BALLU

SPLIT TYPE INVERTER AIR CONDITIONER

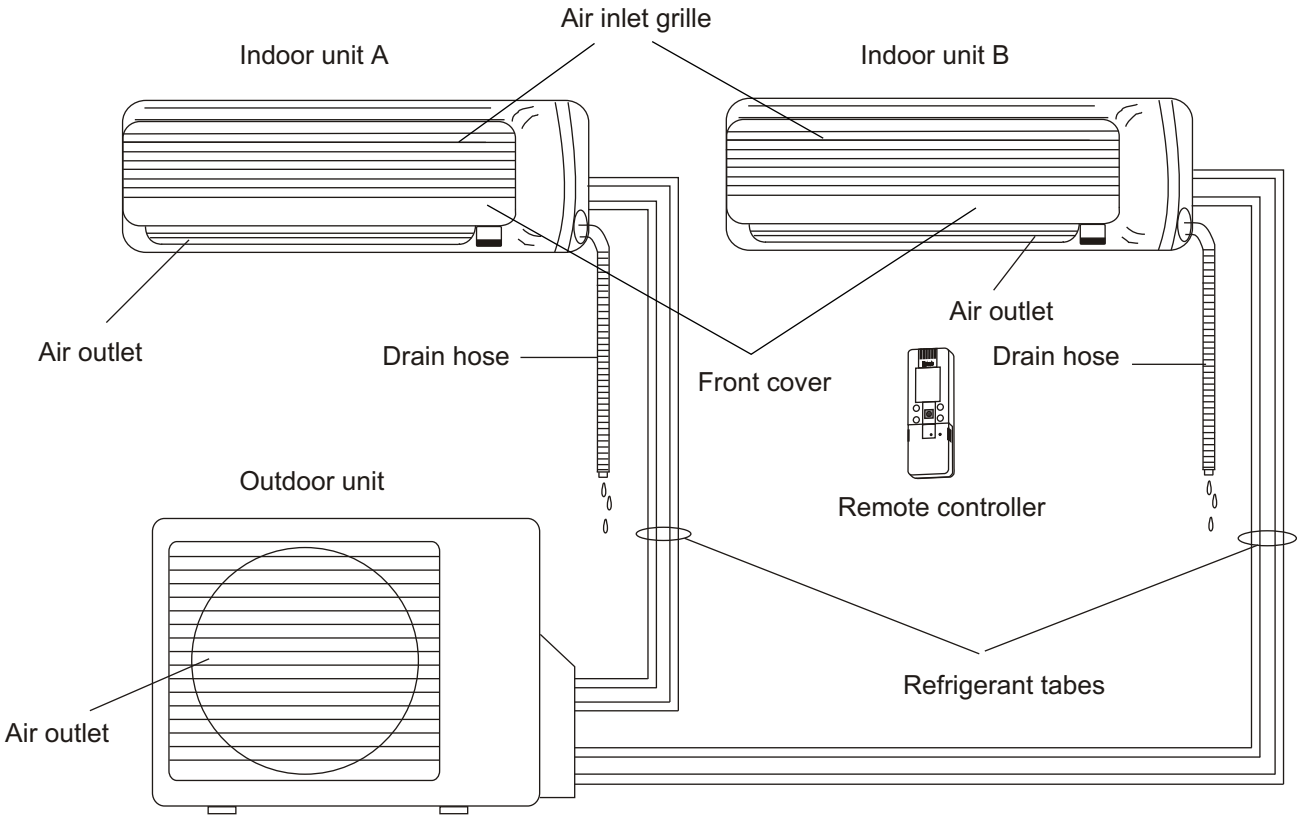
SERVICE MANUAL

KFR - 5701GW/Y2BPE
KFR - 2601GW/BPE*2
KFR - 28 GW/BPE*2

CONTENTS

1. PART NAMES AND FUNCTIONS

KFR-2601GW/BP*2E



Air inlet grille: Air from the room is drawn into this section and passes through air flitters that remove dust.

Air outlet: Conditioned air is blown out of the air conditioner through it.

Remote control unit: used for controlling power ON/OFF, setting operation mode, temperature, fan speed and timer.

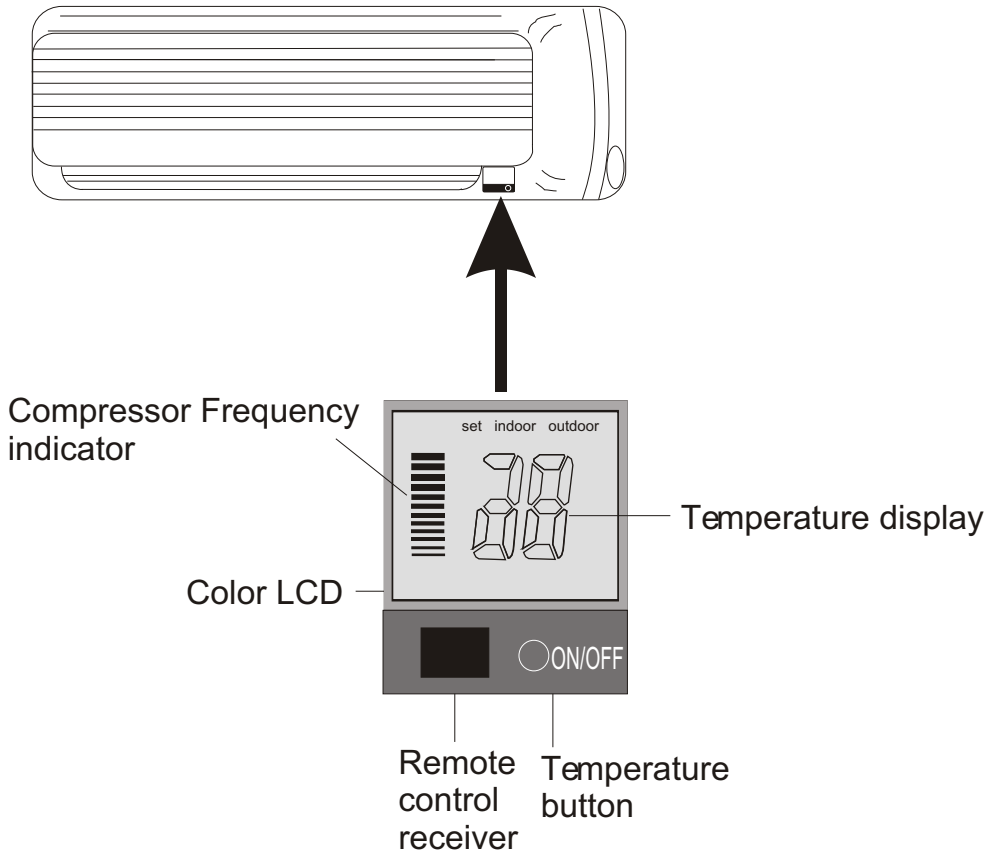
Refrigerant tubes: The indoor and outdoor units are connected by copper tubes through which refrigerant gas flows.

Outdoor (Condensing) unit: It contains the compressor, fan motor, heat exchanger , and other electrical components.

Your air conditioner consists of two indoor unit and an outdoor unit. You can control the air conditioner with the remote control unit

1. PART NAMES AND FUNCTIONS

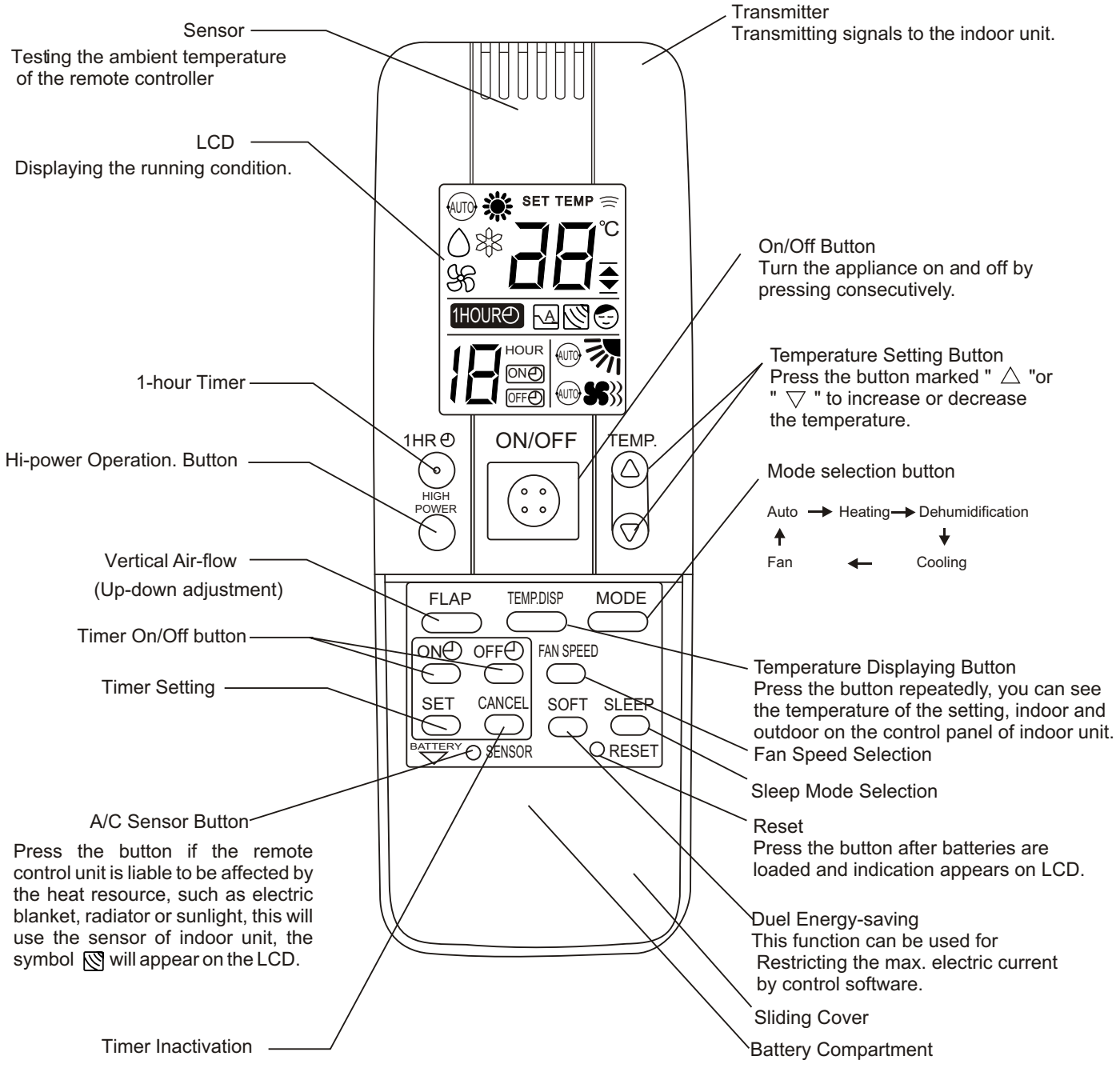
2. CONTROL PANEL OF INDOOR UNIT



Remote control receiver	Used for receiving the signal from the remote control unit		
Temporary button	Then the remote control unit is lost or has fault, this button is used to start the air conditioner.		
Color LCD	Display mode	Operating mode	Background light color
		Cooling	Green
		Heating	Orange
		Fan	Green
		Dehumidification	Green
		Automatic	Select the operating mode automatically
	Compressor frequency indicating	Indicating the compressor frequency by the Scroll bars.	
	Temperature display	Displaying the setting temperature, indoor and outdoor temperature by the remote control unit.	

1. PART NAMES AND FUNCTIONS

REMOTE CONTROL UNIT

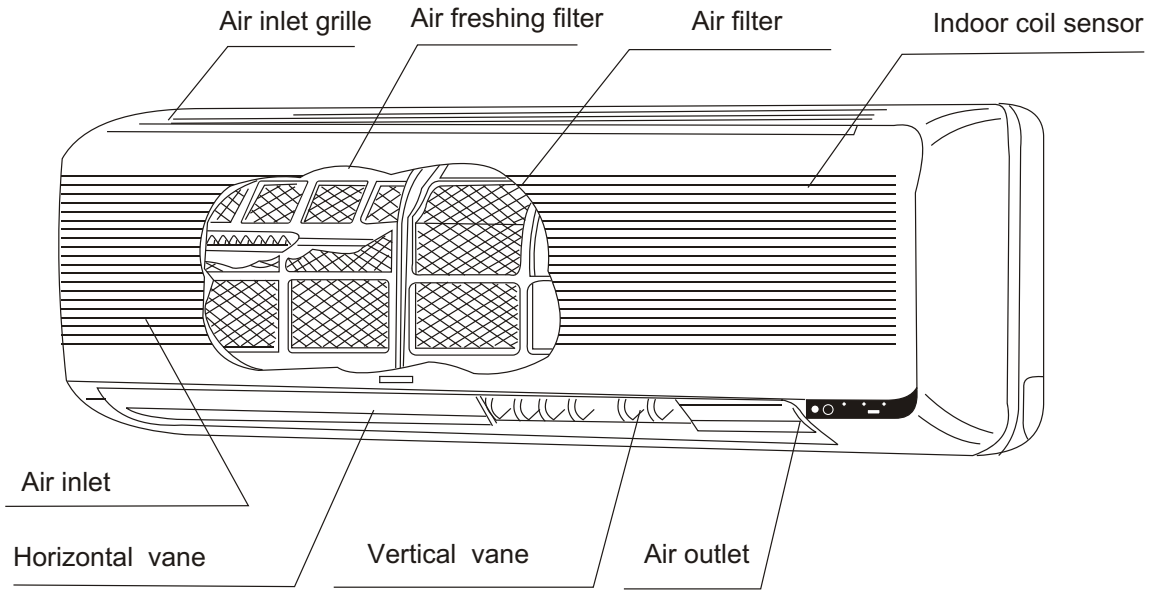


REMARK: The remote controller transmits signal to indoor unit at 3 minutes intervals. If the indoor unit has not received the signal for more than 10 minutes due to remote controller missing or other reason, the sensor on indoor unit will be used for detecting indoor temperature automatically. Here, ambient temperature of remote controller is likely to slightly different from that detecting by the indoor unit, temperature will be compensated automatically. when the remote controller is missing or the batteries are exhausted, please use the temporary switch.

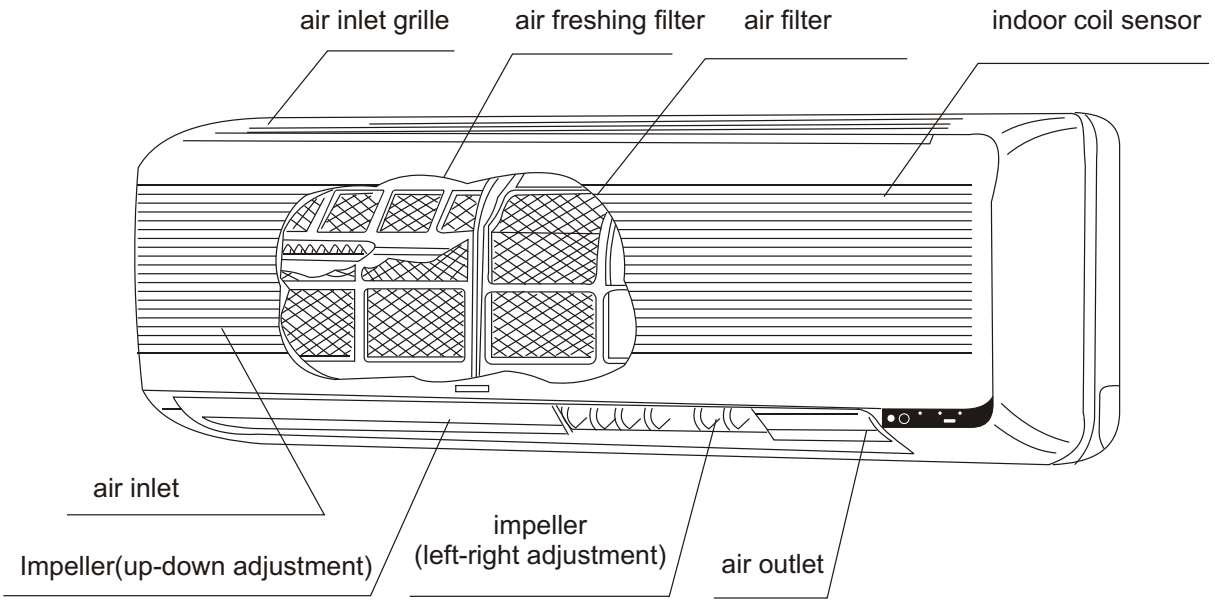
1. PART NAMES AND FUNCTIONS

KFR-2801GW/BP*2E

INDOOR UNIT(A)

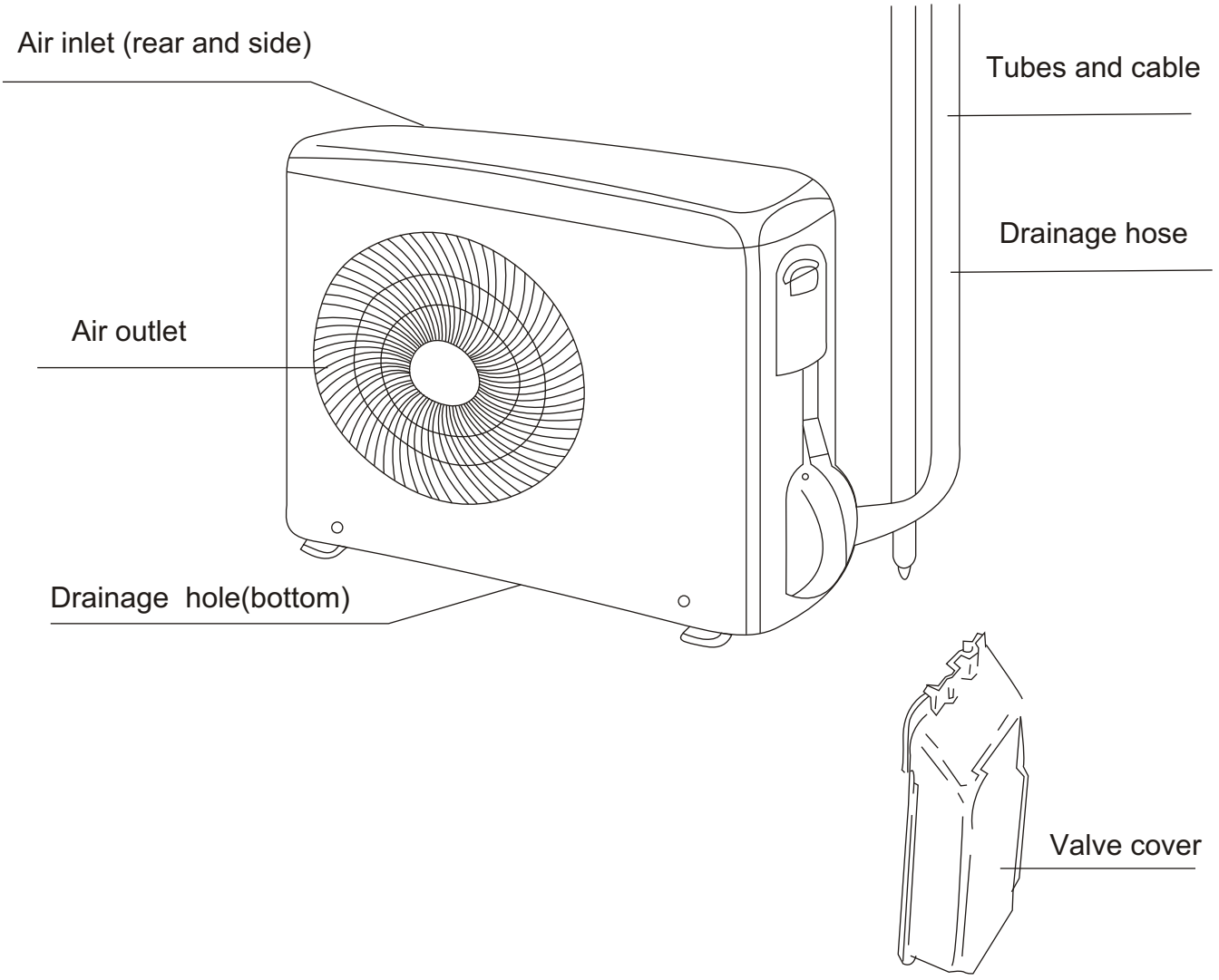


INDOOR UNIT(B)



1. PART NAMES AND FUNCTIONS

OUTDOOR UNIT`



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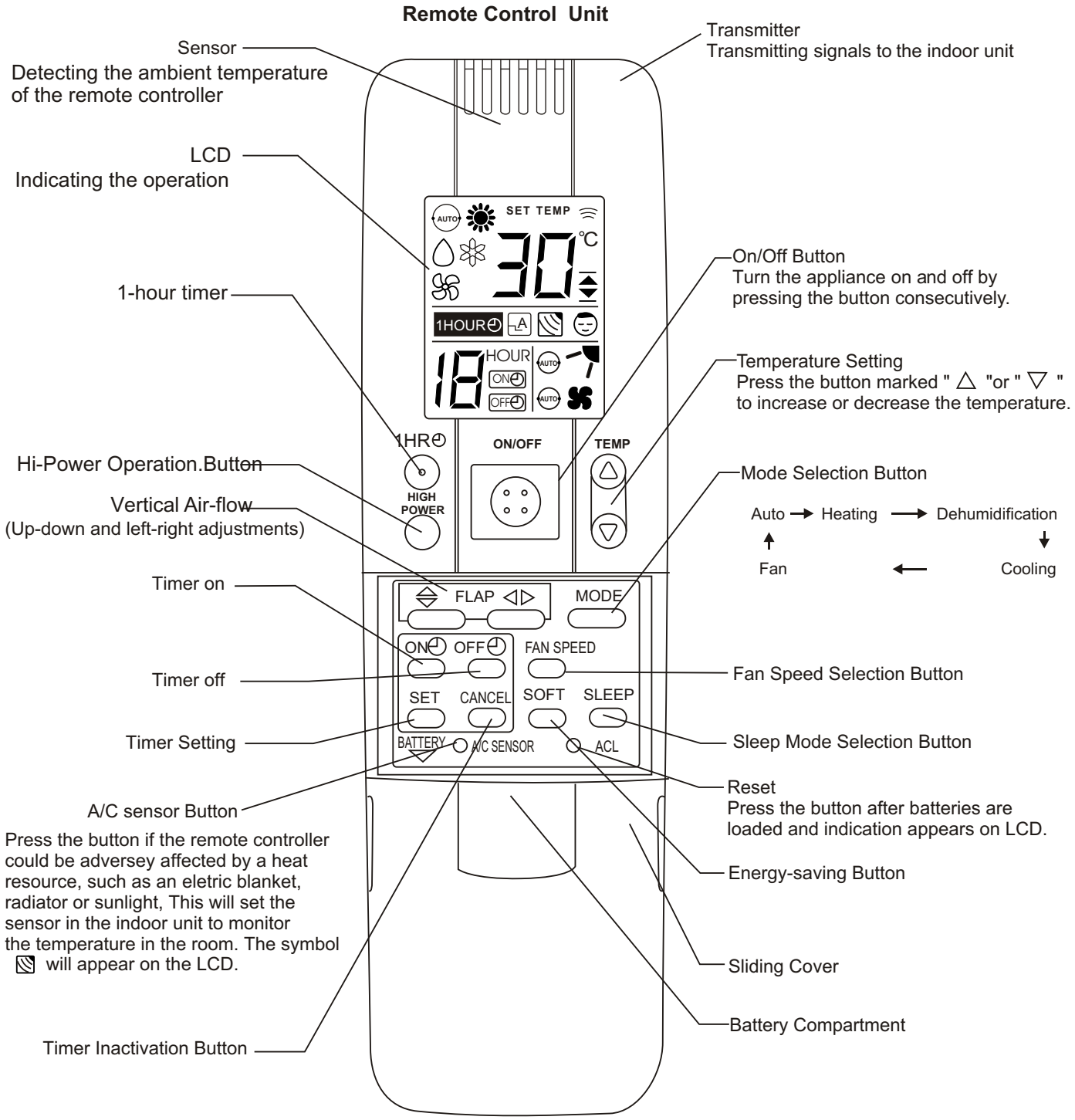

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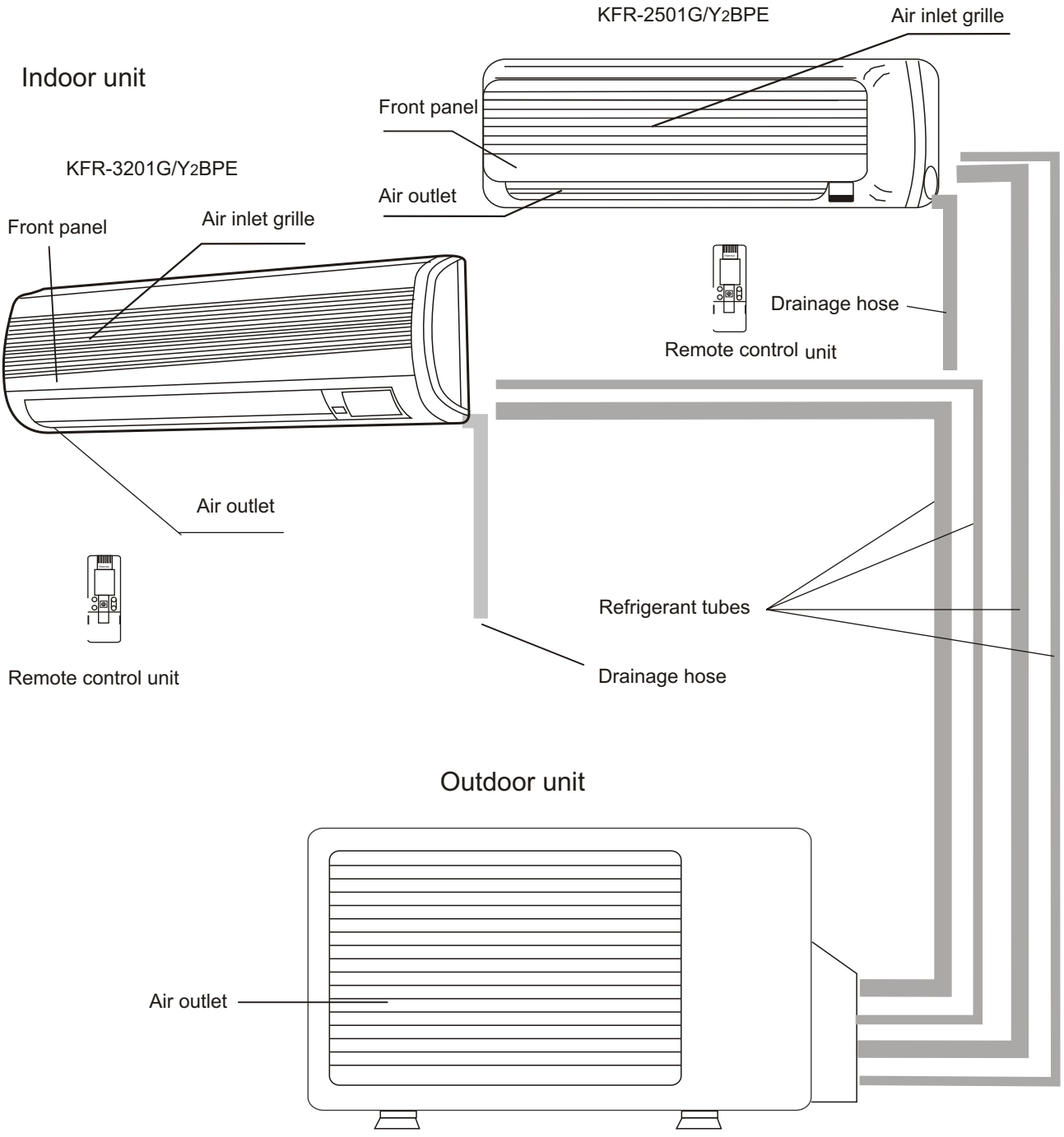
1. PART NAMES AND FUNCTIONS

KFR-5701GW/Y2BPE



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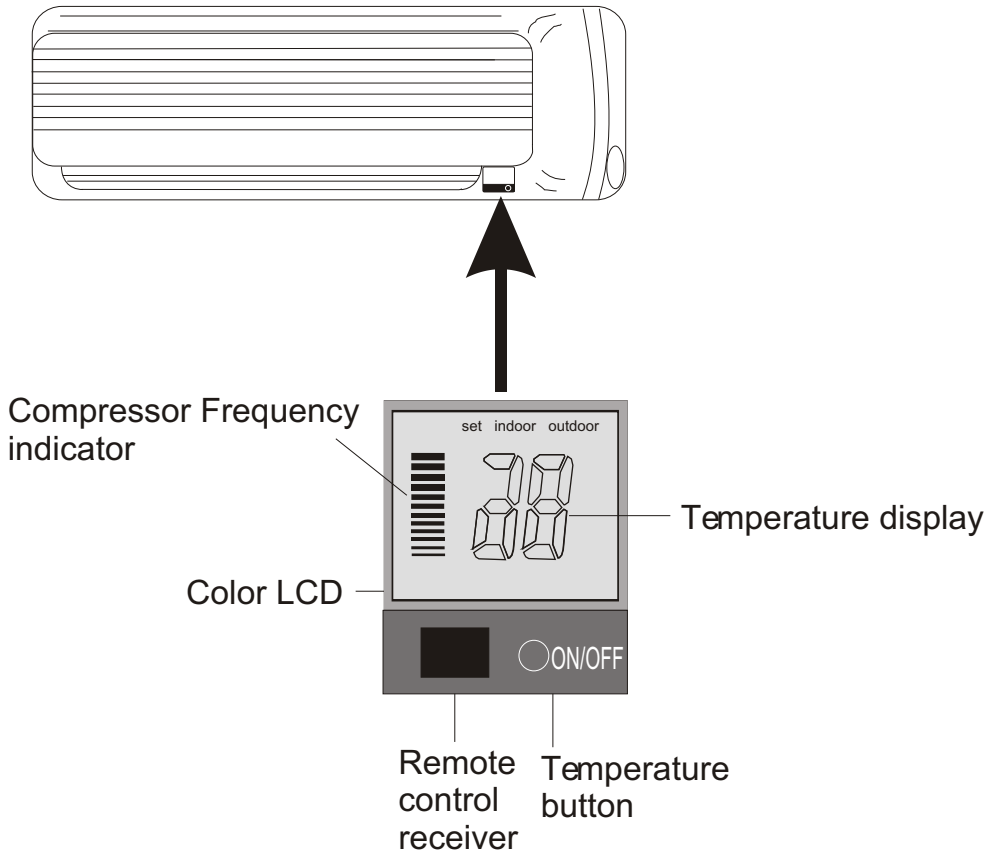
1. PART NAMES AND FUNCTIONS

KFR-5701GW/Y2BPE

CONTROL PANEL OF INDOOR UNIT

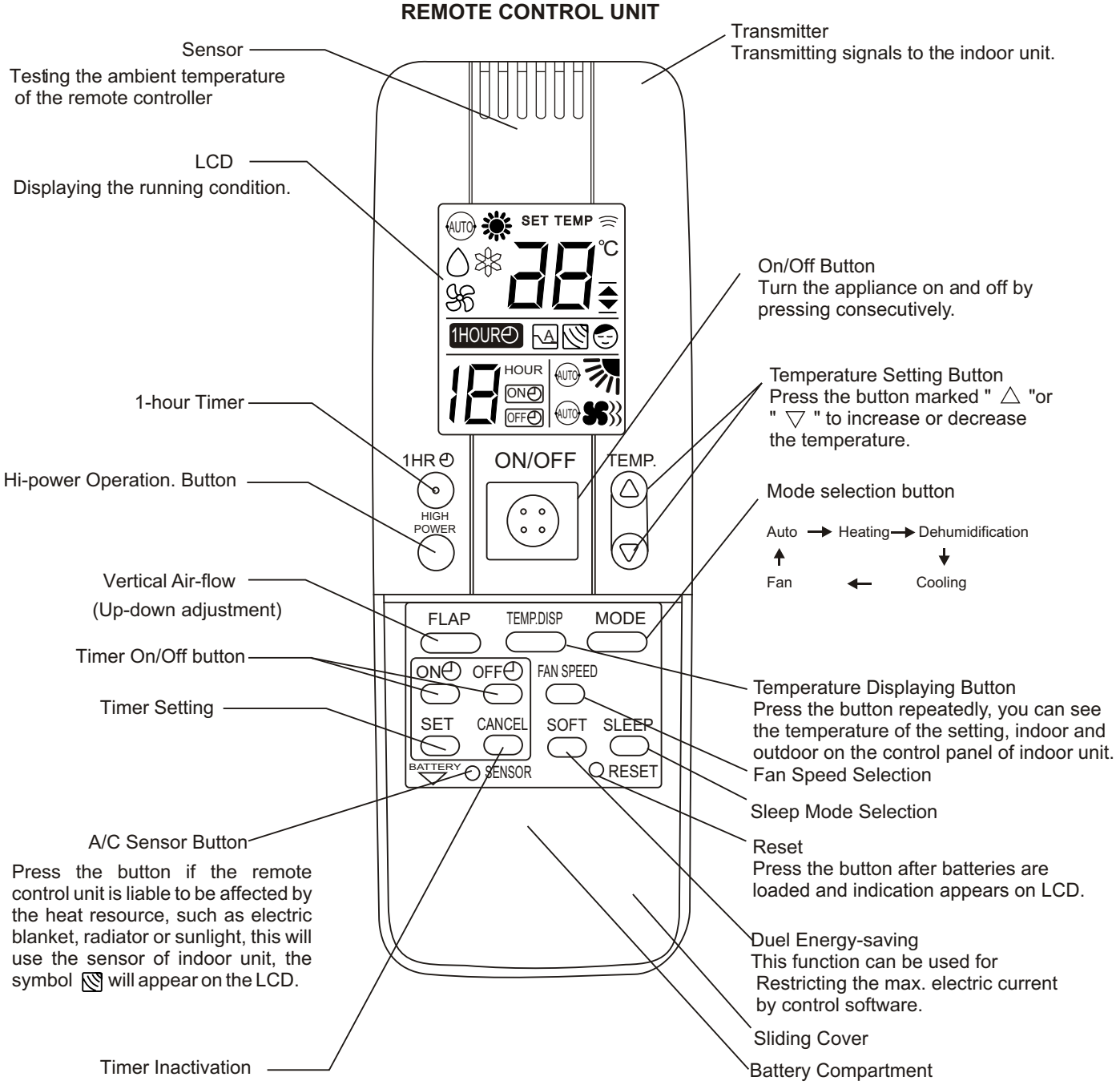


Remote control receiver	Used for receiving the signal from the remote control unit		
Temporary button	When the remote control unit is lost or has fault, this button is used to start the air conditioner.		
Color LCD	Display mode	Operating mode	Background light color
		Cooling	Green
		Heating	Orange
		Fan	Green
		Dehumidification	Green
		Automatic	Select the operating mode automatically
	Compressor frequency indicating	Indicating the compressor frequency by the Scroll bars.	
	Temperature display	Displaying the setting temperature, indoor and outdoor temperature by the remote control unit.	

1. PART NAMES AND FUNCTIONS

KFR-5701GW/Y2BPE

REMOTE CONTROL UNIT



REMARK: The remote controller transmits signal to indoor unit at 3 minutes intervals. If the indoor unit has not received the signal for more than 10 minutes due to remote controller missing or other reason, the sensor on indoor unit will be used for detecting indoor temperature automatically. Here, ambient temperature of remote controller is likely to slightly different from that detecting by the indoor unit, temperature will be compensated automatically. when the remote controller is missing or the batteries are exhausted, please use the temporary switch.

2.SPECIFICATION

Model				KFR-28GW/BP*2E			
Function				Cooling(S)	Cooling(D)	Heating(S)	Heating(D)
Power supply				a.c 220V~ 50Hz			
Capacity	Capacity		KW	2.8	5.6	4.0	7.0
	Dehumidification		ℓ/h	1.5	3.0		
	Air flow		m^3/h	510	1020	510	1020
Electrical data	Power outlet		A	20A			
	Running current		A	11.0		13.0	
	Power input		W	2.05		2.50	
	Auxiliary heater		A(KW)				
	Power factor		%	90		90	
	Starting current		A	25		25	
	Compressor motor current		A	9.8		9.8	
	Fan motor current		A	INDOOR 0.288/0.206/0.146			
Coefficient of performance(C.O.P)				2.7		2.8	
Compressor	Model			C-7RV113H0W			
	Output		W	1100			
	Winding resistance (at20°C)		Ω	0.63			
Indoor fan motor	Model						
	Winding resistance (at20°C)		Ω	6.8			
Outdoor fan motor	Model			UE6T-C51A4			
	Winding resistance (at20°C)		Ω	WHT-PUR57.3PUR-YEL39.3 YEL-PEA57.3WHT-TAW102.9			
Dimensions	Indoor unit	Width	mm	870			
		Height	mm	290			
		Depth	mm	166			
	Outdoor unit	Width	mm	900			
		Height	mm	630			
		Depth	mm	300			
Weight	Indoor unit		kg	8.5			
	Outdoor unit		kg	60			
Special remarks	Air direction						
	Sound lever (Hi)	Indoor unit	dB	39			
		Outdoor unit	dB	50			
	Fan speed (Hi)	Indoor unit	rpm	1200			
		Outdoor unit	rpm	780			
	Fan speed regulator	Indoor unit					
		Outdoor unit					
	Refrigerant filling capacity(R-22)		kg	1.90			
	Thermitstor	RT1(at25°C)	kΩ	5			
		RT2(at25°C)	kΩ	5.286			
		RT3(at0°C)	Ω	57.94			

NOTE:Test conditions: Cooling: Indoor:DB27°C/Wb19°C Heating:Indoor:DB20°C/Wb15°C
Outdoor:DB35°C/Wb24°C Outdoor:DB7°C/Wb6°C

2.SPECIFICATION

Model				KFR-2601GW/BP*2E			
Function				Cooling (S)	Cooling(D)	Heating(S)	Heating(D)
Power supply				AC220V~ 50Hz			
Capacity	Capacity		KW	2.6	5.0	3.6	6.6
	Dehumidification		ℓ/h	1.3	2.6		
	Air flow		m^3/h	400	800	400	800
Electrical data	Power outlet		A	16A			
	Running current		A	9.4		12.0	
	Power input		W	1870		2400	
	Auxiliary heater		A(KW)	----			
	Power factor		%	90		90	
	Starting current		A	25		25	
	Compressor motor current		A	9.8		9.8	
	Fan motor current		A	INDOOR 0.288/0.206/0.146			
Coefficient of performance(C.O.P)				2.7		2.75	
Compressor	Model			YZSB-35RA			
	Output		W	1450			
	Winding resistance (at20℃)		Ω	0.695			
Indoor fan motor	Model			YYW11-2			
	Winding resistance (at20℃)		Ω	BLK-WHT 269 WHT-RED 425			
Outdoor fan motor	Model			UE6T-C51A4			
	Winding resistance (at20℃)		Ω	WHT-PUR57.3PUR-YEL39.3 YEL-PEA57.3WHT-TAW102.9			
Dimensions	Indoor unit	Width	mm	805			
		Height	mm	265			
		Depth	mm	148			
	Outdoor unit	Width	mm	900			
		Height	mm	630			
		Depth	mm	300			
Weight	Indoor unit		kg	7.5			
	Outdoor unit		kg	60.0			
Special remarks	Air direction						
	Sound lever (Hi)	Indoor unit	dB	39			
		Outdoor unit	dB	50			
	Fan speed (Hi)	Indoor unit	rpm	1700			
		Outdoor unit	rpm	780			
	Fan speed regulator	Indoor unit					
		Outdoor unit					
	Refrigerant filling capacity(R-22)		kg	1.70			
	Thermitstor	RT1(at25℃)	kΩ	5			
		RT2(at25℃)	kΩ	5.286			
		RT3(at0℃)	Ω	57.94			

NOTE:Test conditions: Cooling: Indoor:DB27℃/Wb19℃ Heating:Indoor:DB20℃/Wb15℃
Outdoor:DB35℃/WB24℃ Outdoor:DB7℃/Wb6℃

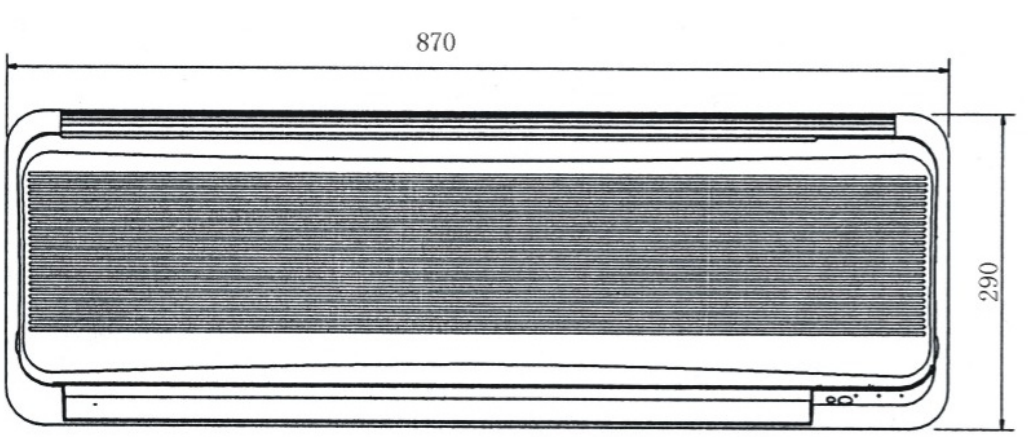
2.SPECIFICATION

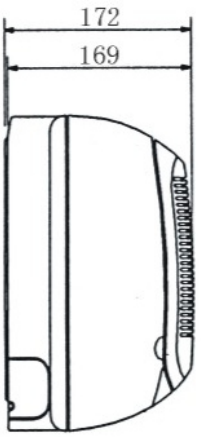
Model				KFR-5701GW/Y2BPE			
Function				Cooling(S)	Cooling(D)	Heating(S)	Heating(D)
Power supply				a.c 220V~ 50Hz			
Capacity	Capacity		KW	2.5/3.2	5.4	3.6/4.8	7.0
	Dehumidification		ℓ/h	1.2/1.5	1.2/2.0		
	Air flow		m^3/h	360/500	860	380/550	930
Electrical data	Power outlet		A	20A			
	Running current		A	11		13	
	Power input		W	2.55		3.00	
	Auxiliary heater		A(KW)				
	Power factor		%	90		90	
	Starting current		A	25		25	
	Compressor motor current		A	9.8		9.8	
	Fan motor current		A				
Coefficient of performance(C.O.P)				2.1		2.3	
Compressor	Model			YZSB-35RA			
	Output		W	1450			
	Winding resistance (at20℃)		Ω	0.695			
Indoor fan motor	Model			YYW11-2 /YYW-4			
	Winding resistance (at20℃)		Ω	BLK-WHT 269 WHT-RED 425/BLU-YEL343 YEL-RED396			
Outdoor fan motor	Model			UE6T-C51A4			
	Winding resistance (at20℃)		Ω	WHT-PUR57.3PUR-YEL39.3 YEL-PEA57.3WHT-TAW102.9			
Dimensions	Indoor unit	Width	mm	(2501G)805/860(3201G)			
		Height	mm	265/285			
		Depth	mm	148/235			
	Outdoor unit	Width	mm	900			
		Height	mm	630			
		Depth	mm	300			
Weight	Indoor unit		kg	7.5/11.5			
	Outdoor unit		kg	60.0			
Special remarks	Air direction						
	Sound lever (Hi)	Indoor unit	dB	40/41			
		Outdoor unit	dB	50			
	Fan speed (Hi)	Indoor unit	rpm	1600(2501G)/1100(3201G)			
		Outdoor unit	rpm	850			
	Fan speed regulator	Indoor unit					
		Outdoor unit					
	Refrigerant filling capacity(R-22)		kg	2.10			
	Thermitstor	RT1(at25℃)	kΩ	5			
		RT2(at25℃)	kΩ	5.286			
		RT3(at0℃)	Ω	57.94			

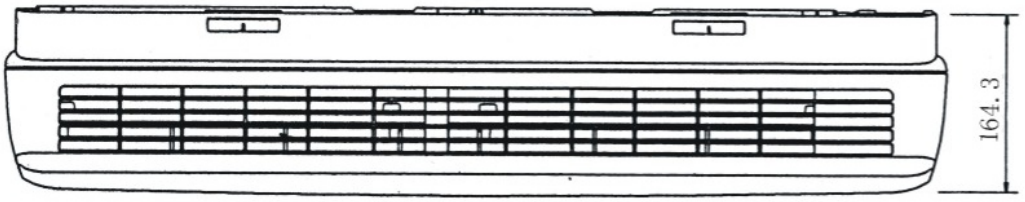
NOTE:Test conditions: Cooling: Indoor:DB27℃/Wb19℃ Heating:Indoor:DB20℃/Wb15℃
Outdoor:DB35℃/WB24℃ Outdoor:DB7℃/Wb6℃

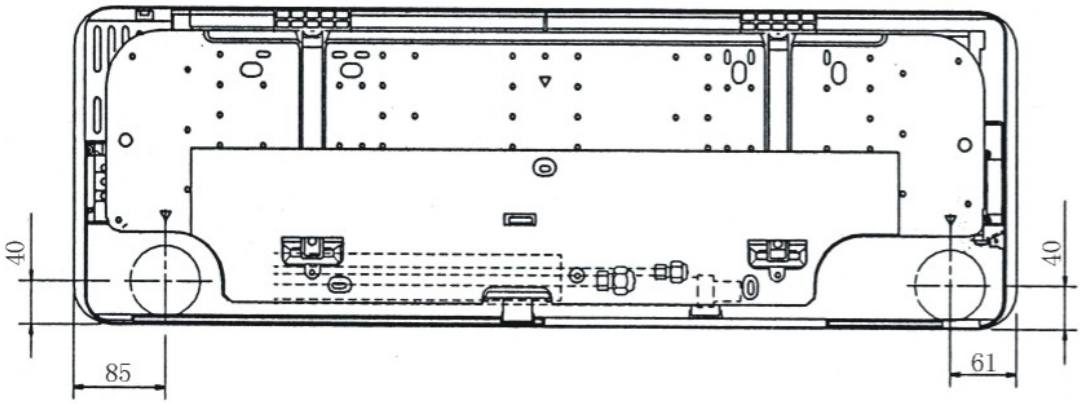
3.OUTLINES AND DIMENSIONS

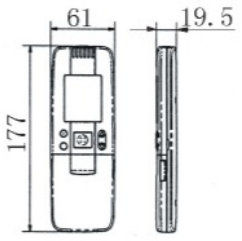
KFR-28G/BPEX2



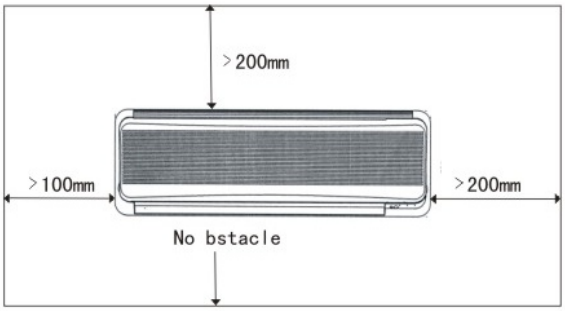






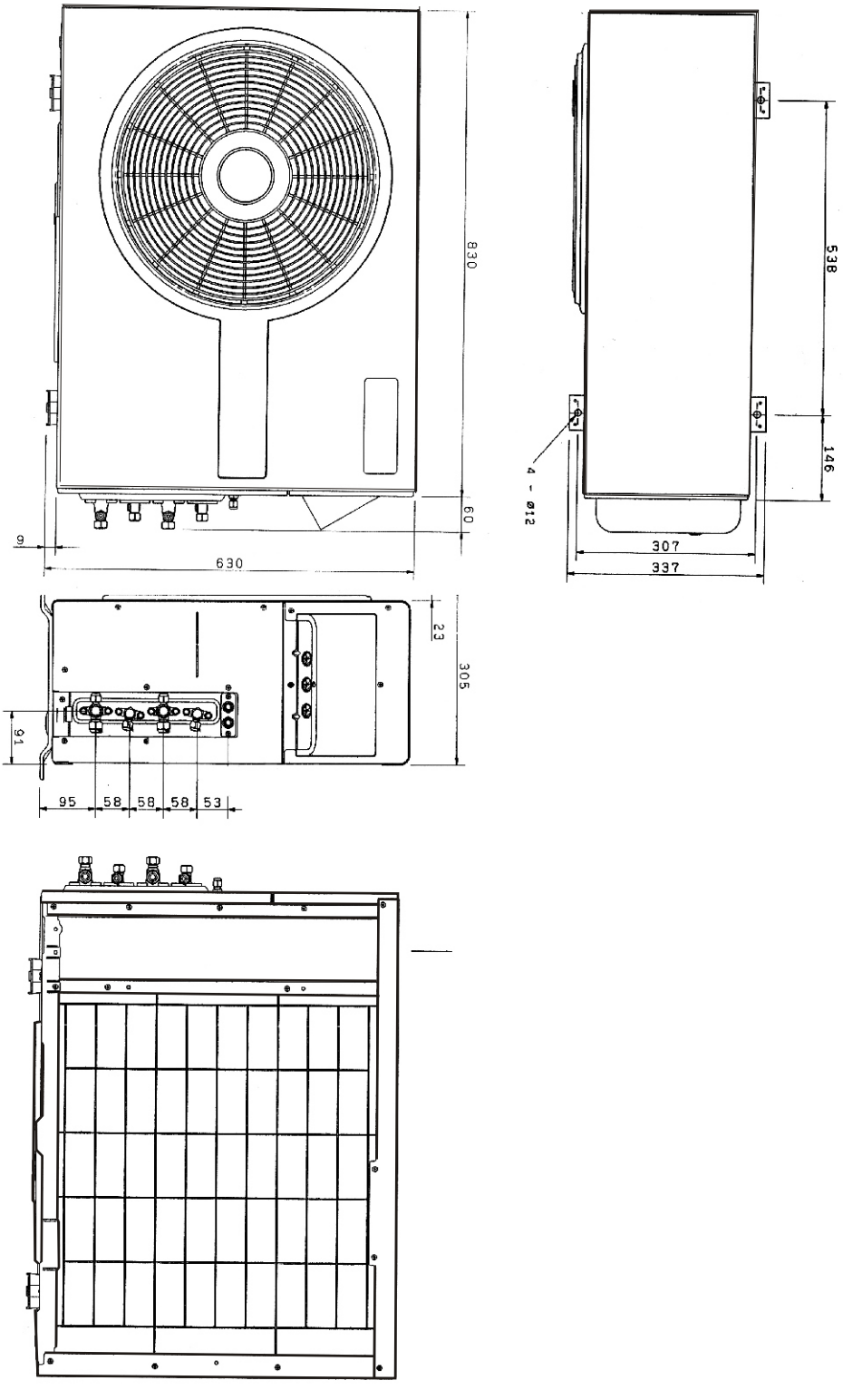


Remote controller



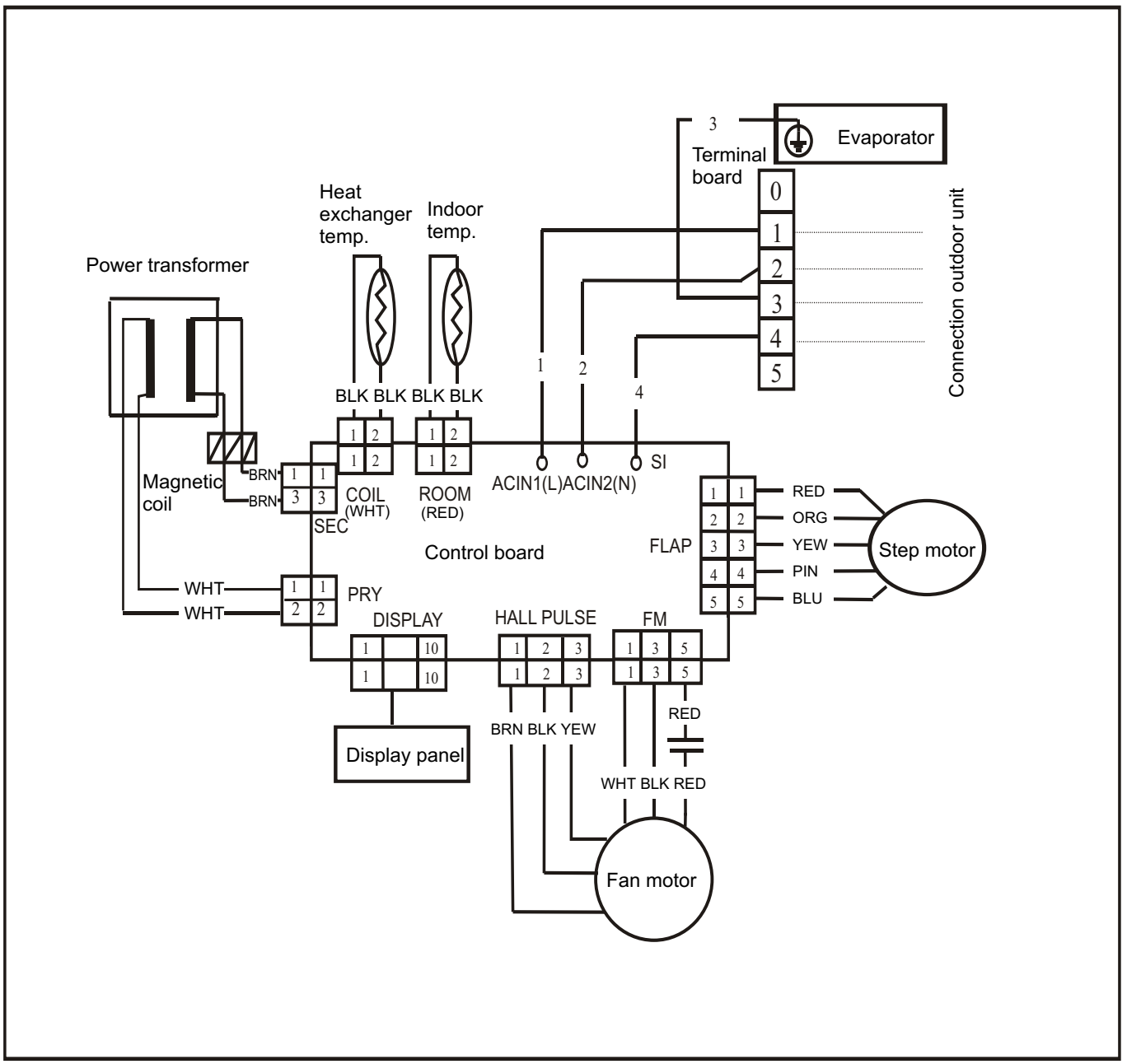
3.OUTLINES AND DIMENSIONS

KFR-2601G/BPE*2



4.WIRING DIAGRAM

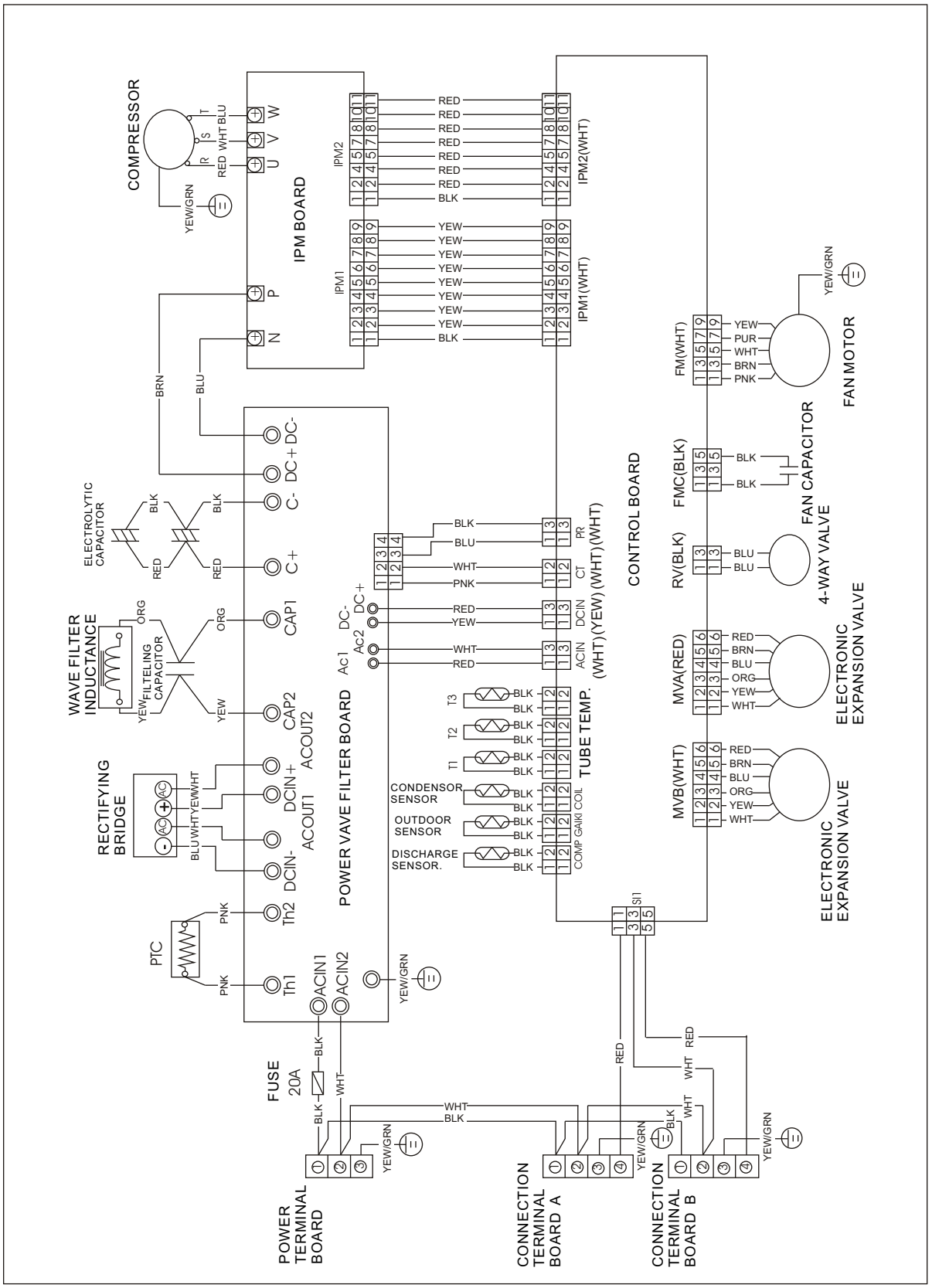
INDOOR UNIT **KFR-2601GW/BPE*2**



4.WIRING DIAGRAM

KFR-2601GW/BPE*2

OUTDOOR UNIT



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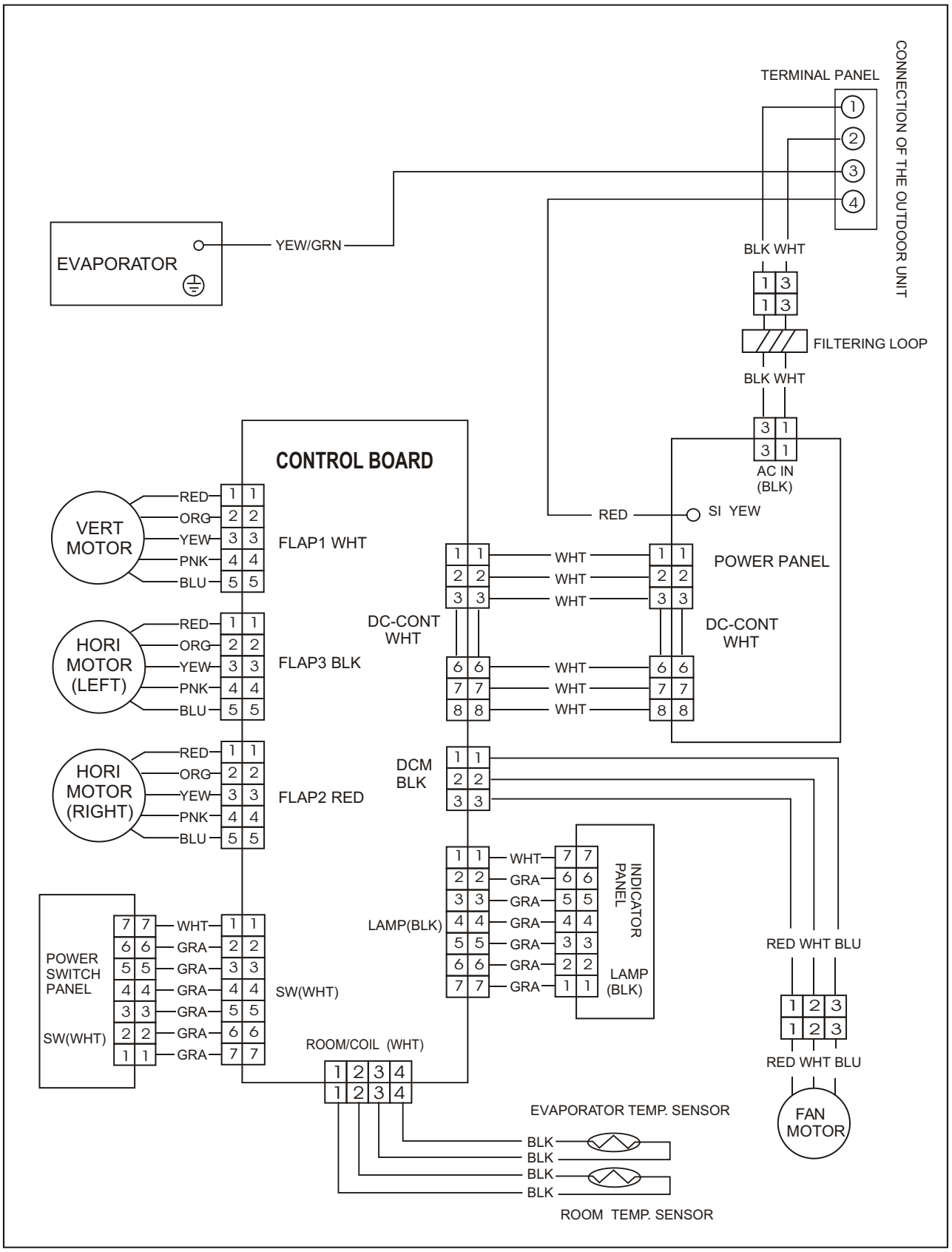
INDOOR UNIT

KFR-2801GW/BPE*2



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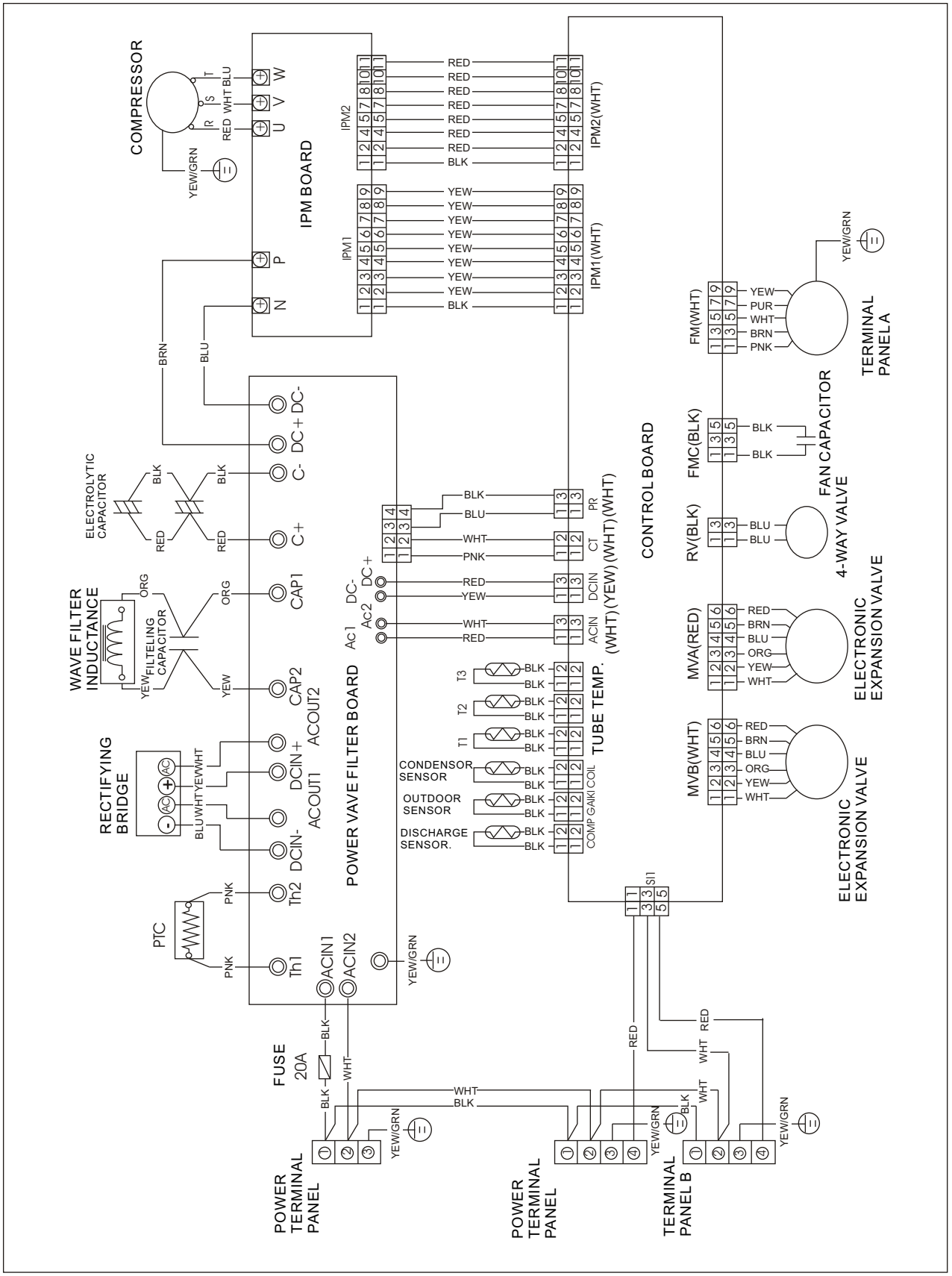
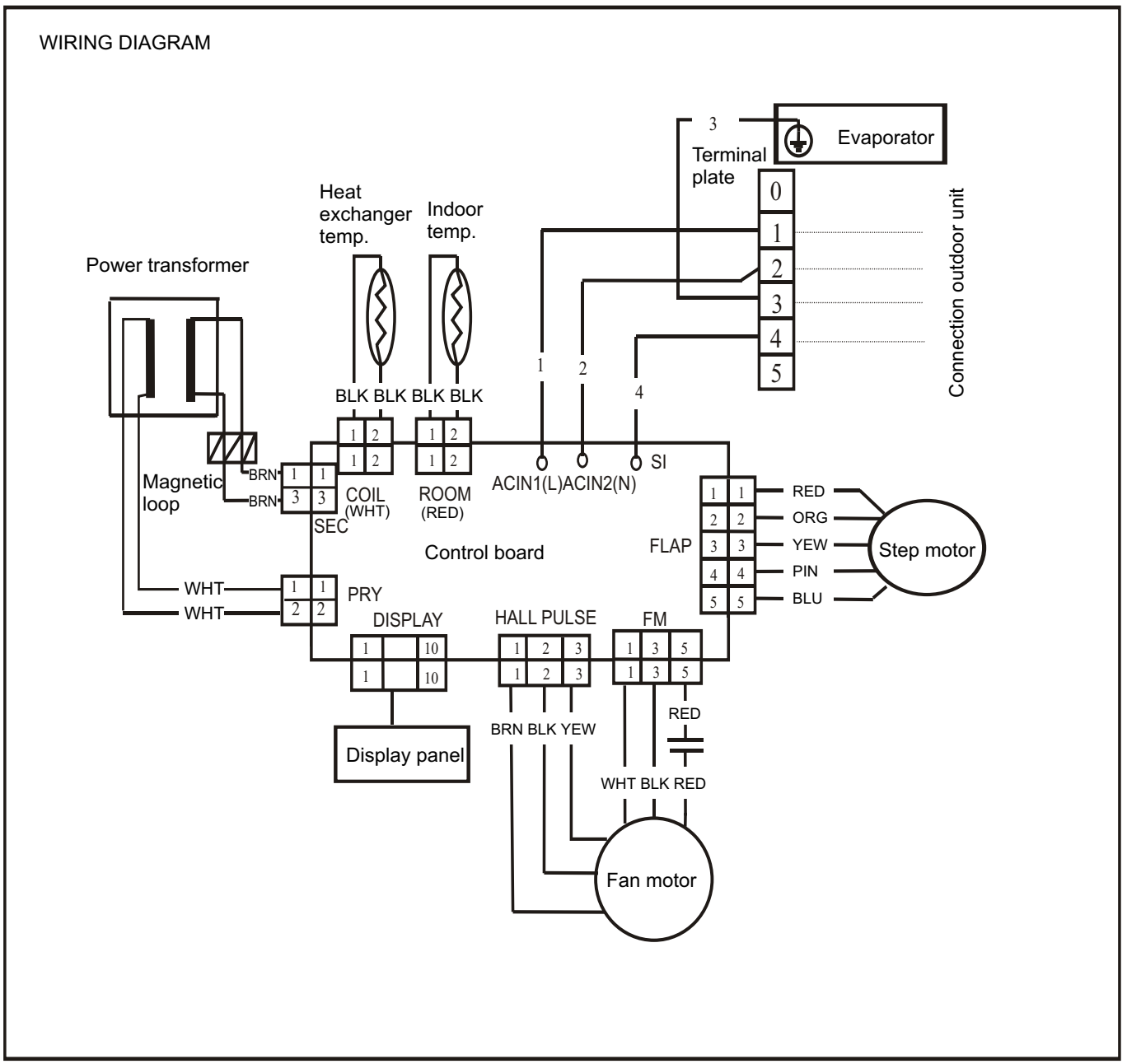


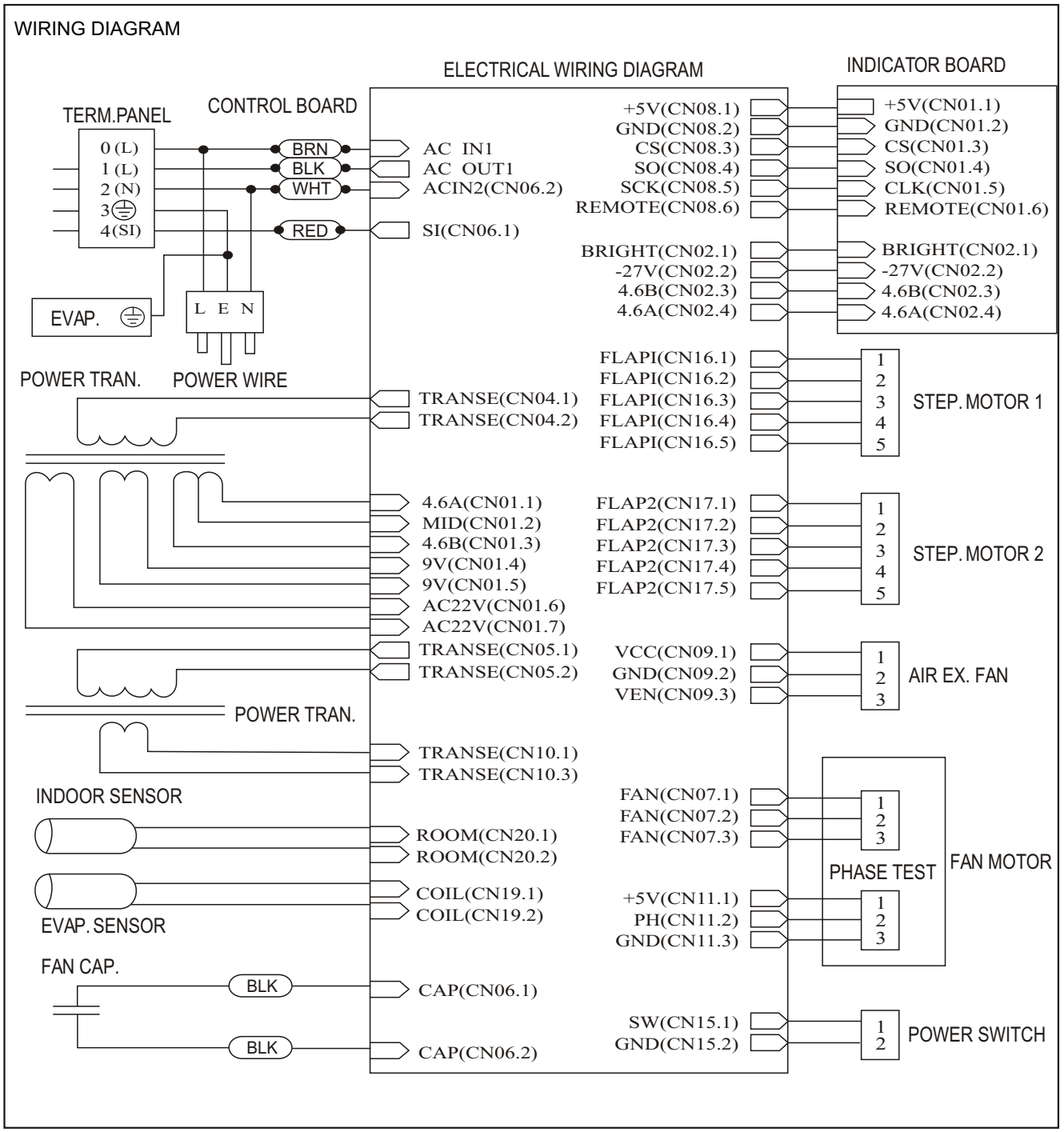
4.WIRING DIAGRAM

INDOOR UNIT (KFR-2501G/Y2BPE)



4.WIRING DIAGRAM

INDOOR UNIT (KFR-3201G/Y$_2$BPE)



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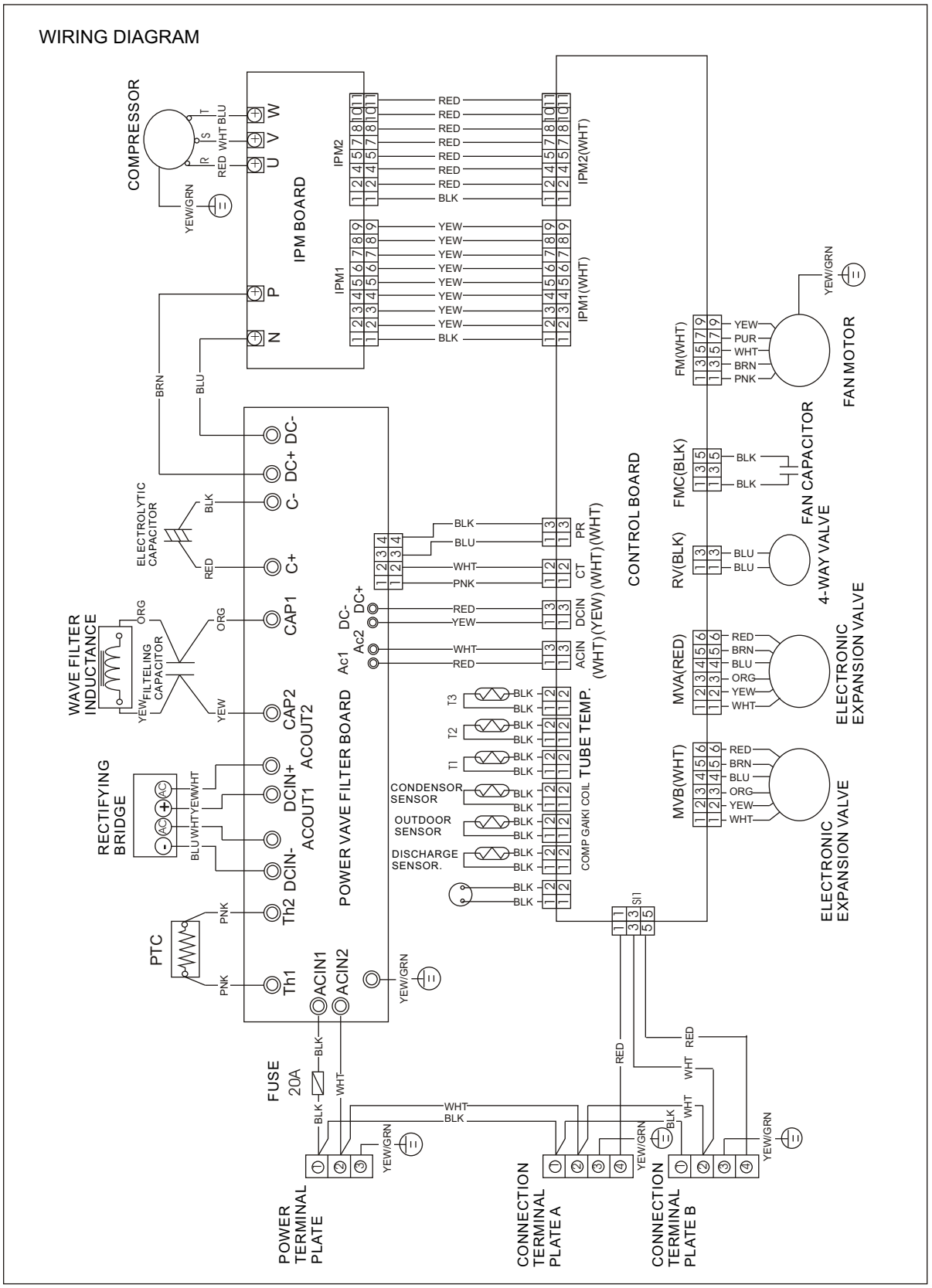
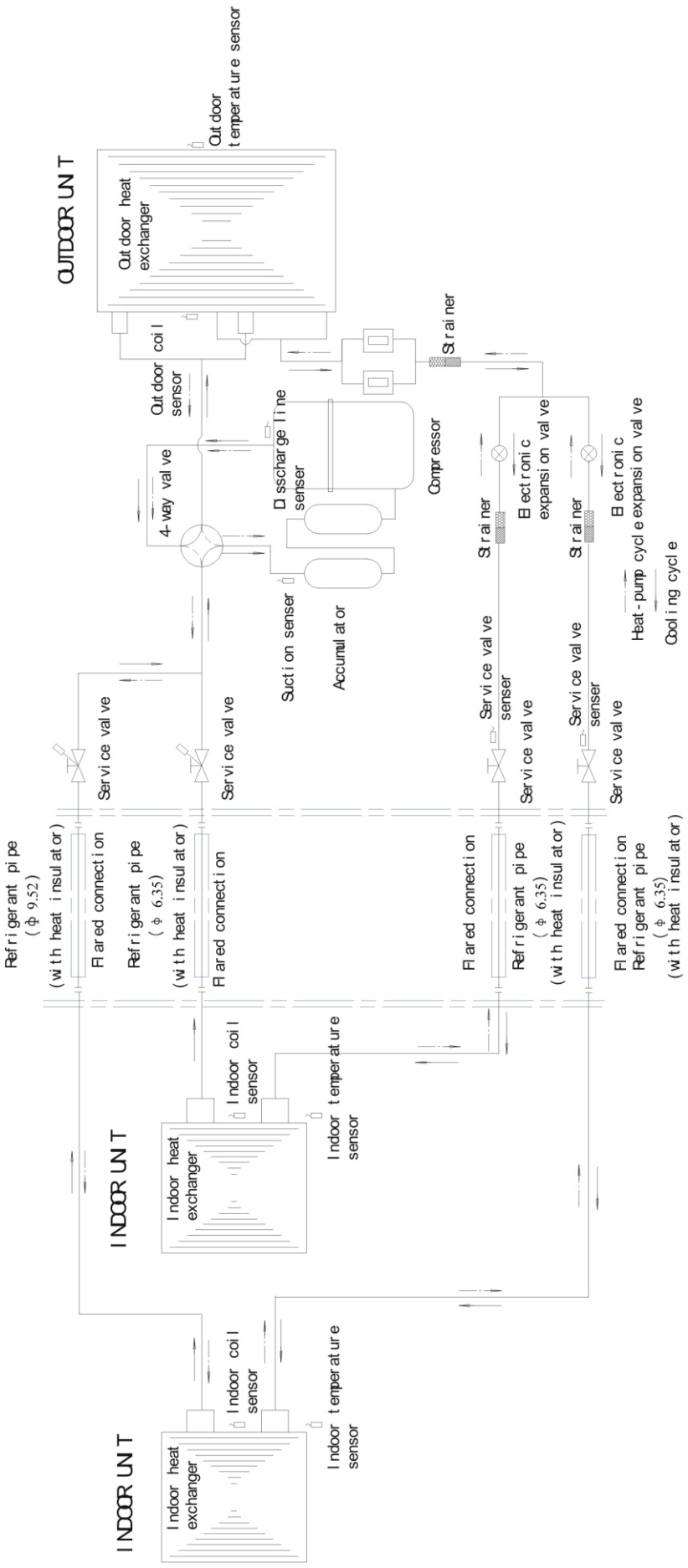
OUTDOOR UNIT(KFR-5701W/Y2BPE)



5.REFRIGERANT SYSTEM DIAGRAM

KFR-28GW/BP*2E

KFR-2601GW/BP*2E



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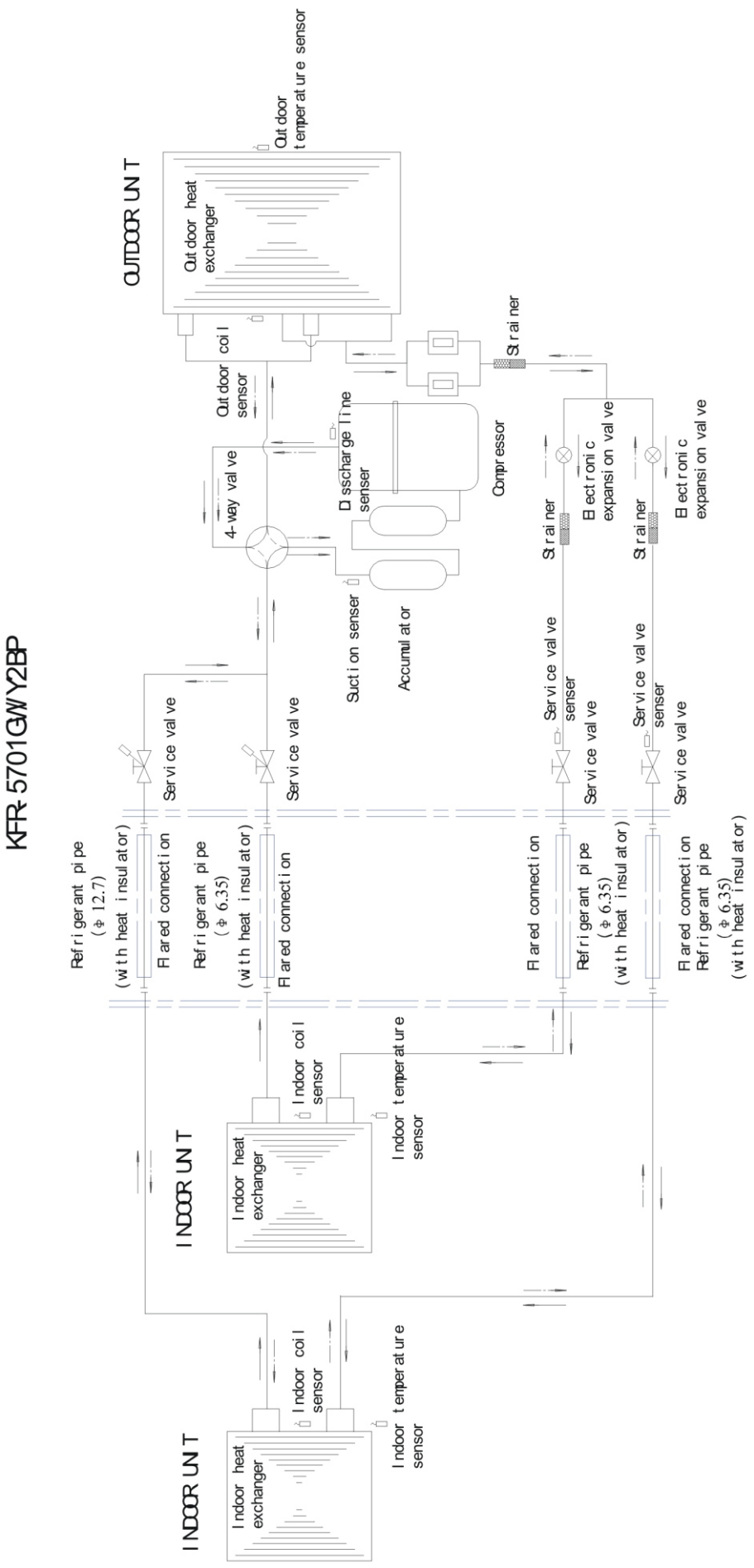


5.REFRIGERANT SYSTEM DIAGRAM

EVACUATION PROCEDURES

Connect the refrigerant pipes (both the liquid and gas pipes) between the indoor and the outdoor units.

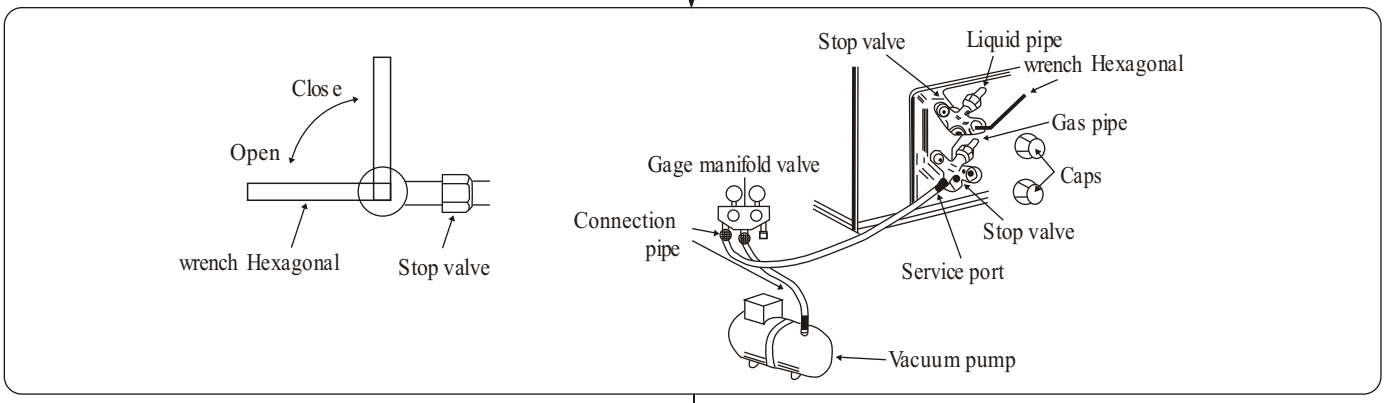
Remove the service port cap of the stop valve on the side of the outdoor unit gas pipe. (The stop valve will not work in its initial state fresh out of the factory (totally closed with cap on).

Connect the gage manifold valve and the vacuum pump to the service port of the stop valve on the gas pipe side of the outdoor unit.

Run the vacuum pump for more than 15minutes and at this time confirm that the pressure gage indicates -0.1Mpa (-76 cmHg).

Check the vacuum with the gage manifold valve, then close the gage manifold valve, and stop the vacuum pump.

Leave it as is for one or two minutes .Make sure the pointer of the gage manifold valve remains in the. same position.



Remove the gage manifold valve quickly from the service port of the stop valve.

After refrigerant pipes are connected and evacuated, fully open all stop valves on gas and liquid pipe sides.
Operating without fully opening lowers the performance and causes trouble.

Pipe length 7m maximum No gas charge is needed.

Pipe length exceeding 7m Charge the prescribed amount of gas.

Tighten the cap to the service port to obtain the initial status.

Retighten the cap.

Leak test

6. PERFORMANCE DATA

COOLING CAPACITY

model	Indoor Intake Air (WB°C)	Outdoor intake air DB°C											
		20		25		30		35		40		45	
		CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC
KFR-2801GW/BPE (220V)	16	3163	1431	3059	1394	2826	1402	2579	1429	2252	1421	2016	1444
	18	3219	1317	3171	1410	3016	1400	2764	1397	2512	1421	2219	1466
	20	3305	1322	3225	1329	3067	1397	2888	1417	2628	1414	2273	1347
	22	3283	1272	3222	1283	3192	1340	3025	1349	2781	1349	2492	1363
KFR-2601GW/BPE (220V)	16	3327	1391	3207	1471	2933	1452	2728	1495	2466	1413	2099	1424
	18	3377	1378	3284	1394	3181	1460	2862	1418	2621	1464	2332	1449
	20	3493	1339	3396	1331	3341	1435	3094	1438	2833	1469	2664	1424
	22	3574	1341	3529	1349	3407	1363	3259	1400	3008	1402	2541	1291
KFR-2601GW/BPE (240V)	16	3298	1386	3280	1495	2955	1481	2770	1562	2451	1443	2235	1444
	18	3360	1380	3271	1396	3191	1462	2891	1458	2662	1503	2296	1439
	20	3462	1338	3375	1345	3317	1444	3160	1504	2858	1474	2599	1460
	22	3573	1346	3254	1353	3409	1365	3258	1408	2970	1393	2512	1308
KFR-3001GW/BPE (220V)	16	3382	1284	3384	1424	3174	1388	2966	1469	2614	1499	2236	1378
	18	3475	1288	3534	1425	3349	1392	3194	1492	2893	1490	2434	1380
	20	3559	1290	3597	1317	3452	1342	3438	1418	3180	1509	2662	1383
	22	3632	1292	3700	1321	3581	1338	3483	1318	3458	1364	2891	1391

6. PERFORMANCE DATA

HEATING CAPACITY

model	Indoor Intake Air (DB°C)	Outdoor intake air WB°C											
		-10		-5		0		5		10		15	
		CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC
KFR-2801GW/BPE (220V)	15	2993	1592	3335	1700	3810	1804	4121	1736	4175	1556	4025	1363
	20	2917	1674	3431	1832	3651	1793	3952	1667	3988	1461	3928	1298
	25	2785	1736	3044	1790	3384	1783	3651	1665	3692	1418	3566	1269
KFR-2601GW/BPE (220V)	15	2813	1462	3226	1613	3861	1900	4157	1809	4184	1594	4674	1688
	20	2891	1543	3315	1712	3333	1795	3863	1760	4151	1668	4267	1609
	25	2615	1608	3044	1679	3174	1670	3570	1741	3847	1646	3583	1346
KFR-2601GW/BPE (240V)	15	2846	1495	3266	1639	3737	1809	4265	1883	4280	1616	4685	1713
	20	2912	1563	3395	1747	3575	1790	3885	1782	4167	1692	4214	1602
	25	2675	1634	3112	1713	3204	1720	3588	1757	3812	1669	3589	1371
KFR-3001GW/BPE (220V)	15	3173	1659	3763	1879	4170	1873	4683	1847	4856	1816	4864	1656
	20	3030	1757	3521	1838	3813	1856	4284	1759	4461	1769	4529	1637
	25	2853	1813	3213	1779	3456	1795	3839	1753	4016	1661	4209	1628

COOLING CAPACITY

Indoor unit model	Indoor Intake Air (WB°C)	Outdoor intake air DB°C											
		20		25		30		35		40		45	
		CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC
KFR-2501G/Y_2BPE	16	2668	955	2675	1144	2602	1147	2569	1244	2403	1377	2196	1474
	18	3069	1066	2822	1144	2928	1169	2749	1269	2599	1397	2354	1469
	20	3284	1079	3038	1159	3145	1174	2979	1288	2814	1415	2515	1456
	22	3507	1089	3240	1118	3384	1183	3226	1309	3060	1431	2777	1483
KFR-3201G/Y_2BPE	16	3654	1390	3403	1386	3409	1355	3286	1565	2456	1466	2920	1750
	18	3911	1407	3738	1515	3760	1473	3582	1594	3440	1733	3182	1750
	20	4144	1423	4059	1416	3996	1488	3852	1619	3714	1765	3255	1748
	22	4357	1437	4321	1436	4235	1499	4106	1641	4016	1788	3561	1753
KFR-(2501G+3201G)/Y_2BPE	16	2525+3360	2083	2483+3351	2093	2389+3012	2292	2120+2644	2299	2012+2932	2515	1668+2435	2495
	18	2706+3556	2104	2688+3329	2089	2623+3062	2342	2309+3010	2290	2183+2741	2501	1937+2468	2494
	20	2960+3686	2066	2737+3682	2072	2891+3105	2373	2448+3307	2298	2453+2701	2530	2092+2609	2489
	22	3227+3677	2102	3090+3650	2112	3054+3319	2375	2708+3248	2306	2633+2836	2573	2210+2740	2492
	22	4357	1437	4321	1436	4235	1499	4106	1641	4016	1788	3561	1753

HEATING CAPACITY

Indoor unit model	Indoor Intake Air (DB°C)	Outdoor intake air WB°C													
		-15		-10		-5		0		5		10		15	
		CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC	CA	PC
KFR-2501G/Y_2BPE	15	2781	1531	3037	1609	2780	1531	3774	1652	4143	1663	4055	1401	3375	1136
	20	1837	920	2808	1672	1837	920	3571	1686	3800	1637	3710	1370	3493	1168
	25	2796	1725	2553	1713	2796	1725	3127	1663	3245	1432	3143	1186	3097	1142
KFR-3201G/Y_2BPE	15	3345	1783	3478	1832	3740	1660	4782	2176	5336	2142	5263	1760	5266	1685
	20	2735	1729	3389	1955	4014	2182	4515	2253	4584	1949	4705	1690	4537	1364
	25	2807	1876	2527	1759	3717	2194	3991	2151	3873	1731	3696	1526	3775	1194
KFR-(2501G+3201G)/Y_2BPE	15	1750+1818	2245	1867+3227	2507	2378+3120	2541	2446+3956	2656	2876+4489	2637	3662+2766	1923	2893+4553	2081
	20	1600+1982	2289	1945+3088	2622	2113+2667	2573	1157+1830	1152	2701+4068	2573	3900+2411	2021	2711+4176	2074
	25	1634+2077	2462	1877+2661	2577	2082+2603	2722	2204+3483	2709	3757+2713	2601	3471+2128	1894	2551+3975	2089

7.CONTROL MODE

Section 1 Main Control Features

1. Control features of remote controller (refer to the Use and Installation Manual)
2. Display on the indoor unit

(1) Display on the indoor unit KFR-28GW/BPx2/2801 GW/BPx2
"Run " indicator lamp, green; it is on when the air conditioner is running (Run-mode).
"Standby" indicator lamp, red; it is on when the air conditioner is running in Anti-Cold Air mode.
"Timer" indicator lamp, green; it is on when the air conditioner is running in Timer Control mode.
"High Efficiency ", orange; it is on when the air conditioner is running in Full Power mode.
The indicator lamps can also display troubles.
(2) Display on the indoor unit KFR-2601GW/BPx2
a. Display of frequency
On the display, there are 12 frequency display bars for display of the frequency at which the compressor is running. Each bar represents 10 Hz. When the air conditioner is running in High Efficiency mode, the frequency is indicated to maximum. The bars are lighted one by one from bottom to upper until they indicate the frequency at which the compressor is running at the current time.
frequency display set indoor outdoor temperature display temporary switch

b. Temperature display
This air conditioner can display temperature setting, room temperature and outdoor temperature respectively. The temperature can be switched over by the help of the "Temperature Switch" button on the remote controller. The air conditioner indicates "Temperature Setting" by default when it gets started. If you press the "Temperature Switch" button, the display will change by the sequence from room temperature → outdoor temperature → temperature setting.

Note: When the indoor is able to receive the temperature signal from the remote controller, and the sensor in the remote controller is switched over to the remote control temperature state, the room temperature indicated is the room atmosphere detected by the remote controller. Otherwise, what has been indicated is the room temperature detected by the air conditioner itself.
c. Trouble Alarm
When the air conditioner is in trouble, it will stop itself. In this case, the serviceman may press the "Sensor Switch"button on the remote controller for consecutive two times and set the built-in sensor in a position to detect the temperature. At this time, a trouble code will be displayed on the LCD on the air condition and blink in back light. In case of a failure in the indoor, the word "indoor"appears on the LCD. In case of a failure in the outdoor, the word "outdoor"appears on the LCD. The displaying lasts 6 seconds with an orange background.

7.CONTROL MODE

LCD Back Lighting
When the air conditioner is in run mode, the background of the LCD is lighted up. For different run modes, the background shows different colors as follows:

Cooling	Heating	Dehumidifying	Airflowing	Automatic
green	red	green	orange	automatic display according to the specific mode.

3.Switch ON/OFF
(1) When in "Stop"(OFF) position, the air conditioner stops and does not receive the signal from the remote controller.
(2) When in "Run"(ON) position, the air conditioner is in the normal operating condition.
(3) When in "Stop→Run"(OFF→ON) position, the air conditioner is in the "automatic run" condition; if Troom temperature < 23°C the air conditioner runs in heating cycle; if Troom temperature > 26°C, the air conditioner runs in cooling cycle; otherwise the air conditioner works under air freshening run.
(4) When in "Run→ Test" position, the air conditioner will be forced to run in the cooling cycle, and the compressor runs at the rated frequency.
4. How to start the outdoor without the indoor?
Connect the outdoor T-RUN and COM by short circuit connection, and turn on the main power. The air conditioner runs in the heating mode, and the outdoor fan runs at the medium airflow rate. Then disconnect the short circuit connection, the air conditioner runs in the cooling mode (compressor delays 50 seconds), the fan runs at the high airflow rate at first and then at the low airflow rate.
5. Indoor control time shortened to 1/60
Short circuit the indoor TEST socket, the indoor control time will be shortened to 1/60.
6. Control of the electronic expansion valve
(1) This air conditioner employs two electronic expansion valves. They control the flow rate of the refrigerant in the indoor unit A and outdoor unit B respectively. The valve's control ability is the key to assure the efficiency and safety of the entire air conditioning system. The testing and inspection of an electronic expansion valve's control ability must be conducted in the air conditioner performance test laboratory.
(2) When first powered on, the electronic expansion valve will reset first, close to the minimum and then open to the preset value. Either compressor or outdoor fan does not start until the valve opens to the preset position.
(3) The openness of the electronic expansion valve depends on the following factors: the compressor's operating frequency, the values of the 10 indoor and outdoor sensor, the temperature setting, etc. The outdoor micro-processors carries out an effective control over the valve according to the 12 parameters. In consideration of a very high accuracy required for these values detected by the temperature sensors, special attention must be paid during the manufacture and assembly of an air conditioner to this end.
(4) When both of the indoor units get started at the same time, the corresponding valve closes as soon as the room temperature reaches the temperature setting. If the room temperatures corresponding to both of the machines reach the preset value, the compressor and outdoor fan will shut down. Otherwise, the compressor frequency will go down.
7. How to run the air conditioner at a fixed frequency?
Press the "High Efficiency " button on the remote controller for consecutive 8 times within 10 seconds, the air conditioner enters the standard operating condition and test itself.

7.CONTROL MODE

Section 2 Run Mode of Air Conditioner

Use the remote controller, and set the air conditioner in the following run modes: automatic, heating, cooling, dehumidifying and air freshening.

1. Automatic

(1) When Troom temperature ⩾ Ttemperature setting, the air conditioner is running in the cooling mode;

(2) When Troom temperature < Ttemperature setting, the air conditioner is running in the heating mode.

Once a run mode is determined, it must not be changed within 30 minutes except that following conditions are met: When in the automatic cooling mode,

Troom temperature < Ttemperature setting -3, the air conditioner immediately enters the heating mode, or when in the automatic heating mode, Troom temperature > Ttemperature setting +3, the air conditioner immediately enters the cooling mode.

2. Cooling mode

(1) The airflow rate of the indoor fan can be set by the remote controller:

a. Model KFR-28GW/BPx2/2801 GW/BPx2

Low: 900 rpm Medium: 1,100 rpm High: 1,200 rpm High efficiency: 1,300 rpm

b. KFR-2601 GW/BPx2

Low: 1,350 rpm Medium: 1,500 rpm High: 1,600 rpm High efficiency: 1,700 rpm

Automatic

	$T_{temperature\ setting}$ - $T_{room\ temperature}$	Airflow rate		$T_{temperature\ setting}$ - $T_{room\ temperature}$	Airflow rate
↓ Direction of Temperature Difference	1°C	Low	↑ Direction of Temperature Difference Difference	1°C	Low
	2°C	Low		2°C	Medium
	3°C	Medium		3°C	Medium
	4°C	Medium		4°C	High
	⩾5°C	High		⩾5°C	High

(2) The control of the indoor air throttle motor is carried out according to the setting on the remote controller. Refer to the Use and Installation Manual.

(3) Control of compressor

The target frequency at which the compressor runs is determined by the difference between the temperature setting and actual room temperature. Larger the difference, higher the frequency. The voltage is available by referring to the V/F curve of the compressor.

a. Model KFR-28GW/BPx2/2801 GW/BPx2

Single			Double		
Minimum	Maximum	Rated Frequency	Minimum	Maximum	Rated Frequency
15	70	40	15	90	74

b. Model KFR-2601 GW/BPx2E

Single			Double		
Minimum	Maximum	Rated Frequency	Minimum	Maximum	Rated Frequency
35	70	43	35	90	80

(4) Control of four-way valve
The four-way valve is always in the cut-off position.
(5) Outdoor fan motor
T outdoor temperature≥28℃, High airflow rate
T outdoor temperature＜28℃, the airflow rate depends on the outdoor coil pipe temperature Toutdoor coil pipe:
T outdoor coil pipe ≥ 40°C, high airflow rate
35°C≤T outdoor coil pipe≤ 40°C, medium airflow rate
T outdoor coil pipe≤ 30°C, low airflow rate

(6) Control of electronic expansion valve:
A. Control of the primary valve's openness
B. Control of exhaust
C. Control of capacity
(7) Anti-freezing for evaporator

2°C＜ Tindoor coil pipe ≤ 5°C, the compressor frequency is prohibited from ascending.
-1°C＜Tindoor coil pipe≤2°C, the compressor frequency goes down.
Tindoor coil pipe ≤-1°C, the compressor is interrupted, and the trouble alarm is given.

3. Dehumidifying mode
(1) When Ttemperature setting- Troom temperature ＜ 2°C, the system enters the dehumidifying run.
The indoor fan is forced to run at the “ultra low” airflow rate. When turn off the machine and restart it, the fan starts after a 3 minutes delay.
Under the dehumidifying mode, press the “High Efficiency ” button, and the control mode is same as that in the cooling cycle.
The outdoor unit control is same as that in the cooling cycle.
(2) Ttemperature setting- Troom temperature≥ 2°C, the air conditioner runs in the cooling mode.

7.CONTROL MODE

4. Heating mode

(1) If Tindoor coil pipe ⩾ 38°C , the indoor fan runs according to the airflow settings on the remote controller.

a. Model KFR-28GW/BPx2/2801 GW/BPx2

Low: 900 rpm Medium: 1,100 rpm High: 1,200 rpm High efficiency: 1,300 rpm

b. KFR-2601 GW/BPx2

Low: 1,350 rpm Medium:1,500 rpm High: 1,600 rpm High efficiency: 1,700 rpm

	$T_{temperature\ setting}$- $T_{room\ temperature}$	Airflow Rate		$T_{temperature\ setting}$- $T_{room\ temperature}$	Airflow Rate
Direction of Temperature Difference	1 °C	Low	Direction of Temperature Difference Difference	1°C	Low
	2 °C	Medium		2°C	Low
	3 °C	Medium		3°C	Medium
	4 °C	Medium		4°C	Medium
	5 °C	High		5 °C	Medium
	⩾ 6°C	High		⩾ 6 °C	High

23°C⩽T indoor coil pipe⩽38°C, the airflow varies from the ultra-low to low rate in stepless change. Higher the temperature is, greater the airflow rate.

T indoor coil pipe ＜23°C, the fan stops.

(2) The indoor throttle motor is controlled according to the settings on the remote controller. Refer to the Use and Installation Manual.

(3) Control of compressor

The compressor's target operating frequency is determined by the difference between the temperature settings and the actual room temperature. Greater the difference is, higher the frequency.

The voltage is available by referring to the V/F curve of the compressor.

Single			Double		
Minimum	Maximum	Rated Frequency	Minimum	Maximum	Rated Frequency
35	85	56	15	120	90

(4) Control of 4-way valve

The 4-way valve is always kept powered on and closed except for defrost run.

(5) Outdoor fan motor

a. Model KFR-28GW/BPx2/2801 GW/BPx2

Toutdoor temperature ⩾ 25°C, low airflow rate, when single unit runs;
medium airflow rate, when double units run.

25°C＜Toutdoor temperature ⩾ 10°C, medium airflow rate.

Toutdoor temperature＜10°C , high airflow rate.

b. Model KFR-2601 GW/BPx2

Toutdoor temperature⩾ 28°C, high airflow rate.

Toutdoor temperature ＜ 28°C, it depends on the outdoor coil pipe temperature Toutdoor temperature. When

Toutdoor temperature ⩾40°C, high airflow rate;
35°C⩽ Toutdoor temperature ⩽ 40°C, medium airflow rate.

Toutdoor temperature⩽ 30°C , low airflow rate.

(6) Control of electronic expansion valve
Primary valve openness control, overheat control, exhaust control and capacity control.
(7) Defrost run
A. The defrost run is carried out by reversing the heating cycle.
B. Conditions for entering the defrost run:
The heating run has last for at least 30 minutes;
Other conditions (to be added in)
C. Defrosting procedures:
Both compressor and outdoor fan motor stop.
→50 seconds later, the 4-way valve is shut down.
→Another 5 seconds later, the compressor gets started.
When the defrost conditions are met, or the compressor has been running for over 6 minutes, the compressor stops and the defrosting ends.

(8) Overload protection for indoor heat exchanger
Tindoor coil pipe ＞ 65°C , the compressor stops;
The indoor heat exchanger temperature ≥ 56°C, the outdoor airflow rate is switched
Over to the low airflow rate, and the compressor frequency drops;
56°C＞ the indoor heat exchanger temperature ＞53°C , the compressor frequency
Is prohibited from ascending.

5. Air-freshening mode
Under the air-freshening run, the indoor fan motor runs according to the airflow rate setting on the remote controller.
a. Model KFR-28GW/BPx2/2801 GW/BPx2
Low: 900 rpm Medium: 1,100 rpm High: 1,200 rpm High efficiency: 1,300 rpm
b. KFR-2601 GW/BPx2
Low: 1,350 rpm Medium : 1,500 rpm High: 1,600 rpm High efficiency: 1,700 rpm

Automatic

	$T_{temperature\ setting}$ - $T_{room\ temperature}$	Airflow Rate		$T_{temperature\ setting}$ - $T_{room\ temperature}$	Airflow Rate
↑ Direction of Temperature Difference	1°C	Low	↓ Direction of Temperature Difference Difference	1°C	Low
	2°C	Medium		2°C	Low
	3°C	Medium		3°C	Medium
	4°C	Medium		4°C	Medium
	5°C	High		5°C	Medium
	≥6°C	High		≥6°C	High

6. Perfect protection functions of the air conditioner
1. Abnormal sensor:
In case an indoor or outdoor sensor is short circuited or open circuited, the compressor gets stopped.
2. Abnormal IPM (power module)
In case IPM gets in trouble such as overheat (100°C), overcurrent (28A), short circuit (51A) and too low drive voltage (12.5V), both the compressor and outdoor fan motor stop, and the trouble code is displayed.
3. Compressor exhaust temperature protection
Compressor exhaust temperature ＞120°C , the compressor is interrupted and
the trouble is displayed;
Compressor exhaust temperature ≥ 105°C , the compressor frequency goes down;
96°C＜ compressor exhaust temperature ＜ 104°C , the compressor frequency
Is prohibited from ascending.
4. Total current control
When the outdoor unit's AC supply current exceeds a preset value, the compressor frequency goes down. If the current in the compressor continues to rise, the compressor is interrupted. The current settings is tabulated below (the figure in the bracket is the off current):

Cooling		Heating	
Single	Double	Single	Double
14A (17A)	8A (11A)	17A (19A)	10A (12A)

5. Protection against abnormal supply voltage
When the AC supply voltage is higher than 260 V or lower than 145 V, the compressor is interrupted, and the trouble code is displayed.
6. Protection against instantaneous interruption
In case of instantaneous interruption of the AC supply, the compressor is interrupted and the trouble code is displayed.
7. Time delay protection
After a stop of the compressor, there must be a 3 minutes delay to restart the compressor. But when powered on for the first time, the compressor must be started immediately.
8. Communication in trouble
If the outdoor unit receives no effective communicating signal from the indoor unit after being started, the outdoor will run in the condition that the indoor unit is shut down.
9. Indoor fan motor in trouble
If the indoor micro-computer judges that the motor is being stopped, locked or running with abnormal shake upon the position signal of the indoor motor's rotor, it will cut off the drive signal of the indoor fan, and the indoor unit will stop itself and restart several minutes later.
10. Overload control
Tindoor coil pipe ＞ 65°C , the compressor stops;
The indoor heat exchanger temperature ≥56°C , the outdoor blow rate
turns to the low rate, and the compressor frequency goes down;
56°C>the indoor heat exchanger temperature ＞53°C , the
compressor frequency is prohibited from ascending.
11. Anti-freezing
2°C<T indoor coil pipe 5°C , the compressor frequency is prohibited from ascending;
1 °C<T indoor coil pipe ≤ 2°C , the compressor frequency goes down;
T indoor coil pipe≤ 1°C , the compressor is interrupted and the trouble alarm is given.

8. TROUBLESHOOTING

In case of occurrence of a trouble during operation, the system stops itself, and then the trouble description is displayed. If you want the trouble description to be reappeared, press the “Sensor Switch” button and set the remote controller to the “Self Temperature Control” and then to the “Remote Temperature Control”.

a. Model KFR-28GW/BPx2/2801 GW/BPx2

The trouble indicator and run indicator share a LCD (the symbol ⊙ means flashing and ◯ means constant light).

Code	Trouble Display				Description of Trouble	Cause of Trouble
	Run	Standby	Timer	High-efficiency		
1	⊙				Room temperature sensor abnormal	Thermistor short-circuited or open circuited
2		⊙			Heat exchanger temperature sensor abnormal	Thermistor short-circuited or open circuited
3	⊙	⊙			Heat exchanger frozen	
4			⊙		Heat exchanger overheated	
5	⊙		⊙		Communication in trouble	
8				⊙	Indoor fan in trouble	
1	◯				Outdoor ambient temperature sensor abnormal	Thermistor short-circuited or open circuited
2		◯			Outdoor heat exchanger temperature sensor abnormal	Thermistor short-circuited or open circuited
3	◯	◯			Compressor overheated	Thermistor short-circuited or open circuited, or compressor overheated
4			◯		Outdoor capillary tube A temperature sensor in trouble	Thermistor short-circuited or open circuited
5	◯		◯		Outdoor capillary tube B temperature sensor in trouble	Thermistor short-circuited or open circuited
6		◯	◯		Overcurrent trouble	Too large electric current in the outdoor unit
7	◯	◯	◯		No load	Compressor not connected or the module damaged
8			◯		Supply voltage abnormal	Too high or too low supply voltage
9	◯		◯		Instantaneous interruption of power	

12			◯	◯	Malfunction of IPM power module	
13	◯		◯	◯	Incorrect outdoor E^2PROM data	
14		◯	◯	◯	Outdoor air circulation temperature sensor in trouble	

b. KFR-2601 GW/BPx2E

Code	Description of Trouble	Cause of Trouble
1	Room temperature sensor abnormal	Thermistor short-circuited or open circuited
2	Heat exchanger temperature sensor abnormal	Thermistor short-circuited or open circuited
3	Heat exchanger frozen	
4	Heat exchanger overheated	
5	Communication in trouble	
8	Indoor fan in trouble	
1	Outdoor ambient temperature sensor abnormal	Thermistor short-circuited or open circuited
2	Abnormal temperature sensor of the outdoor heat exchanger	Thermistor short-circuited or open circuited
3	Compressor overheated	Thermistor short-circuited or open circuited, or compressor overheated
4	Outdoor capillary tube A temperature sensor in trouble	Thermistor short-circuited or open circuited
5	Outdoor capillary tube B temperature sensor in trouble	Thermistor short-circuited or open circuited
6	Overcurrent	Too large electric current in the outdoor unit
7	No load	Compressor not connected or the module damaged
8	Supply voltage abnormal	Too high or too low supply voltage
9	Instantaneous interruption of power	
10	Outdoor overloaded in cooling cycle	
11	Defrost run is undergoing	
12	Malfunction of IPM power module	
13	Incorrect outdoor E^2PROM data	
14	Outdoor air circulation temperature sensor in trouble	
	IPM power module overheated	

8. TROUBLESHOOTING

3.6 Abnormal power supply voltage protection

When the supply voltage is above 260V or below 150V, the compressor stops, and the trouble code is displayed.

3.7 Overhot protection for the indoor heat exchanger

When the temperature of the indoor coil ≥ 70°C, the compressor will stop;

When the temperature ≥ 55°C, the outdoor flow speed will turn to the low speed, and the compressor runs at the descending frequency;

When the temperature ≥ 52°C and < 55°C, the compressor will prohibit the frequency from rising.

3.8 Anti-frost protection for the indoor heat exchanger

Refer to the cooling cycle.

3.9 Momentary interruption protection for power supply

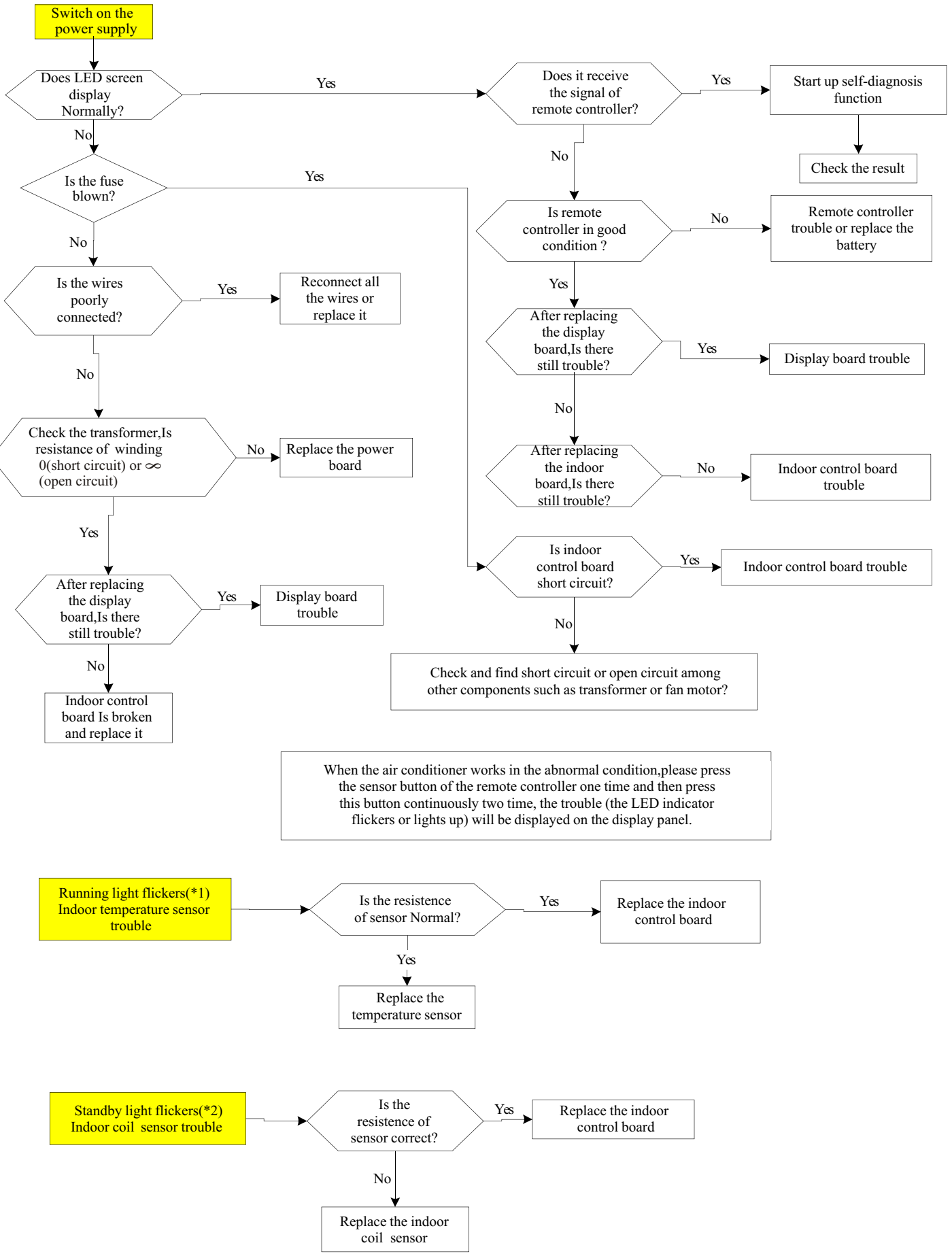
When the power supply lacks the cycle or is interrupted, the compressor stops running, and the trouble code is displayed.

3.10 Start delay protection: When restarting the machine, the start is delayed for 3 minutes for protection.

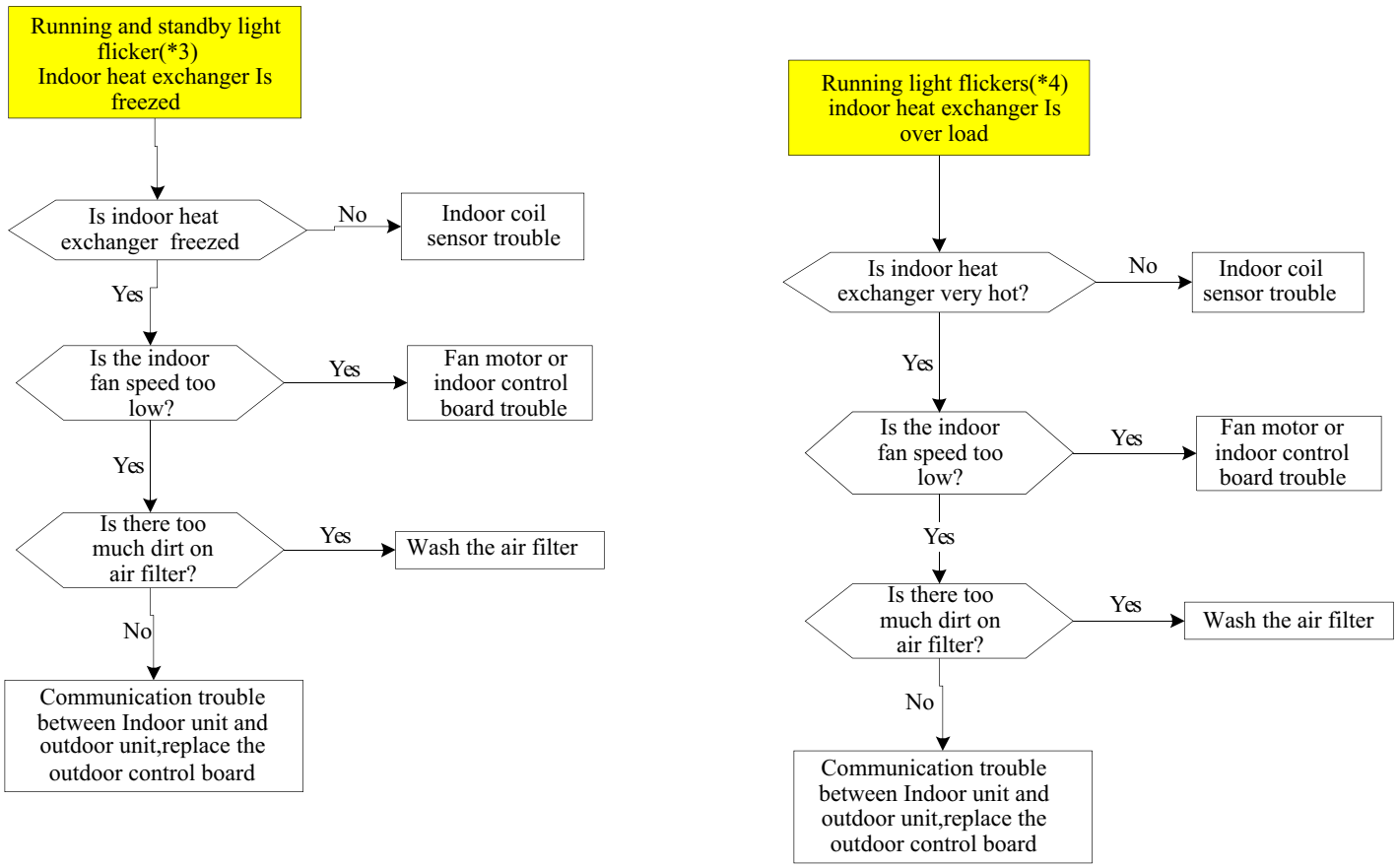
3.11 Communication trouble: when the outdoor unit is turned on, the indoor unit will shut down the indoor unit 3 minutes later if the indoor unit has not received an effective communication signal which returns from the outdoor unit. And at the same time the trouble code is displayed. After another 3 minutes, the outdoor will be powered on again. Once the communication returns to normal, the trouble code will be cleared.

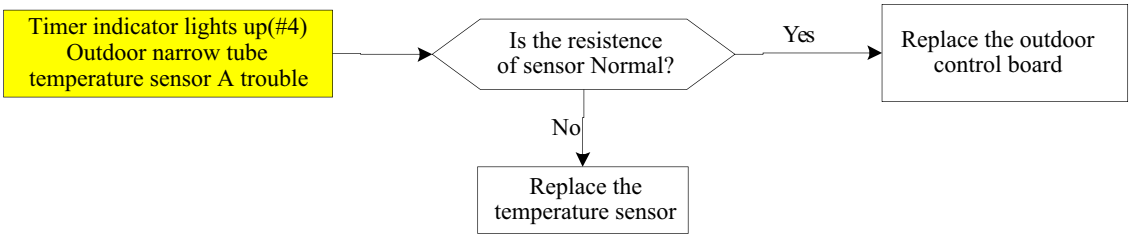
3.12 The trouble in the indoor fan motor: when the indoor micro-computer, depending on the position of the rotor of the indoor motor, determines the motor is in stoppage, lock or abnormal vibration state, the micro-computer will cut off the driving signal of the indoor fan. 3 minutes later, it is restarted. If the trouble occurs 4 times within 30 minutes, the air conditioner will stop, and the trouble code will be displayed. It can not be restarted unless being powered on again.

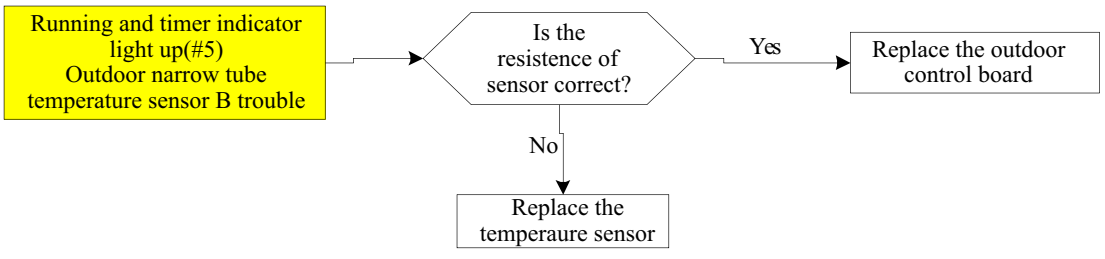
9.SERVICE FLOW CHART

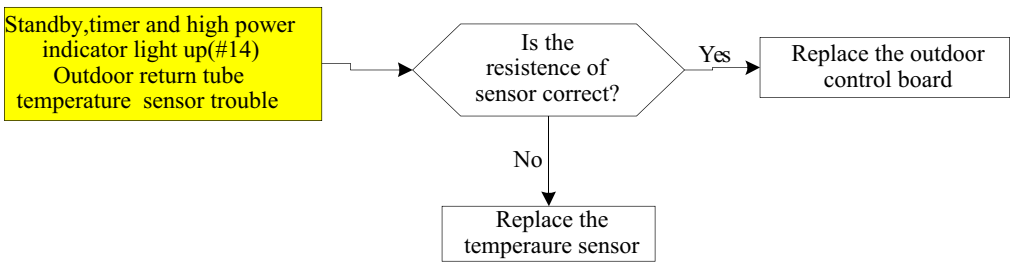


9.SERVICE FLOW CHART

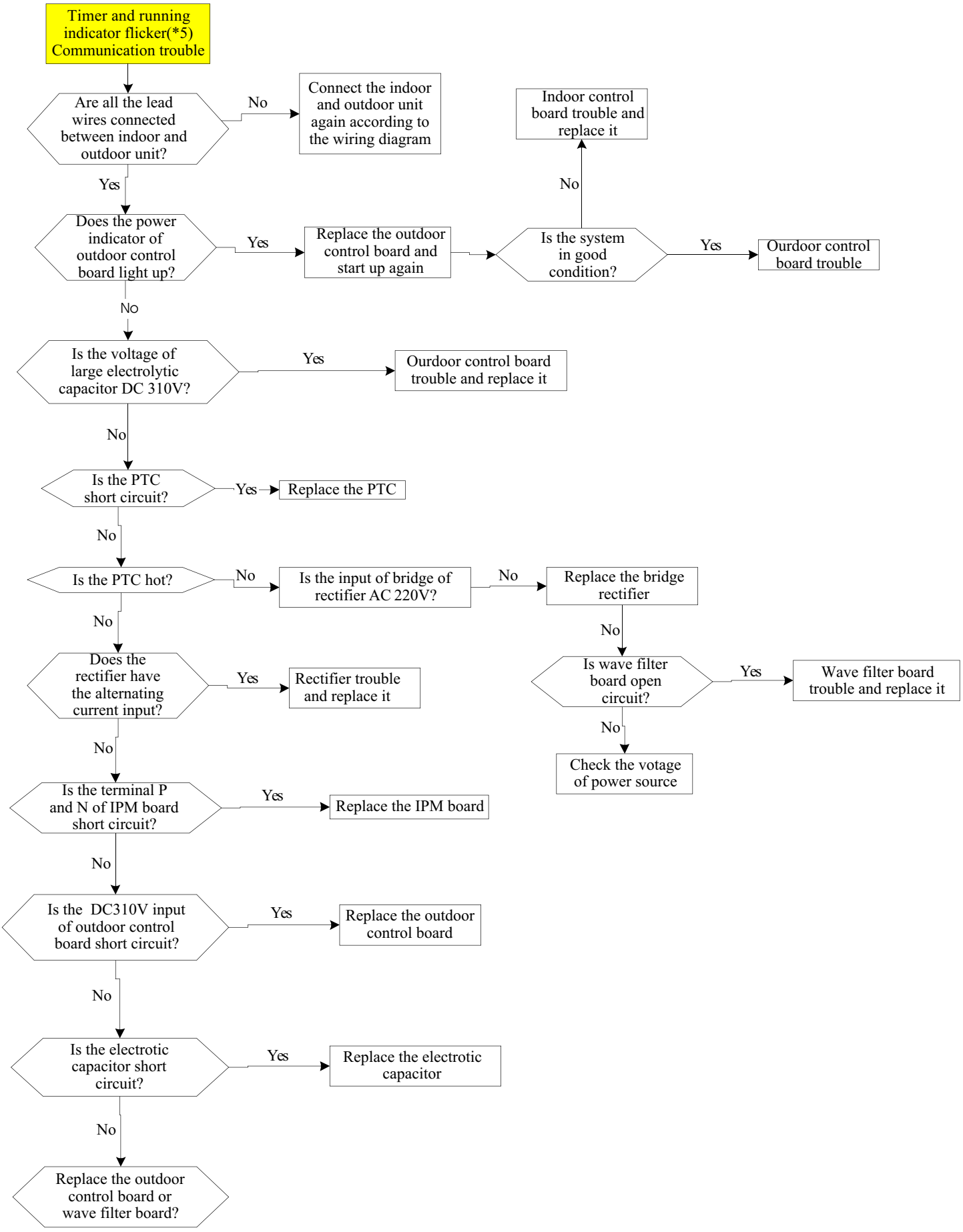




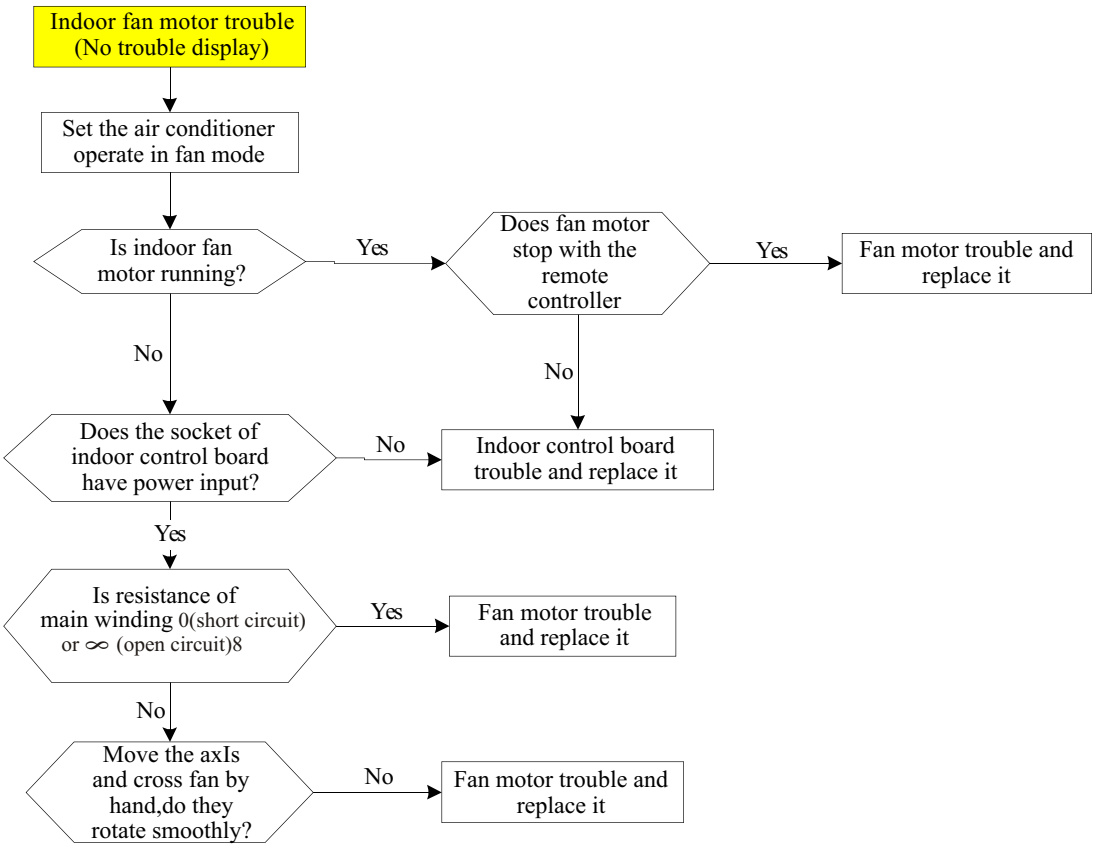


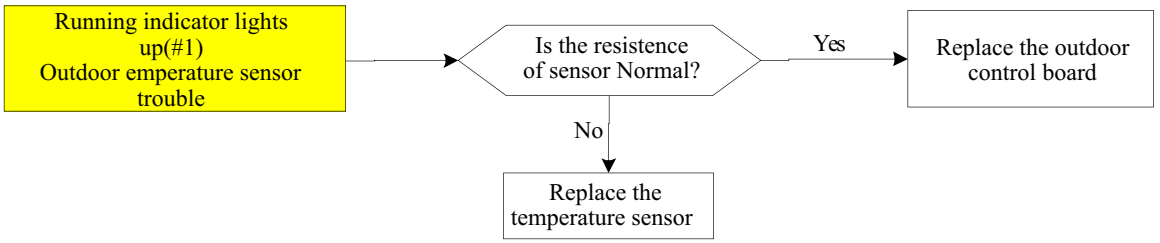


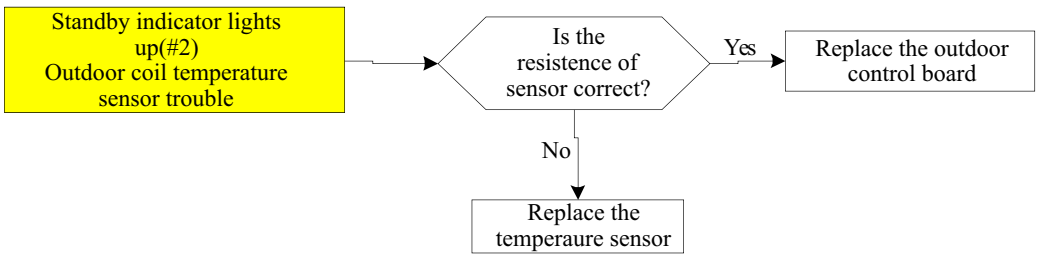
9.SERVICE FLOW CHART



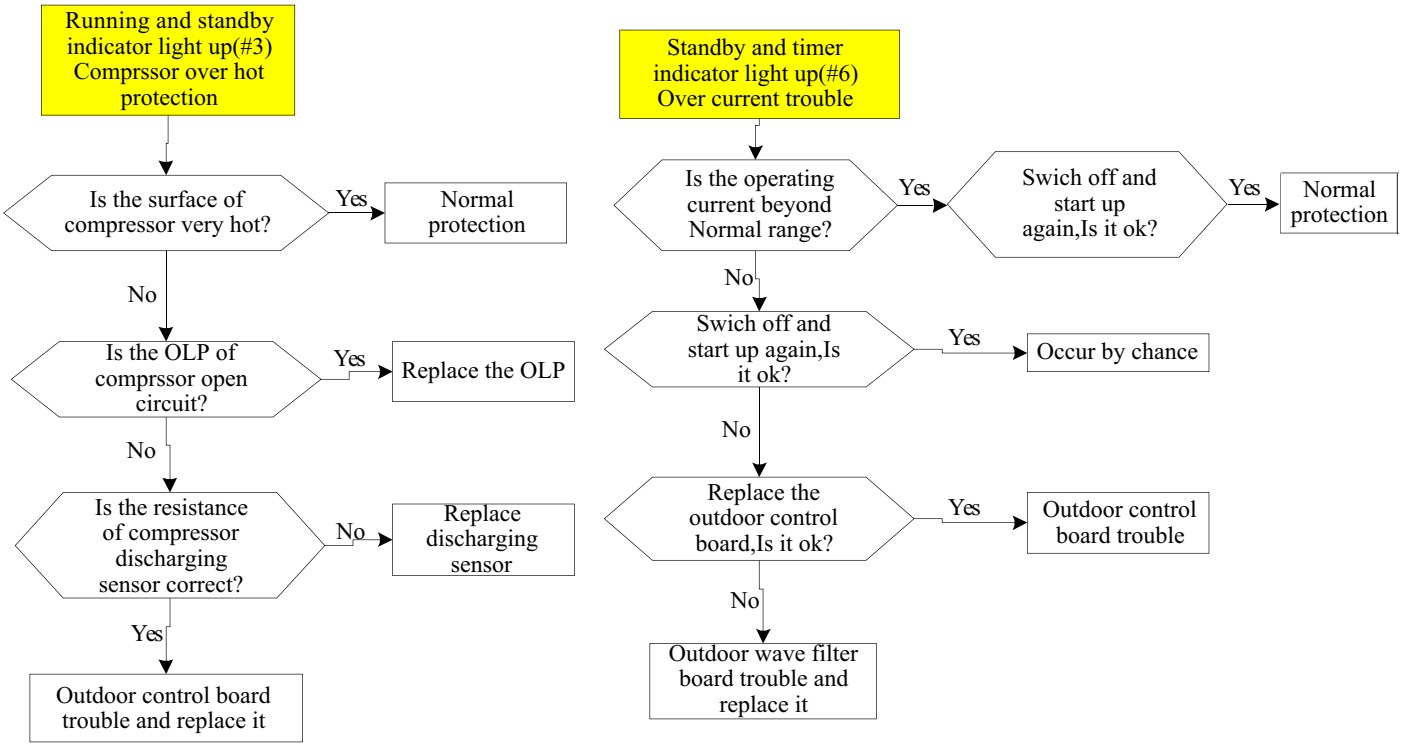
9.SERVICE FLOW CHART

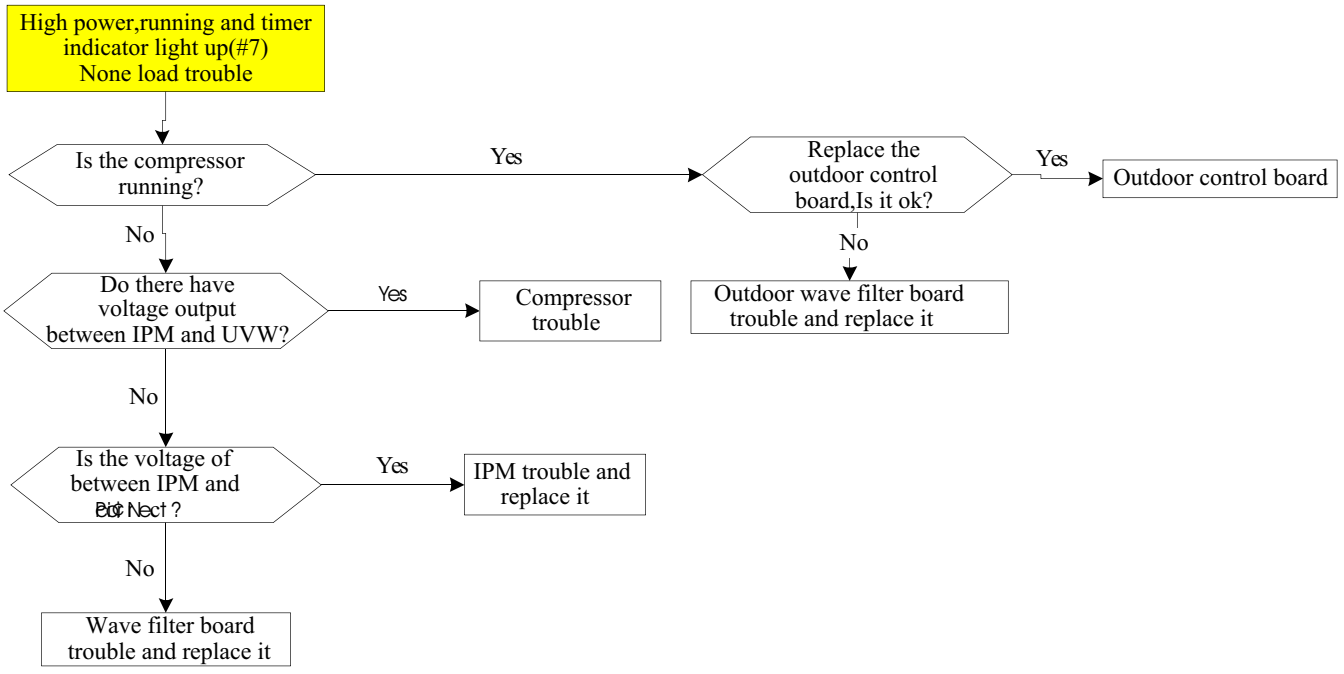


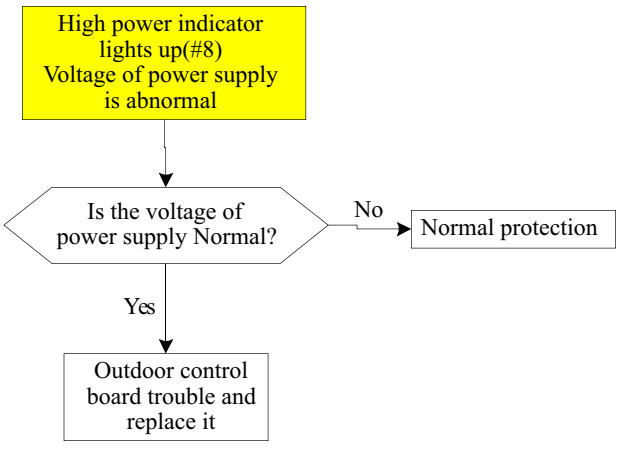




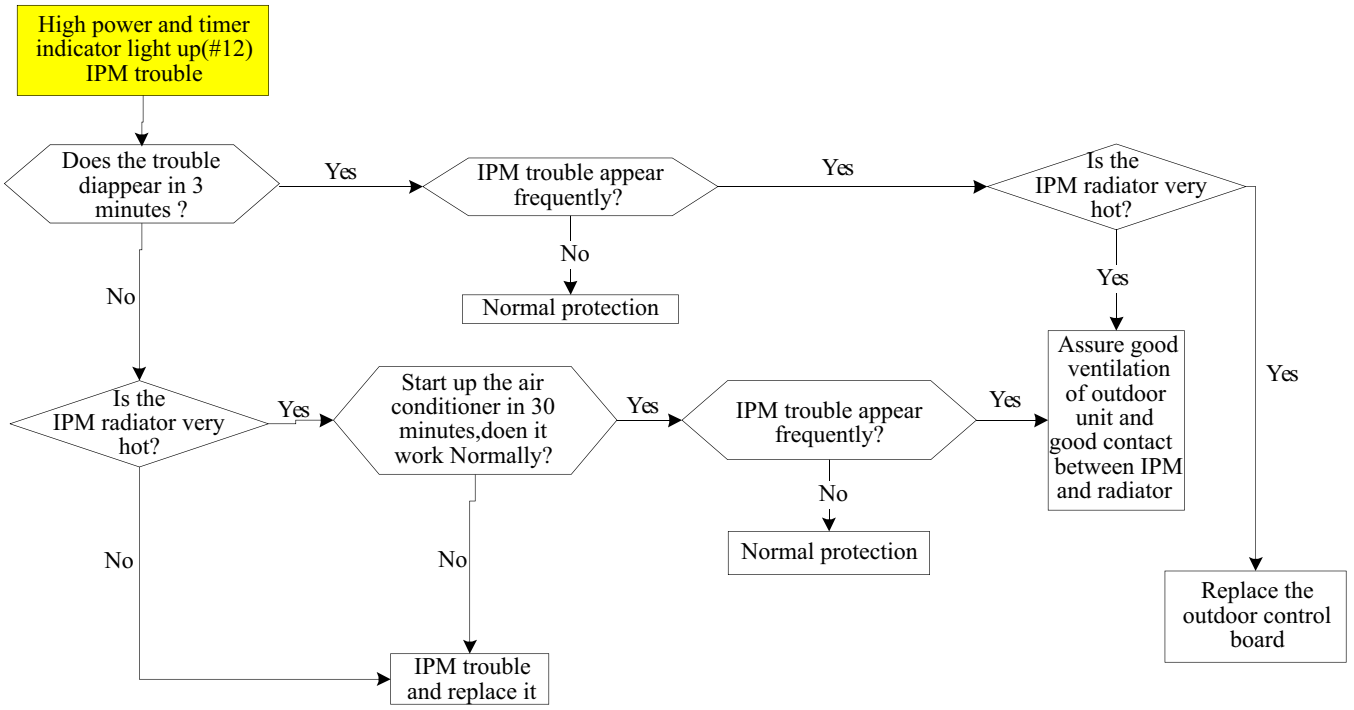
9.SERVICE FLOW CHART

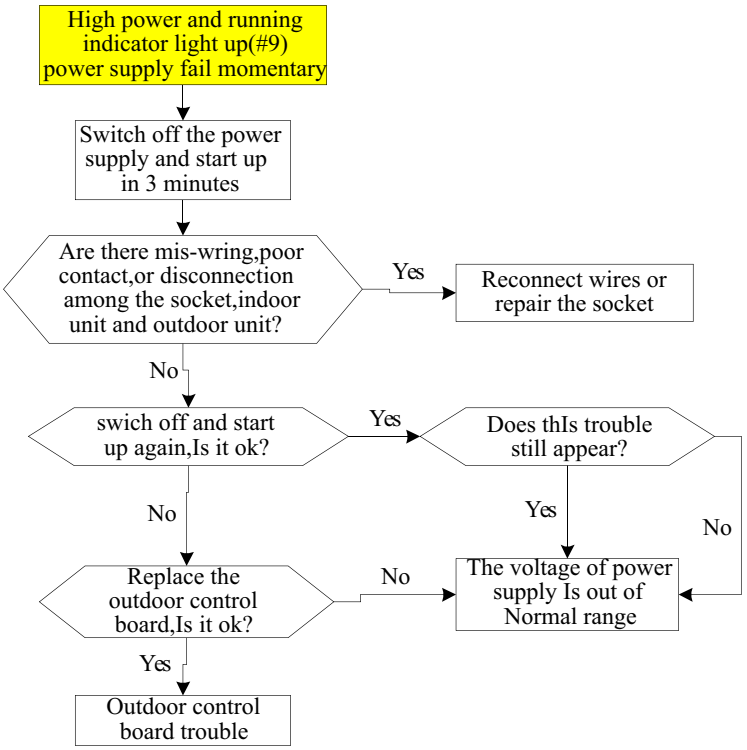






9.SERVICE FLOW CHART

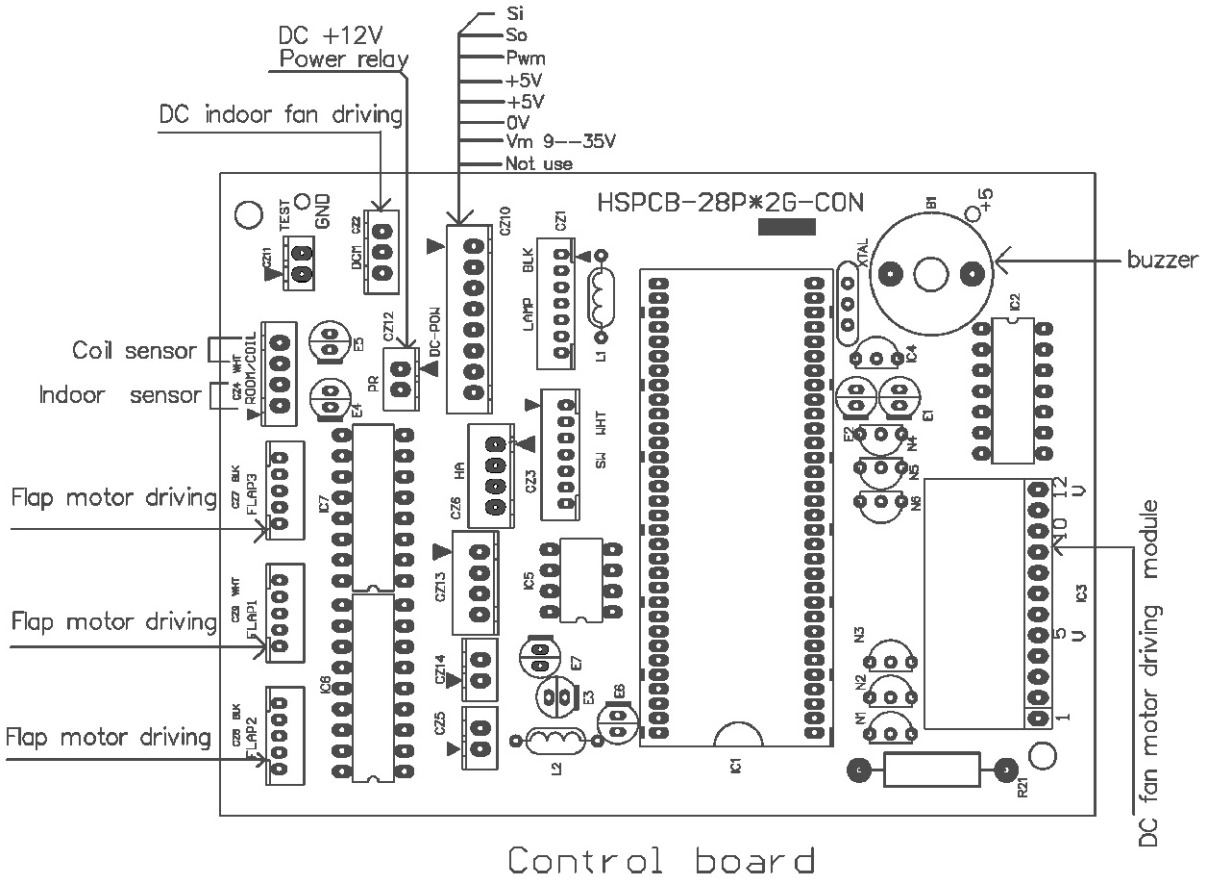




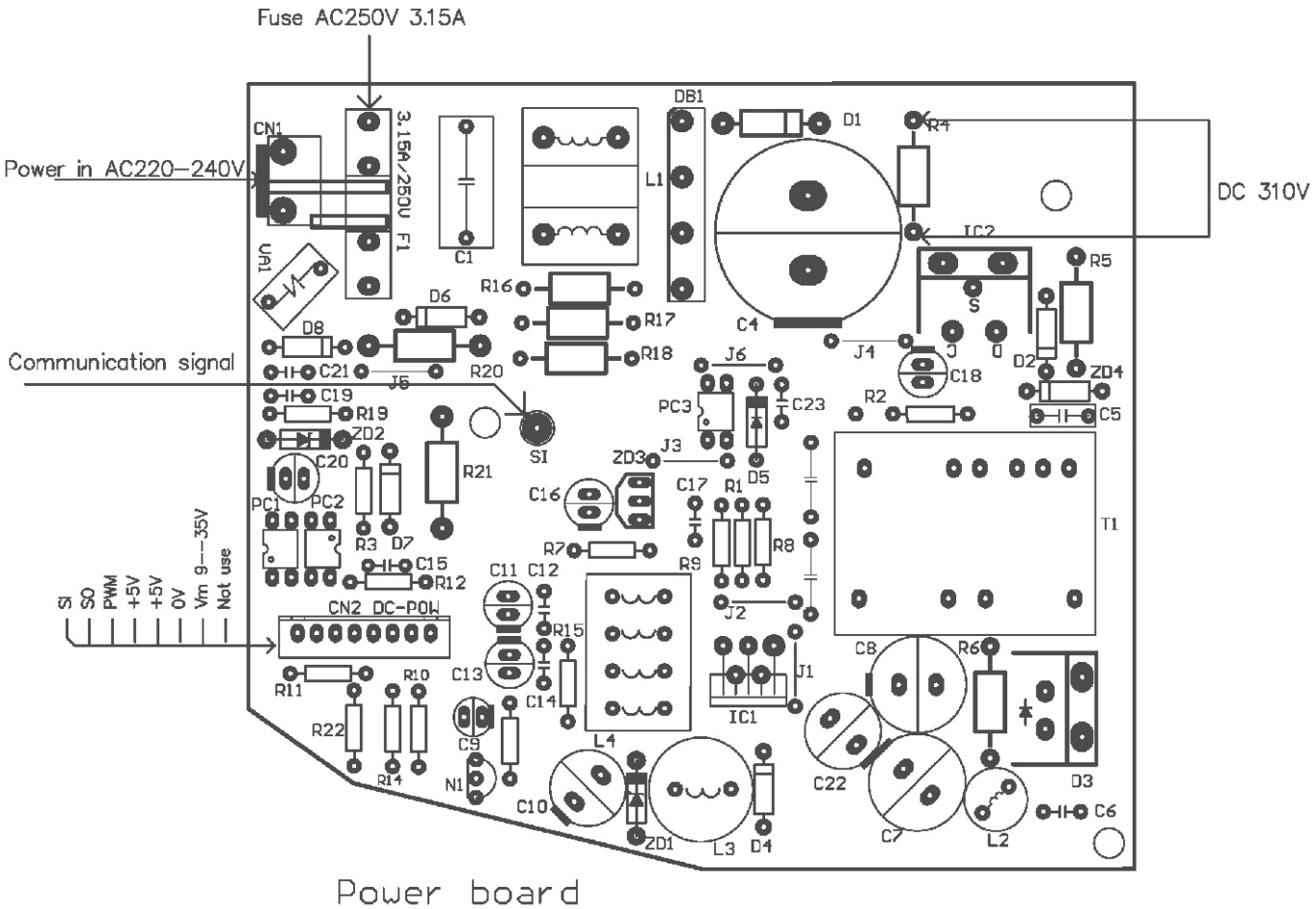
NOTE: THE NUMBER WITHIN BRACKET INDICATES TROUBLE CODE,"*" INDICATES INDOOR UNIT;"#" INDICATES OUTDOOR UNIT.

9.SERVICE FLOW CHART

KFR-28G/BPE*2



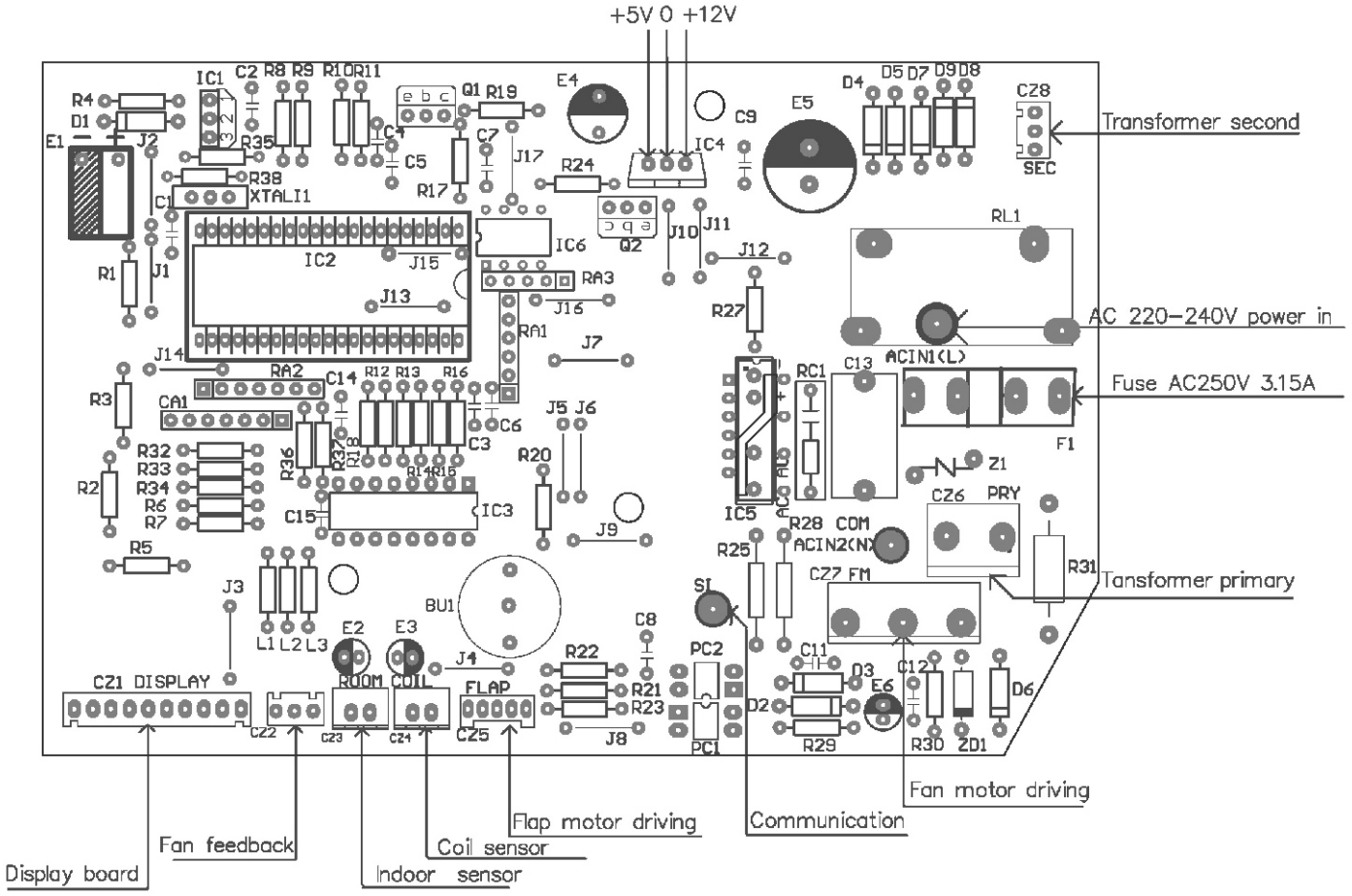
Control board



Power board

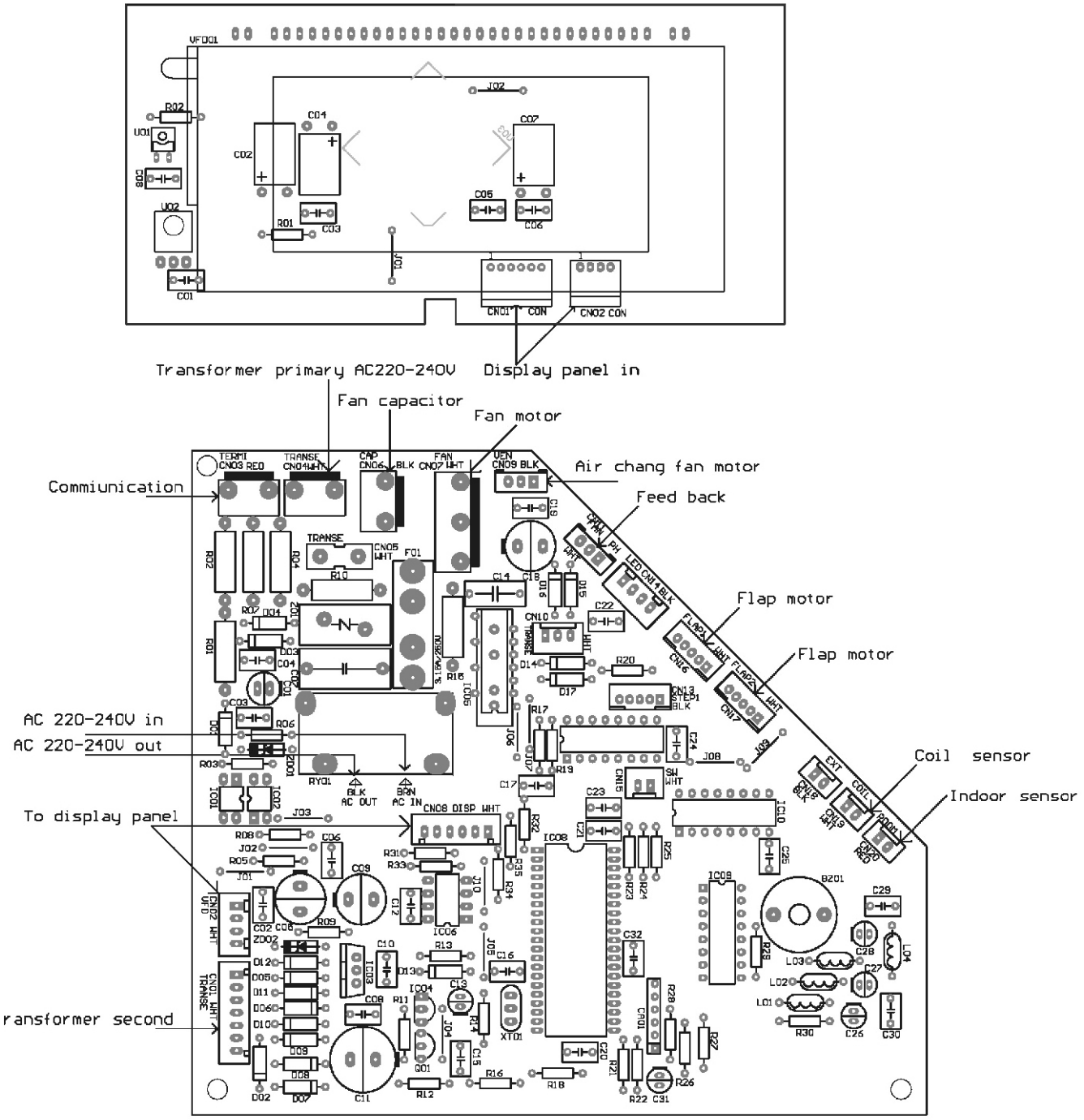
9.SERVICE FLOW CHART

KFR-2601G/BPE*2 KFR-2501G/BPE



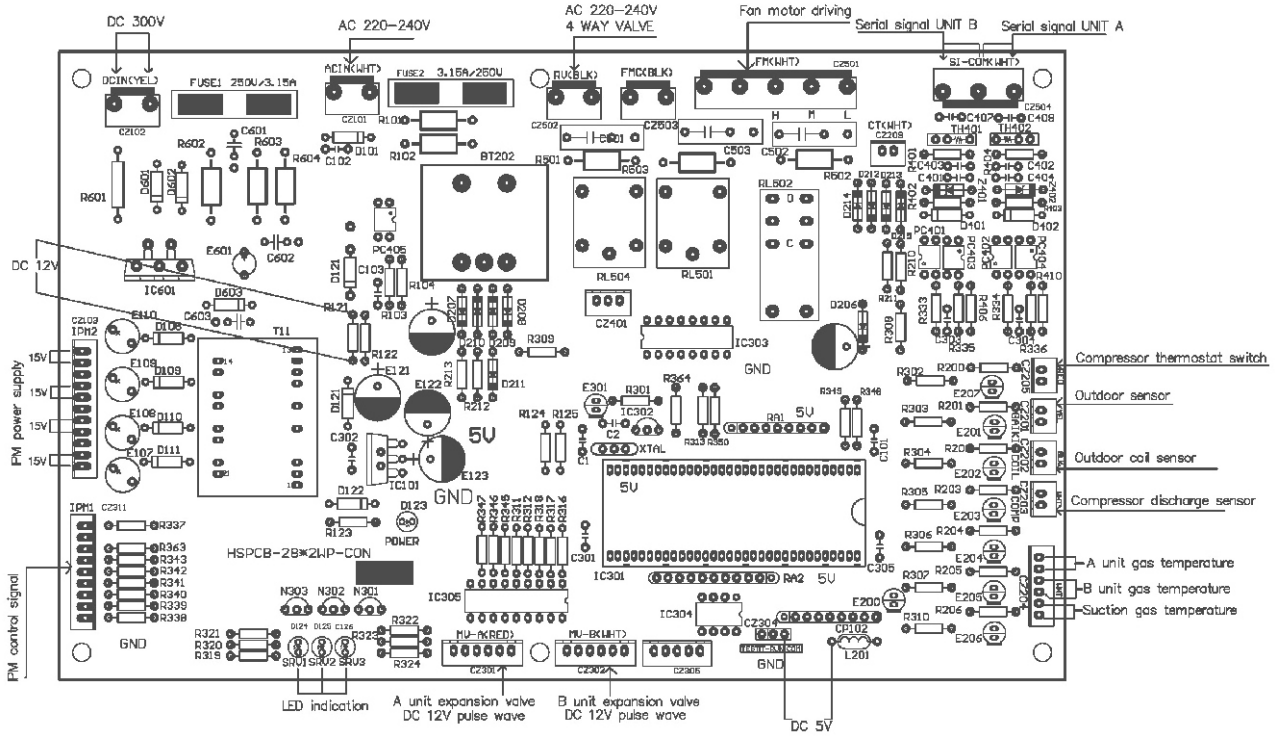
9.SERVICE FLOW CHART

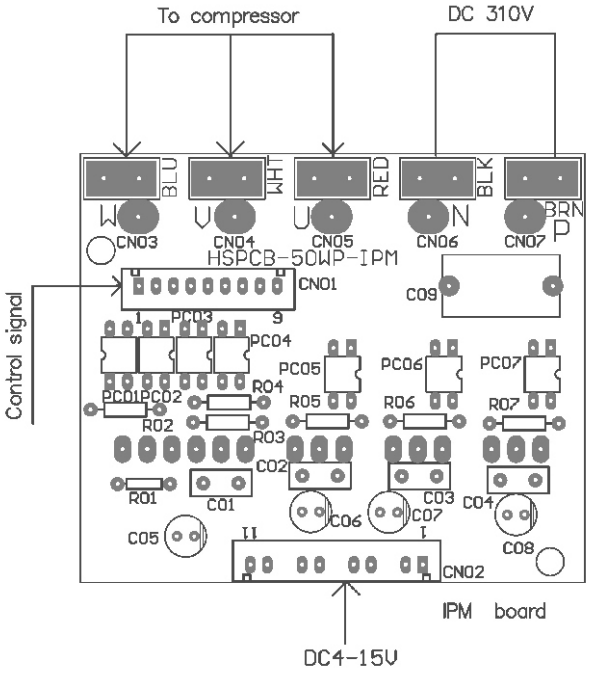
KFR-3201G/BPE

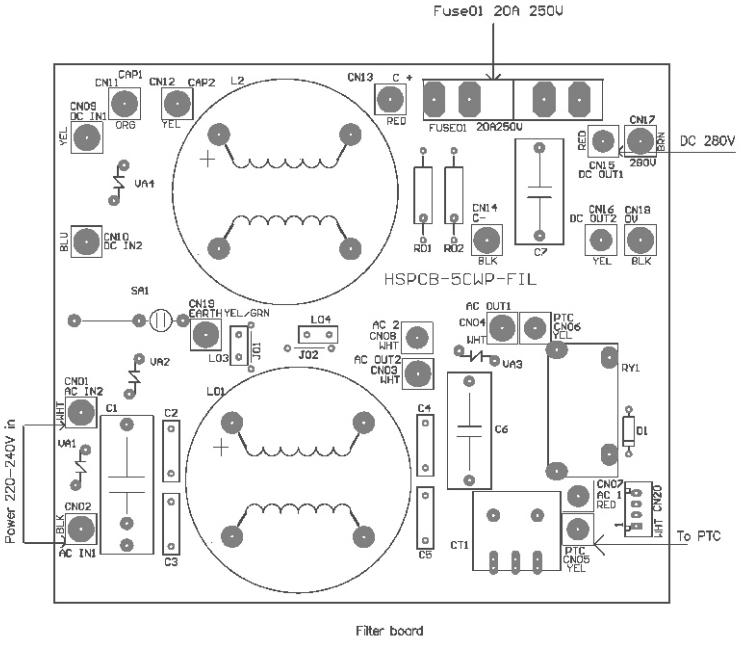


9.SERVICE FLOW CHART

KFR-5701W/Y2BPE







10.SENSOR PARAMETER

THE PARAMETER OF THE INDOOR COIL SENSOR, OUTDOOR SENSOR AND HEAT EXCHANGER SENSOR

T('c)	R(Ko)	V(v)	T('c)	R(Ko)	V(v)	T('c)	R(Ko)	V(v)
-20	39.58	0.5307	9	10.1	1.5878	38	3.265	2.9504
-19	37.58	0.5558	10	9.684	1.6338	39	3.151	2.9932
-18	35.69	0.5818	11	9.284	1.6805	40	3.041	3.0358
-17	33.91	0.6087	12	8.903	1.7276	41	2.936	3.0775
-16	32.23	0.6363	13	8.54	1.7749	42	2.835	3.1188
-15	30.65	0.6648	14	8.194	1.8226	43	2.739	3.159
-14	29.15	0.6942	15	7.864	1.8704	44	2.646	3.199
-13	27.74	0.7244	16	7.549	1.9185	45	2.556	3.2387
-12	26.4	0.7556	17	7.249	1.9667	46	2.471	3.2771
-11	25.14	0.7875	18	6.962	2.0151	47	2.388	3.3155
-10	23.95	0.8202	19	6.688	2.0636	48	2.309	3.3528
-9	22.82	0.8539	20	6.427	2.112	49	2.233	3.3896
-8	21.75	0.8885	21	6.178	2.1603	50	2.159	3.4262
-7	20.74	0.9237	22	5.939	2.2089	51	2.089	3.4615
-6	19.79	0.9596	23	5.712	2.257	52	2.021	3.4965
-5	18.88	0.9966	24	5.494	2.3053	53	1.956	3.5306
-4	18.02	1.0343	25	5.286	2.3533	54	1.893	3.5644
-3	17.2	1.0731	26	5.086	2.4014	55	1.832	3.5977
-2	16.43	1.1122	27	4.896	2.4489	56	1.774	3.6299
-1	15.7	1.152	28	4.714	2.4963	57	1.718	3.6616
0	15	1.1929	29	4.539	2.5436	58	1.664	3.6926
1	14.34	1.2342	30	4.372	2.5904	59	1.612	3.7231
2	13.71	1.2765	31	4.212	2.6369	60	1.562	3.7528
3	13.11	1.3195	32	4.059	2.683	61	1.513	3.7824
4	12.55	1.3623	33	3.912	2.7288	62	1.467	3.8106
5	12.01	1.4063	34	3.772	2.7738	63	1.422	3.8386
6	11.5	1.4506	35	3.637	2.8188	64	1.379	3.8658
7	11.01	1.4959	36	3.508	2.8631	65	1.337	3.8927
8	10.55	1.541	37	3.384	2.907			

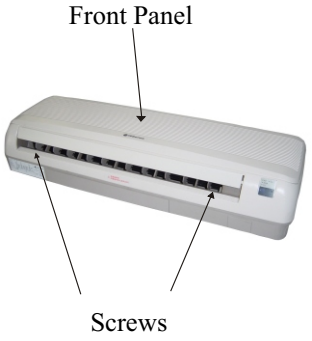
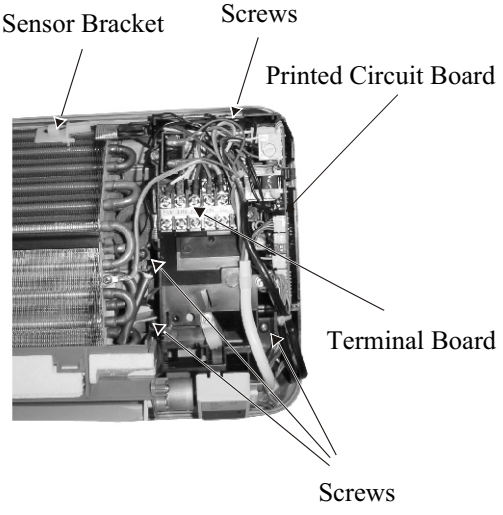
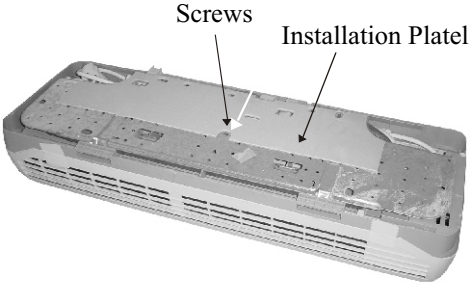
10.SENSOR PARAMETER

THE PARAMETER OF THE DISCHARGE SENSOR

T('C)	R(O)	V(v)	T('C)	R(O)	V(v)	T('C)	R(O)	V(v)
-10	313.4	0.3	31	44.74	1.545	71	9.659	3.372
-9	297.2	0.315	32	42.89	1.59	72	9.331	3.409
-8	281.9	0.331	33	41.13	1.636	73	9.016	3.446
-7	267.5	0.348	34	39.44	1.682	74	8.712	3.483
-6	253.9	0.365	35	37.84	1.729	75	8.421	3.519
-5	241.1	0.383	36	36.3	1.776	76	8.14	3.554
-4	229	0.402	37	34.84	1.823	77	7.869	3.588
-3	217.6	0.421	38	33.44	1.871	78	7.609	3.622
-2	206.8	0.441	39	32.11	1.919	79	7.359	3.655
-1	196.6	0.462	40	30.83	1.967	80	7.118	3.688
0	186.9	0.483	41	29.61	2.016	81	6.885	3.72
1	177.8	0.506	42	28.45	2.064	82	6.662	3.751
2	169.2	0.529	43	27.34	2.112	83	6.446	3.781
3	161	0.552	44	26.27	2.161	84	6.239	3.811
4	153.3	0.577	45	25.25	2.21	85	6.039	3.84
5	146	0.602	46	24.28	2.258	86	5.846	3.869
6	139	0.629	47	23.35	2.307	87	5.661	3.897
7	132.5	0.656	48	22.46	2.355	88	5.482	3.924
8	126.3	0.684	49	21.6	2.404	89	5.309	3.951
9	120.4	0.712	50	20.79	2.452	90	5.143	3.977
10	114.8	0.742	51	20.01	2.499	91	4.982	4.003
11	109.5	0.772	52	19.26	2.547	92	4.827	4.028
12	104.4	0.804	53	18.54	2.595	93	4.678	4.052
13	99.66	0.836	54	17.85	2.642	94	4.534	4.076
14	95.13	0.869	55	17.19	2.689	95	4.395	4.099
15	90.82	0.902	56	16.56	2.735	96	4.261	4.122
16	86.74	0.937	57	15.96	2.781	97	4.132	4.144
17	82.85	0.972	58	15.38	2.826	98	4.007	4.165
18	79.16	1.008	59	14.82	2.872	99	3.886	4.187
19	75.65	1.045	60	14.29	2.916	100	3.77	4.207
20	72.32	1.083	61	13.78	2.96	101	3.658	4.227
21	69.15	1.122	62	13.28	3.005	102	3.549	4.246
22	66.13	1.161	63	12.81	3.048	103	3.444	4.265
23	63.27	1.201	64	12.36	3.09	104	3.343	4.284
24	60.54	1.242	65	11.93	3.132	105	3.15	4.32
25	57.94	1.283	66	11.51	3.174	106	3.059	4.337
26	55.46	1.325	67	11.11	3.214	107	2.97	4.354
27	53.11	1.368	68	10.73	3.254	108	2.884	4.37
28	50.86	1.411	69	10.36	3.294	109	2.802	4.386
29	48.72	1.455	70	10	3.333	110	2.721	4.401
30	46.68	1.5						

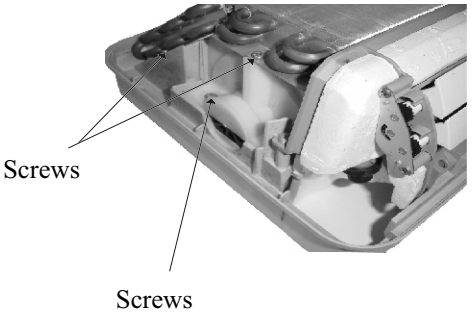
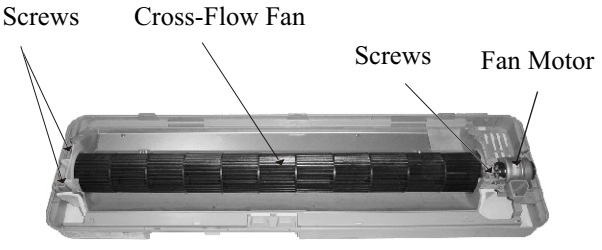
11. DISASSEMBLY INSTRUCTIONS

KFR-2601G/BPE*2

1. Remove the grille 1) Open the screw cover of the grille. 2) Take out the screws of the grille. 3) Hold both sides of the grilleand drag it towards oneself, shown the operation switching board of the indoor unit.	
2. Remove the electrical control box 1) Remove the cover of the electrical control box 2) Take the indoor coil sensor from the sensor bracket. 3) Remove the switching board. 4) Take out the screws of the terminal board and remove the terminal board. 5) Disconnect the circuitry of the printed circuit board. 6) Remove and check-up the printed circuit board. 7) Disconnect all the connectors of the electrical control box. 8) Take out the screws of the electrical control box and remove the electrical control box.	
2. Remove the installation plate 1) Take out the screws of the installation plate. 2) Remove the installation plate.	

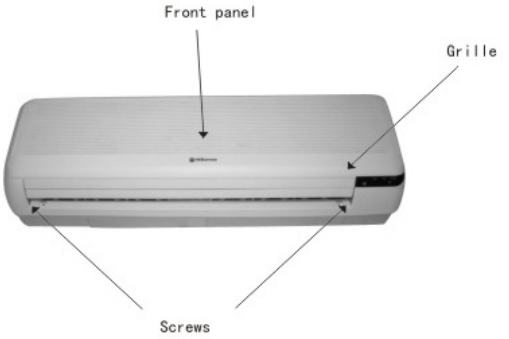
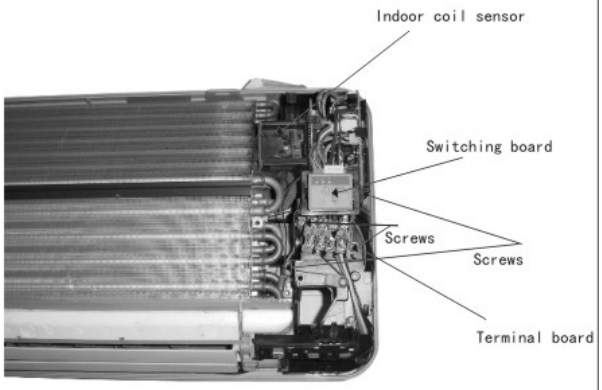
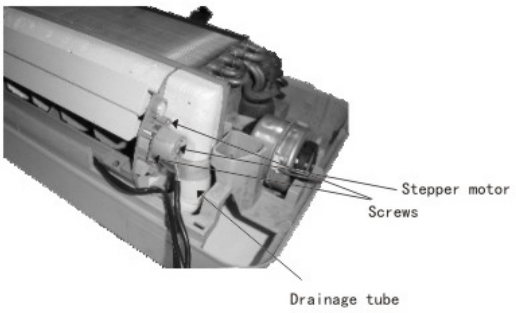
11. DISASSEMBLY INSTRUCTIONS

KFR-2601G/BPE*2

3. Remove the air outlet 1) Take out the screws of the air outlet. 2) Remove the atepper motor. 3) Disconnect the drainage hose and the air outlet. 4) Remove the air outlet.	
4. Remove the evaporator 1) Disconnect the evaporator and the other parts, Take out the screws of the evaporator and remove the evaporator..	
5 . Remove the cross-flow fan and the fan motor 1) Take out the screw between the cross-flow fan and the fan motor. 2) Remov ethe fan motor and the bearing ass'y. 3) Remove the cross-flow fan.	

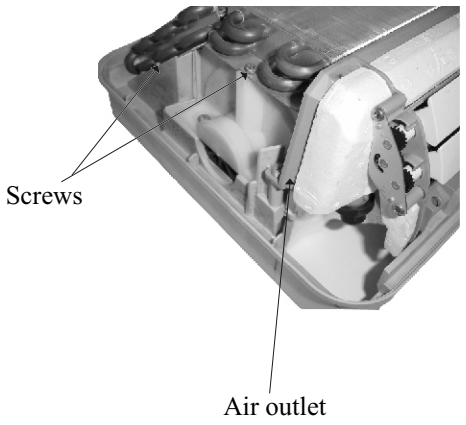
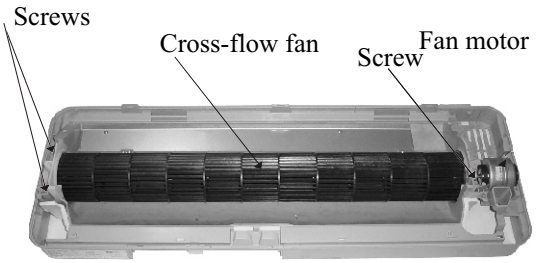
11. DISASSEMBLY INSTRUCTIONS

KFR-28G/BPE*2

OPERATION PROCEDURE	PHOTOS
1. Remove the grille 1) Open the screw cover of the grille and remove the screws. 3) Hold the both sides of the front panel and dragging it towards oneself, shown the operation and switching board of the indoor unit. 4) Remove the grille.	
2. Remove the electrical control box 1) Remove the electrical control box cover. 2) Take out the indoor coil sensor from the sensor bracket. 3) Remove the switching board. 4) Take out the screws of the terminal board and remove the the terminal board. 5) Disconnect all the circuitry of the printed circuit board. 6) Remove and check-up the printed circuit board. 7) Disconnect all the circuitry of the electrical control box. 8) Take out the screws and remove the electrical control box.	
3. Remove the air outlet 1) Take out the screws of the stepper motor, disconnect the connectors between the stepper motor and the air outlet. 2) Remove the stepper motor 3) Disconnect the connectors between the drainage hose and the air outlet. 4) Take out the screws and remove the air outlet.	

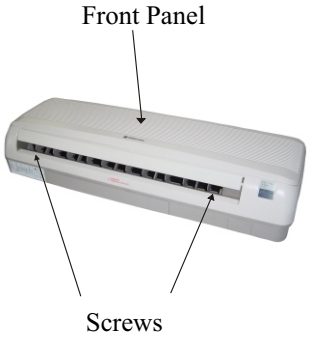
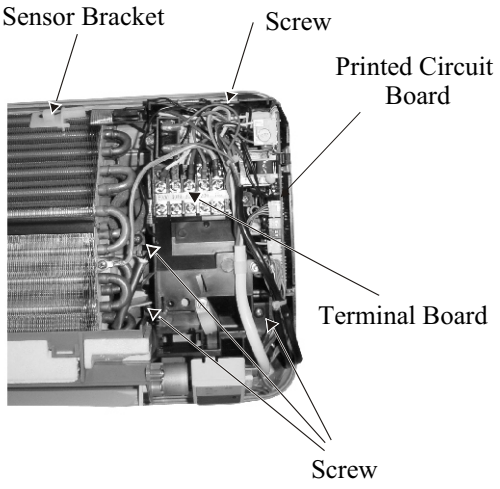
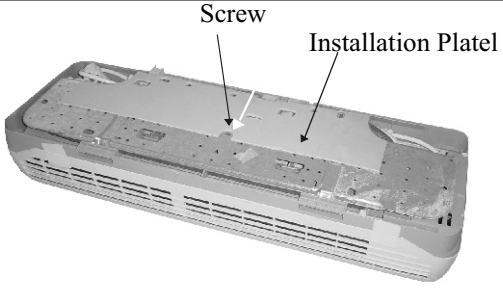
11. DISASSEMBLY INSTRUCTIONS

KFR-28G/BPE*2

4.Remove the evaporator 1) Disconnect the evaporator and the other parts¬take out the screws and remove the evaporator.	
5. Remove the cross-flow fan and the fan motor 1)Take out the screws and remove the rubber ring. 2)Take out the screws that between the cross-flow fan and the fan motor. 3)Remove the fan motor and the bearing ass'y. 4)Remove the cross-flow fan.	

11. DISASSEMBLY INSTRUCTIONS

KFR-2601G/BPE

OPERATION PROCEDURE	PHOTOS
1.Remove the grille 1) Open the screw cover of the grille. 2) Take out the screws of the grille. 3) Hold both sides of the grilleand drag it towards oneself, shown the operation switching board of the indoor unit.	
2. Remove the electrical control box 1) Remove the cover of the electrical control box 2) Take the indoor coil sensor from the sensor bracket. 3) Remove the switching board. 4) Take out the screws of the terminal board and remove the terminal board. 5) Disconnect the circuitry of the printed circuit board. 6) Remove and check-up the printed circuit board. 7) Disconnect all the connectors of the electrical control box. 8) Take out the screws of the electrical control box and remove the electrical control box.	
2. Remove the installation plate 1) Take out the screws of the installation plate. 2) Remove the installation plate.	

11. DISASSEMBLY INSTRUCTIONS

KFR-2601G/BPE

3.Remove the air outlet

1) Take out the screws of the air outlet.

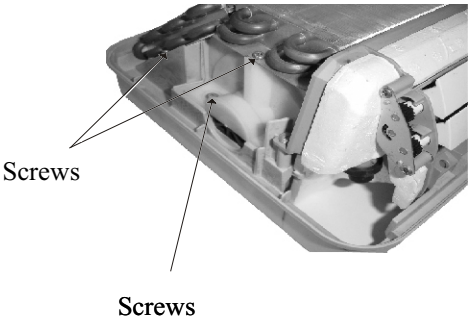
2) Remove the atepper motor.

3) Disconnect the drainage hose and the air outlet.

4) Remove the air outlet.

4. Remove the evaporator

1) Disconnect the evaporator and the other parts,Take out the screws of the evaporator and remove the evaporator.,

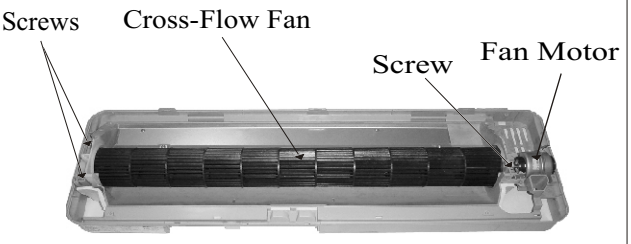


5. Remove the cross-flow fan and the fan motor

1) Take out the screw between the cross-flow fan and the fan motor.

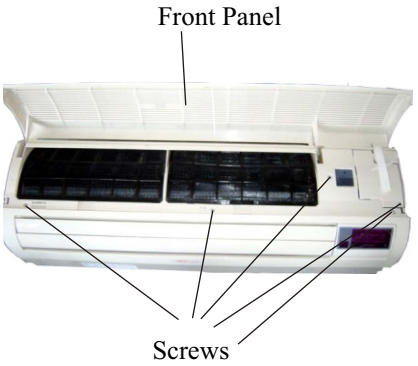
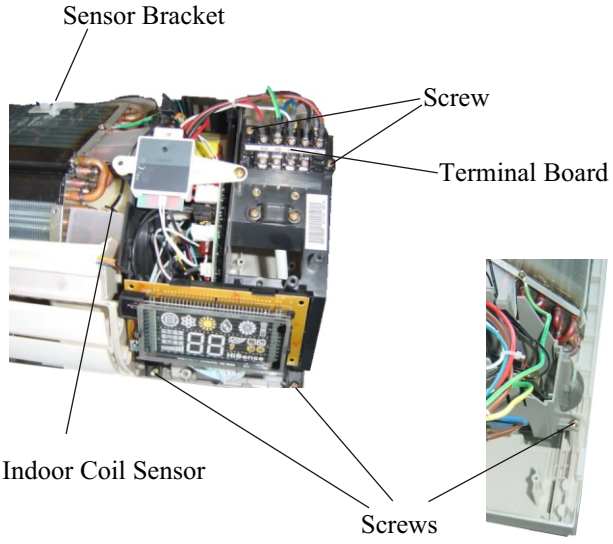
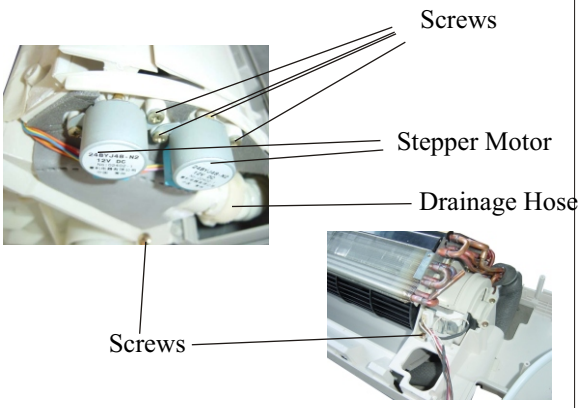
2) Remov ethe fan motor and the bearing ass'y.

3) Remove the cross-flow fan.



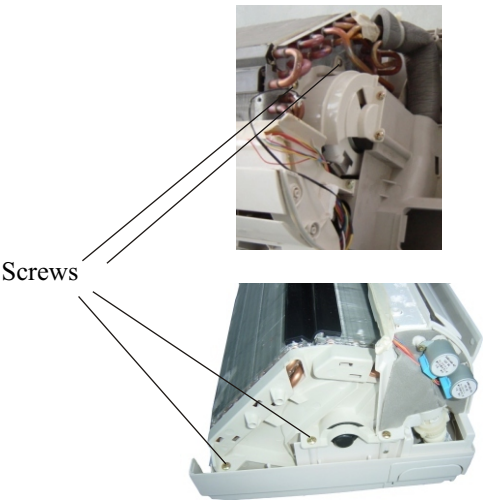
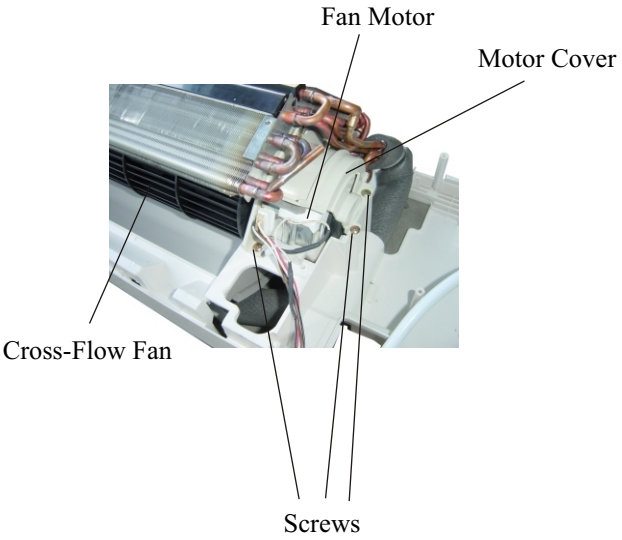
11. DISASSEMBLY INSTRUCTIONS

• KFR-3201G/BPE

OPERATION PROCEDURE	PHOTOS
1. Remove the grille 1) Open the front panel. 2) Take out the screws in the grille. 3) Hold the both sides of the grille, dragging towards oneself and then remove it.	
2. Remove the electrical control box 2) Remove the indoor coil sensor from the sensor bracket. 3) Remove the switching board. 4) Take out the screws of the terminal board then Remove the terminal board. 5) Disconnect all the circuitry of the printed circuit board. 6) Remove the printed circuit board and check-up it. 7) Disconnect the circuitry in the electrical control box. 8) Remove the printed circuit board. 9)Take out the screws of the electrical control box and remove the electrical control box.	
3. Remove the air outlet frame 1) Take out the screws of the stepper motor and disconnect the stepper motor and the air outlet frame. 2) Remove the stepper motor. 3) Disconnect the drainage hose and the air outlet frame. 4) Take out the screws of the air outlet frame. 5) Remove the air outlet frame.	

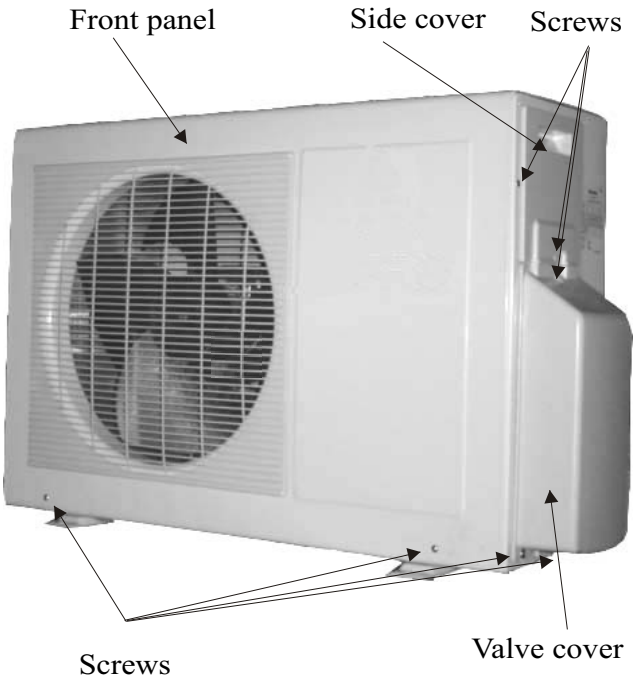
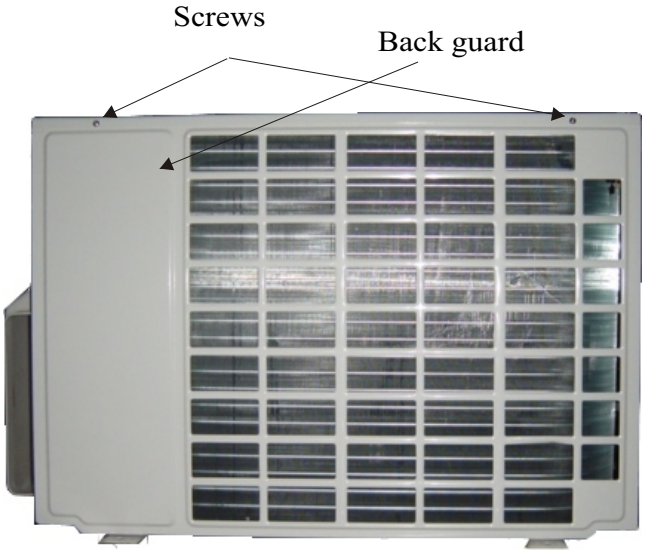
11. DISASSEMBLY INSTRUCTIONS

KFR-3201G/BPE

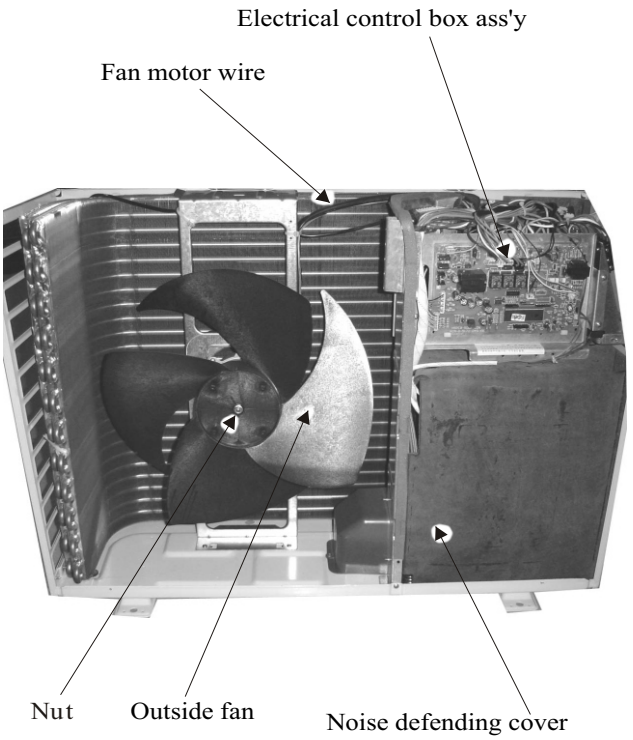
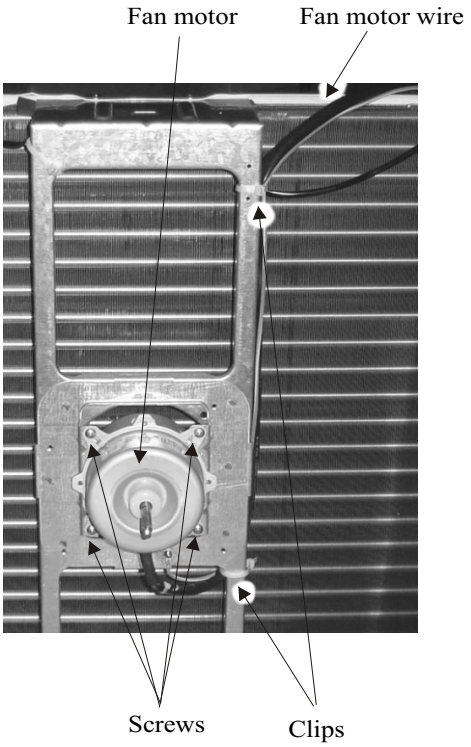
4. Remove the evaporator 1) Disconnect the evaporator and the other parts then remove the screws of the evaporator. 2) Remove the evaporator.	
5.Remove the cross-flow fan and the fan motor 1) Take out the screws of the motor cover and remove the cover. 2) Remove the cross-flow fan and the fan motor.	

11. DISASSEMBLY INSTRUCTIONS

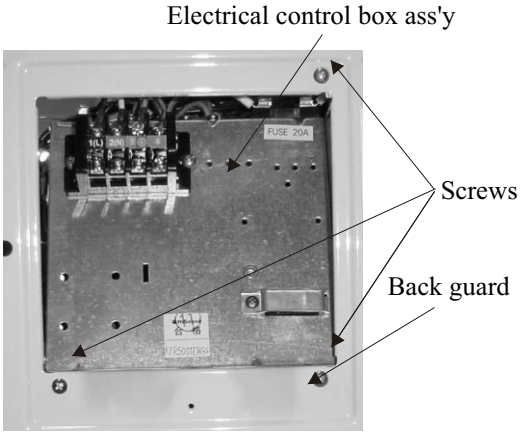
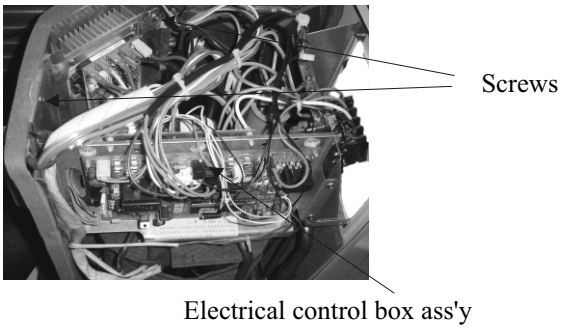
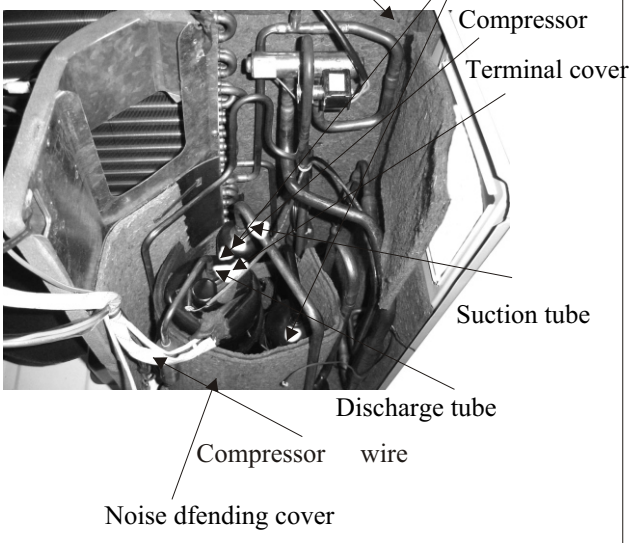
KFR-5701W/Y2BPE

OPERATING PROCEDURE	PHOTOS
1.Remove the front panel 1) Removethe valve cover. 2) Removethe side cover. 3) Removethe front panel.	
	

11. DISASSEMBLY INSTRUCTIONS

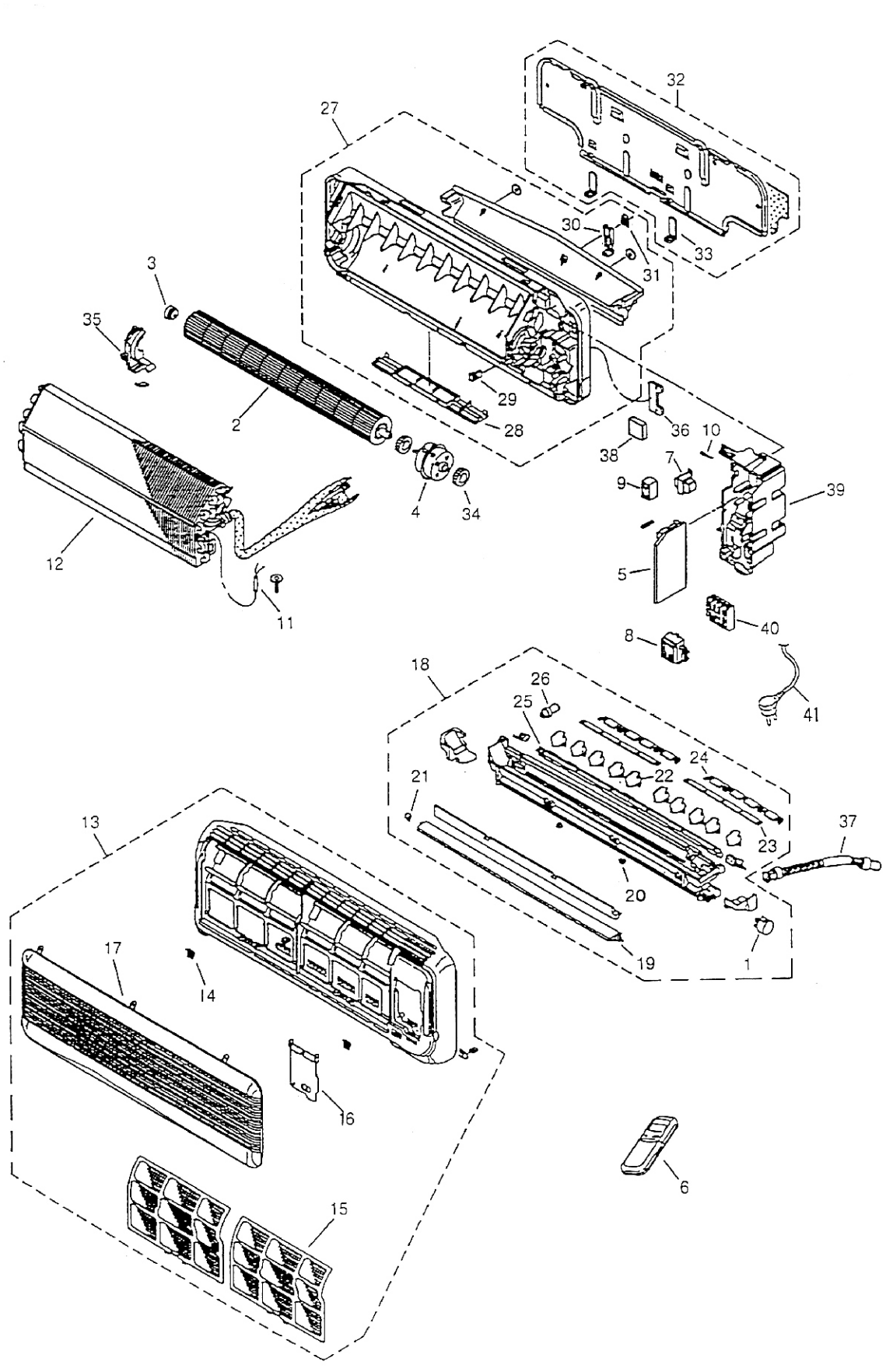
OPERATING PROCEDURE	PHOTOS
2. Remove the outside fan 1) Turn the nut which fix the outside Fan in anti-clockwise and remove the outside fan.	
3. Remove the fan motor 1) Remove all the terminals of the fan motor wire. 2) Take out the screws and the clip. 3) Remove the fan motor.	

11. DISASSEMBLY INSTRUCTIONS

OPERATING PROCEDURE	PHOTOS
4. Remove the electrical control Box ass'y 1) Remove all the terminals of the electrical control box ass'y. 2) Take out the screws and remove the electrical control box.	 
5. Remove the compressor 1) Remove the back guard. 2) Remove the compressor terminal cover and the compressor wire. 3) Disconnect the compressor and the discharge tube, liquid tank, and the suction tube. 5) Remove the noise defending cover. 6) Take out the nut of the compressor and remove the compressor.	

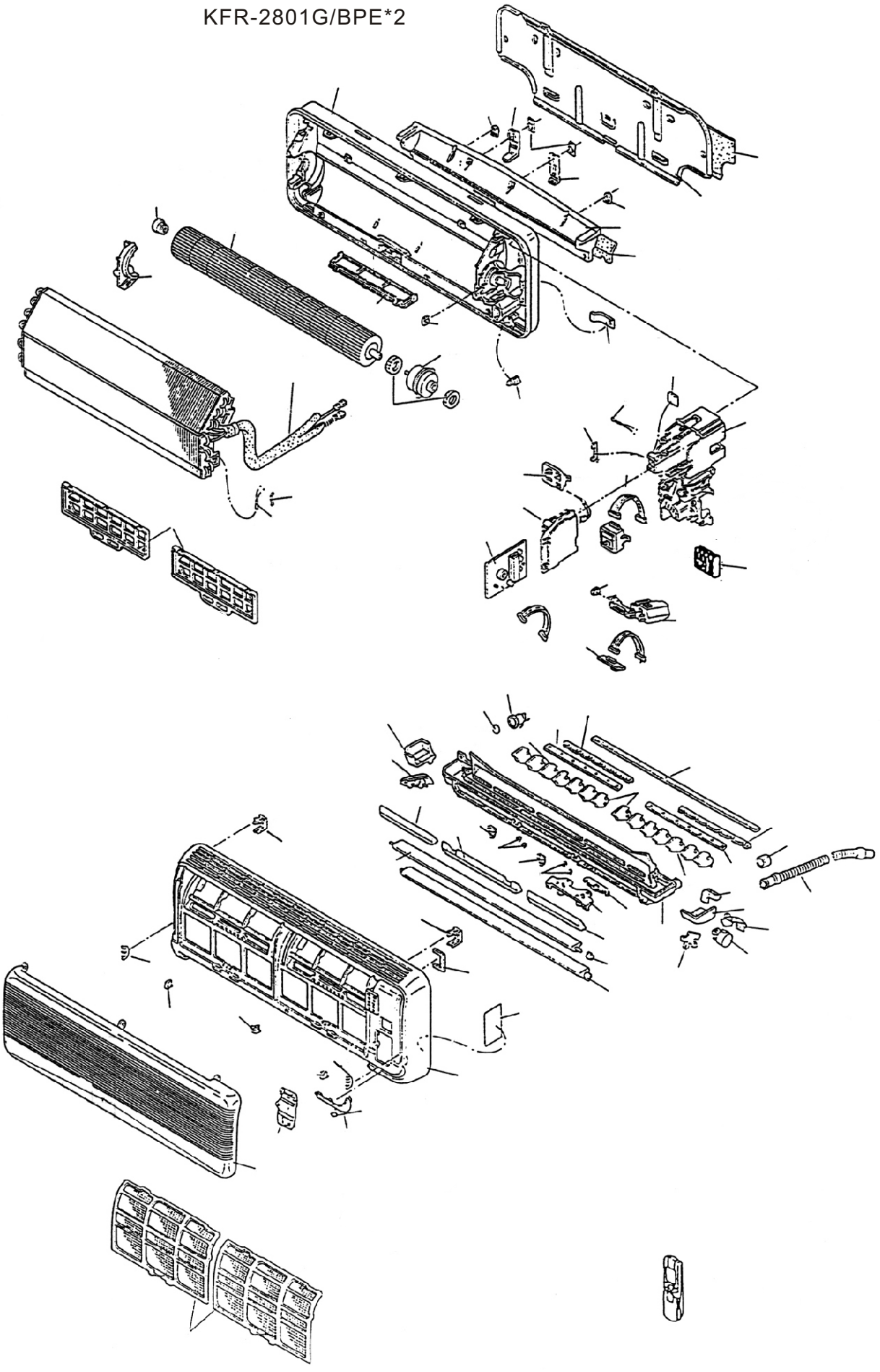
12. PARTS LIST

KFR-2601G/BPE*2 KFR-2501G/BPE



12. PARTS LIST

KFR-2801G/BPE*2

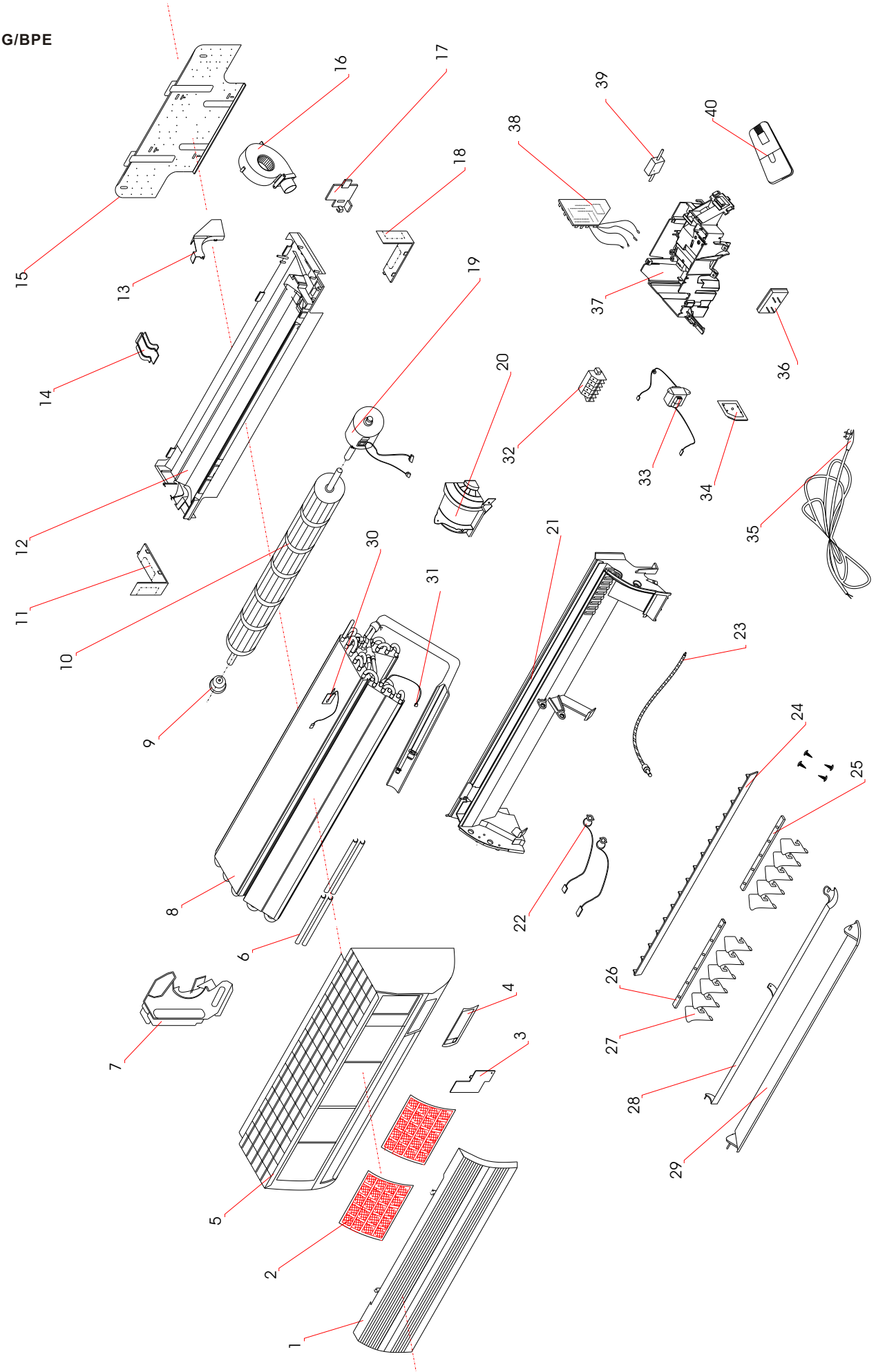


12. PARTS LIST

			KFR-2601G/BPX2E	KFR-2501G/BPE
Key No.	Part No.	Description	Q'ty	Q'ty
1	529-0-0000-062-0A-0	Steppor Motor	1	1
2	852-0-2509-206-00-0	Cross-Flow Fan Ass'y	1	1
3	852-0-2510-128-00-1	Bearing Ass'y	1	1
4	RZA-0-0000-001-XX-0	Fan Motor	1	1
5	RZA-0-5172-155-XX-0	PCB Ass'y	1	1
6	RZA-0-0054-045-XX-0	Remote Controller	1	1
7	RZA-0-5263-004-XX-0	Power Transformer	1	1
8	RZA-0-5152-024-XX-1	Switching and Display Ass'y		1
8	RZA-0-5152-031-XX-0	Switching and Display Ass'y	1	
9	4-2239-572-20-3	Capacitor	1	1
11	851-0-5259-050-XX-0	Temperature Sensor	1	1
11	851-0-5259-051-XX-0	Temperature Sensor	1	1
12	852-0-4116-421-00-1	Evaporator Ass'y	1	1
13	852-0-1501-297-00-0	Grill Ass'y	1	1
14	852-2-2350-155-01-0	Screw Cover	2	2
15	852-0-2307-248-01-0	Air Filter	2	2
16	852-2-2369-314-01-0	Electrical Control Box cover	1	1
17	852-2-1601-123-01-0	Front Panel	1	1
18	852-0-1504-204-00-0	Air Outlet Frame	1	1
19	852-2-1523-198-01-0	Flap	1	1
20	852-2-1514-496-01-0	Midst Axel Cover	2	2
21	852-2-1514-498-01-0	Side Axel Cover	1	1
22	852-2-1519-253-01-0	Vane	10	10
23	852-2-1514-500-01-0	Vane Lever	2	2
24	852-2-2478-142-01-0	Vane Panel	2	2
25	852-2-2360-130-01-1	Vane	1	1
26	852-2-2348-118-00-0	Drainage Vent Tuck	1	1
27	852-0-2201-267-00-0	Base Ass'y	1	1
28	852-2-2369-316-01-0	Bottom Cover	1	1
29	852-2-2316-136-01-0	Crook	1	1
30	852-2-2362-209-01-0	Mounting Plate	1	1
31	852-2-2487-109-01-0	Mounting Plate	1	1
32	852-0-2210-111-00-0	Installation Plate	1	1
33	852-2-2309-721-01-0	Installation Plate fixer	2	2
34	852-2-2511-163-00-0	Rubber Ring	2	2
35	852-0-2515-103-00-0	Rubber Cover Ass'y	1	1
36	852-2-2309-723-01-0	Mounting Plate	1	1
37	852-0-1303-221-00-0	Drainage Hose Ass'y	1	1
38	852-2-2350-141-00-1	Cover	1	1
39	RZA-0-5301-017-XX-0	Electrical Control Box	1	
40	RZA-0-5306-025-XX-0	Terminal	1	1
41	RZA-0-5250-019-XX-2	Power Cable	1	1

12. PARTS LIST

KFR-3201G/BPE



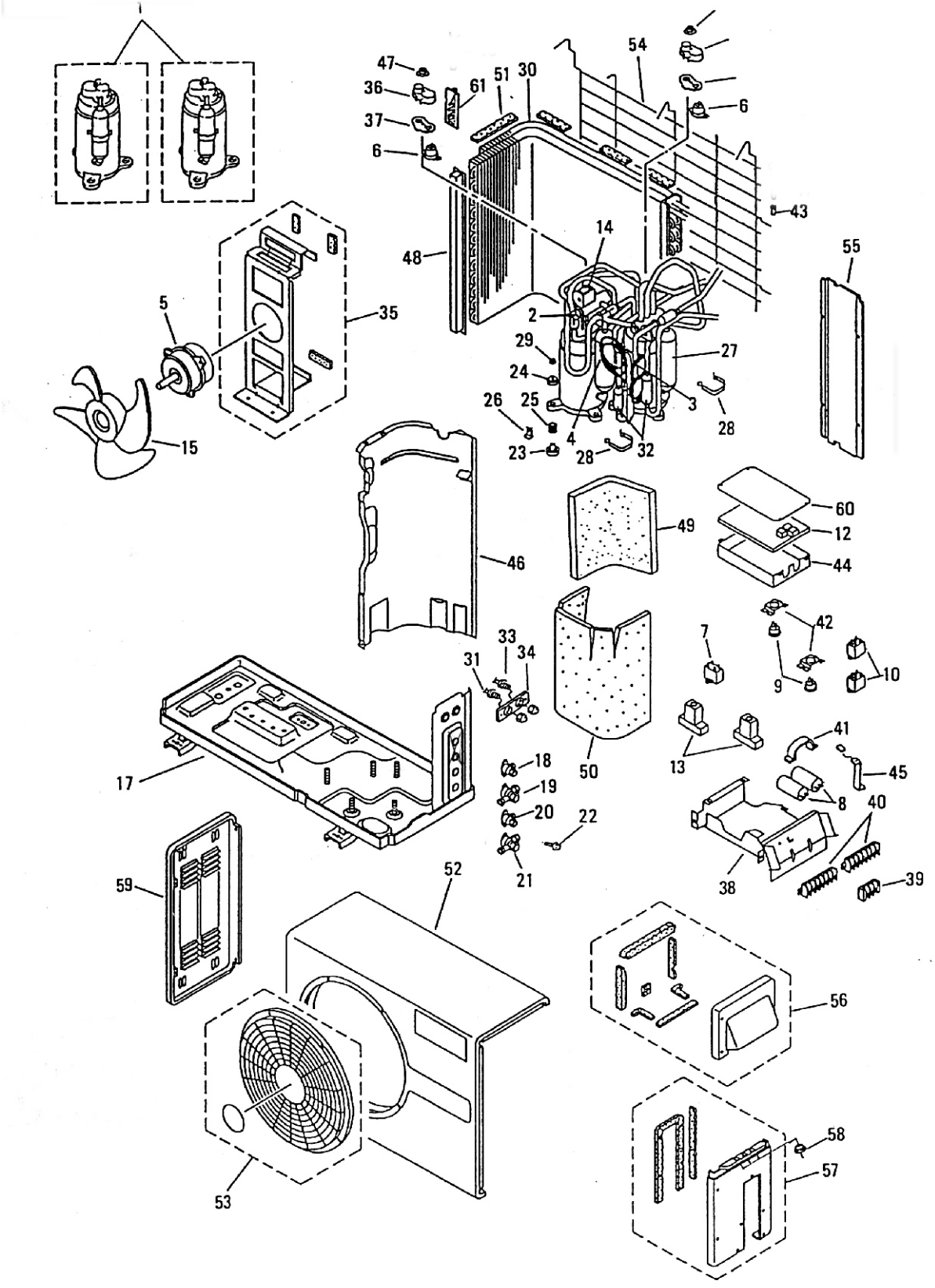
12. PARTS LIST

KFR-3201G/BPE

Key NO.	Description	Quantity	Part NO.
1	Front Panel	1	RZA-2-1601-003-XX-0
2	Air Filter	2	RZA-0-2305-005-XX-0
3	Electrical Control Box cover	1	RZA-2-2369-006-XX-0
4	Display panel	1	RZA-0-2258-003-XX-
5	Grille Ass'y	1	RZA-0-1501-004-XX-0
6	Water Plate	2	RZA-0-2326-102-XX-0
7	Evaporator Supportor	1	RZA-2-2219-014-XX-0
8	Evaporator Ass'y	1	RZA-0-0055-033-XX-0
9	Bearing Ass'y	1	RZA-0-2510-100-XX-0
10	Cross-Flow Fan Ass'y	1	RZA-0-2509-100-XX-0
11	Down Left Cover	1	RZA-2-2369-007-XX-0
12	Base Ass'y	1	RZA-0-2201-101-XX-0
13	Insulator Cover Ass'y	1	RZA-0-2209-016-XX-0
14	Mounting Plate	1	RZA-2-2478-100-XX-0
15	Installation Plate	1	RZA-2-2230-100-XX-0
17	Mounting Plate	1	RZA-2-2362-018-XX-0
18	Down Right Cover	1	RZA-2-2369-008-XX-0
19	Fan Motor	1	RZA-0-0000-046-XX-0
20	Motor Guard ass'y	1	RZA-0-2514-102-XX-0
21	Air Outlet Frame	1	RZA-0-1504-016-XX-0
22	Stepper Motor	2	RZA-0-0000-048-XX-0
23	Drainage Hose Ass'y	1	RZA-0-1303-100-XX-0
24	Vane Install Plate Ass'y	1	RZA-0-1514-011-XX-0
25	Short Vane Lever	1	RZA-2-1514-009-XX-0
26	Long Vane Lever	1	RZA-2-1514-013-XX-0
27	Vane	9	RZA-2-1519-003-XX-0
28	Down Flap	1	RZA-2-1523-005-XX-0
29	Up Flap	1	RZA-2-1523-004-XX-0
30	Sensor Bracket	1	852-2-5303-215-01-0
31	Indoor Coil Sensor	1	RZA-0-5259-051-XX-0
32	Terminal Board	1	RZA-0-5306-025-XX-0
33	Power Transformer	1	RZA-0-5263-022-XX-0
34	Transformer Fixing Plate	1	RZA-2-2222-008-XX-0
35	Power Cable	1	RZA-0-5250-019-XX-2
36	Display board	1	RZA-0-5172-146-XX-0
37	Electrical Control Box	1	RZA-0-5301-020-XX-0
38	Control Board	1	RZA-0-5172-192-XX-0
39	Switching Ass'y	1	RZA-0-5152-023-XX-0
40	Remote Controller	1	RZA-0-0054-047-XX-0

12. PARTS LIST

KFR-2601W/BPE*2



12. PARTS LIST

ATTENTION ! OUTDOOR UNIT

To ensure correct parts supply, please let us know followings. When you make service parts order:

1. Part NO. 2.Description 3.Q'ty

Key No.	Part No.	Description	Q'ty
1	852-0-4526-119-00-1	Compressor Ass'y	2
2	852-0-4509-118-00-2	Solenoid Valve Ass'y	2
3	852-0-4206-821-00-2	Tube Ass'y Capillary	1
4	852-0-4206-822-00-2	Tube Ass'y Capillary	1
5	851-0-5202-262-0A-0	Fan Motor	1
6	4-2339-600-26-1	Thermostat	2
7	1FA-4-C1A0-023-00-0	Fixed Capacitor	1
8	4-2239-572-21-1	Fixed Capacitor (PMT 400V/25)	2
9	4-2329-692-95-0	Relay	2
10	4-2329-562-82-0	Relay	2
11	4-2239—600-26-0	Relay	
12	851-0-5158-408-00-7	P.C.B. Ass'y	1
13	851-0-5172-554-00-0	P.C.B. Ass'y	2
14	4-2649-562-0A-0(0B-0)	Solenoid	2
15	852-2-2502-135-00-0	Propeller Fan	1
16	1FA-4-S4Z0-002-00-1	Thermostat Other	2
17	852-0-2202-619-00-1	Bottom Plate Ass'y	1
18	852-0-4501-466-00-0	Valve Ass'y 1/4 in	1
19	852-0-4501-470-00-0	Valve Ass'y 3/8 in	1
20	852-0-4501-468-00-0	Valve Ass'y 1/4 in	1
21	852-0-4501-472-00-1	Valve Ass'y 3/8 in	1
22	3-9201-616-01-0	Deltite Screw	8
23	851-2-2390-131-00-1	Cusion Rubber	6
24	851-2-2390-136-00-1	Cusion Rubber	6
25	851-2-2330-130-01-0	Spring	6
26	851-2-1314-173-01-0	Stoper	6
27	819-0-6907-238-00-2	Accumulator Ass'y	2
28	851-2-2356-169-01-2	Band Mounting	2
29	851-0-2395-105-01-0	Nut Special Ass'y	6
30	852-0-4102-689-00-1	Condenser Ass'y	1

12. PARTS LIST

Key No.	Part No.	Description	Q'ty
33	852-0-4507-344-00-1	Nipple Ass'y	1
34	852-2-2309-744-01-0	Mounting Plate	1
35	852-0-2506-178-00-0	Fan Support Ass'y	1
36	801-2-6194-134-00-2	Cover Terminal	2
37	801-2-5303-142-00-2	Gasket Terminal	2
38	852-0-5301-427-01-0	ELEC. Component box Ass'y	1
39	4-2379-562-22-0	Terminal Base	1
40	4-2379-510-10-1	Terminal Base	2
41	852-2-5301-290-01-0	Clip Capacitor	1
42	852-2-2487-112-01-0	Mounting	2
43	852-2-5304-179-01-0	Clip Wire	1
44	852-2-5309-298-01-0	Electrical Control Box	1
45	852-2-5310-271-01-0	Mounting Plate	1
46	852-0-2209-237-00-0	Partition Plate Ass'y	1
47	801-2-8305-101-00-3	Nut 5	2
48	852-0-2309-154-00-0	Cover Ass'y	1
49	852-2-2476-345-00-1	Insulation	1
50	852-2-2476-193-00-2	Insulation	1
51	852-2-2353-*360-00-0	Packing	4
52	852-0-1101-312-00-1	Front Cover	1
53	852-2-1321-154-01-1	Fan guard	
54	852-0-1111-129-01-3	Guard	1
55	852-2-1120-248-01-0	Rear Panel	1
56	852-0-1104-275-00-0	Side Panel Ass'y	1
57	852-0-1104-277-00-0	Side Panel Ass'y	1
58	800-2-5309-124-00-0	Eyelet П в ·	3
59	852-0-1104-280-00-0	Side Panel Ass'y	1
60	852-2-5315-332-01-A	Cover Plate	1
61	852-0-5310-103-00-0	Cover Plate	2
62			
63			
64			

NOTE:1.Metal and plastice parts will be supplied basically with necessary heat insulation pads or packing.

2.Each key number with an asterisk(*)means the recommended service parts.