1. Feng Xia Series

1.1 Summary

Fig. 1.1

MODEL	NOTE
KF-70GW/A1 KFR-70GW/A1	CE STANDARD 1Ph 220-230V 50Hz R22
KF-70GW/NA1 KFR-70W/NA1	CE STANDARD 1Ph 220-230V 50Hz R407C
GSW30-22L/A GSW30-22R/A	1Ph 220V 60Hz R22
KFR-70GW/A1-12405	1Ph 240V 50Hz R22
KF-80GW/A1 KFR-80GW/A1	1Ph 220-230V 50Hz R22
KF-80GW/NA1 KFR-80GW/NA1	1Ph 220-230V 50Hz R407C

1.2 Technical specifications.

Table 1-1

Model			KF-70GW/A1	KFR-70GW/A1	
Function			Cooling	Cooling	Heating
Power supply			1Ph 220-230V 50Hz		
Capacity(W)			7000	7000	7500
Rated input(W)			2750	2750	2650
Rated current(A)			13	13	12.8
Air flow(m^3/h)			1080		
Dehumidifying volume(L/h)			2.8		
EER/C.O.P(W/W)			2.55	2.55	2.83
Indoor unit	Model		KF-70G/A1	KFR-70G/A1	
	Motor fan speed(r/min)		1420		
	Output power(W)		28		
	Fan type/piece		Cross flow fan-1		
	Diameter-length(mm)		ϕ 108 × 954		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		3-1.5		
	Working area(m^2)		0.28		
	Swing motor		MP35EA		
	Input power(W)		4		
	Fuse(A)		Controllor 3.15A Transformer 0.2A		
	Working capacitor(μF)		3.5		
	Noise(dB(A))		⩽ 51		
	Dimension(width-height-depth)mm		1220 × 360 × 206		
	Net weight(kg)		27		
Outdoor unit	Model		KF-70W/A1	KFR-70W/A1	
	Input power(W)		2720	2720/2620	
	Current(A)		13.0	13.0/12.6	
	L.R.A.(A)		65		
	Throttling method		Capillary		
	Compressor		AWG5532EXC or AWG5532EVA		
	Power(W)		2680		
	Protector		External overload protection		
	Starting method		By capacitor		
	Working temp.		Exhaust temperature ⩽ 115℃		
	Condenser		Aluminum-copper		
	Pipe-diameter		ϕ 9.52		
	Working area(m^2)		0.6		
	Fan motor speed(rpm)		780		
	Type-piece		Axial fan-1		
	Diameter(mm)		ϕ 455		
	Defrosting method		Auto defrost		
	Noise dB(A)		58		
	Dimension(mm)(width-height-depth)		950 × 840 × 412		
	Net weight(kg)		75		
	Refrigerant charge (kg)		R22 2.5		
Connecting pipe	Outer diameter	Liquid pipe	ϕ 9.52 (3/8")		
		Gas pipe	ϕ 16(5/8")		
	Max distance	Height(m)	5		
		Length(m)	10		

The technical data are subject to change without notice .Please refer to the nameplate of the unit.

Table 1-2

Model			KF-70GW/NA1	KFR-70GW/NA1	
Function			Cooling	Cooling	Heating
Power supply			1Ph 220V-230V 50Hz		
Capacity(W)			7000	7000	7500
Rated input(W)			3250	3250	3200
Rated current(A)			15.4	15.4	15.2
Air flow(m^3/h)			1080		
Dehumidifying volume(L/h)			2.8		
EER/C.O.P(W/W)			2.35	2.35	2.58
Indoor unit	Model		KF-70G/NA1	KFR-70G/NA1	
	Motor fan speed(r/min)		1420		
	Output power(w)		28		
	Fan type/piece		Cross flow fan-1		
	Diameter-length(mm)		ϕ 108 × 955		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		3-1.5		
	Working area(m^2)		0.28		
	Swing motor		MP35EA		
	Input power(W)		4		
	Fuse(A)		Controllor 3.15A Transformer 0.2A		
	Working capacitor(μF)		3.5		
	Noise(dB(A))		⩽ 51		
	Dimension(width-height-depth)mm		1220 × 360 × 206		
	Net weight(kg)		27		
Outdoor unit	Model		KF-70W/NA1	KFR-70W/NA1	
	Input power(W)		3220	3220/3170	
	Current(A)		15.2	15.2/15.0	
	L.R.A.(A)		75		
	Throttling method		Capillary		
	Compressor		C-RN220H5B		
	Power(W)		2950		
	Protector		External overload protection		
	Starting method		By capacitor		
	Working temp.		Exhaust temperature ⩽ 115℃		
	Condenser		Aluminum-copper		
	Pipe-diameter		ϕ 9.52		
	Working area(m^2)		0.6		
	Fan motor speed(rpm)		780		
	Type-piece		Axial fan-1		
	Diameter(mm)		ϕ 455		
	Defrosting method		Auto defrost		
	Noise dB(A)		59		
	Dimension(mm)(width-height-depth)		950 × 840 × 412		
	Net weight(kg)		75		
	Refrigerant charge (kg)		R407C 2.5		
Connecting pipe	Outer diameter	Liquid pipe	ϕ 9.52 (3/8")		
		Gas pipe	ϕ 16(5/8")		
	Max distance	Height(m)	5		
		Length(m)	10		

The technical data are subject to change without notice .Please refer to the nameplate of the unit.

Table 1-3

Model			GSW30-22L/A	GSW30-22R/A	
Function			Cooling	Cooling	Heating
Power supply			1Ph 220V 60Hz		
Capacity(W)			7000	7000	7500
Rated input(W)			3200	3200	3100
Rated current(A)			14.5	14.5	14.1
Air flow(m^3/h)			1080		
Dehumidifying volume(L/h)			2.8		---
EER/C.O.P(W/W)			2.2	2.2	2.4
Indoor unit	Model		GSW30-22L/A(I)	GSW30-22R/A(I)	
	Motor fan speed(r/min)		1420		
	Output power(W)		28		
	Fan type/piece		Cross flow fan-1		
	Diameter-length(mm)		ϕ 108 × 954		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		3-1.5		
	Working area(m^2)		0.28		
	Swing motor		MP35EA		
	Input power(W)		4		
	Fuse(A)		Controller3.15A Transformer0.2A		
	Working capacitor(μF)		3.5		
	Noise(dB(A))		⩽ 51		
	Dimension(width-height-depth)(mm)		1220 × 360 × 206		
	Net weight(kg)		27		
Outdoor unit	Model		GSW30-22L/A(O)	GSW30-22R/A(O)	
	Input power(W)		3170	3170/3070	
	Current(A)		14.0	14.0/13.8	
	L.R.A.(A)		69		
	Throttling method		Capillary		
	Compressor		CRFQ-0250-PFV-501		
	Power(W)		2680		
	Protector		External overload protection		
	Starting method		By capacitor		
	Working temp.		Exhaust temperature ⩽ 115℃		
	Condenser		Aluminum-copper		
	Pipe-diameter		ϕ 9.52		
	Working area(m^2)		0.6		
	Fan motor speed(rpm)		780		
	Type-piece		Axial fan-1		
	Diameter(mm)		ϕ 455		
	Defrosting method		Auto defrost		
	Noise dB(A)		58		
	Dimension(mm)(width-height-depth)		950 × 840 × 412		
	Net weight(kg)		75		
	Refrigerant charge (kg)		R22 2.5		
Connecting pipe	Outer diameter	Liquid pipe(mm)	ϕ 9.52(3/8'')		
		Gas pipe(mm)	ϕ 16(5/8'')		
	Max distance	Height(m)	5		
		Length(m)	10		

The technical data are subject to change without notice .Please refer to the nameplate of the unit.

Table 1-4

Model			KFR-70GW/A1-12405	
Function			Cooling	Heating
Power supply			1Ph 240V 50Hz	
Capacity (W)			7000	7500
Rated input (W)			3050	2980
Rated current (A)			13.2	13
Air flow (M^3/h)			960	
Dehumidifying volume (L/h)			1.2	
EER/C.O.P(W/W)			2.41	2.45
Indoor unit	Model		KFR-70G/A1-12405	
	Motor fan speed(r/min)		1420/1300/1100	
	Output power(W)		60	
	Fan type/piece		Cross flow fan-1	
	Diameter-length(mm)		ϕ 108 × 955	
	Evaporator		Aluminum fin-copper tube	
	Row-fin distance(mm)		1.5	
	Working area(m^2)		0.13	
	Swing motor		MP35EA	
	Input power(W)		2	
	Fuse(A)		Controllor 3.15A Transformer 0.2A	
	Working capacitor(μF)		1	
	Noise(dB(A))		⩽ 50	
	Dimension(width-height-depth)mm		1220 × 360 × 205	
	Net weight(kg)		24	
Outdoor unit	Model		KFR-70W/A1-12405	
	Input power (W)		2550	
	Current (A)		12	
	L.R.A. (A)		68	
	Throttling method		Capillary	
	Compressor		AWG5532EVA or AWG5532EXC	
	Power (W)		2600	
	Protector		Internal overload protection	
	Starting method		Power supply module	
	Working temp.		Exhaust temperature ⩽ 130℃	
	Condenser		Aluminum-copper	
	Pipe-diameter		ϕ 9.52/ ϕ 16	
	Working area(m^2)		0.3	
	Fan motor speed(rpm)		780	
	Type-piece		Axial fan-1	
	Diameter(mm)		ϕ 455	
	Defrosting method		Auto defrost	
	Noise dB(A)		60	
	Dimension(mm)(width-height-depth)		840 × 950 × 412	
	Net weight(kg)		75	
	Refrigerant charge (kg)		R22	
Connecting pipe	Length (m)		5	
	Outer diameter	Liquid pipe	ϕ 16	
		Gas pipe	ϕ 9.52	
	Max distance	Height(m)	5	
		Length(m)	10	

The technical data are subject to change without notice .Please refer to the nameplate of the unit.

Table 1-5

Model			KF-80GW/A1	KFR-80GW/A1	
Function			Cooling	Cooling	Heating
Power supply			1Ph 220-230V 50Hz		
Capacity(W)			8000	8000	8500
Rated input(W)			3700	3700	3680
Rated current(A)			6.8	6.8	6.6
Air flow(m^3/h)			1040		
Dehumidifying volume(L/h)			2.8		
EER/C.O.P(W/W)			2.1	2.1	2.1
Indoor unit	Model		KF-80G/A1	KFR-80G/A1	
	Motor fan speed(r/min)		1420		
	Output power(W)		28		
	Fan type/piece		Cross flow fan-1		
	Diameter-length(mm)		ϕ 108 × 955		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		3-1.5		
	Working area(m^2)		954 × 303		
	Swing motor		MP35EA		
	Input power(W)		4		
	Fuse(A)		Controller3.15A Transformer0.2A		
	Working capacitor(μF)		3.5		
	Noise(dB(A))		⩽ 51		
	Dimension(width-height-depth)(mm)		1220 × 360 × 205		
	Net weight(kg)		27		
Outdoor unit	Model		KF-80W/A1	KFR-80W/A1	
	Input power(W)		3220	3220/3170	
	Current(A)		15.2	15.2/15.0	
	L.R.A.(A)		75		
	Throttling method		Capillary		
	Compressor		C-SB263H8A		
	Power(W)		2950		
	Protector		External overload protection		
	Starting method		By capacitor		
	Working temp.		Exhaust temperature ⩽ 115℃		
	Condenser		Aluminum-copper		
	Pipe-diameter		ϕ 9.52		
	Working area(mmxmm)		813 × 683		
	Fan motor speed(rpm)		850		
	Type-piece		Axial fan-1		
	Diameter(mm)		ϕ 455		
	Defrosting method		Auto defrost		
	Noise dB(A)		60		
	Dimension(mm)(width-height-depth)		950 × 840 × 412		
	Net weight(kg)		75		
	Refrigerant charge (kg)		R22 2.4	R22 2.55	
Connecting pipe	Outer diameter	Liquid pipe(mm)	ϕ 9.52		
		Gas pipe(mm)	ϕ 16		
	Max distance	Height(m)	5		
		Length(m)	10		

The technical data are subject to change without notice .Please refer to the nameplate of the unit.

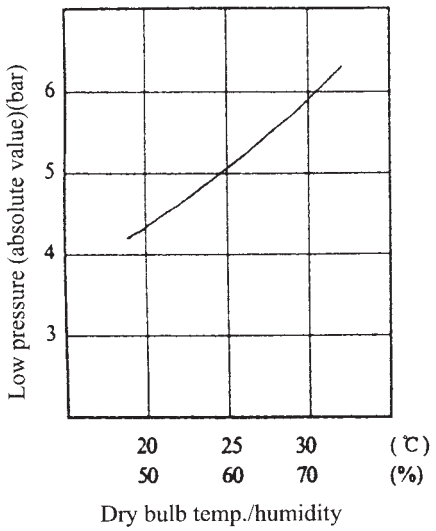
Table 1-6

Model			KF-80GW/NA1	KFR-80GW/NA1	
Function			Cooling	Cooling	Heating
Power supply			1Ph 220-230V 50Hz		
Capacity(W)			8000	8000	8500
Rated input(W)			3700	3700	3680
Rated current(A)			6.8	6.8	6.6
Air flow(m^3/h)			1040		
Dehumidifying volume(L/h)			2.8		
EER/C.O.P(W/W)			2.1	2.1	2.1
Indoor unit	Model		KF-80G/NA1	KFR-80G/NA1	
	Motor fan speed(r/min)		1420		
	Output power(W)		28		
	Fan type/piece		Cross flow fan-1		
	Diameter-length(mm)		ϕ 108 × 955		
	Evaporator		Aluminum fin-copper tube		
	Row-fin distance(mm)		3-1.5		
	Working area(m^2)		954 × 303		
	Swing motor		MP35EA		
	Input power(W)		4		
	Fuse(A)		Controller3.15A Transformer0.2A		
	Working capacitor(μF)		3.5		
	Noise(dB(A))		⩽ 51		
	Dimension(width-height-depth)(mm)		1220 × 360 × 205		
	Net weight(kg)		27		
Outdoor unit	Model		KF-80W/NA1	KFR-80W/NA1	
	Input power(W)		3220	3220/3170	
	Current(A)		15.2	15.2/15.0	
	L.R.A.(A)		75		
	Throttling method		Capillary		
	Compressor		C-SBN263H8A		
	Power(W)		2950		
	Protector		External overload protection		
	Starting method		By capacitor		
	Working temp.		Exhaust temperature ⩽ 115℃		
	Condenser		Aluminum-copper		
	Pipe-diameter		ϕ 9.52		
	Working area(mmxmm)		813 × 683		
	Fan motor speed(rpm)		850		
	Type-piece		Axial fan-1		
	Diameter(mm)		ϕ 455		
	Defrosting method		Auto defrost		
	Noise dB(A)		60		
	Dimension(mm)(width-height-depth)		950 × 840 × 412		
	Net weight(kg)		75		
	Refrigerant charge (kg)		R407C 2.4	R407C 2.6	
Connecting pipe	Outer diameter	Liquid pipe(mm)	ϕ 9.52		
		Gas pipe(mm)	ϕ 16		
	Max distance	Height(m)	5		
		Length(m)	10		

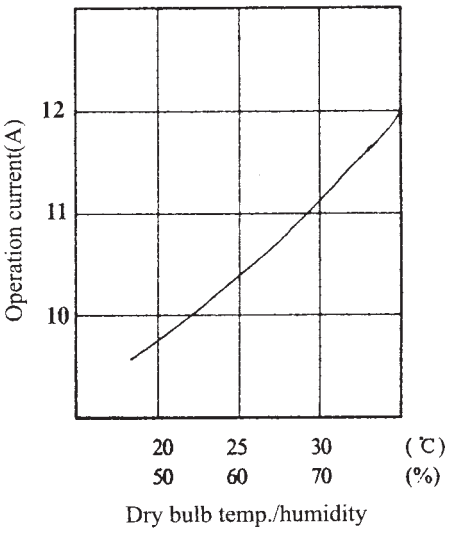
The technical data are subject to change without notice .Please refer to the nameplate of the unit.

1.3 Performance curves

Cooling operation
Condition:In testing , indoor and outdoor have same work condition

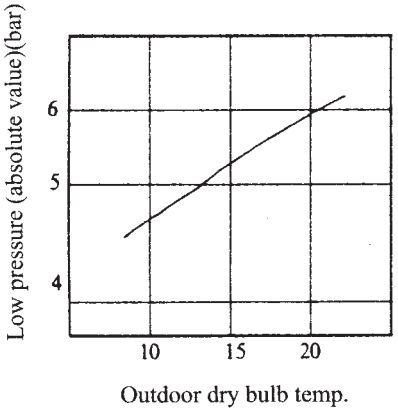


(a)

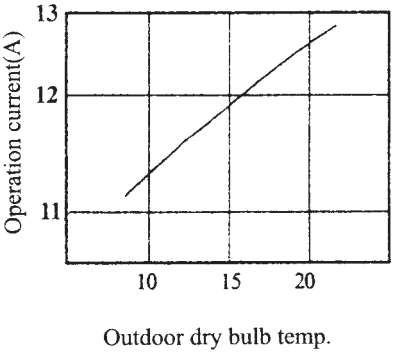


(b)

Heating operation
Indoor work condition:dry bulb temp.21,wet bulb temp.15.5

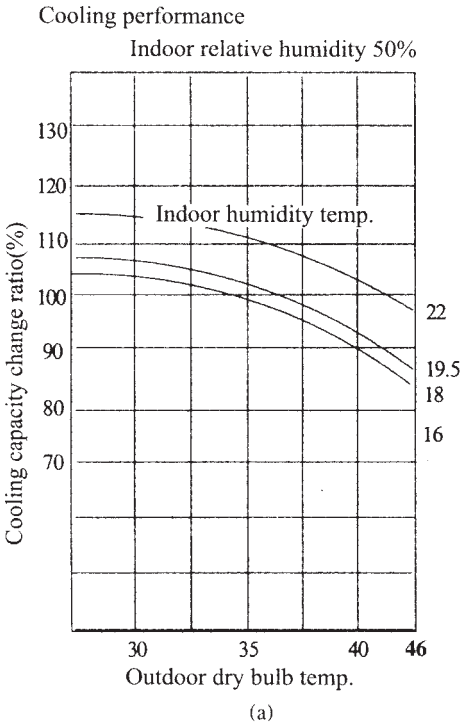


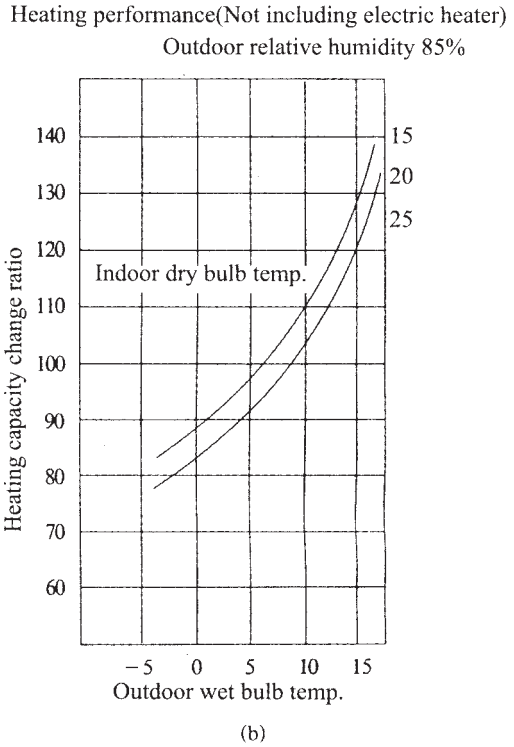
(c)

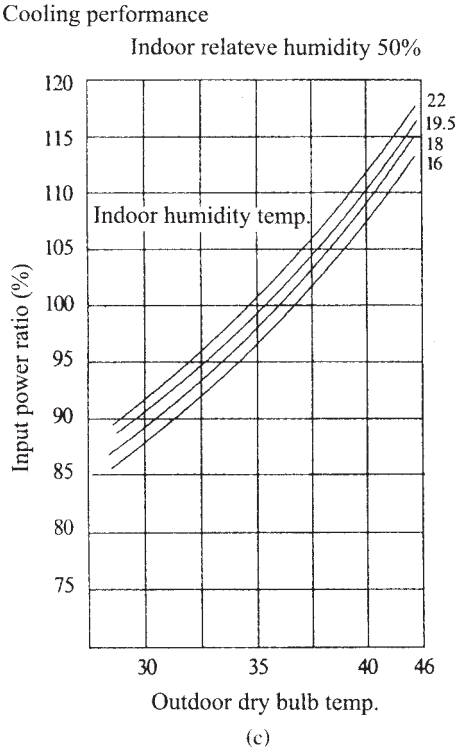


(d)

Fig. 1.2


Cooling performance
Indoor relative humidity 50%
Indoor humidity temp.
22
19.5
18
16
Cooling capacity change ratio(%)
130
120
110
100
90
80
70
30
35
40
46
Outdoor dry bulb temp.
(a)


Heating performance(Not including electric heater)
Outdoor relative humidity 85%
Indoor dry bulb temp.
15
20
25
Heating capacity change ratio
140
130
120
110
100
90
80
70
60
−5
0
5
10
15
Outdoor wet bulb temp.
(b)


Cooling performance
Indoor relateve humidity 50%
Indoor humidity temp.
22
19.5
18
16
Input power ratio (%)
120
115
110
105
100
95
90
85
80
75
30
35
40
46
Outdoor dry bulb temp.
(c)

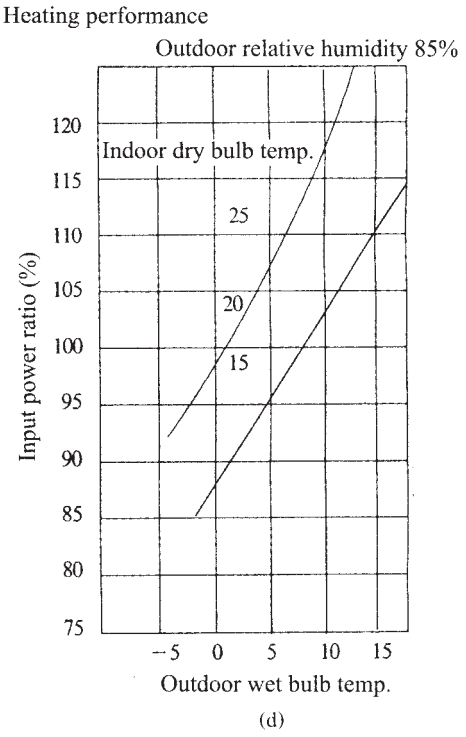
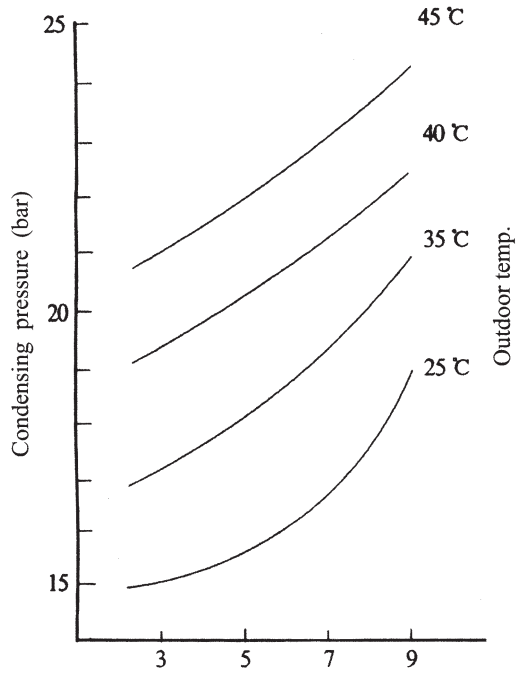
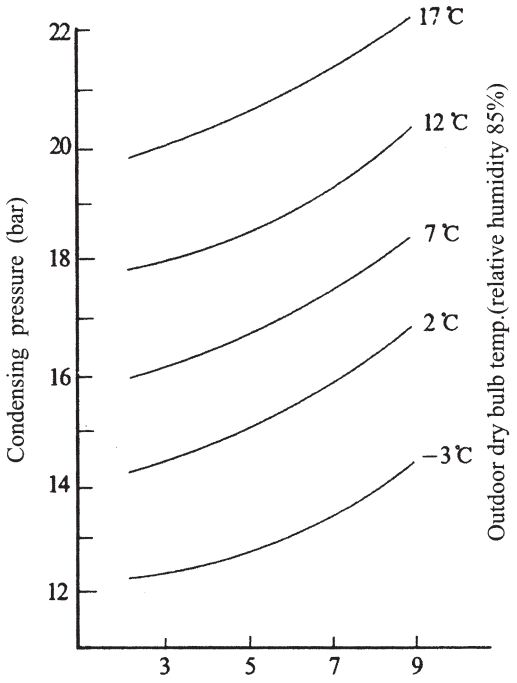

Heating performance
Outdoor relative humidity 85%
Indoor dry bulb temp.
25
20
15
Input power ratio (%)
120
115
110
105
100
95
90
85
80
75
−5
0
5
10
15
Outdoor wet bulb temp.
(d)

Fig. 1.3



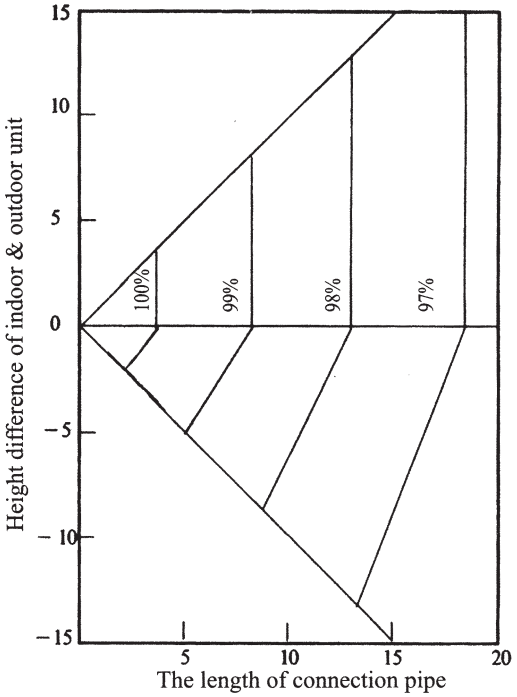
The affection to the charging quantity by pressure under cooling work condition.
Indoor work condition:27℃ dry bulb , 19.5℃ wet bulb

(e)



The affection to the charging quantity by pressure under heating work condition.
Indoor work condition:21℃ dry bulb temp.21

(f)



Cooling capacity vary with the length of connection pipe

(g)

Fig. 1.4

1.4 Outlines and dimensions of indoor unit

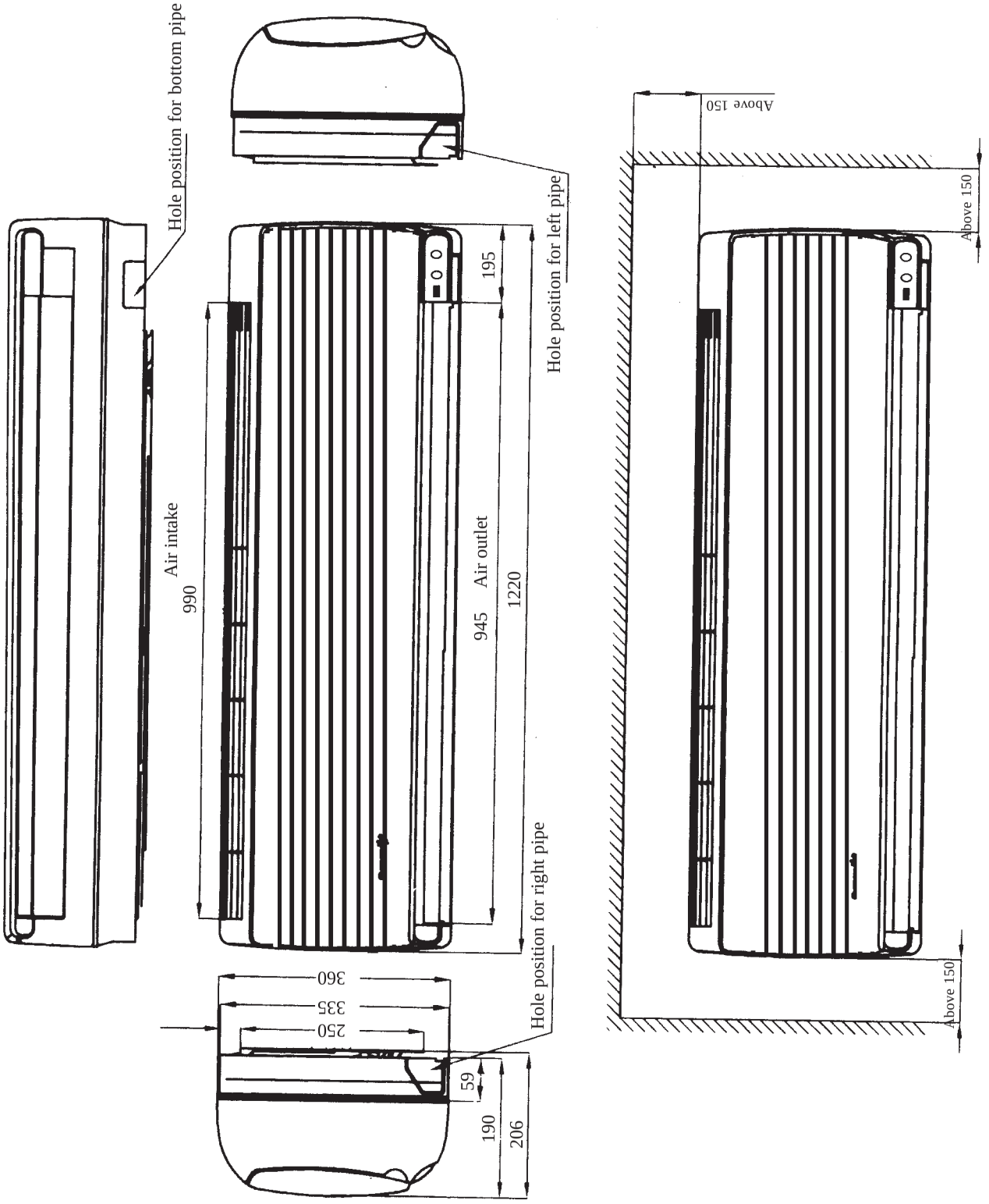
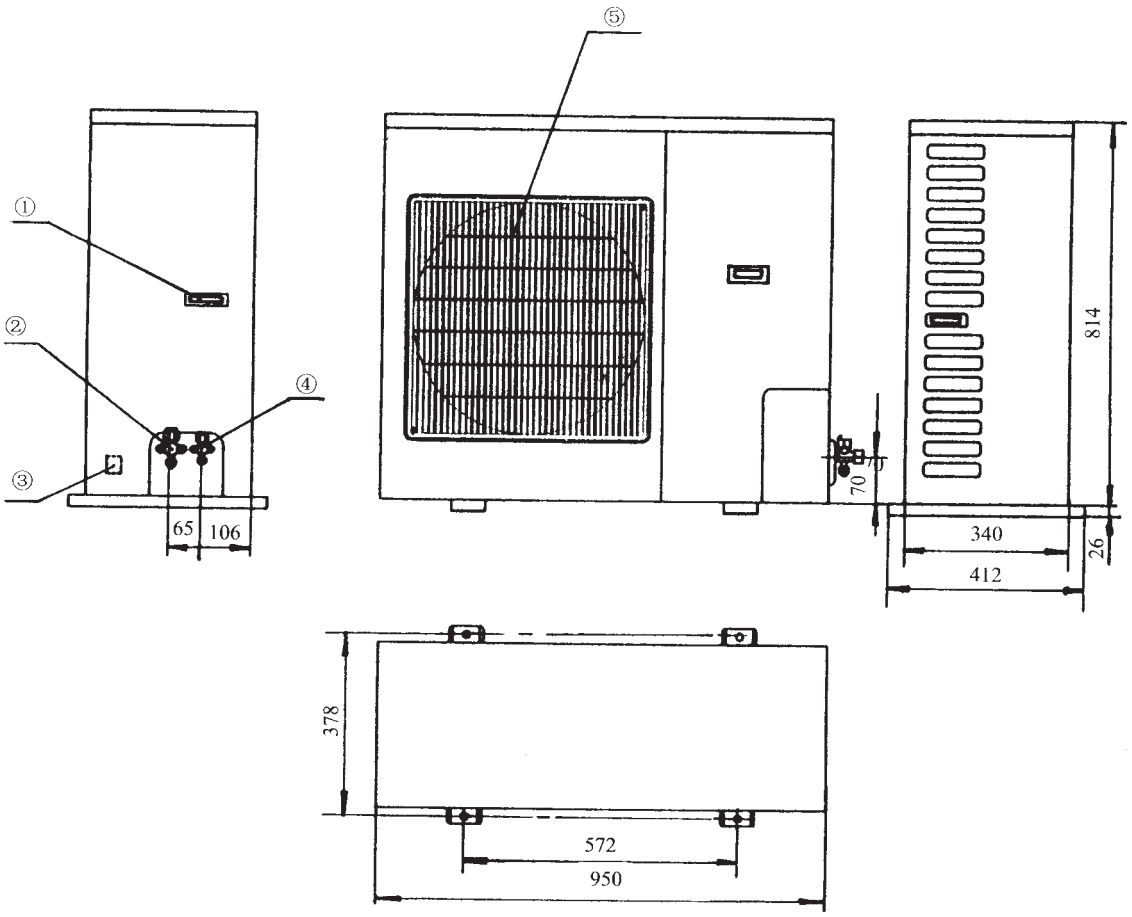


Fig. 1.5

1.5 Outlines and dimensions of outdoor unit



① Handle for moving ② Liguid valve assy. ③ Wire hole ④ Gas valve assy. ⑤ Front panel

Fig. 1.6

1.6 Explosive view and spare parts list of indoor unit

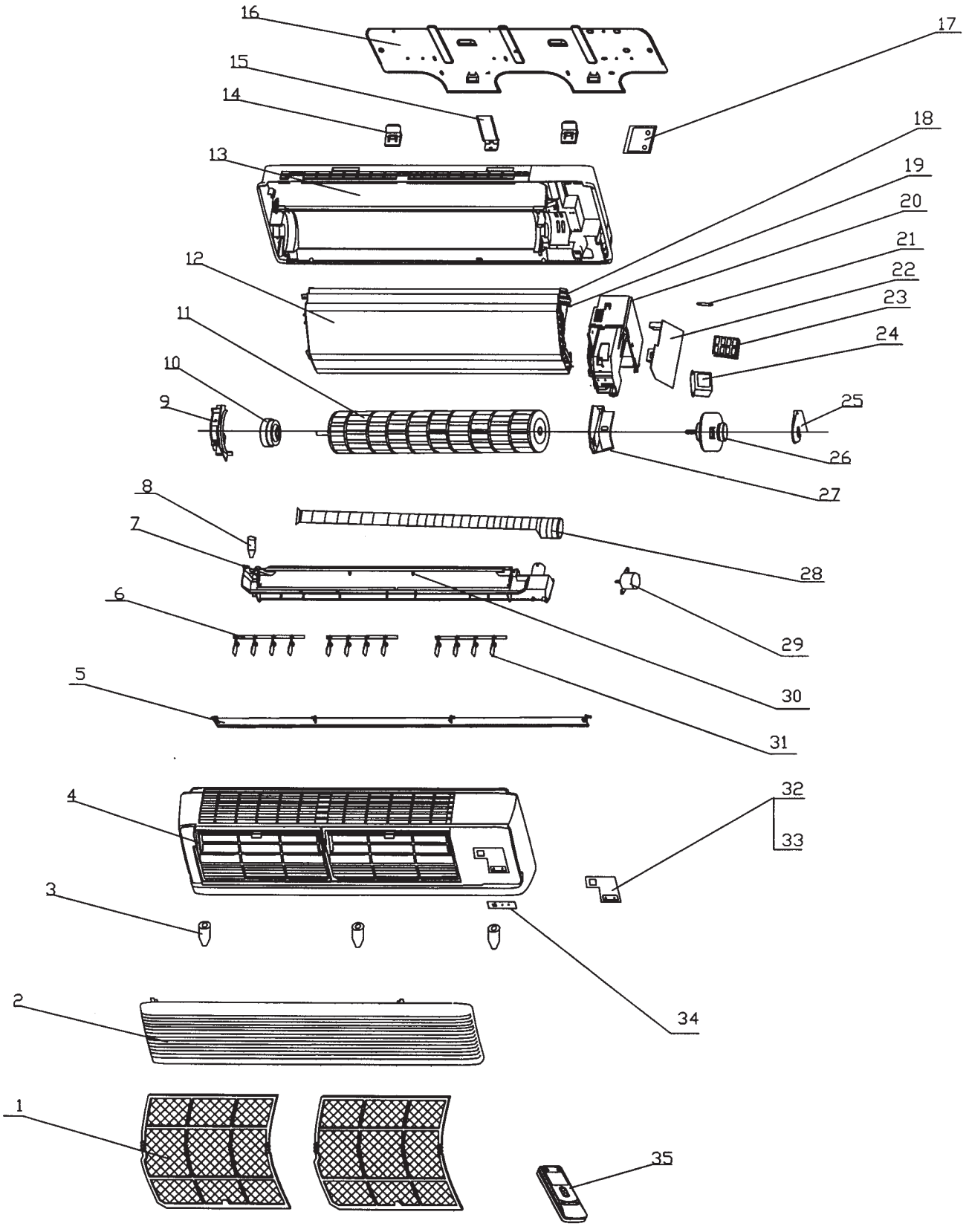


Fig. 1.7

Table 1-7

No	Description		Part No						Qty
			KF-70G/A1	KFR-70G/A1	KF-70G/NA1	KFR-70G/NA1	GSW30-22L/A(I)	GSW30-22R/A(I)	
1	Filter	过滤网	11122005	11122005	11122005	11122005	11122005	11122005	2
2	Front Panel	面板	20002020	20002020	20002020	20002020	20002020	20002020	1
3	Screw cover	螺钉盖	24252002	24252002	24252002	24252002	24252002	24252002	3
4	Front Case	面板体	20002021	20002021	20002021	20002021	20002021	20002021	1
5	Guide Louver	导风板	10512009	10512009	10512009	10512009	10512009	10512009	1
6	Connecting Lever	导风连杆	10582005	10582005	10582005	10582005	10582005	10582005	3
7	Water Tray	接水盘	12412061	12412061	12412061	12412061	12412061	12412061	1
8	Drain Stem	排水口堵头	06812061	06812061	06812061	06812061	06812061	06812061	1
9	Left Evap Supporter	蒸发器左支撑	01072435	01072435	01072435	01072435	01072435	01072435	1
10	Ring of Bearing	贯流风叶轴承胶圈	76512044	76512044	76512044	76512044	76512044	76512044	1
11	Cross Fan Assy	贯流风叶部件	10352397	10352397	10352397	10352397	10352397	10352397	1
12	Evaporator Assy	蒸发器组件	01002018	01002018	\	\	01002018	01002018	1
	Evaporator Assy	蒸发器组件	\	\	010020181	010020181	\	\	1
13	Rear Case	底座	26152440	26152440	26152440	26152440	26152440	26152440	1
14	Fixing Hook	底座固定扣	26152442	26152442	26152442	26152442	26152442	26152442	2
15	Rear Pipe Clamp	压管夹	02142204	02142204	02142204	02142204	02142204	02142204	1
16	Wall Mounting Plate	壁挂板	01252205	01252205	63262017	63262017	63262017	63262017	1
17	Pipe Clamp	管夹	02142440	02142440	02142440	02142440	02142440	02142440	1
18	Sensor Suppor	感温头支架	24211121	24211121	24211121	24211121	24211121	24211121	1
19	Sensor Holder	感温头插片 B	42020063	42020063	42020063	42020063	42020063	42020063	1
20	Electric Box	电器盒	20102006	20102006	20102006	20102006	20102006	20102006	1
21	Wire Clamp	电线夹	71010103	71010103	71010103	71010103	71010103	71010103	1
22	PCB 5F51J	控制器 5F51J	30025581	\	30025581	\	30025581	\	1
	PCB 5F52J	控制器 5F52J	\	30025582	\	30025582	\	30025582	1
23	Termincal board	四位接线板T4B3A	42011233	42011233	42011233	42011233	42011233	42011233	1
24	Transformer SC21C	电源变压器	43110161	43110161	43110161	43110161	43110161	43110161	1
25	Motor Clamp	电机固定卡	02112001	02112001	02112001	02112001	02112001	02112001	2
26	Motor FN25D	电机FN25D	15012105	15012105	15012105	15012105	\	\	1
26	Motor FN25C	电机FN25C	\	\	\	\	15012107	15012107	1
27	Right Evap Supporter	蒸发器右支撑	01072436	01072436	01072436	01072436	01072436	01072436	1
28	Drainage Pipe	排水管	05232411	05232411	05232411	05232411	05232411	05232411	1
29	Motor MP35EA	步进电机 MP35EA	15210104	15210104	15210104	15210104	15210104	15210104	1
30	Tray Supporter	接水盘中支撑	12122245	12122245	12122245	12122245	12122245	12122245	2
31	Swing Louver	导风叶片	10512006	10512006	10512006	10512006	10512006	10512006	12
32	Electric Box Cover	接线盖板	22242201	22242201	22242201	22242201	22242201	22242201	1
33	Switch Mask	显示灯标牌	60310178	60310178	60310178	60310178	60310178	60310178	1
34	Indicating Mask	显示接收板	22432200	22432200	22432200	22432200	22432200	22432200	1
35	Remote Controller	遥控器 Y512	30512506	30512506	30512506	30512506	30512506	30512506	1
36	Power Cord	电源线	40020333	40020333	40020333	40020333	40020237	40020237	1
37	Connecting Cable	电源连接线	40020427	40020427	40020427	40020427	40020455	40020455	1
38	Siganl Cable	信号控制线	\	40032103	40032154	40032153	40032144	40032137	1
39	room sensor	室温感温包	39000038	39000038	39000038	39000038	39000038	39000038	1
40	tube sensor	管温感温包	39000118	39000118	39000118	39000118	39000118	39000118	1

The data are subject to change without notice.

Table 1-8

No.	Description		Part No. KFR-70G/A1-12405	Qty
1	Filter	过滤网	11122005	2
2	Front Panel	面板	20002020	1
3	Screw cover	螺钉盖	24252002	3
4	Front Case	面板体	20002021	1
5	Guide Louver	导风板	10512009	1
6	Connecting Lever	导风连杆	10582005	3
7	Water Tray	接水盘	12412061	1
8	Drain Stem	排水口堵头	06812061	1
9	Left Evap Supporter	蒸发器左支撑	01072435	1
10	Ring of Bearing	贯流风叶轴承胶圈	76512044	1
11	Cross Fan Assy	贯流风叶部件	10352395	1
12	Evaporator Assy	蒸发器组件	01002018	1
13	Rear Case	底座	26152440	1
14	Fixing Hook	底座固定扣	26152442	2
15	Rear Pipe Clamp	压管夹	02142204	1
16	Wall Mounting Plate	壁挂板	01252205	1
17	Pipe Clamp	管夹	02142440	1
18	Sensor Suppor	感温头支架	24211121	1
19	Sensor Holder	感温头插片 B	42020063	1
20	Electric Box	电器盒	20102006	1
21	Wire Clamp	电线夹	71010103	1
22	PCB 5F52	控制器 5F52	30025187	1
23	Termincal board	四位接线板 T4B3A	42011233	1
24	Transformer SC21C	电源变压器	43110161	1
25	Motor Clamp	电机固定卡	02112001	2
26	Motor FN25D	电机 FN25D	15012105	1
27	Right Evap Supporter	蒸发器右支撑	01072436	1
28	Drainage Pipe	排水管	05232411	1
29	Motor MP35EA	步进电机 MP35EA	15210104	1
30	Tray Supporter	接水盘中支撑	12122245	2
31	Swing Louver	导风叶片	10512006	12
32	Electric Box Cover	接线盖板	22242201	1
33	Switch Mask	显示灯标牌	60310178	1
34	Indicating Mask	显示接收板	22432200	1
35	Remote Controller	遥控器 Y512	30512505	1
36	Power Cord	电源线	40020333	1
37	Connecting Cable	电源连接线	40020427	1
38	Siganl Cable	信号控制线	40032103	1
39	room sensor	室温感温包	39000038	1
40	tube sensor	管温感温包	39000118	1

The data are subject to change without notice.

Table 1-9

No	Description		Part No				Qty
			KF-80G/A1	KFR-80G/A1	KF-80G/NA1	KFR-80G/NA1	
1	Filter	过滤网	11122005	11122005	11122005	11122005	2
2	Front Panel	面板	20002020	20002020	20002020	20002020	1
3	Screw cover	螺钉盖	24252002	24252002	24252002	24252002	3
4	Front Case	面板体	20002021	20002021	20002021	20002021	1
5	Guide Louver	导风板	10512009	10512009	10512009	10512009	1
6	Connecting Lever	导风连杆	10582005	10582005	10582005	10582005	3
7	Water Tray	接水盘	12412061	12412061	12412061	12412061	1
8	Drain Stem	排水口堵头	06812061	06812061	06812061	06812061	1
9	Left Evap Supporter	蒸发器左支撑	01072435	01072435	01072435	01072435	1
10	Ring of Bearing	贯流风叶轴承胶圈	76512044	76512044	76512044	76512044	1
11	Cross Fan Assy	贯流风叶部件	10352397	10352397	10352397	10352397	1
12	Evaporator	蒸发器	01032395	01032395	01032395	\	1
	Evaporator	蒸发器	\	\	\	010323951	1
13	Rear Case	底座	26152440	26152440	26152440	26152440	1
14	Fixing Hook	底座固定扣	26152442	26152442	26152442	26152442	2
15	Rear Pipe Clamp	压管夹	02142204	02142204	02142204	02142204	1
16	Wall Mounting Plate	壁挂板	01252205	01252205	01252205	01252205	1
17	Pipe Clamp	管夹	02142440	02142440	02142440	02142440	1
18	Sensor Suppor	感温头支架	24211121	24211121	24211121	24211121	1
19	Sensor Holder	感温头插片 B	42020063	42020063	42020063	42020063	1
20	Electric Box	电器盒	20102006	20102006	20102006	20102006	1
21	Wire Clamp	电线夹	71010103	71010103	71010103	71010103	1
22	PCB 5F51J	控制器 5F51J	30025581	\	30025581	\	1
	PCB 5F52J	控制器 5F52J	\	30025582	\	30025582	1
23	Terminal board	四位接线板T4A2A	42011139	42011139	42011139	42011139	1
24	Transformer SC21C	电源变压器	43110161	43110161	43110161	43110161	1
25	Motor Clamp	电机固定卡	02112001	02112001	02112001	02112001	2
26	Motor FN25D	电机FN25D	15012105	15012105	15012105	15012105	1
27	Right Evap Supporter	蒸发器右支撑	01072436	01072436	01072436	01072436	1
28	Drainage Pipe	排水管	05232411	05232411	05232411	05232411	1
29	Motor MP35EA	步进电机 MP35EA	15210104	15210104	15210104	15210104	1
30	Tray Supporter	接水盘中支撑	12122245	12122245	12122245	12122245	2
31	Swing Louver	导风叶片	10512006	10512006	10512006	10512006	12
32	Electric Box Cover	接线盖板	22242201	22242201	22242201	22242201	1
33	Switch Mask	显示灯标牌	60310178	60310178	60310178	60310178	1
34	Indicating Mask	显示接收板	22432404	22432404	22432404	22432404	1
35	Remote Controller	遥控器 Y512	30512506	30512506	30512506	30512506	1
36	Power Cord	电源线 5G1.5	40020477	40020477	40020477	40020477	1
37	Connecting Cable	电源连接线	40020241	40020241	40020241	40020241	1
38	Siganl Cable	信号控制线	40030327	40030327	40030327	40030327	1
	Siganl Cable	信号控制线	\	40030328	\	40030328	1
39	Room sensor	室温感温包	39000038	39000038	39000038	39000038	1
40	Tube sensor	管温感温包	39000118	39000118	39000118	39000118	1

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1.7 Explosive view and spare parts list of outdoor unit

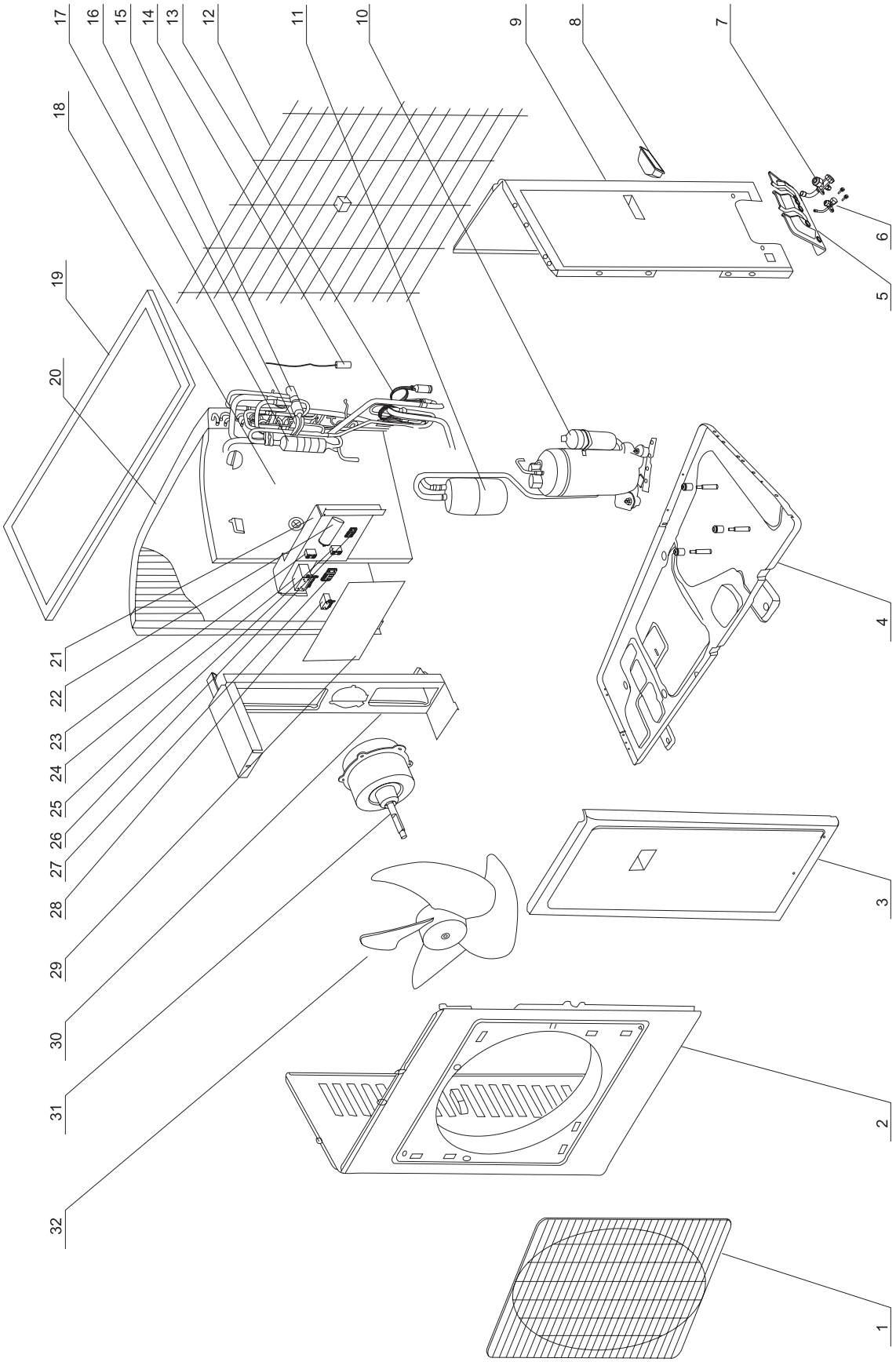

Fig. 1.8

Table 1-10

No	Description		Part No						Qty
			KF-70W/A1	KFR-70W/A1	KF-70W/NA1	KFR-70W/NA1	GSW30-22L/A(O)	GSW30-22R/A(O)	
1	Front Grill	面罩组件	22265250	22265250	22265250	22265250	22265250	22265250	1
2	Front Plate	外罩	01435253	01435253	01435253	01435253	01435253	01435253	1
3	Front Side plate	前侧板组件	01305018	01305018	01305018	01305018	01305018	01305018	1
4	Metal Base	底盘组件	01205264	01205264	01205011	01205011	01205011	01205011	1
5	Valve Support	阀门支架组件	01715002	01715002	01715002	01715002	01715002	01715256	1
6	Liquid Valve Assy	小阀门组件	07105256	07105256	\	\	07105256	07103202	1
	Liquid Valve Assy	小阀门组件	\	\	07105002	07105002	\	\	1
7	Gas Valve Assy	大阀门组件	07105252	07105252	\	\	07105252	07105252	1
	Gas Valve Assy	大阀门组件	\	\	07105007	07105007	\	\	1
8	Handle	把手	26235253	26235253	26235253	26235253	26235253	26235253	1
9	Rear Side Plate	后侧板组件	01305262	01305262	01305262	01305262	01305262	01305262	1
10	Compressor AWG5532EVA	压缩机及其配件	00100509	00100509	\	\	\	\	1
	Compressor C-RN220H5B	压缩机及其配件	\	\	00100063	00100063	\	\	1
	Compressor CRFQ-0250-PFV-501	压缩机及其配件	\	\	\	\	00100011	00100011	1
11	Gas-Liquid Separator	汽液分离器部件	07225001	07225001	07255251	07255251	07255251	07255251	1
12	Rear Grill Assy	网罩(白色)	01475251	01475251	01475251	01475251	01475251	01475251	1
13	Capillary assy	毛细管组件	03003036	03003038	03003039	03003124	03003039	03003123	1
14	Tube Sensor	室外感温头	\	39000006	\	39000006	\	39000006	1
15	4-way Valve	四通阀	\	43000313	\	\	\	43000403	1
	4-way Valve	四通阀	\	\	\	43000305	\	\	1
	4-way Valve Fittings	四通阀配件	\	\	\	\	\	430004001	1
16	Pressure Switch	压力保护开关	\	\	46020011	46020011	46020003	46020003	1
17	Silencer L220	消音器	07245101	07245101	07245005	07245005	07245101	07245101	1
18	Isolation Sheet Assy	隔板组件	01235253	01235253	01235253	01235253	01235253	01235253	1
19	Top Cover Assy	顶盖组件	01255260	01255260	01255260	01255260	01255260	01255260	1
20	Condenser Assy	冷凝器组件	01105030	01103031	\	\	01135030	01135030	1
	Condenser Assy	冷凝器组件	\	\	01135030	01103044	\	\	1
21	Electric Box	电器盒	01415265	01415265	01415265	01415265	01415265	01415265	1
22	Capacitor 45UF\450VAC	压缩机电容	33010740	33010740	\	\	\	\	1
	Capacitor 40UF\440VAC	压缩机电容	\	\	33010722	33010722	\	\	1
	Capacitor 35UF\450VAC	压缩机电容	\	\	\	\	33000027	33000027	1
23	Capacitor 3UF\450VAC	风机电容	33010027	33010027	33010027	33010027	\	\	1
		风机电容	\	\	\	\	33010021	33010021	1
24	Contactor CJX9B-255	双极交流接触器	44010221	44010221	\	\	44010221	44010221	1
	Contactor CJX9B-255\01	双极交流接触器	\	\	44010222	44010222	\	\	1
25	Capacitor 88-108UF	启动电容	33010603	33010603	\	\	\	\	1
	Capacitor 145-174UF	启动电容	\	\	\	\	33010604	33010604	1
26	Terminal Board 2-8	接线板2-8	42011103	42011103	42011103	42011103	42011103	42011103	1
27	Terminal Board	三位接线板	42011102	42011102	42011102	42011102	42011102	42011102	1
28	Relay 3 ARR3U10AS3\JDQ1-6	启动继电器	44020306	44020306	44020306	44020306	44020306	44020306	1
29	Electric Box Cover	电器盒上盖板	01415255	01415255	01415255	01415255	01415255	01415255	1
30	Motor Support	电机支架组件	01705251	01705202	01705251	01705251	01705251	01705251	1
31	Motor LW60B	电机LW60B	15015205	15015205	15015205	15015205	\	\	1
	Motor FW60F	电机FW60F	\	\	\	\	15013250	15013250	1
32	Axial Flow Fan	轴流风叶	10335253	10335253	10335254	10335254	10335254	10335254	1

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Table 1-11

No.	Description		Part No.	Qty
			KFR-70W/A1-12405	
1	Front Grill	面罩组件	22265251	1
2	Front Plate	外罩	01435253	1
3	Front Side plate	前侧板组件	01305018	1
4	Metal Base	底盘组件	01205011	1
5	Valve Support	阀门支架组件	01715002	1
6	Liquid Valve Assy	小阀门组件	07105256	1
7	Gas Valve Assy	大阀门组件	07105252	1
8	Handle	把手	26235253	1
9	Rear Side Plate	后侧板组件	01305262	1
10	Compressor AWG5532EVA	压缩机及其配件	00100509	1
11	Gas-Liquid Separator	汽液分离器部件	07225001	1
12	Rear Grill Assy	网罩(白色)	01475251	1
13	Capillary assy	毛细管组件	03003038	1
14	Tube Sensor	室外感温头	39000006	1
15	4-way Valve	四通阀	43000403	1
	4-way Valve Fittings	四通阀配件	43000400	1
17	Silencer L220	消音器	07245101	1
18	Isolation Sheet Assy	隔板组件	01235253	1
19	Top Cover Assy	顶盖组件	01255260	1
20	Condenser Assy	冷凝器组件	01135030	1
21	Electric Box	电器盒	01415265	1
22	45UF/450VAC	压缩机电容	33010740	1
23	Capacitor 3UF/450VAC	风机电容	33010027	1
24	Contactor CJX9B-25S	双极交流接触器	44010221	1
25	Capacitor 88-108UF	启动电容	33010603	1
26	Terminal Board 2-8	接线板 2-8	42011103	1
27	Terminal Board	三位接线板	42011102	1
28	Relay3ARR3U10AS3/JDQ1-6	启动继电器	44020306	1
29	Electric Box Cover	电器盒上盖板	01415255	1
30	Motor Support	电机支架组件	01705202	1
31	Motor LW60B	电机 LW60B	15015205	1
32	Axial Flow Fan	轴流风叶	10335254	1

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Table 1-12

No.	Description		Part No				Qty
			KF-80W/A1	KFR-80W/A1	KF-80W/NA1	KFR-80W/NA1	
1	Front Grill	面罩组件	22265250	22265250	22265250	22265250	1
2	Front Plate	外罩	01435254	01435254	01435254	01435254	1
3	Front Side plate	前侧板组件	01305018	01305018	01305018	01305018	1
4	Metal Base	底盘组件	01205433	01205433	01205433	01205433	1
5	Valve Support	阀门支架组件	01715001	01715001	01715001	01715001	1
6	Liquid Valve Assy	小阀门组件	07105255	\	\	\	1
	Liquid Valve Assy	小阀门组件	\	07105002	07105002	07105002	1
7	Gas Valve Assy	大阀门组件	07105251	07105251	07105251	07105251	1
8	Handle	把手	26235252	26235252	26235252	26235252	1
9	Rear Side Plate	后侧板组件	01305262	01305262	01305262	01305262	1
10	Compressor C-SB263H8A	压缩机及其配件	00100077	00100077	\	\	1
	Compressor C-SBN263H8A	压缩机及其配件	\	\	00100160	00100160	1
11	Gas-Liquid Separator	汽液分离器部件	07255201	07255201	07255201	07255201	1
12	Rear Grill Assy	网罩(白色)	01475251	01475251	01475251	01475251	1
13	Capillary assy	毛细管组件	03003261	03003314	03003261	03003314	1
14	Tube Sensor	室外管温感温包	39000121	39000121	39000121	39000121	1
15	4-way Valve	四通阀	\	43000325	\	43000325	1
	4-way Valve Fittings	四通阀配件	\	\	\	\	1
16	Pressure Switch	压力保护开关	46020003	46020003	46020003	46020003	1
17	Silencer L220	消音器	\	\	\	\	\
18	Isolation Sheet Assy	隔板组件	01235253	01235253	01235253	01235253	1
19	Top Cover Assy	顶盖组件	01255260	01255260	01255260	01255260	1
20	Condenser Assy	冷凝器组件	01135202	\	01135202	01135202	1
	Condenser Assy	冷凝器组件	\	01133058	\	\	1
21	Electric Box	电器盒	01415205	01415205	01415205	01415205	1
22	Capacitor 45UF/450VAC	压缩机电容	\	\	\	\	\
23	Capacitor 3UF/450V	风机电容	33010027	33010027	33010027	33010027	1
24	Contactor LC1D1801M7C	交流接触器	44010211	44010211	44010211	44010211	1
25	Capacitor 88-108UF	启动电容	\	\	\	\	\
26	Terminal Board 2-8	接线板2-8	42011103	42011103	42011103	42011103	1
27	Terminal Board GT8F0A1	接线板	42011036	42011036	42011036	42011036	1
28	Relay 3 ARR3U10AS3\JDQ1-6	启动继电器	\	\	\	\	\
29	Electric Box Cover	电器盒上盖板	01415255	01415255	01415255	01415255	1
30	Motor Support	电机支架组件	01705251	01705251	01705251	01705251	1
31	Motor LW60L	电机LW60L	15013063	\	15013063	\	1
	Motor LW70A	电机LW70A	\	15015210	\	15015210	1
32	Axial Flow Fan	轴流风叶	10335253	10335253	10335253	10335253	1

The data are subject to change without notice.

1.8 Circuit diagram

These circuit diagrams are subject to change Without notice.
Please refer to the ones stuck on the machines.

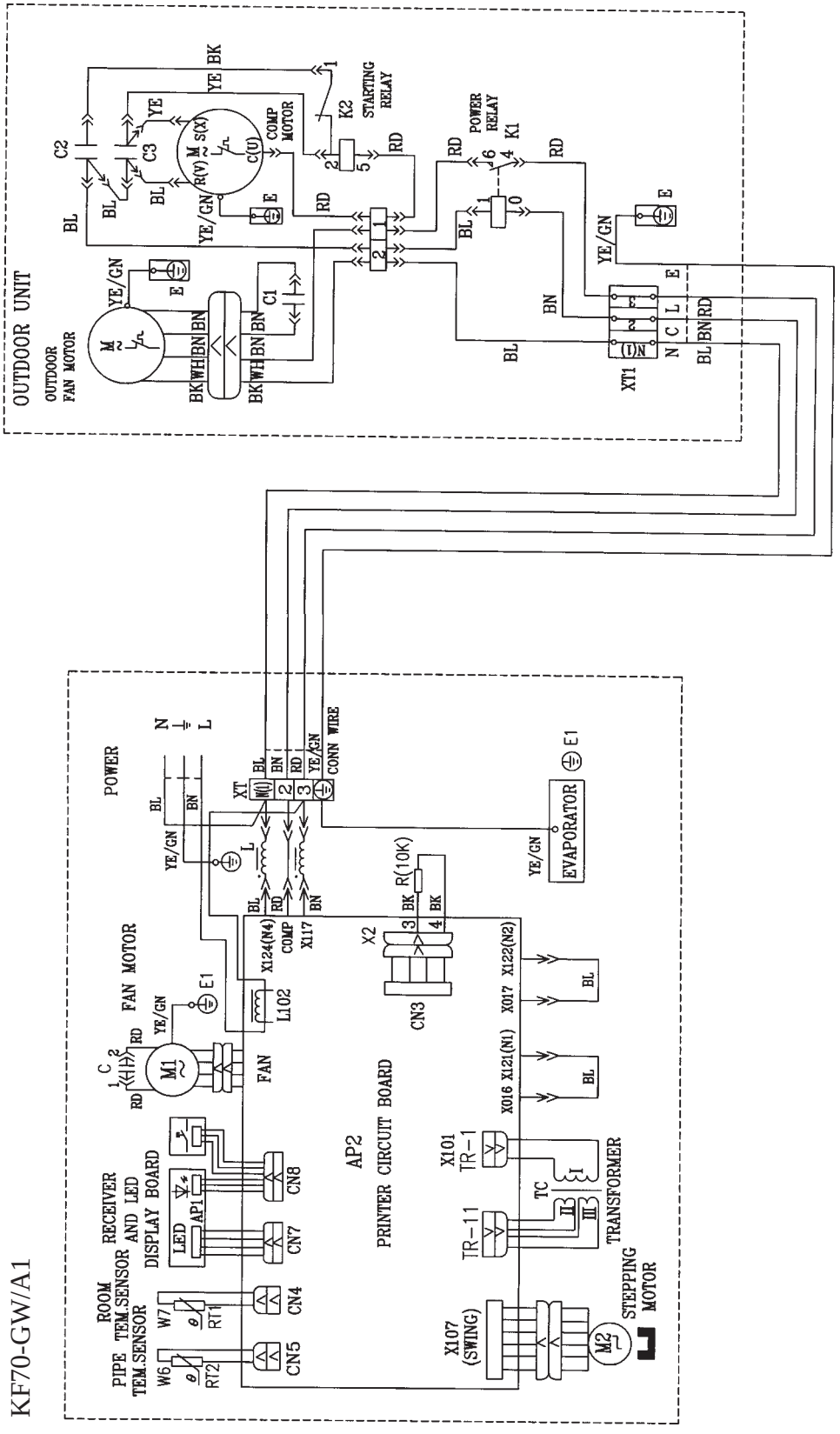


Fig. 1.9

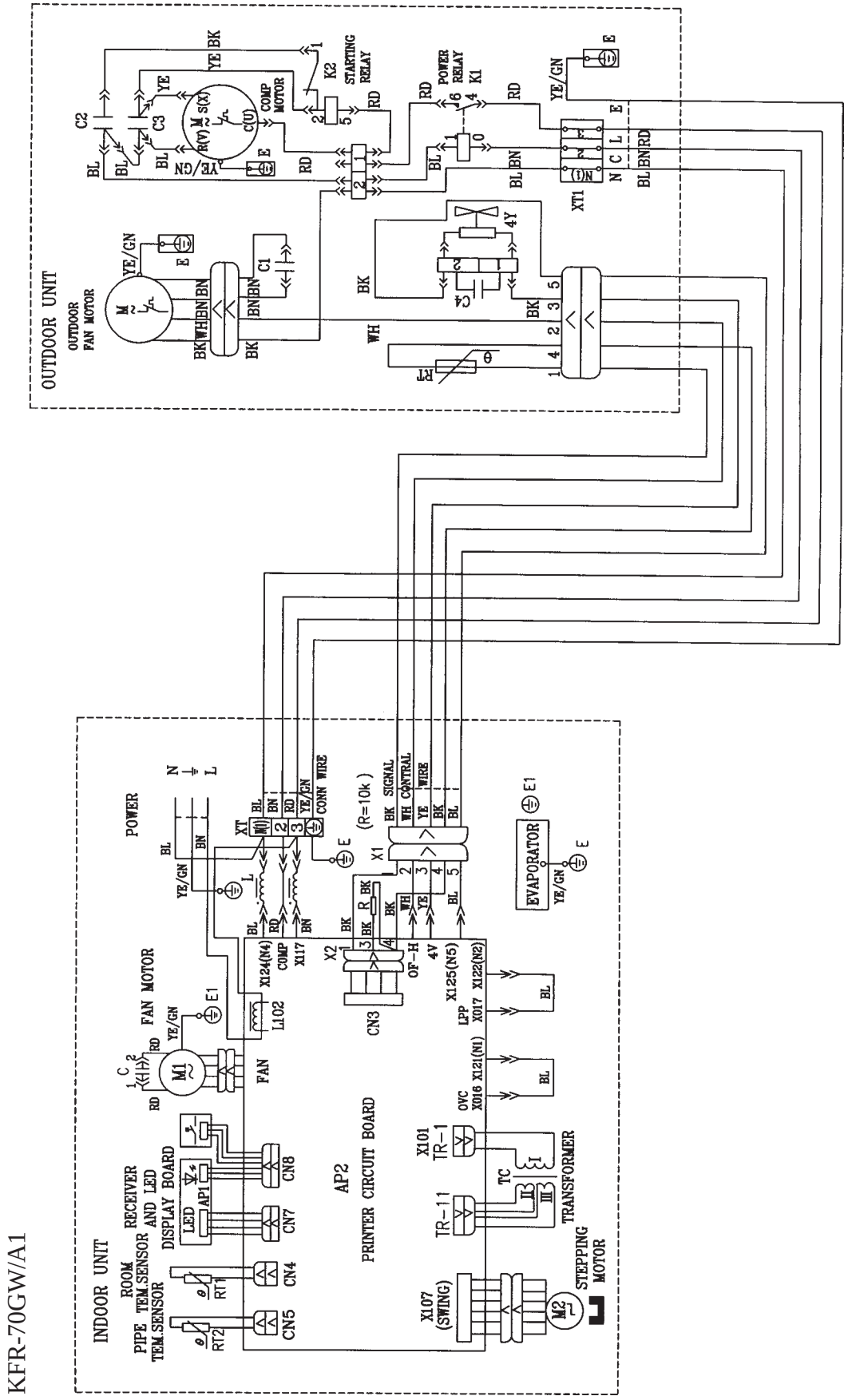

KFR-70GW/A1
OUTDOOR UNIT
OUTDOOR FAN MOTOR
COMP MOTOR
STARTING RELAY
POWER RELAY
INDOOR UNIT
POWER
FAN MOTOR
FAN
CONN WIRE
CONTRAL WIRE
SIGNAL
EVAPORATOR
ROOM TEM.SENSOR
PIPE TEM.SENSOR
RECEIVER AND LED DISPLAY BOARD
AP2
PRINTER CIRCUIT BOARD
TRANSFORMER
STEPPING MOTOR
(SWING)

Fig. 1.10

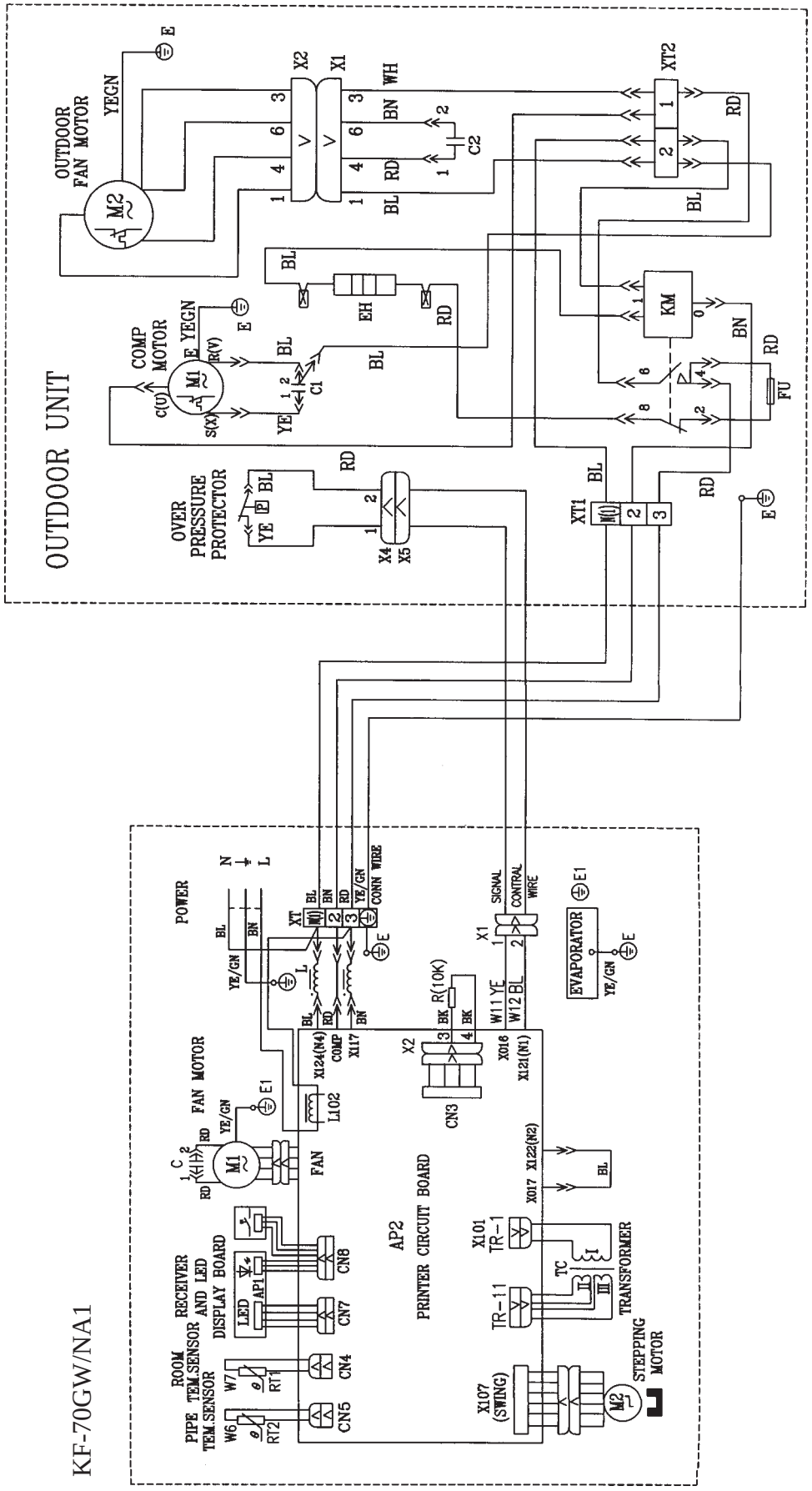

KF-70GW/NA1
OUTDOOR UNIT
OUTDOOR FAN MOTOR
COMP MOTOR
OVER PRESSURE PROTECTOR
EH
KM
FU
C1
C2
XT1
XT2
X1
X2
X4
X5
POWER
CONN WIRE
SIGNAL CONTRAL WIRE
EVAPORATOR
R(10K)
FAN MOTOR
FAN
L102
AP2
PRINTER CIRCUIT BOARD
RECEIVER AND LED DISPLAY BOARD
ROOM TEM.SENSOR
PIPE TEM.SENSOR
TRANSFORMER
STEPPING MOTOR
X107 (SWING)
CN3
CN4
CN5
CN7
CN8

Fig. 1.11

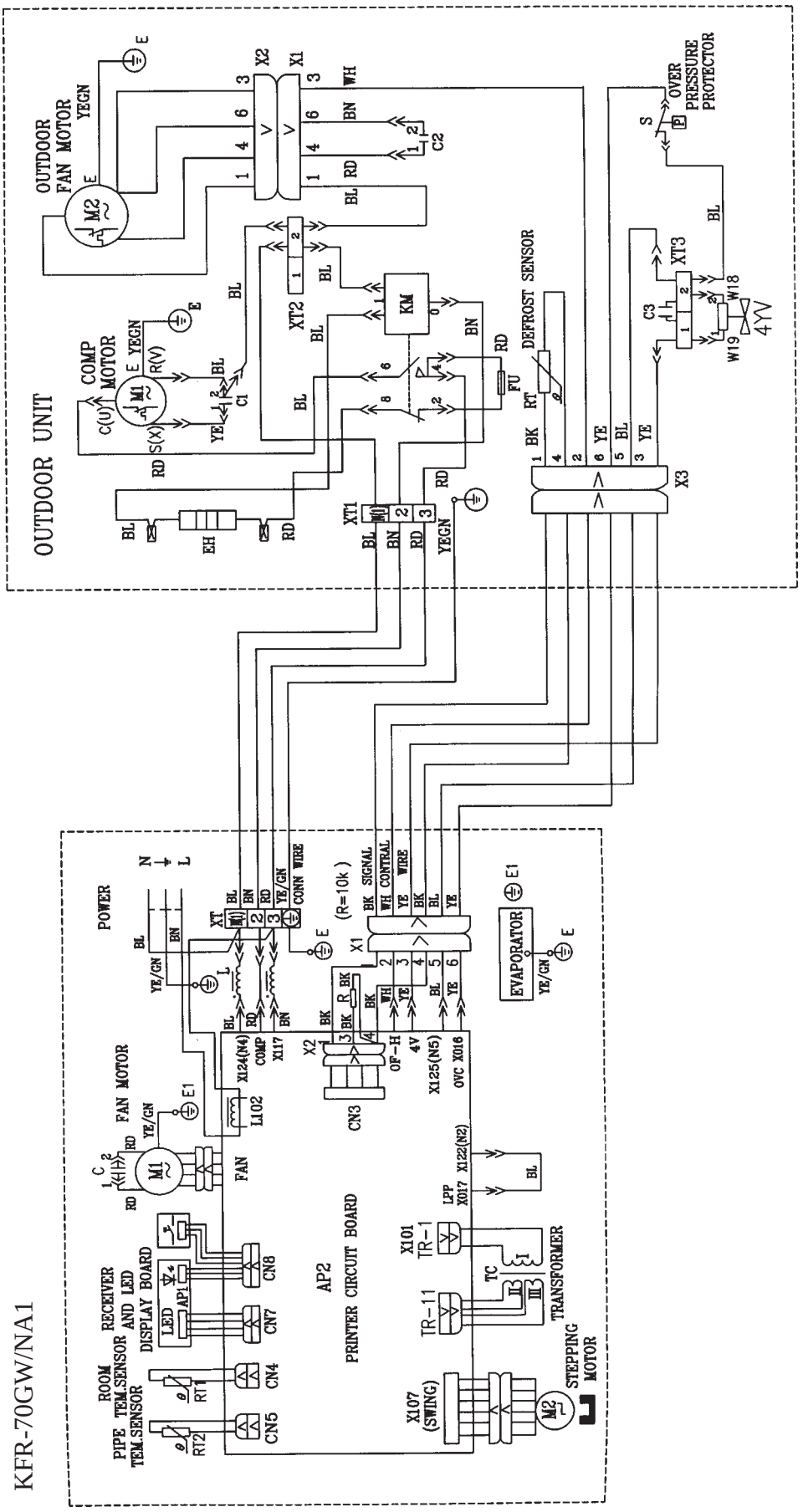

KFR-70GW/NA1
OUTDOOR UNIT
OUTDOOR FAN MOTOR
COMP MOTOR
OVER PRESSURE PROTECTOR
DEFROST SENSOR
4V
KM
FU
EH
RT
C1
C2
C3
XT1
XT2
XT3
X1
X2
X3
YEGN
BL
BN
RD
YE
BK
WH
POWER
CONN WIRE
BK SIGNAL
WH CONTRAL
WIRE
(R=10k)
EVAPORATOR
FAN MOTOR
FAN
L102
COMP
X117
X124(N4)
X125(N5)
OVC X016
OF-H
CN3
X122(N2)
LPP X017
AP2
PRINTER CIRCUIT BOARD
X101
TR-1
TR-11
TC
TRANSFORMER
STEPPING MOTOR
X107 (SWING)
ROOM RECEIVER AND LED DISPLAY BOARD
LED
AP1
CN8
CN7
CN4
CN5
PIPE TEM.SENSOR
TEM.SENSOR
RT1
RT2

Fig. 1.12

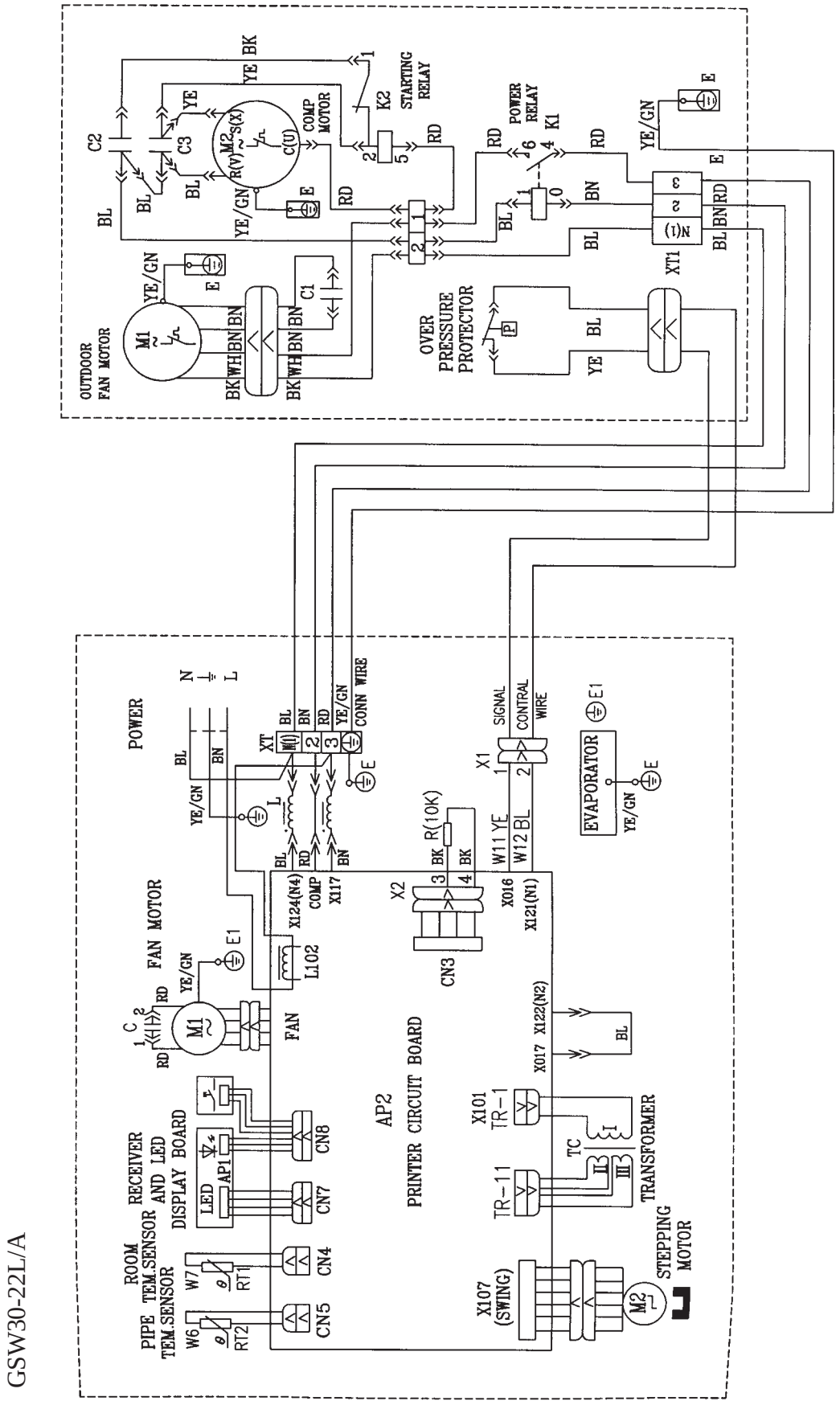

GSW30-22L/A
OUTDOOR FAN MOTOR
M1
C1
C2
C3
COMP MOTOR
STARTING RELAY
K2
POWER RELAY
K1
XT1
OVER PRESSURE PROTECTOR
CONN WIRE
XT
POWER
FAN MOTOR
L102
X124(N4)
COMP
X117
R(10K)
X2
CN3
X016
X121(N1)
SIGNAL
CONTRAL
WIRE
X1
EVAPORATOR
E1
FAN
X122(N2)
X017
AP2
PRINTER CIRCUIT BOARD
X101
TR-1
TR-11
TC
TRANSFORMER
X107
(SWING)
M2
STEPPING MOTOR
ROOM TEM.SENSOR
PIPE TEM.SENSOR
RT1
RT2
W7
W6
RECEIVER AND LED DISPLAY BOARD
AP1
LED
CN4
CN5
CN7
CN8

Fig. 1.13

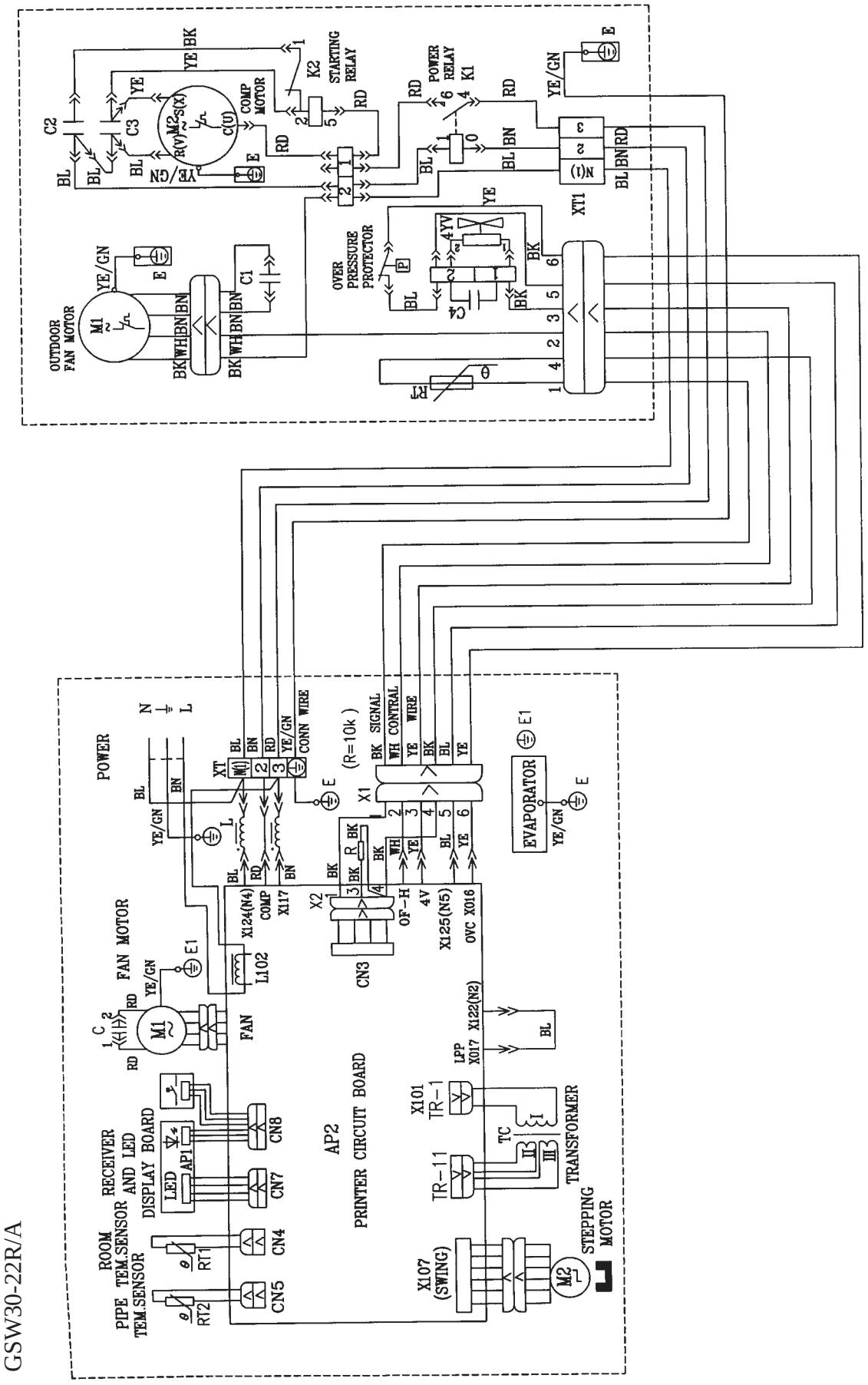

GSW30-22R/A
POWER
FAN MOTOR
RECEIVER AND LED DISPLAY BOARD
ROOM TEM.SENSOR
PIPE TEM.SENSOR
AP2
PRINTER CIRCUIT BOARD
TRANSFORMER
STEPPING MOTOR
EVAPORATOR
OUTDOOR FAN MOTOR
COMP MOTOR
STARTING RELAY
POWER RELAY
OVER PRESSURE PROTECTOR
CONN WIRE
SIGNAL CONTRAL WIRE
(R=10k)

Fig. 1.14

KFR-70GW/A1-12405

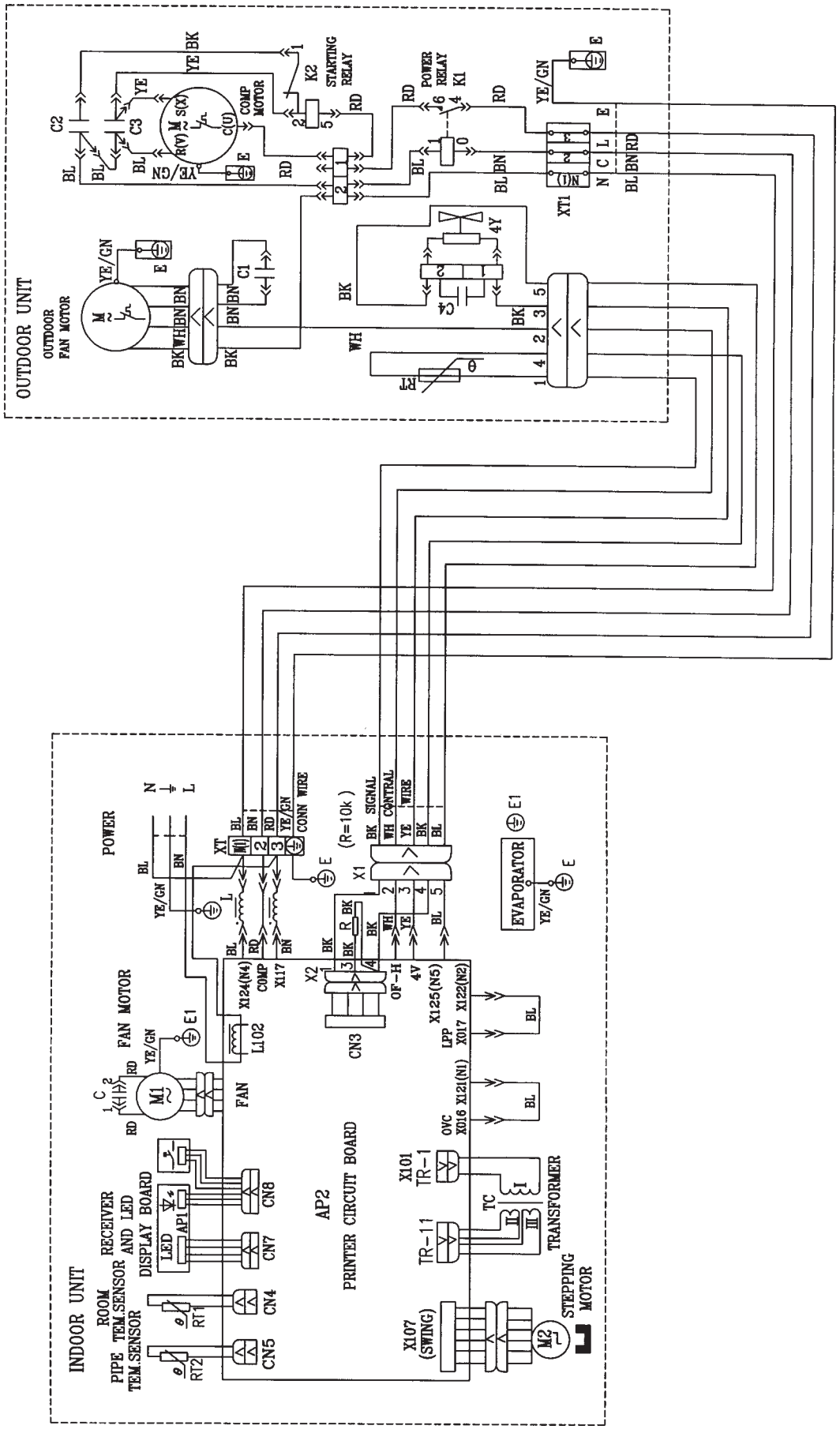


Fig. 1.15

KF-80GW/A1
KF-80GW/NA1

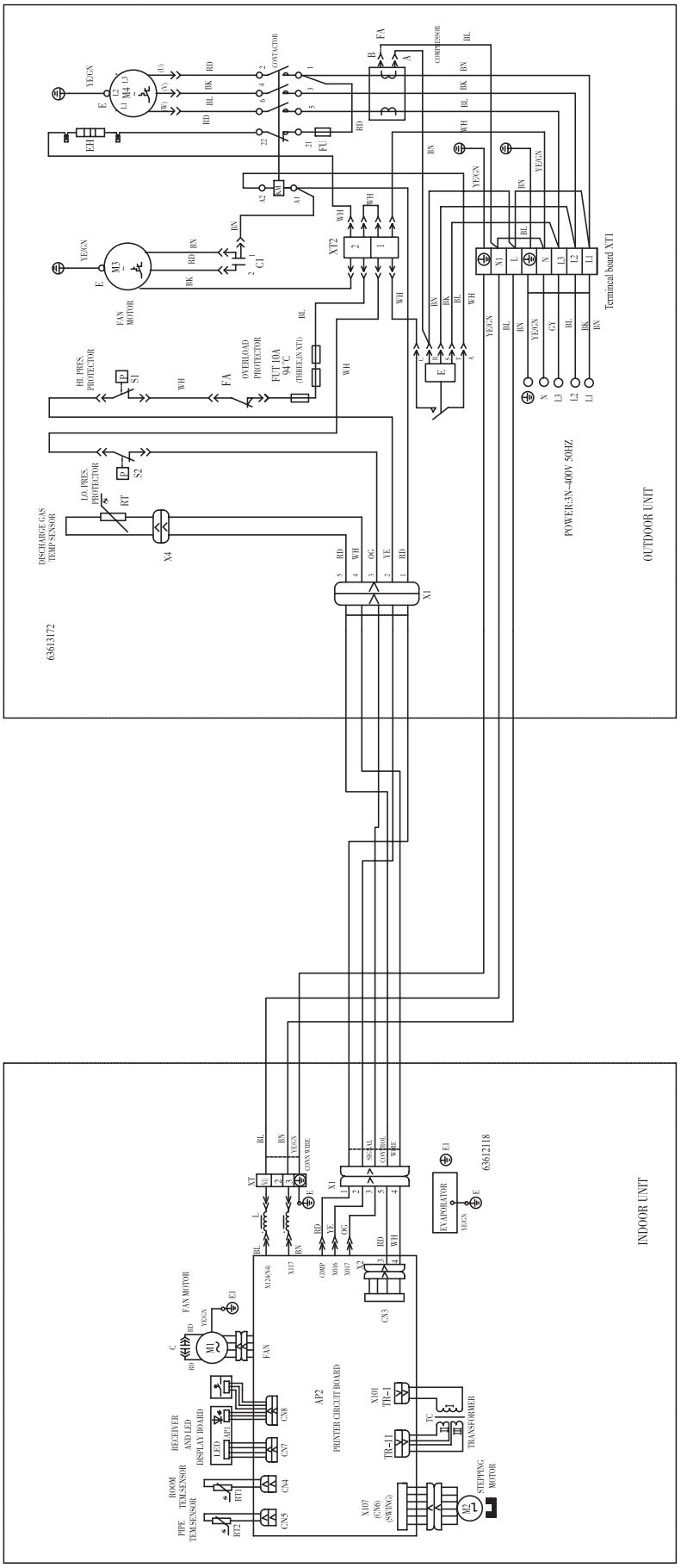


Fig. 1.16

KFR-80GW/A1
KFR-80GW/NA1

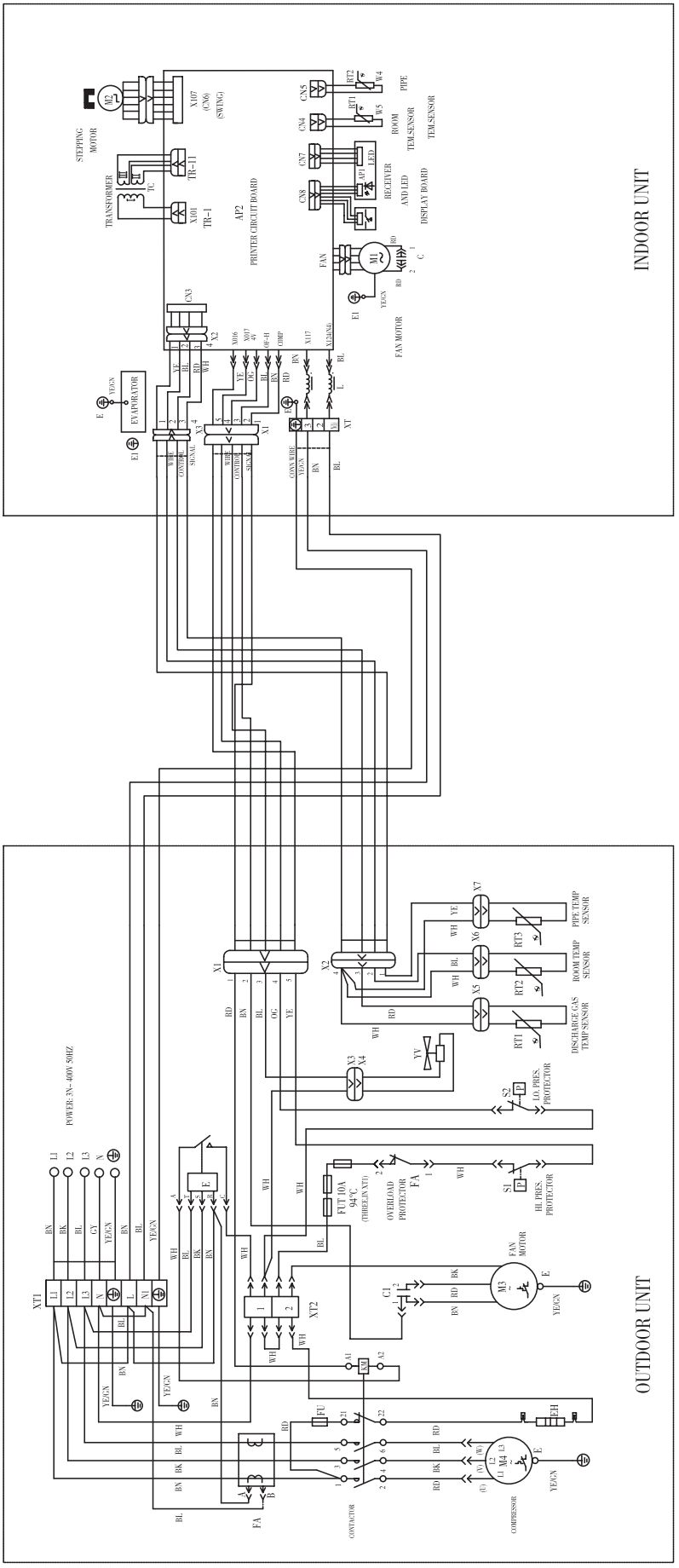


Fig. 1.17

1.9 PCB function manual

PCB function manual of Feng Xia Split Air-conditioner

1. Running mode:

1) AUTO; 2) COOL; 3) HEAT; 4) DRY; 5) FAN.

2. Controlling contents:

1) indoor unit fan motor(high, middle and low speed);

2) sweep fan motor;

3) outdoor unit fan motor(high and low);

4) compressor;

5) reversing valve;

6) electrical heater;

3. The parameter to be input:

1) the ambient temperature of the indoor unit (shorten form is T_{in});

2) the evaporator temperature of the indoor unit (shorten form is T_{eva});

3) the condenser temperature of the outdoor unit (shorten form is T_{con});

4) the ambient temperature of the outdoor unit (shorten form is T_{out});

5) the temperature of the gas output from the compressor (shorten form is T_{output}).

4. The different controlling mode for the different function mode:

Under all of the modes, the compressor will continue work for 6 min once it starts. And it will be restart in 3min after it stops.

1) Cooling mode:

If $T_{in} \geqslant T_{set}+1℃$, cooling mode act, compressor and outdoor unit run, and indoor unit run in the set speed;

If $T_{in} \leqslant T_{set}-1℃$, the unit will be stop from cooling mode, compressor and outdoor unit stop, and indoor unit still run in the set speed;

If $T_{set}-1℃ < T_{in} < T_{set}+1℃$, keep running in the old mode;

In the cooling mode, the range of T_{set} is 16℃~30℃.

2) Drying mode:

If $T_{in} > T_{set}+2℃$, drying mode act, compressor, indoor unit fan motor and outdoor unit fan motor run, The indoor unit fan motor runs in low speed;

If $T_{set}-2℃ \leqslant T_{in} \leqslant T_{set}+2℃$, compressor, indoor unit fan motor and outdoor unit fan motor run for 6min, then stop for 4min, then run by this cycle. The indoor unit fan motor runs in low speed;

If $T_{in} < T_{set}-2℃$, compressor, outdoor unit fan motor and indoor unit fan motor stop.

In drying mode, the range of T_{set} is 16℃~30℃.

3) Heating mode:

If $T_{in} \leqslant T_{set}-1℃$, heating mode act, reversing, compressor and outdoor unit fan motor run, indoor unit fan motor runs in the set speed and the condition of avoiding the cold wind;

If $T_{in} \geqslant T_{set}+1^{\circ}C$, compressor and outdoor unit fan motor stop, reserving valve is still electric , the indoor unit fan motor runs in the set speed and flow the rest heat;

If $T_{set}-1^{\circ}C < T_{in} < T_{set}+1^{\circ}C$, keep running in the old mode;

In the heating mode, the range of T_{set} is 16℃~30℃.

In the heating mode, the 4-way valve will be electroless in 2min after the unit is turned off.

The conditions of avoiding cold wind:

Once the compressor work, either $T_{eva} \geqslant 42^{\circ}C$ or the compressor running for over 30sec, the indoor unit fan motor run in the old speed, 6min later, if $T_{eva} \leqslant 35^{\circ}C$, indoor unit fan motor run in low speed, if $35^{\circ}C < T_{eva} < 42^{\circ}C$, keep speed.

The conditions of flowing hot wind:

Once the compressor is stop, the indoor unit fan motor runs in low speed and will stop too in 90sec.

The conditions of beginning defrosting:

After the unit continue heating for 44min or if $T_{con} \leqslant -5^{\circ}C$ for 1min, the defrosting mode act, running light flash, reversal valve, indoor and outdoor unit stop.

If there is electrical heater in the unit, then it will be stop first and the reversal valve, the indoor and outdoor unit stop in 10sec.

The conditions of stopping defrosting:

After the unit continue defrosting for 10min or if $T_{con} \geqslant 10^{\circ}C$, the defrosting stop, the reversal valve, the outdoor unit run, and the indoor unit fan motor will run in the the condition of avoiding the cold wind.

The working condition of electrical heater:

When the indoor unit is running in high or middle speed, and $T_{eva} \leqslant 49^{\circ}C$ and $T_{in} \leqslant 25^{\circ}C$, electrical heater act.

When the indoor unit is stop, or $T_{eva} \geqslant 54^{\circ}C$ or $T_{in} \geqslant 28^{\circ}C$, or $T_{in} \geqslant T_{set}$, the electrical heater stop and will restart in 2min.

4) Fanning mode:

The indoor unit fan motor runs in the set fan speed:

The range of is 16℃~30℃.

5) Auto mode:

It runs according the T_{in}.

If $T_{in} > 26^{\circ}C$, cooling mode act, the T_{set} is 26℃.

If $T_{in} < 20^{\circ}C$, heating mode act, the T_{set} is 20℃.

If $20^{\circ}C \leqslant T_{in} \leqslant 26^{\circ}C$, running in the old mode.

If the unit is cooling only, if $T_{in} < 20^{\circ}C$, fanning mode act, the T_{set} is $20^{\circ}C$.

Once the each mode act, it will be in 30sec to change to the auto mode according the T_{in}.

5. Timer and sleep mode:

1) Sleep mode:

If it is cooling or drying, in 1hour of the beginning, the T_{set} will be increased $1^{\circ}C$, and it will be increased $1^{\circ}C$ after 2hour, then the unit runs in this temperature.

If it is heating, in 1hour of the beginning, the T_{set} will be decreased $1^{\circ}C$, and it will be decreased $1^{\circ}C$ after 2hour, then the unit runs in this temperature.

There is no sleep mode when fanning and auto mode act.

2) Timer for Turn on:

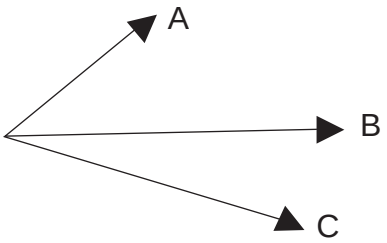
The unit is stop when the timer for turn on is acted, when it is time to turn on, the controller will act in the set mode. The distance of setting twice is 0.5hour and the range time is 0. 5~24hour.

3) Timer for Turn off:

The unit is run when the timer for turn off is acted, the unit is stop when it time to turn off. He distance of setting twice is 0.5hour and the range time is 0.5~24hour.

6. Other functions:

1) Sweeping:



a. When unit is turned on, guider revolve anti-clockwise to A then revolve deasil to C.

b. When unit is turned on (sweeping mode does not act), guider revolve to A then stop; if sweeping mode act, guider revolve between A and B. Now, guider can be stop or not by remote control; it is valid only when indoor unit fan motor run.

c. When unit is stop, guider revolve to C to shut the air-let.

2) Buzzer function:

It will be act when the controller is turned on or received a right signal.

3) Auto fan speed of indoor unit:

When heating act:

If $T_{in} \geqslant T_{set}$, the indoor unit fan motor runs in low fan speed;

If $T_{set}-3^{\circ}C \leqslant T_{in} < T_{set}$, it is middle fan speed;

If $T_{in} < T_{set}-3^{\circ}C$, it is high fan speed.

When cooling act:

If $T_{in} \leqslant T_{set}$, it is low fan speed;

If $T_{set} < T_{in} \leqslant T_{set}+3^{\circ}C$, it is middle fan speed;

If $T_{in} > T_{set}+3^{\circ}C$, it is high fan speed.

When fanning act:

If $T_{in} \leqslant T_{set}$, it is low fan speed;

If $T_{set} < T_{in} \leqslant T_{set}+3^{\circ}C$, it is middle fan speed;

If $T_{in} > T_{set}+3^{\circ}C$, it is high fan speed.

The indoor unit fan motor will run by the rules till it runs for 30sec after the unit is turned on.

4) Indicator light:

Running indicator light (red):

It flashes once when the unit is turned on, light is turned on when the unit is turned on and turned off when the unit is turned off.

Mode indicator light (yellow/ green):

It is yellow when it is heating.

It is green when it is cooling.

It is turned off when others modes act.

7. The protecting functions:

1) The protection of avoiding freeze:

In cooling or drying mode, after compressor run for 10min, if $T_{eva} \leqslant 0^{\circ}C$ for 3min, running indicator light flash, compressor stop, outdoor unit fan, indoor unit fan and sweeping fan keep the old mode. If $T_{eva} \geqslant 10^{\circ}C$, and compressor is stop for 3min, running indicator light turn off, PCB run in the set mode.

Buttons won't be screened when protection of avoiding freeze act.

2) Compressor high voltage protection:

All of the load will be stop when the protection act for 3sec, screen all of the buttons and control signal, running indicator light flash; when the protection is canceled for 6sec, all the screen will be canceled, running indicator light still flash. Press the "ON/OFF" button to turn off the light. Press the button once more to restart.

3) Low voltage protection:

a. In 3min later after compressor start, if the low voltage switch is turn off for 3min, then unit stop, running indicate light flash, 3min later, resume to run automatically. If this protection act twice, running indicate light flash and can not resume automatically in order to mention the user that the unit is leakage; it must press the ON/OFF button to stop the unit and press once more to restart;

b. It won't test the low voltage switch digital when defrosting mode act until 10min later after defrosting stop;

c. Press auto and test buttons together can shield the digital of low-voltage to collect the gas, 6min later or press ON/OFF button to resume test automatically;

d. If $T_{out} \leqslant 0^{\circ}C$ when heating, shield the test function;

e. If compressor stop and outdoor unit fan motor run when heating, shield the digital of low-voltage until outdoor unit fan motor run;

f. Compressor stop and low-voltage switch turn off for 30sec, unit stop and running indicate light flash, unit can not restart automatically unless press ON/OFF button twice.

4) Protection for avoiding too high temperature of outlet pipe:

After compressor start, if $T_{out} \geqslant T_2$ (T_2=120℃,125℃,130℃), or if there is any trouble in outlet pipe sensor, running indicate light flash.

If $T_{in}=T_{set}$, unit stop.

If $T_{out} < 90$℃ after compressor stop for 3min, unit restart.

Unit can not restart unless this protection act twice. Running indicate light flash.

Press ON/OFF button twice to run the unit in set mode.

5) Protection for avoiding too high temperature of indoor:

If $T_{eva} \geqslant 58$℃ for 4sec when heating, outdoor unit fan motor stop, if $T_{eva} \leqslant 52$℃, outdoor unit fan motor restart.

6) Protection for low-voltage

If current≥25A for 3sec after compressor start, unit will stop when $T_{in}=T_{set}$, then restart in 3min later. If this protection act more than 6 times, unit can not restart automatically, it must restart it by pressing ON/OFF button.

8. Buttons:

If unit is for cooling only, when press “heating” button, it just fan.

1)TEST button:

Press this button when unit is stop, cooling mode act, indoor and outdoor unit fan motor run in high speed. Press this button more than 1sec, heating mode act, indoor and outdoor unit fan motor run in high speed. If $T_{in} \leqslant -10$℃ or $T_{in} \geqslant 80$℃, buzzer ring; if $T_{eva} \leqslant -13$℃ or $T_{in} \geqslant 74$℃, buzzer ring.

Press this button when unit is running, unit will stop.

2) AUTO button:

Press this button when unit is stop, unit will run in auto mode. Unit will stop if press this button when unit is running,

9. Memory function:

Memory include: mode, sweep, T_{set}, set speed.

Unit will restart in old mode by memory function after power is turned off.

2. Feng Xia Inverter Type

2.1 Summary

Fig. 2.1

MODEL	NOTE
KFR-70GW/A1F	SAA STANDARD 1Ph 240V 50Hz R22

2.2 Technical specification

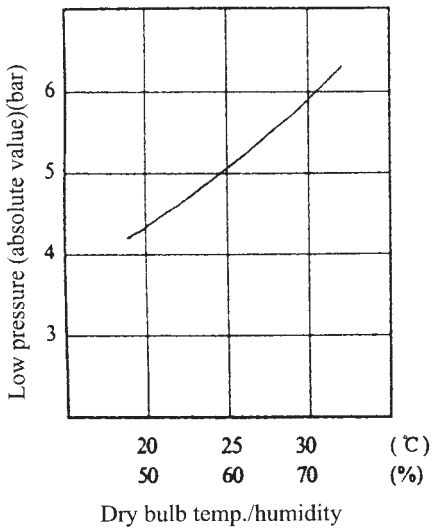
Table 2-1

Model			KFR-70GW/A1F	
Function			Cooling	Heating
Power supply			1Ph-240V-50Hz	
Capacity (W)			7000(3000~7000)	8500(4000~8600)
Rated input (W)			2820(1200~3450)	2830(1200~2928)
Rated current (A)			12(5~15)	12.1(5~13.6)
Air flow (M^3/h)			1080	
Dehumidifying volume (L/h)			2.3	
EER/C.O.P(W/W)			2.48	3.0
Indoor unit	Model		KFR-70G/A1F	
	Motor fan speed(r/min)		1420	
	Output power(W)		28	
	Fan type/piece		Cross flow fan-1	
	Diameter-length(mm)		ϕ 108 × 954	
	Evaporator		Aluminum fin-copper tube	
	Row-fin distance(mm)		3-1.5	
	Working area(m^2)		0.28	
	Swing motor		MP35EA	
	Input power(W)		4	
	Fuse(A)		Controllor 3.15A Transformer 0.2A	
	Working capacitor(μF)		3.5	
	Noise(dB(A))		⩽ 51	
	Dimension(width-height-depth)mm		1220 × 360 × 206	
	Net weight(kg)		27	
Outdoor unit	Model		KFR-70W/A1F	
	Input power (W)		2792(1172~3422)	2802(1172~2900)
	Current (A)		11.9(4.9~14.9)	12.0(4.9~13.5)
	L.R.A. (A)		76	
	Throttling method		Capillary	
	Compressor		QXBS-26(F)	
	Power (W)		1780	
	Protector		External overload protection	
	Starting method		By capacitor	
	Working temp.		Exhaust temperature ⩽ 115℃	
	Condenser		Aluminum-copper	
	Pipe-diameter		ϕ 9.52/	
	Working area(m^2)		0.6	
	Fan motor speed(rpm)		780	
	Type-piece		Axial fan-1	
	Diameter(mm)		ϕ 455	
	Defrosting method		Auto defrost	
	Noise dB(A)		58	
	Dimension(mm)(width-height-depth)		950 × 840 × 412	
	Net weight(kg)		75	
	Refrigerant charge (kg)		R22 2.4	
Connecting pipe	Outer diameter	Liquid pipe(mm)	ϕ 9.52(3/8")	
		Gas pipe(mm)	ϕ 16(5/8")	
	Max distance	Height(m)	5	
		Length(m)	10	

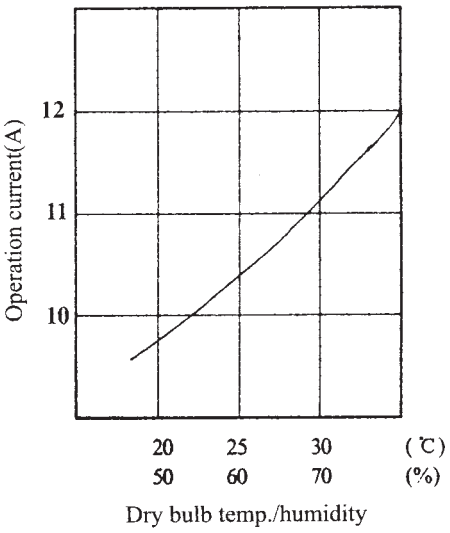
The technical data are subject to change without notice .Please refer to the nameplate of the unit.

2.3 Performance curves

Cooling operation
Condition:In testing , indoor and outdoor have same work condition

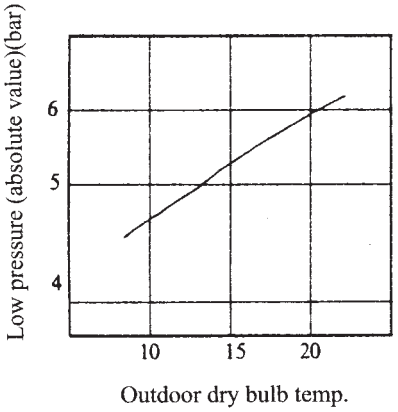


(a)

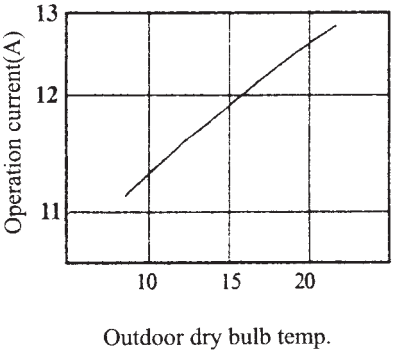


(b)

Heating operation
Indoor work condition:dry bulb temp.21,wet bulb temp.15.5



(c)



(d)

Fig. 2.2

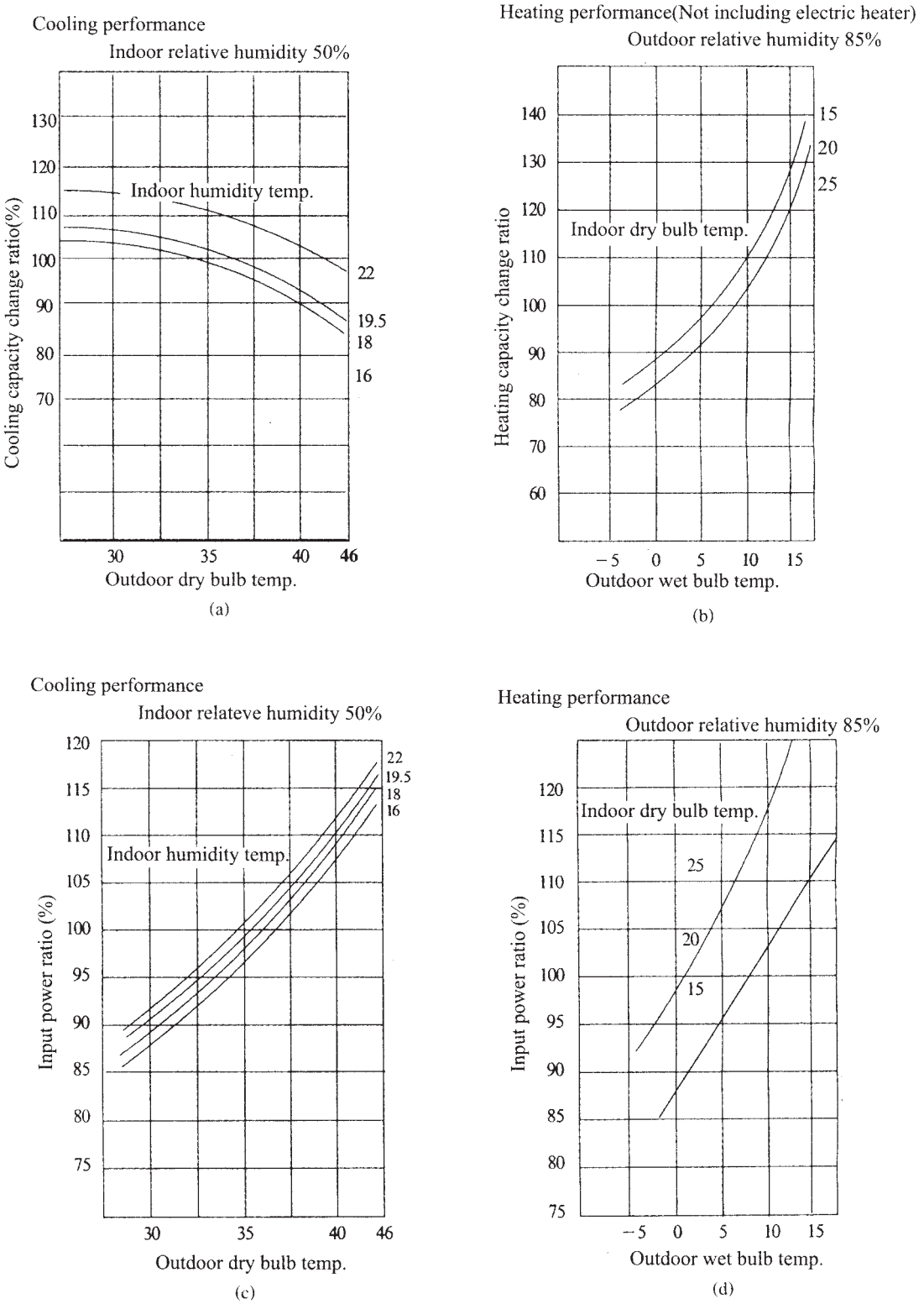
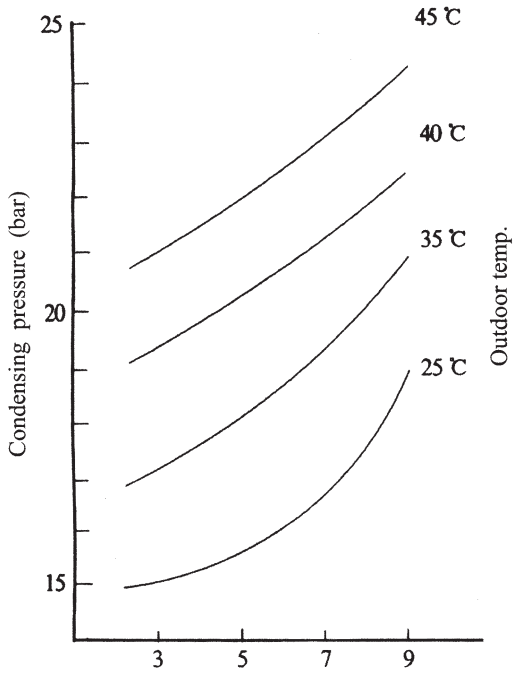
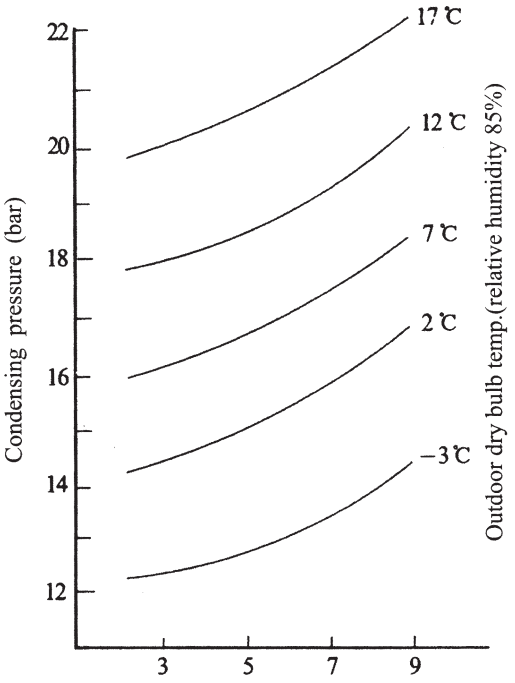

Cooling performance
Indoor relative humidity 50%
Indoor humidity temp.
22
19.5
18
16
Cooling capacity change ratio(%)
130
120
110
100
90
80
70
30
35
40
46
Outdoor dry bulb temp.
(a)
Heating performance(Not including electric heater)
Outdoor relative humidity 85%
Indoor dry bulb temp.
15
20
25
Heating capacity change ratio
140
130
120
110
100
90
80
70
60
−5
0
5
10
15
Outdoor wet bulb temp.
(b)
Cooling performance
Indoor relateve humidity 50%
Indoor humidity temp.
22
19.5
18
16
Input power ratio (%)
120
115
110
105
100
95
90
85
80
75
30
35
40
46
Outdoor dry bulb temp.
(c)
Heating performance
Outdoor relative humidity 85%
Indoor dry bulb temp.
25
20
15
Input power ratio (%)
120
115
110
105
100
95
90
85
80
75
−5
0
5
10
15
Outdoor wet bulb temp.
(d)

Fig. 2.3



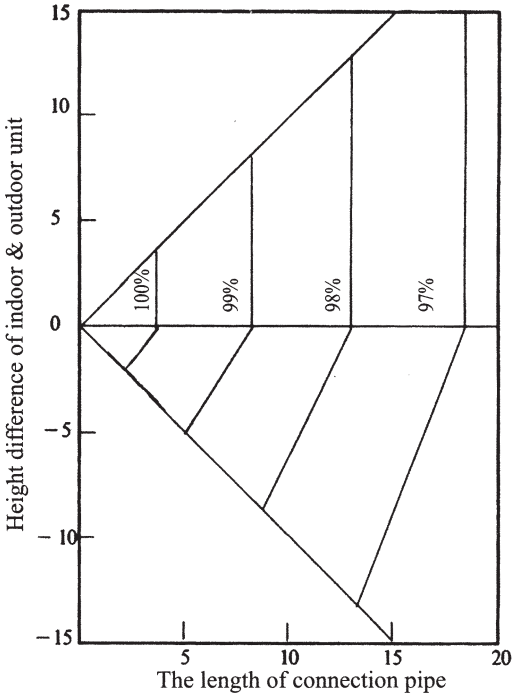
The affection to the charging quantity by pressure under cooling work condition.
Indoor work condition:27℃ dry bulb , 19.5℃ wet bulb

(e)



The affection to the charging quantity by pressure under heating work condition.
Indoor work condition:21℃ dry bulb temp.21

(f)



Cooling capacity vary with the length of connection pipe

(g)

Fig. 2.4

2.4 Outlines and dimensions of indoor unit

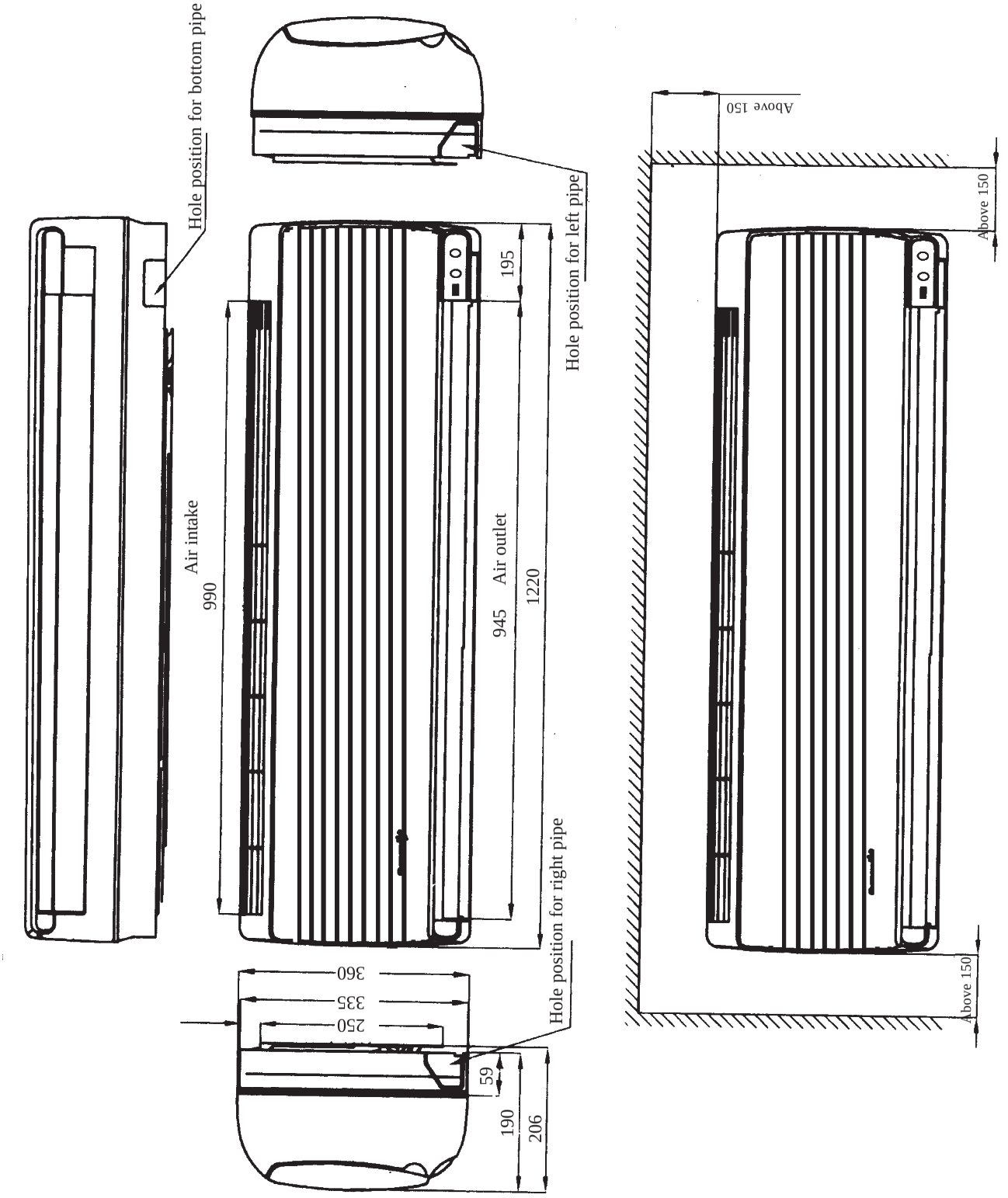
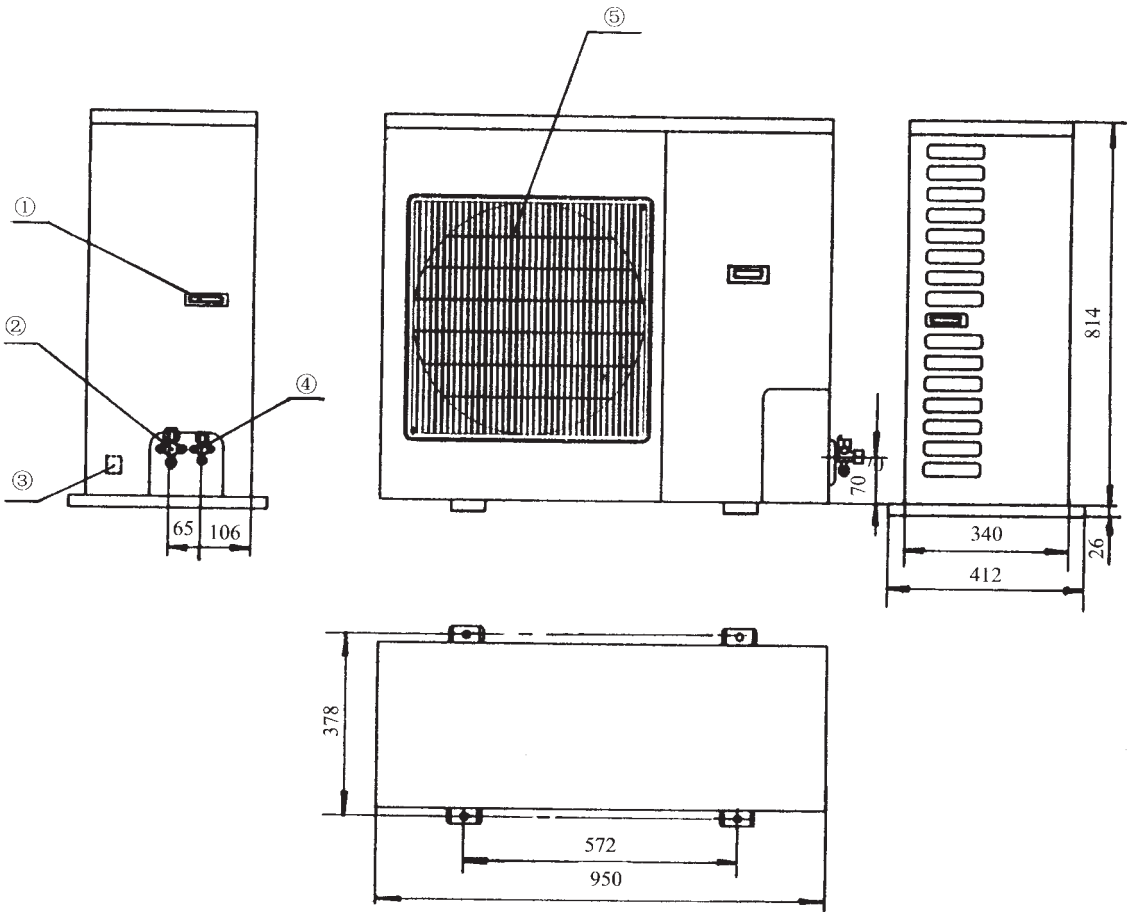


Fig. 2.5

2.5 Outlines and dimensions of outdoor unit



① Handle for moving ② Liguid valve assy. ③ Wire hole ④ Gas valve assy. ⑤ Front panel

Fig. 2.6

(Blank)

2.6 Explosive view and spare parts list of indoor unit

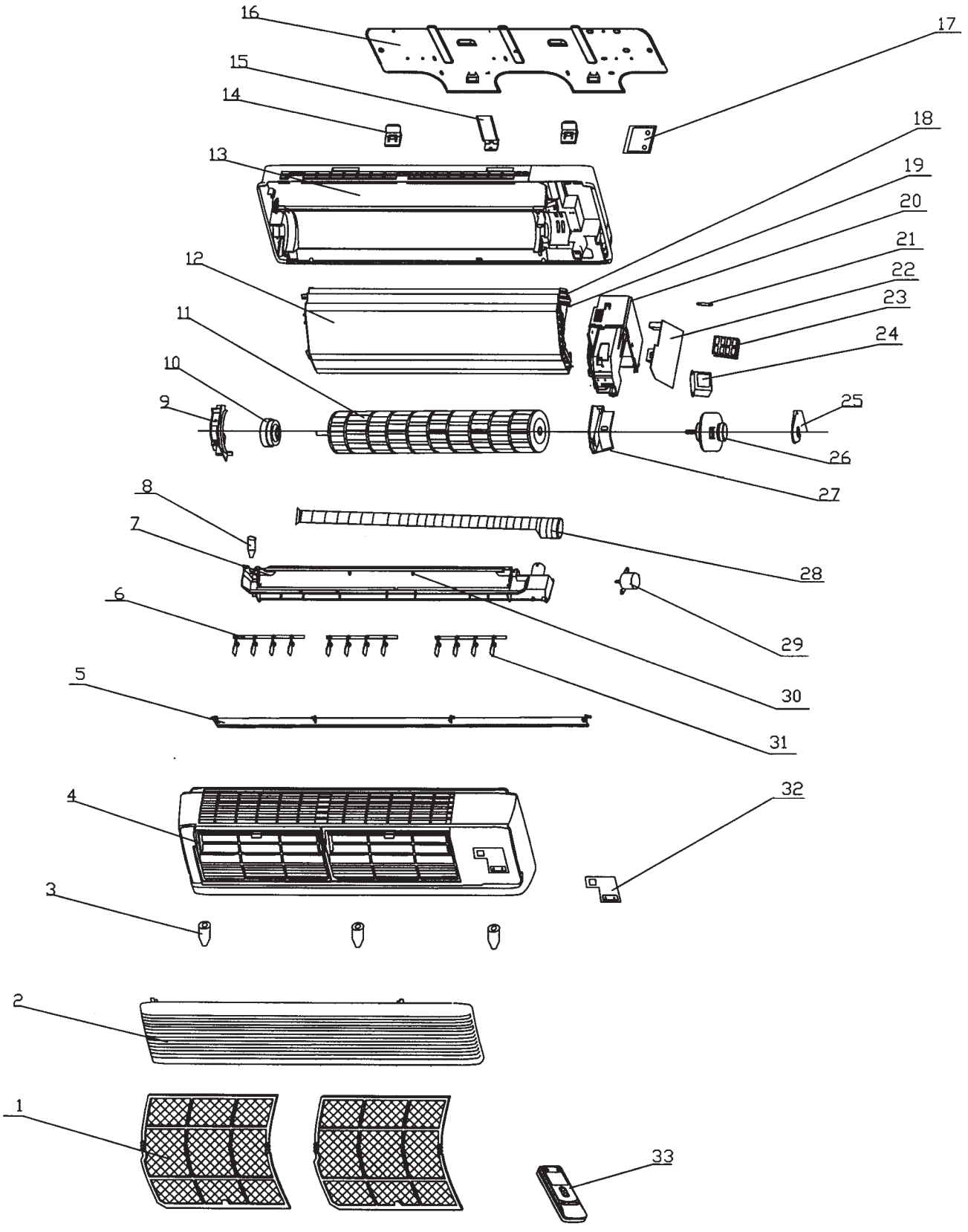


Fig. 2.7

Table 2-2

No.	Description		Part No. KFR-70G/A1F	Qty
1	Filter	过滤网	11122005	2
2	Front Panel	面板	20002020	1
3	Screw cover	螺钉盖	24252002	3
4	Front Case	面板体	20002021	1
5	Guide Louver	导风板	10512009	1
6	Connecting Lever	导风连杆	10582005	3
7	Water Tray	接水盘	12412061	1
8	Drain Stem	排水口堵头	06812061	1
9	Left Evap Supporter	蒸发器左支撑	01072435	1
10	Ring of Bearing	贯流风叶轴承胶圈	76512044	1
11	Cross Fan Assy	贯流风叶部件	10352397	1
12	Evaporator Assy	蒸发器组件	01002018	1
13	Rear Case	底座	26152440	1
14	Fixing Hook	底座固定扣	26152442	2
15	Rear Pipe Clamp	压管夹	02142204	1
16	Wall Mounting Plate	壁挂板	01252205	1
17	Pipe Clamp	管夹	02142440	1
18	Sensor Supporter	感温头支架	24211121	1
19	Sensor Holder	感温头插片 B	42020063	1
20	Electric Box	电器盒	20102006	1
21	Wire Clamp	电线夹	71010103	1
22	Mainboard	主板 15F-1F	30031501	1
	Mainboard	主板 25F-2F	30031502	1
	LED Board JD	接收板 JD	30046057	1
	LED Board K	接收板 K	30042016	1
23	Termincal board	接线板 GT4B4A2	42011146	1
24	Transformer SC28B5	电源变压器	43110204	1
25	Motor Clamp	电机固定卡	02112001	2
26	Motor FN25D	电机 FN25D	15012105	1
27	Right Evap Supporter	蒸发器右支撑	01072436	1
28	Drainage Pipe	排水管	05232411	1
29	Motor MP35EA	步进电机 MP35EA	15210104	1
30	Tray Supporter	接水盘中支撑	12122245	2
31	Swing Louver	导风叶片	10512006	12
32	Electric Box Cover	接线盖板	22242201	1
33	Remote Controller	遥控器 Y512	30512506	1
34	Power Cord	电源线	40020333	1
35	Connecting Cable	电源连接线	40020427	1

The data are subject to change without notice.

2.7 Explosive view and spare parts list of outdoor unit

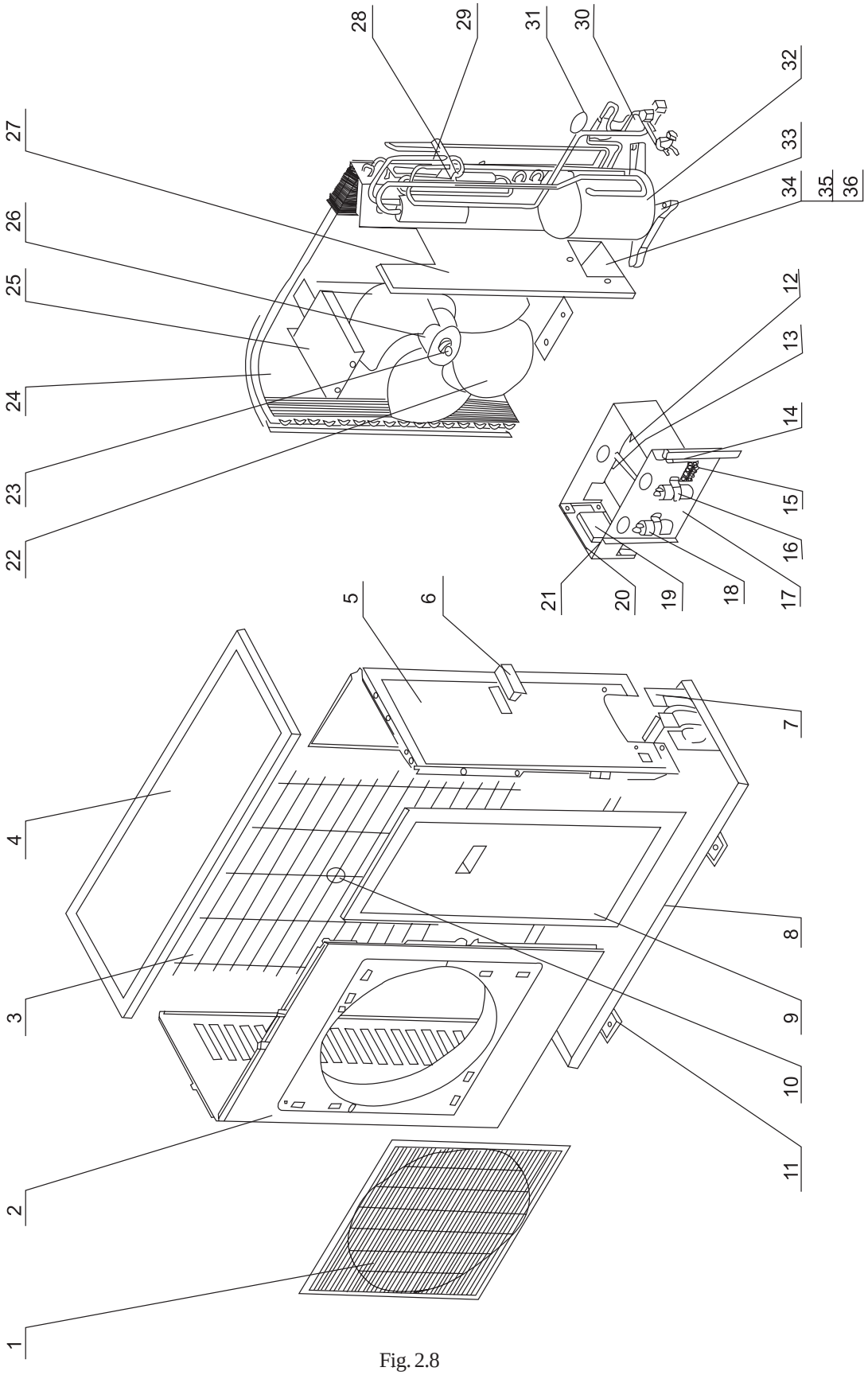


Fig. 2.8

Table 2-3

No.	Description		Part No. KFR-70W/A1F	Qty
1	Front Grill	面罩组件	22265250	1
2	Front Plate	外罩	01435254	1
3	Rear Grill Assy	网罩(白色)	01475251	1
4	Top Cover Assy	顶盖组件	01255260	1
5	Rear Side Plate	后侧板	01305260	1
6	Handle	把手	26235253	3
7	Valve Supporter	阀门支架组件	01715001	1
8	Metal Base	底盘组件	01205121	1
9	Front Side Plate	前侧板组件	01305018	1
10	Underlay	网罩垫块	76315251	1
11	Holder	支脚	01795251	2
12	Filter Plate	滤波板 W402	30034009	1
13	Mainboard W932	主板 W932	30039060	1
14	Screw Assy	螺钉组合件 M4X12	70110225	5
15	Terminal Board 2-8	接线板 T360E	42011236	1
16	Capacitor 100uF/400V ± 10%	电解电容100uF/400V±10%	33310054	1
17	Electric Box	电器盒(铆接)	01415020	1
18	Capacitor	电容 20uF/200VAC	33010701	1
19	Electrical Source Module	电源模块 50A/600V	32210094	1
20	Radiator	模块散热器	49015501	1
21	Commutated Bridge	整流桥 S25VB60	46010602	2
22	Axial Flow Fan	轴流风叶	10335253	1
23	Gasket	垫圈 10 #	70410303	1
24	Condenser Assy	冷凝器部件	01103514	1
25	Motor Supporter	电机支架	01705253	1
26	Motor LW80B	电机 LW80B	15015053	1
27	Isolation Sheet Assy	中间隔板组件	01235503	1
28	4-way Valve	四通阀(2 匹)	43000403	1
29	4-way Valve Fittings	四通阀配件	430004002	1
30	Gas Valve Assy	大阀门组件	07105251	1
31	Liquid Valve Assy	小阀门组件 3/8"	07103702	1
32	Compressor	压缩机及其配件QXBS-26(F)	00100411	1
33	Nut with Washer M8	带垫螺母 M8	70310014	3
34	Damping Block	电抗器橡胶减振块	76315501	4
35	Nut with Washer	带垫螺母	70413501	4
36	Reactor R2285 6.2mH/22A	电抗器 R2285 6.2mH/22A	43130158	1

The data are subject to change without notice.

2.8 Circuit diagram

This circuit diagram is subject to change Without notice.
Please refer to the one stuck on the machine.

KFR-70GW/A1F

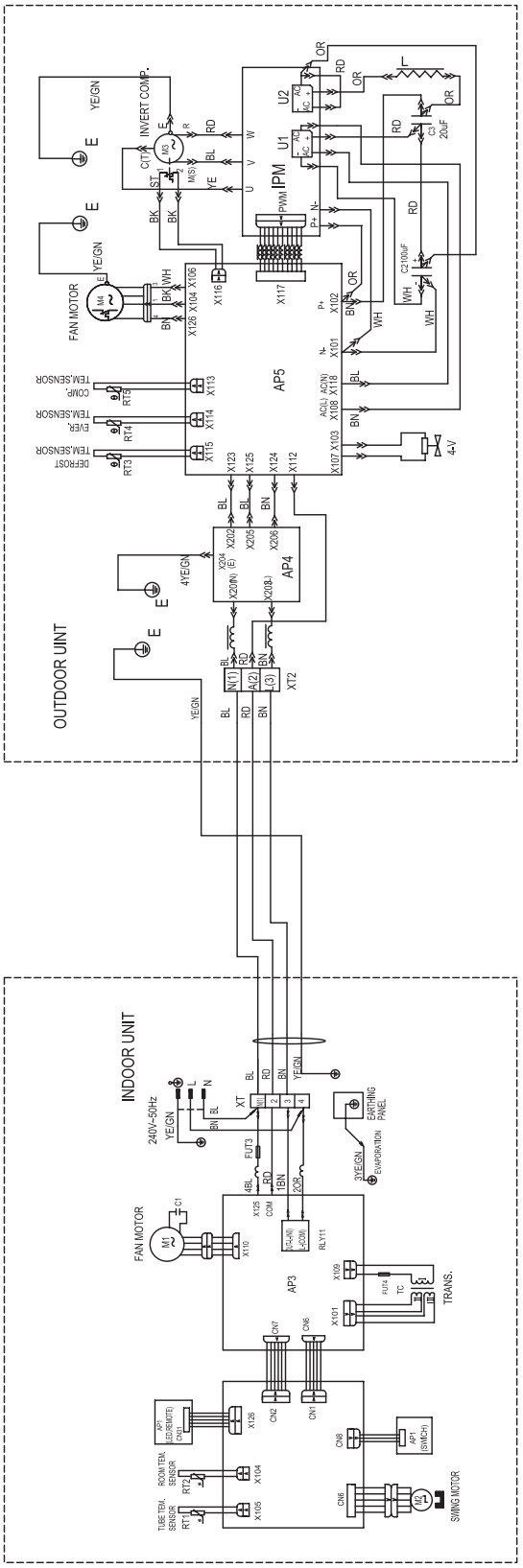


Fig. 2.9

2.9 PCB function manual

The PCB function manual of Feng Xia Inverter air conditioner

A. Function description of PCB

1. Cooling
2. Heating
3. Fan
4. Dehumidifying
5. Auto
6. Manual operation

B. Operation category of PCB

1. Indoor fan motor
2. Outdoor fan motor
3. Compressor
4. Guide louver
5. Beeper
6. Led (indoor and outdoor)
7. Electric heater
8. 4-way valve
9. Outdoor supply
10. Pre-heat belt

C. Parameter setting of PCB

1. Operation mode
2. Set temp. T_{set}
3. Fan speed
4. Timer mode
5. Time
6. Guide louver situation
7. T_{sur}: Surrounding temp. of indoor and outdoor environment
8. T_{tb1}: Surface temp. of outdoor heat exchange copper tubes
9. T_{tb2}: Surface temp. of indoor heat exchange copper tubes
10. Compressor temp.
11. Gross current I_t
12. Sleep mode

13. Compressor overload protecting signal
14. Module capacity protecting signal

D. Fundamental functions

1. Cooling mode

(1) Working conditions and procedure under cooling mode

a. $T_{sur} \geqslant T_{set}$

The unit changes to cooling mode. Indoor fan motor, outdoor fan motor and compressor start to run, indoor fan motor operates at the set fan speed.

b. $T_{sur} \leqslant T_{set}$-2℃

Compressor stops running, after 30 seconds delay, outdoor fan motor will stop running. Outdoor fan motor keeps on running at the set speed.

c. T_{set}-2℃< T_{sur}< T_{set}

Unit remains current operation mode.

(2) Under this mode, temperature setting scope is 16~30℃ when reversing valve is out of supply.

(3) Protecting functions

a. Evaporator anti-freezing protection

Under cooling and dehumidifying modes, compressor keeps on running for 6 minutes:

◇ $T_{eva} \leqslant$ 2℃: Capacity decent function starts to work.

◇ If $T_{eva} \leqslant$-1℃ lasts for 3 minutes, the compressor stops running and after 30 seconds delay, outdoor fan motor stops. Under cooling mode, indoor fan motor and stepping motor retain existing modes. Under dehumidifying mode, indoor fan motor runs at low speed and stepping motor retains existing mode.

◇ $T_{eva} \geqslant$ 6℃: Unit restarts and gets into the previous operation mode.

b. The capacity descends when cross current rises.

◇ Cross current $I_t \geqslant$ B, capacity upswing is forbidden.

◇ Cross current $I_t \geqslant$C, capacity descends falls down a certain degree at once. If the current keeps on rising, the capacity will descends for another time.

◇ $I_t \geqslant$ D, compressor stops running immediately and after 30 seconds delay, outdoor fan motor stops.

◇ For 3200W units: B=8A, C=9A, D=10A

For 2500W units: B=6A, C=7A, D=8A

2. Dehumidifying mode

(1) Working conditions and procedure under dehumidifying mode

a. $T_{sur} \geqslant T_{set}$

Dehumidifying function starts up. Indoor, outdoor fan motor and compressor begin to run. Indoor motor runs at low speed.

b. T_{set}-2℃≤ T_{sur} ≤ T_{set}

Unit retains dehumidifying mode.

c. T_{sur}< T_{set}-2℃

Compressor stops operation, 30 seconds later outdoor fan motor stops. Indoor motor keeps on running at low speed.

(2) Temporary setting range: 16~30℃.

(3) Protecting function

Please refer to cooling mode.

3. Fan mode

(1) Indoor fan motor can operate at any speed rate (high, medium, low or automatically) under fan mode. Compressor and outdoor fan motor keep still.

(2) Control conditions of automatic speed rate

a. T_{sur}> T_{set}+4℃

The unit switches to high speed automatically.

b. T_{set}+2℃≤ T_{sur} ≤ T_{set}+4℃

The unit switches to medium speed automatically.

c. T_{sur}< T_{set}+2℃

The unit switches to low speed automatically.

(3) Temperature setting range: 16~30℃.

4. Heating mode

(1) Working conditions and procedure under heating mode

a. T_{sur} ≤ T_{set}+2℃

Heating function starts up. Compressor, outdoor motor and 4-way valve operate at the same time. Indoor fan motor operates at the set speed rate under anti-cool air condition.

b. T_{set}+2℃< T_{sur}< T_{set}+5℃

The unit retains heating mode.

c. T_{sur} ≥ T_{set}+5℃

Compressor stops running. Outdoor motor stops 30 seconds later. Indoor fan motor operates under blowing surplus heat condition with compressor indicator turning off.

d. 0> T_{out}> -3℃; -7℃≤ T_{out} ≤ -3℃; T_{out}< -7℃

The compressor's operation rates are F1; F2; F3.

(2) Working conditions and procedure of condensing

Condensing function starts up when heating time lasts 45 minutes and any of the following conditions lasts 3 minutes:

a. T_{out} ≥ 5℃, T_{tb1} ≤ -4℃;

b. 0℃≤ T_{out}< 5℃, T_{tb1} ≤ -8℃;

c. -5℃≤ T_{out}< 0℃, T_{tb1} ≤ -12℃;

d. T_{out}< 5℃, T_{tb1} ≤ -16℃

Under above situations, compressor and indoor fan motor stop at once, 30 seconds later, the outdoor motor and 4-way valve stop. The compressor will restart after another 15 seconds delay with the operation rate F1. The indoor operation indicator flashes when condensing.

After running for 5 minutes or when T_{tb} ≥ 10℃, compressor stops running. After 30 seconds delay 4-way valve turns on. Another 60 seconds later compressor and the outdoor motor switch back to operation status with the indicator flashing. Indoor fan motor operates under anti-cool air condition.

(3) Temperature setting range: 16~30℃.

(4) Under anti-cool air condition, compressor starts operation. 2 minutes later or when T_{tb} ≥ 41℃, indoor fan motor starts up at the set speed rate.

(5) Blowing surplus heat function

After keeping running for 90 seconds, indoor fan motor stops.

(6) Working conditions of auxiliary electric heater

Under heating mode, indoor motor runs at high and medium speed. If it detects indoor temperature T_{sur} ≤ 22℃ or indoor heat exchanger temperature T_{tb2} ≤ 48℃, auxiliary electric heater starts to work.

Auxiliary electric heater will stop running if compressor stops running and indoor motor runs at low speed (or stops). The situation will be the same if T_{sur} ≥ 25℃ or T_{tb2} ≥ 54℃.

When being switched off, auxiliary electric heat can be switched on only after 2 minutes delay.

(7) The capacity descends when cross current rises.

a. When cross current exceeds the stated current (I_t ≥ X), capacity upswing is forbidden. When I_t ≥ Y, capacity falls down a certain degree. If the current goes on rising, capacity will fall down another certain degree until the real current is lower than stated cross current.

Under the circumstance, capacity will rise up a certain degree with a comparative lower temperature in the room. In case temperature in the room goes on declining, capacity will increase a certain degree until real current exceeds stated cross current.

b. When I_t ≥ Z, compressor stops and outdoor motor stops.

c. For 3200W units: X=11A, Y=12A, Z=13A

For 2500W units: X=8A, Y=9A, Z=10A

5. Auto mode

(1) Working condition and procedure under auto mode

Standard cooling T_{set}=25℃, standard heating T_{set}=20℃

① T_{sur}> T_{set}+1℃

Select cooling mode, from this time, the set temperature is 25℃.

$T_{sur} \leqslant T_{set}$-2℃

Compressor and outdoor motor stop, indoor motor runs at the set speed.

T_{set}-2℃< T_{sur}< T_{set}+1℃

Keep the original state.

② $T_{sur} \leqslant T_{set}$

Select heating mode, from this time, the set temperature is 20℃.

$T_{sur} \geqslant T_{set}$+3℃

Compressor stops first, outdoor motor stops 30 seconds later, indoor motor runs at low speed as the blowing condition.

T_{set}< T_{sur}< T_{set}+3℃

Keep the original state.

(2) Protection functions

a. The same as the one in cooling mode.

b. The same as the one in heating mode.

c. When surrounding temperature changes, it has no priority mode. Compressor hasn't 6-munite starting limitation.

6. Protecting function and malfunction display (suitable for cooling、heating、dehumidifying and auto mode)

(1) Overload protection

T_{tb}: Outdoor's heat exchanger temperature when cooling. or: Indoor's heat exchanger temperature when heating.

a. 56℃$\leqslant T_{tb}$< 58℃

Indoor motor runs at setting speed rate, compressor runs at rate F5.

b. 58℃$\leqslant T_{tb}$< 62℃

Indoor motor runs at set speed rate, compressor runs at rate F2.

c. $T_{tb} \geqslant$ 62℃

Indoor motor runs at set speed rate, compressor stops running.

d. When temperature descends (56℃$\leqslant T_{tb}$< 60℃)

Indoor motor runs at set speed rate, compressor runs at rate F2.

e. 52℃$\leqslant T_{tb}$< 56℃

Indoor motor runs at set speed rate, compressor runs at rate F5.

f. T_{tb}< 52℃

The unit returns to the previous operation mode.

(2) Compressor delay protection

Compressor can restart 3 minutes delay after the latest stopping.

(3) Compressor exhausting temperature protection

When compressor exhausting temperature ⩾ 103℃, capacity increasing is forbidden. When

the temperature ⩾ 108℃, capacity begins to descend. If temperature goes on rising, capacity will fall down a certain degree. When temperature ⩾ 115℃, compressor stops running. 3 minutes later, if it detects the temperature ⩽ 90℃, compressor will restart.

(4) Energy saving protection

When running under energy saving mode, compressor highest running rate is F_{max}=80Hz (cooling), F_{max}=90Hz (heating).

(5) Stated heating / cooling capacity testing

Select cooling or heating mode, press negative-ion & energy saving button.

(6) Indoor and outdoor malfunction indicators (Appendix Table-1)

(Attention: Outdoor malfunction indicators work only when compressor stops running.)

① Green lamp is on when compressor stops and malfunction occurs.

② Yellow lamp is on when outdoor temperature sensor has problem.

③ Red lamp is on when outdoor tube sensor has problem.

④ Green lamp flashes when module is protected.

⑤ Both red and yellow lamps flash when compressor is over loaded.

⑥ Green, red and yellow lamps are all on when exhausting temperature sensor has problem.

⑦ Indoor D1 is on when compressor runs.

⑧ Indoor D2, the communicate indicator, it flashes if units runs in order.

⑨ Indoor D3, the temperature sensor, it flashes when meeting problems.

Appendix Table-1:

LED1	LED2	LED3	D1	D2	D3	Malfunction Description
Green On						①
		Yellow On				②
	Red On					③
Green Flash						④
	Red Flash	Yellow Flash				⑤
Green On	Red On	Yellow On				⑥
			On			⑦
				Flash		⑧
					Flash	⑨

Addition: LED1, LED2, LED3 are outdoor indicators. D1, D2, D3 are indoor main board indicators. When defrosting, LED indicators flash.

7. Other control categories

(1) Mode selection

Press MODE button constantly to show the mode: AUTO-> COOL-> DRY-> FAN-> HEAT-> AUTO. Select the one you need.

(2) Temperature setting selection

Press TEMP ∧ or TEMP ∨ for one more time, the set temperature will add or deduct 1℃. The working range is 16~30℃. This function is out of operation under AUTO mode.

(3) Emergency control

Control board switching provides auto, testing and stop functions.

a. Auto function

Use auto function when remote controller is lost. Auto model is selected if pressing the button once, indoor motor runs at auto speed and guide louvers work under swing mode. If detecting remote control signals, unit runs according to signals.

b. Testing function

Middle cooling model is selected when pressing button for twice consecutively. If pressing button for three times consecutively, middle heating model is selected. (Middle cooling / heating is for air conditioner testing purpose.) If remote control directives are detected, unit will run with remote control mode.

c. Stop function

If pressing the button for 4 times consecutively, the unit stops running.

(4) Time setting selection

Press the button one more time, the set hour will be up or down 0.5 hour. Working range is 0~24 hours.

(5) Sleep mode control

a. Under cooling or dehumidifying mode, 1 hour after you set the sleep timer, T_{set} will add 1℃, 2 hours later T_{set} adds another 1℃. Unit goes on to run under this status.

b. Under heating mode, if timer is set, T_{set} will lower 1℃ one hour after SLEEP model is selected. T_{set} will lower another 1℃ two hours later. Unit goes on to run under this status.

c. Under fan mode and Auto mode, the set temperature doesn't change.

(6) Indoor fan motor control

Indoor fan motor can be set to run at HIGH, MED, LOW speed by pressing the button. Fan speed can be set as AUTO speed. Compressor running rate determines fan speed. Indoor fan motor runs at low speed under swing mode.

(7) Swing selection

Use the remoter swing button to switch on / off. Louvers works when indoor fan motor operates.

(8) Beeper control

When air conditioner switches on or it receives operative signals from remote controller or buttons are pressed, buzzer will buzz.

(9) ON / OFF button

Press the button constantly to switch on / off.

(10) Auto speed levels

F ⩽ 60Hz:	Low speed
60Hz< F< 80Hz:	Medium speed
F ⩾ 80Hz:	High speed

Switches among above speed levels are affected by different loading. Unit runs at the most suitable speed under blurring control. Under swing mode, auto speed selects low speed automatically.

TECHNICAL SERVICE MANUAL

—— Feng Xia Series

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI
Jinji West Rd. Qianshan Zhuhai
Guangdong China

Introduction

In this technical service manual, you will find rich references to Feng Xia Series products, including photos, technical specifications, explosive views, spare parts lists and circuit diagrams. Service people and engineers of Gree's customers and distributors would find it a very handy source of technical information of our products.

Technical Support Department
GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI
Nov. 2002

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