction.</li></ol>	 <p>②</p>  <p>③</p>
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No.	Parts name	Procedures	Remarks
1	Front panel	<p>How to remove the front panel.</p> <ol style="list-style-type: none"> <li>1) Pull the below side of the panel toward you and remove screw of the cover.</li> <li>2) Release the connector of the display ass'y.</li> <li>3) Release the three clips and then remove the panel.</li> <li>4) Remove the filter and the horizontal louver.</li> <li>5) Remove the five screws and then remove the panel ass'y.</li> </ol>	
2	Electrical parts	<p>How to remove the electrical parts.</p> <ol style="list-style-type: none"> <li>1) Remove the front panel from procedure 1.</li> <li>2) Pull out the room temp. sensor (T1). Remove the two screws for the ground connection.</li> <li>3) Pull out the coil temp.</li> </ol>	

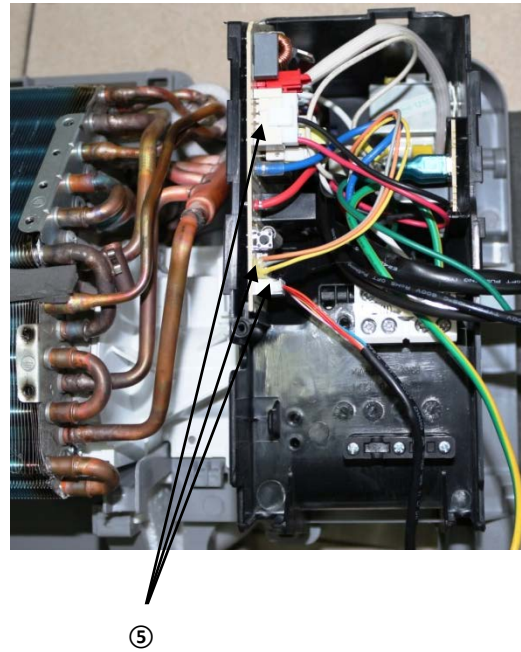
sensor.

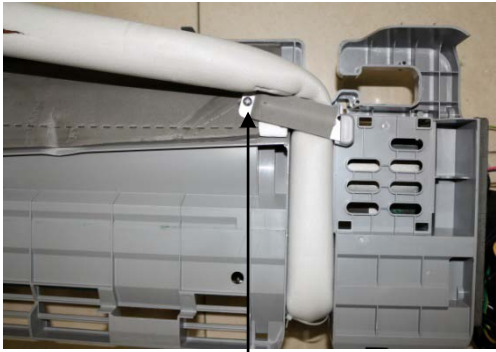

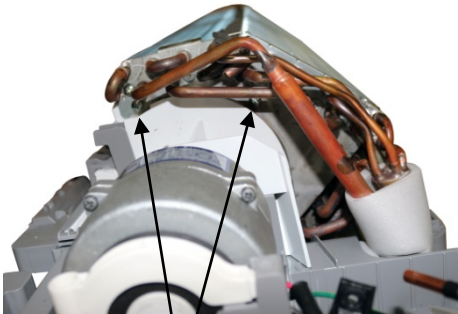
4) Remove the fixing screw.


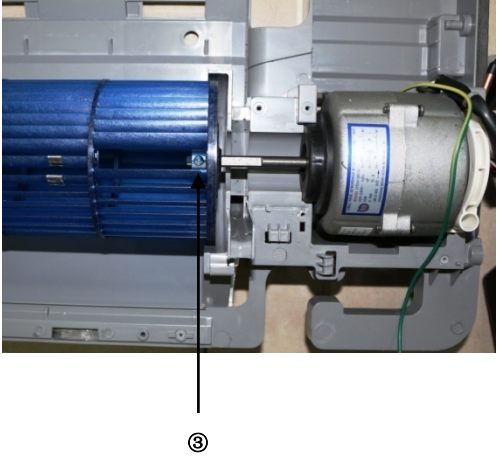


5) Remove the screw on the electronic control box cover.

Pull out the fan motor connector and swing motor connector. Then remove the electronic control box.

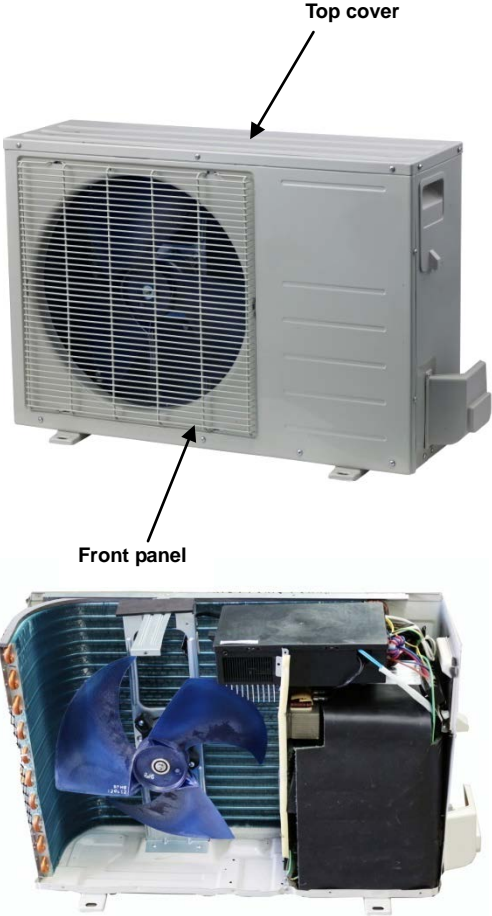
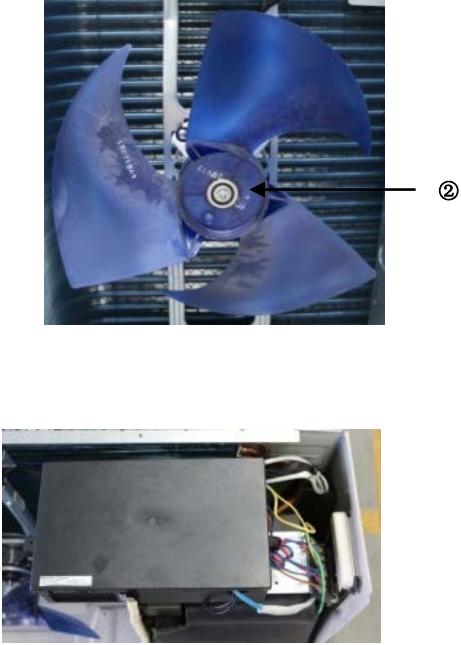


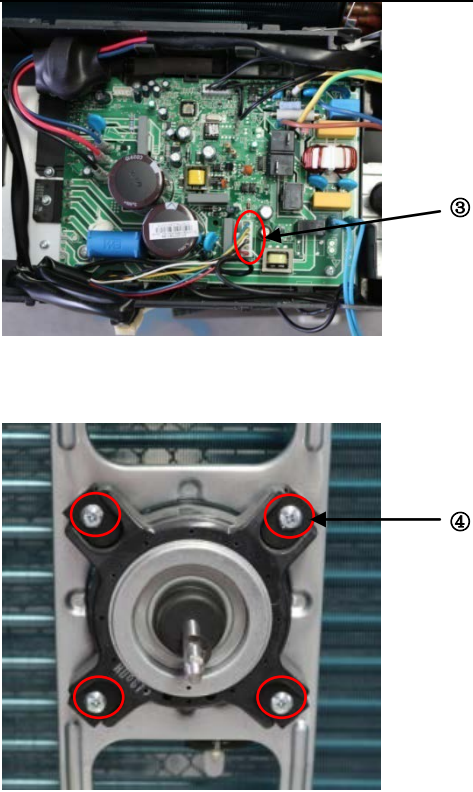
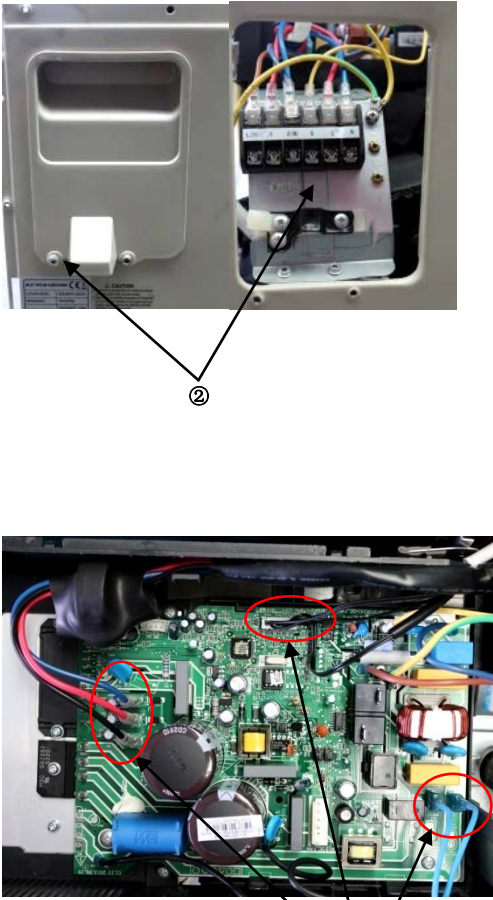
3	Evaporator	<p>How to remove the evaporator.</p> <ol style="list-style-type: none"><li>1) After remove the electrical parts from procedure 2, disassemble the pipe holder at the rear side of the unit.</li><li>2) Remove the three screws on the evaporator at the fixed plate.</li><li>3) Remove the two screws on the evaporator at the base bearing side.</li><li>4) Then pull out the evaporator.</li></ol>	 <p>①</p>  <p>②</p>  <p>③</p>
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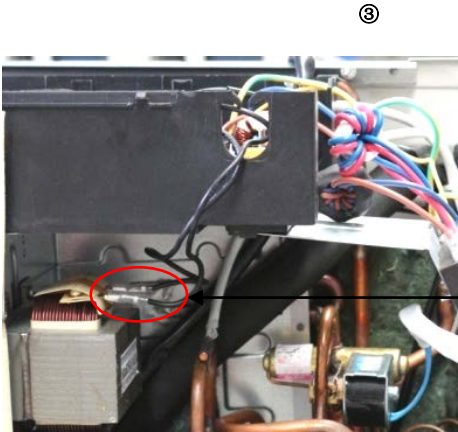

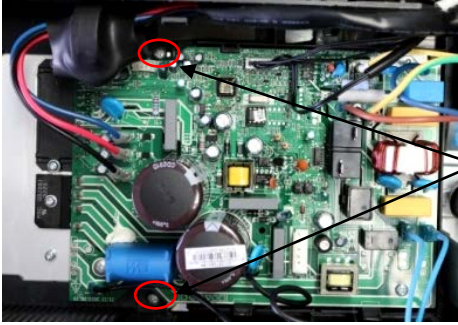

4	Fan motor and Fan	<p>How to remove the fan motor.</p> <ol style="list-style-type: none"><li>1) Remove the front panel, electrical parts and evaporator following procedure 1-3.</li><li>2) Remove the four screws and remove the fixing board of fan motor.</li><li>3) Remove the fixing screw .</li><li>4) Pull out the fan motor and fan ass'y from the side direction.</li></ol>	 
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## 2 Outdoor units (38QUS009DS for example)

No.	Part name	Procedures	Remarks
1	Panel plate	<p>How to remove the panel plate.</p> <p>1) Stop operation of the air conditioner and turn "OFF" the power breaker.</p> <p>2) Remove the top cover. (7 screws)</p> <p>3) Remove the front panel. (8 screws)</p>	
2	Fan ass'y	<p>How to remove the fan ass'y.</p> <p>1) Remove the panel plate from procedure 1.</p> <p>2) Remove the hex nut fixing the fan and then the fan can be removed.</p> <p>3) Open the electronic box cover fixing with clips and release the fan motor connector.</p>	

		<p>4) Remove the four fixing screws.</p> <p>Remove the fan motor.</p>	
3	Electrical parts	<p>How to remove the electrical parts.</p> <p>1) Perform work of item 1,2.</p> <p>2) Remove the two fixing screws of wiring cover and the two fixing screws of wiring board.</p> <p>3) Remove the wires connected with the compressor, the 4-way valve and the temp.sensors(T3,T4,T5).</p>	

		<p>4) Remove the wires connected with the reactor.</p> <p>5) Remove the grounding wire.</p> <p>6) Remove the two screws fixing the electronic control box.</p> <p>7) Then remove the electrical parts.</p>	  
4	Compressor	<p>How to remove the compressor.</p> <p>1) Perform work of item 1,2,3</p> <p>2) Remove the discharge pipe and suction pipe with a burner.</p> <p>3) Remove the hex nuts and washers fixing the</p>	

		<p>compressor on bottom plate.</p> <p>4) Lift the compressor from the base pan assembly.</p>	
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