

TECHNICAL SERVICE MANUAL

—— **Digital 2000 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 Digital 2000 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
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Editor In Chief: Chen Jianmin

Compiler: Chen Zhian Ouyang Jun Tian Guoku
Yang Rong Jia Tianwei Cao Xuan Wang Min

Proofreader: Wei Chi Li Jiangyun Yang Cuilan Yin Xiangtian Xiao Kai Yan Haipeng

Designer of Cover: Li Jiesheng Sheng Zhiguo

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Digital 2000 Series

1. Summary



Fig. 1

MODEL	NOTE
KF-25GW/NA70	CE STANDARD 1Ph 230V 50Hz R407C
KFR-25GW/NA70	
KF-35GW/NA70	
KFR-35GW/NA70	



Fig. 2

MODEL	NOTE
KF-25GW/NA71 KFR-25GW/NA71 KF-35GW/NA71 KFR-35GW/NA71	CE STANDARD 1Ph 230V 50Hz R407C
KF-25GW/A7-12206 KF-35GW/A7-12206	1Ph 220V 60Hz R22

2. Technical specifications

Table 1

Model			KF-25GW/NA70 & KF-25GW/NA71	
Function			Cooling	
Power supply			1Ph 230V 50Hz	
Capacity (W)			2500	
Rated input (W)			991.5	
Rated current (A)			4.46	
Air flow (m³/h)			490	
Dehumidifying volume (L/h)			1.2	
C.O.P (W/W)			2.52	
Indoor unit	Model		KF-25G/NA70 & KF-25G/NA71	
	Motor fan speed(rpm)		910/840/760	
	Output power(W)		6	
	Fan type/piece		Cross flow fan-1	
	Diameter-length(mm)		φ 91 × 616	
	Evaporator		Aluminum fin-copper tube	
	Row-fin distance(mm)		2-1.4	
	Working area(m²)		0.18	
	Swing motor		MP24CA , MP24GA	
	Input power(W)		2	
	Fuse(A)		Controller 3.15A Transformer 0.2A	
	Working capacitor(μF)		1	
	Noise(dB(A))		≤ 33	
	Dimension(width-height-depth)(mm)		830 × 190 × 280	
	Net weight(kg)		11	
Outdoor unit	Model		KF-25W/NA70 & KF-25W/NA71	
	Input power(W)		1020	
	Current(A)		4.44	
	L.R.A.(A)		24	
	Throttling method		Capillary	
	Compressor		C-RV167H01AA	
	Compressor power (W)		1075	
	Protector		Internal overload protection	
	Starting method		Capacitor starting	
	Working temp.		Exhaust temperature ≤ 115℃	
	Condenser		Aluminum fin-copper	
	Pipe-diameter (mm)		φ 9.52	
	Working area(m²)		0.4	
	Fan motor speed(rpm)		885	
	Type-piece		Axial fan-1	
	Diameter(mm)		φ 400	
	Defrosting method		Auto defrost	
	Noise (dB(A))		≤ 57	
	Dimension(width-height-depth)(mm)		848 × 320 × 540	
	Net weight(kg)		40	
	Refrigerant charge (kg)		R407C/1.02	
Connecting pipe	Length (m)		4	
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6	
		Gas pipe(mm)	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.

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Table 2

Model			KFR-25GW/NA70 & KFR-25GW/NA71	
Function			Cooling	Heating
Power supply			1Ph 230V 50Hz	
Capacity (W)			2500	2900
Rated input (W)			1030	958
Rated current (A)			4.64	4.32
Air flow (m³/h)			400	
Dehumidifying volume (L/h)			1.2	
C.O.P (W/W)			2.43	3.0
Indoor unit	Model		KFR-25G/NA70 & KFR-25G/NA71	
	Motor fan speed(rpm)		910/840/760	
	Output power(W)		6	
	Fan type/piece		Cross flow fan-1	
	Diameter-length(mm)		φ 91 × 616	
	Evaporator		Aluminum fin-copper tube	
	Row-fin distance(mm)		2-1.4	
	Working area(m²)		0.18	
	Swing motor		MP24CA , MP24GA	
	Input power(W)		2	
	Fuse(A)		Controller 3.15A Transformer 0.2A	
	Working capacitor(μF)		1	
	Noise(dB(A))		≤ 33	
	Dimension(width-height-depth)(mm)		830 × 190 × 280	
	Net weight(kg)		11	
Outdoor unit	Model		KFR-25W/NA70 & KFR-25W/NA71	
	Input power(W)		1020	858
	Current(A)		4.44	4.12
	L.R.A.(A)		24	
	Throttling method		Capillary	
	Compressor		C-RV167H01AA	
	Compressor power (W)		1075	
	Protector		Internal overload protection	
	Starting method		Capacitor starting	
	Working temp.		Exhaust temperature ≤ 115℃	
	Condenser		Aluminum fin-copper	
	Pipe-diameter (mm)		φ 9.52	
	Working area(m²)		0.4	
	Fan motor speed(rpm)		885	
	Type-piece		Axial fan-1	
	Diameter(mm)		φ 400	
	Defrosting method		Auto defrost	
	Noise (dB(A))		≤ 57	
	Dimension(width-height-depth)(mm)		848 × 320 × 540	
	Net weight(kg)		40	
	Refrigerant charge (kg)		R407C/1.02	
Connecting pipe	Length (m)		4	
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6	
		Gas pipe(mm)	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.

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Table 3

Model			KF-35GW/NA70 & KF-35GW/NA71	
Function			Cooling	
Power supply			1Ph 230V 50Hz	
Capacity (W)			3500	
Rated input (W)			1351	
Rated current (A)			6.22	
Air flow (m³/h)			506	
Dehumidifying volume (L/h)			1.6	
C.O.P (W/W)			2.59	
Indoor unit	Model		KF-35G/NA70 & KF-35G/NA71	
	Motor fan speed(rpm)		1090/1010/920	
	Output power(W)		8	
	Fan type/piece		Cross flow fan-1	
	Diameter-length(mm)		φ 91 × 616	
	Evaporator		Aluminum fin-copper tube	
	Row-fin distance(mm)		2-1.4	
	Working area(m²)		0.18	
	Swing motor		MP24CA、MP24GA	
	Input power(W)		2	
	Fuse(A)		Controller 3.15A Transformer 0.2A	
	Working capacitor(μF)		1	
	Noise(dB(A))		≤ 38	
	Dimension(width-height-depth)(mm)		830 × 190 × 280	
	Net weight(kg)		11	
Outdoor unit	Model		KF-35W/NA70 & KF-35W/NA71	
	Input power(W)		1339	
	Current(A)		6.02	
	L.R.A.(A)		31	
	Throttling method		Capillary	
	Compressor		C-RV227H01AA	
	Compressor power (W)		1075	
	Protector		Internal overload protection	
	Starting method		Capacitor starting	
	Working temp.		Exhaust temperature ≤ 115℃	
	Condenser		Aluminum fin-copper	
	Pipe-diameter (mm)		φ 9.52	
	Working area(m²)		0.4	
	Fan motor speed(rpm)		885	
	Type-piece		Axial fan-1	
	Diameter(mm)		φ 400	
	Defrosting method		Auto defrost	
	Noise (dB(A))		≤ 57	
	Dimension(width-height-depth)(mm)		848 × 320 × 540	
	Net weight(kg)		40	
	Refrigerant charge (kg)		R407C/0.8	
Connecting pipe	Length (m)		4	
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6	
		Gas pipe(mm)	φ 12	
	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.

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Table 4

Model			KFR-35GW/NA70 & KFR-35GW/NA71	
Function			Cooling	Heating
Power supply			1Ph 230V 50Hz	
Capacity (W)			3500	4000
Rated input (W)			1530	1510
Rated current (A)			7.3	6.92
Air flow (m³/h)			500	
Dehumidifying volume (L/h)			1.6	
C.O.P (W/W)			2.29	2.65
Indoor unit	Model		KFR-35G/NA70 & KFR-35G/NA71	
	Motor fan speed(rpm)		1090/1010/920	
	Output power(W)		8	
	Fan type/piece		Cross flow fan-1	
	Diameter-length(mm)		φ 91 × 616	
	Evaporator		Aluminum fin-copper tube	
	Row-fin distance(mm)		2-1.4	
	Working area(m²)		0.18	
	Swing motor		MP24CA , MP24GA	
	Input power(W)		2、 2	
	Fuse(A)		Controller 3.15A Transformer 0.2A	
	Working capacitor(μF)		1	
	Noise(dB(A))		≤ 38	
	Dimension(width-height-depth)(mm)		830 × 190 × 280	
	Net weight(kg)		11	
Outdoor unit	Model		KFR-35W/NA70 & KFR-35W/NA71	
	Input power(W)		1518	1498
	Current(A)		7.1	6.92
	L.R.A.(A)		31	
	Throttling method		Capillary	
	Compressor		C-RV237H01AA	
	Compressor power (W)		1100	
	Protector		Internal overload protection	
	Starting method		Capacitor starting	
	Working temp.		Exhaust temperature ≤ 115℃	
	Condenser		Aluminum fin-copper	
	Pipe-diameter (mm)		φ 9.52	
	Working area(m²)		0.4	
	Fan motor speed(rpm)		885	
	Type-piece		Axial fan-1	
	Diameter(mm)		φ 400	
	Defrosting method		Auto defrost	
	Noise (dB(A))		≤ 57	
	Dimension(width-height-depth)(mm)		848 × 320 × 540	
	Net weight(kg)		40	
	Refrigerant charge (kg)		R407C/1.02	
Connecting pipe	Length (m)		4	
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6	
		Gas pipe(mm)	φ 12	
	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.

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Table 5

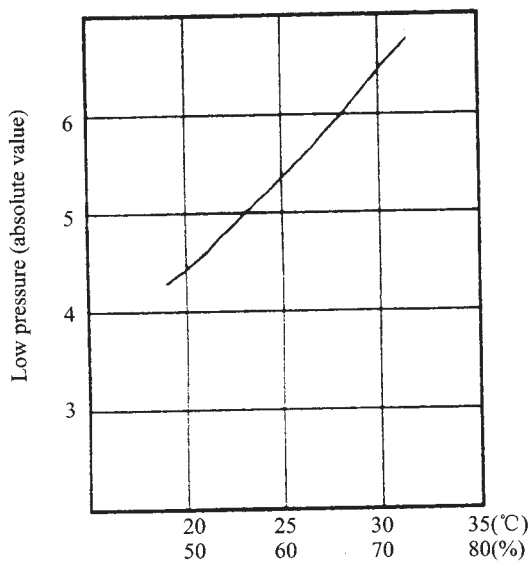
Model			KF-25GW/A7-12206	KF-35GW/A7-12206
Function			Cooling	
Power supply			1Ph 220V 60Hz	
Capacity (W)			2500	3500
Rated input (W)			810	1120
Rated current (A)			3.75	5.15
Air flow (m³/h)			360	510
Dehumidifying volume (L/h)			1.2	1.6
C.O.P (W/W)			3.08	3.13
Indoor unit	Model		KF-25G/A7-12206	KF-35G/A7-12206
	Motor fan speed(rpm)		1280	
	Output power(W)		20	
	Fan type/piece		Cross flow fan-1	
	Diameter-length(mm)		φ 92 × 616	
	Evaporator		Aluminum fin-copper tube	
	Row-fin distance(mm)		1.5	
	Working area(m²)		0.18	
	Swing motor		MP24GA	
	Input power(W)		2	
	Fuse(A)		Controller 3.15A Transformer 0.2A	
	Working capacitor(μF)		1	
	Noise(dB(A))		≤ 36	≤ 38
	Dimension(width-height-depth)(mm)		830 × 190 × 285	
	Net weight(kg)		11	
Outdoor unit	Model		KF-25W/A7-12206	KF-35W/A7-12206
	Input power(W)		775	1085
	Current(A)		3.59	4.99
	L.R.A.(A)		26	33/240V
	Throttling method		Capillary	
	Compressor		2P14S236A1J	2P19S236A1J
	Compressor power (W)		850	
	Protector		Internal overload protection	
	Starting method		Capacitor starting	
	Working temp.		Exhaust temperature ≤ 115℃	
	Condenser		Aluminum fin-copper	
	Pipe-diameter (mm)		φ 9.52	
	Working area(m²)		0.4	
	Fan motor speed(rpm)		20/730	20/885
	Type-piece		Axial fan-1	
	Diameter(mm)		φ 400	
	Defrosting method		Auto defrost	
	Noise (dB(A))		≤ 52	≤ 56
	Dimension(width-height-depth)(mm)		848 × 320 × 540	
	Net weight(kg)		32	43
	Refrigerant charge (kg)		R22/0.83	R22/1.05
Connecting pipe	Length (m)		4	
	Outer diameter of connecting pipe	Liquid pipe(mm)	φ 6	
		Gas pipe(mm)	φ 9.52	φ 12
	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.

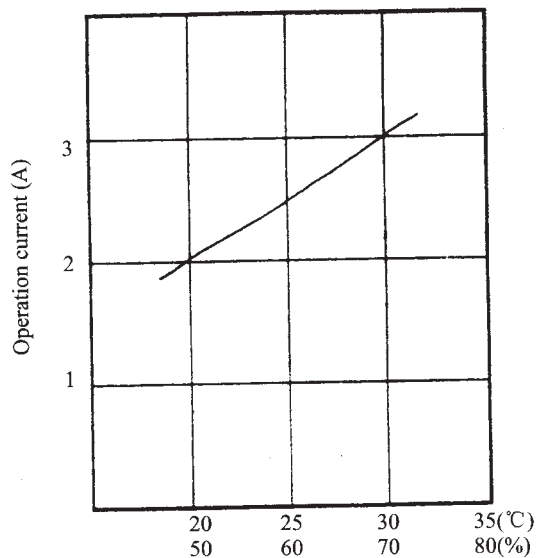
3. Performance curves

The change relation between low pressure, operation current and temp.

Cooling operation condition: Indoor and outdoor have the same work condition during the test.



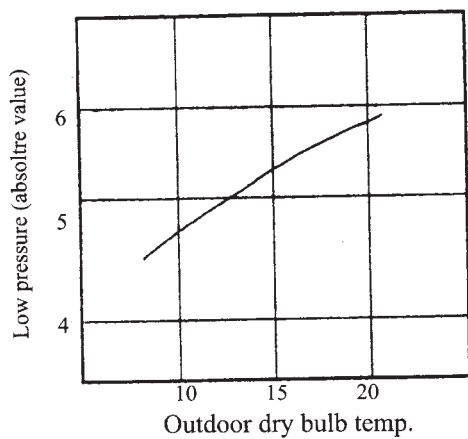
(a)



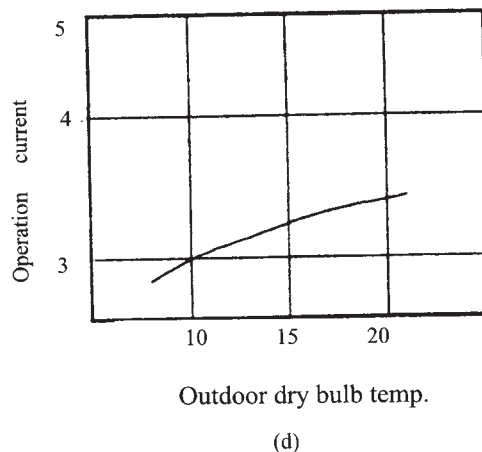
(b)

Heating operation

Indoor work condition: DB 21°C/WB 15.5°C



(c)



(d)

Fig. 3

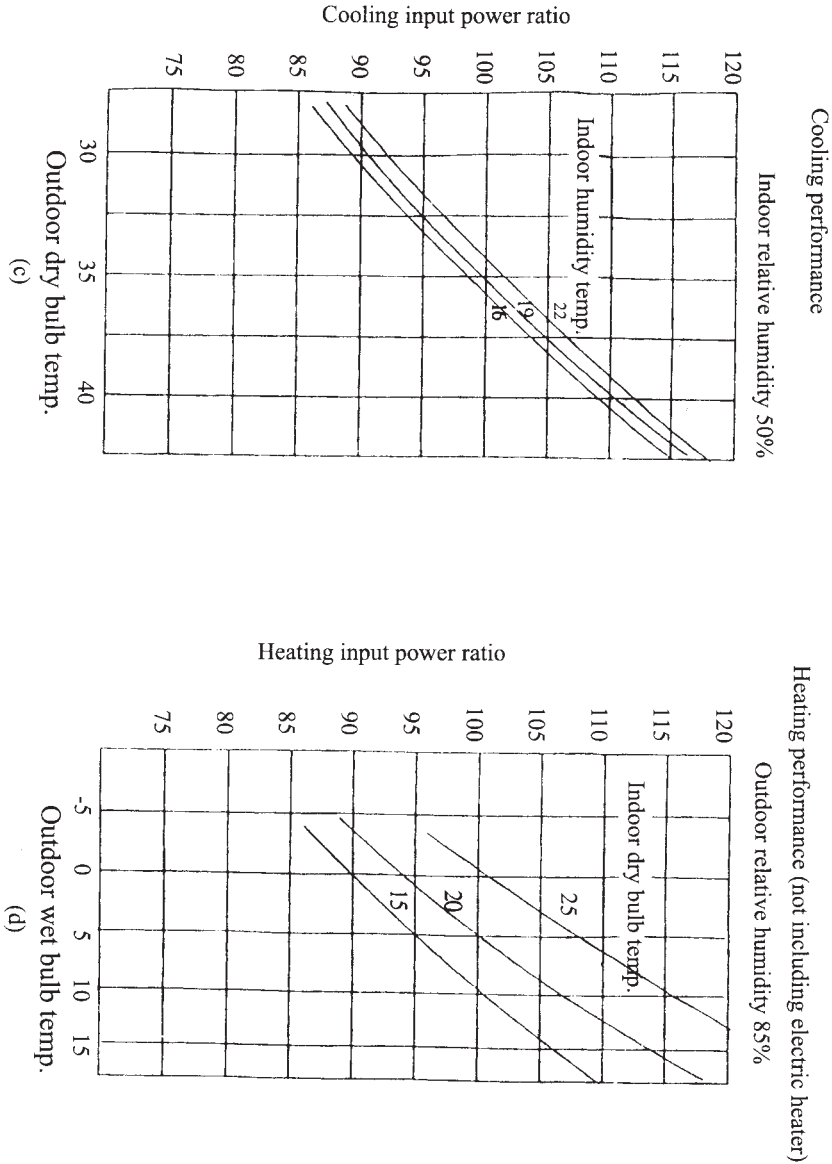
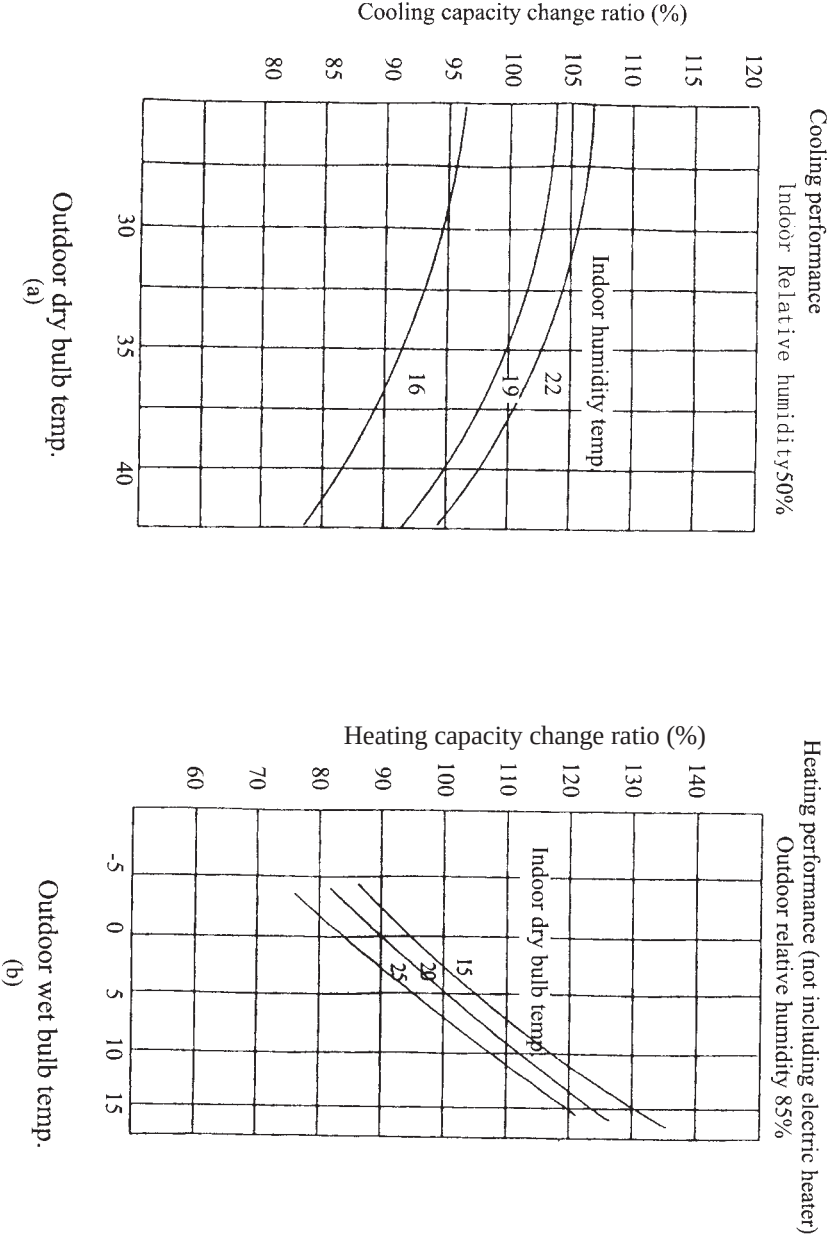
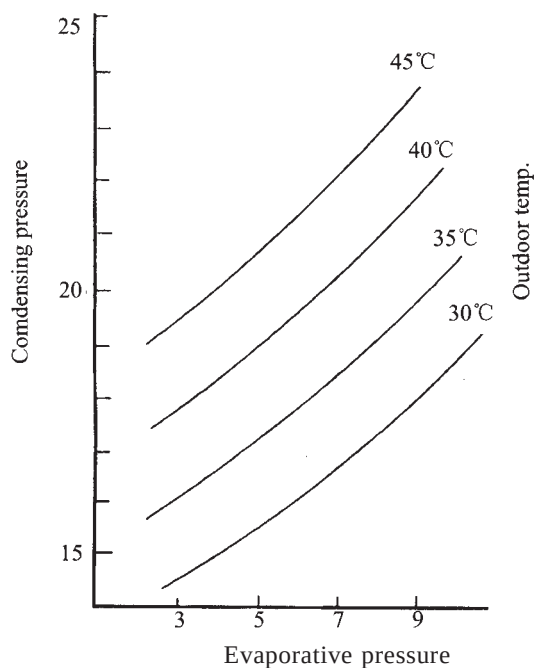
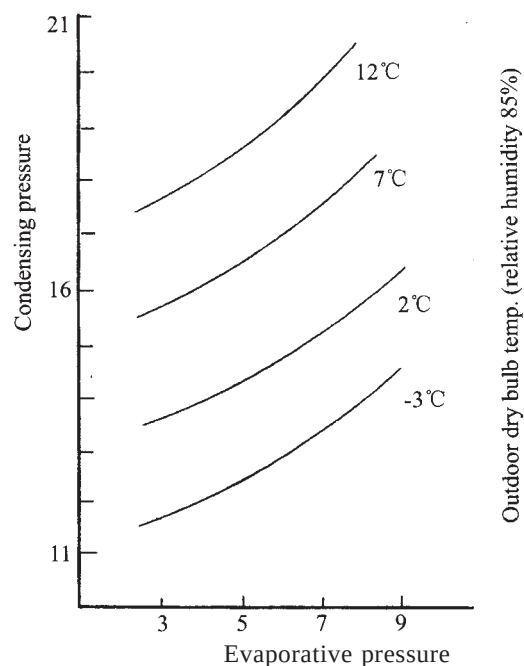


Fig. 4



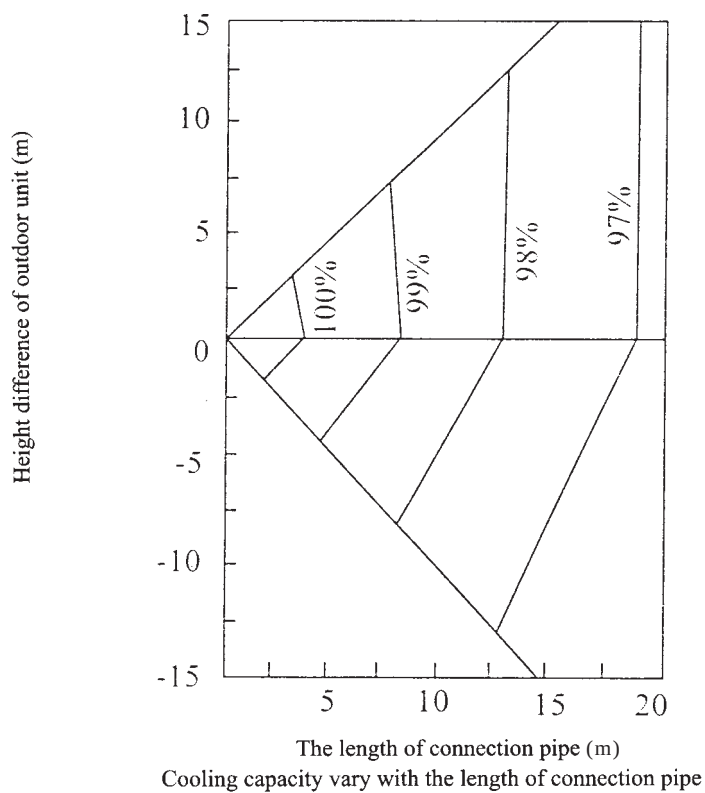
The affection to the charging quantity by pressure under cooling work condition.
(Indoor work condition: DB 27°C, WB 19.5°C)

(e)



The affection to the charging quantity by pressure under heating work condition.
(Indoor work condition: DB 21°C)

(f)

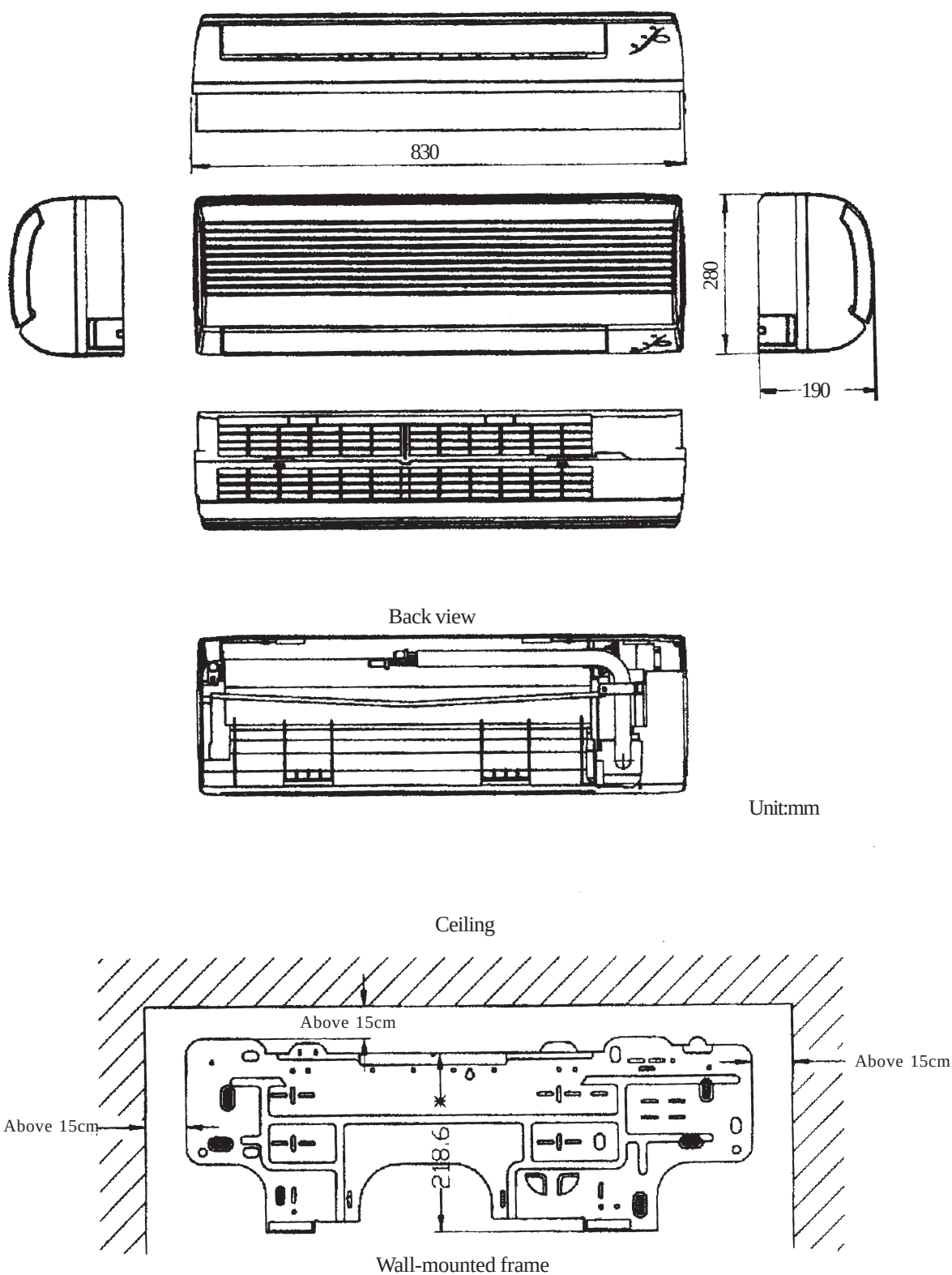


Cooling capacity vary with the length of connection pipe

Fig. 5

4. Outlines and dimensions of indoor unit

Model: KF-25GW/NA70 KFR-25GW/NA70 KF-35GW/NA70 KFR-35GW/NA70
 KF-25GW/NA71 KFR-25GW/NA71 KF-35GW/NA71 KFR-35GW/NA71



Unit:mm

Fig. 6

Model: KF-25GW/A7-12206 KF-35GW/A7-12206

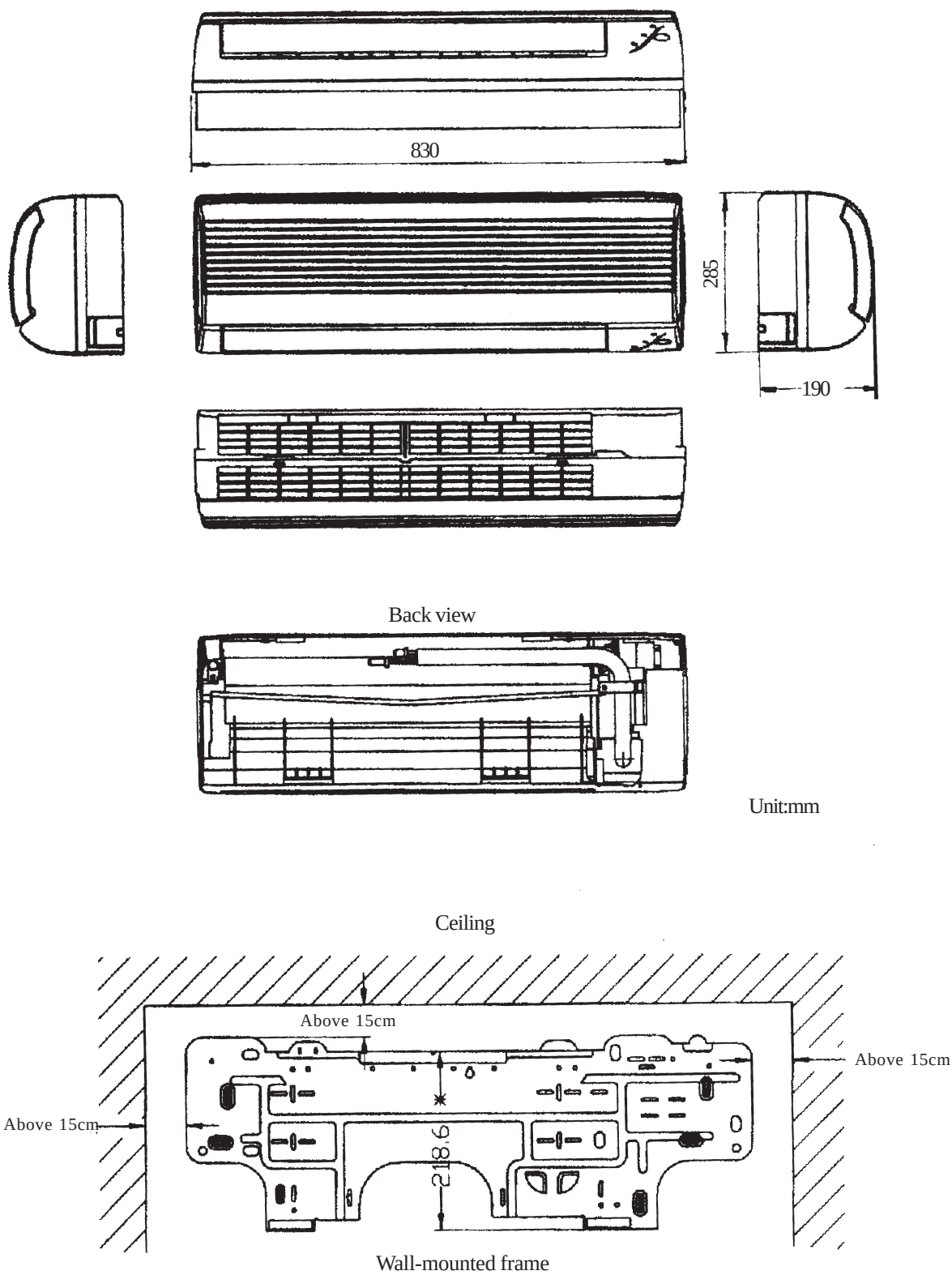


Fig. 7

5. Outlines and dimensions of outdoor unit

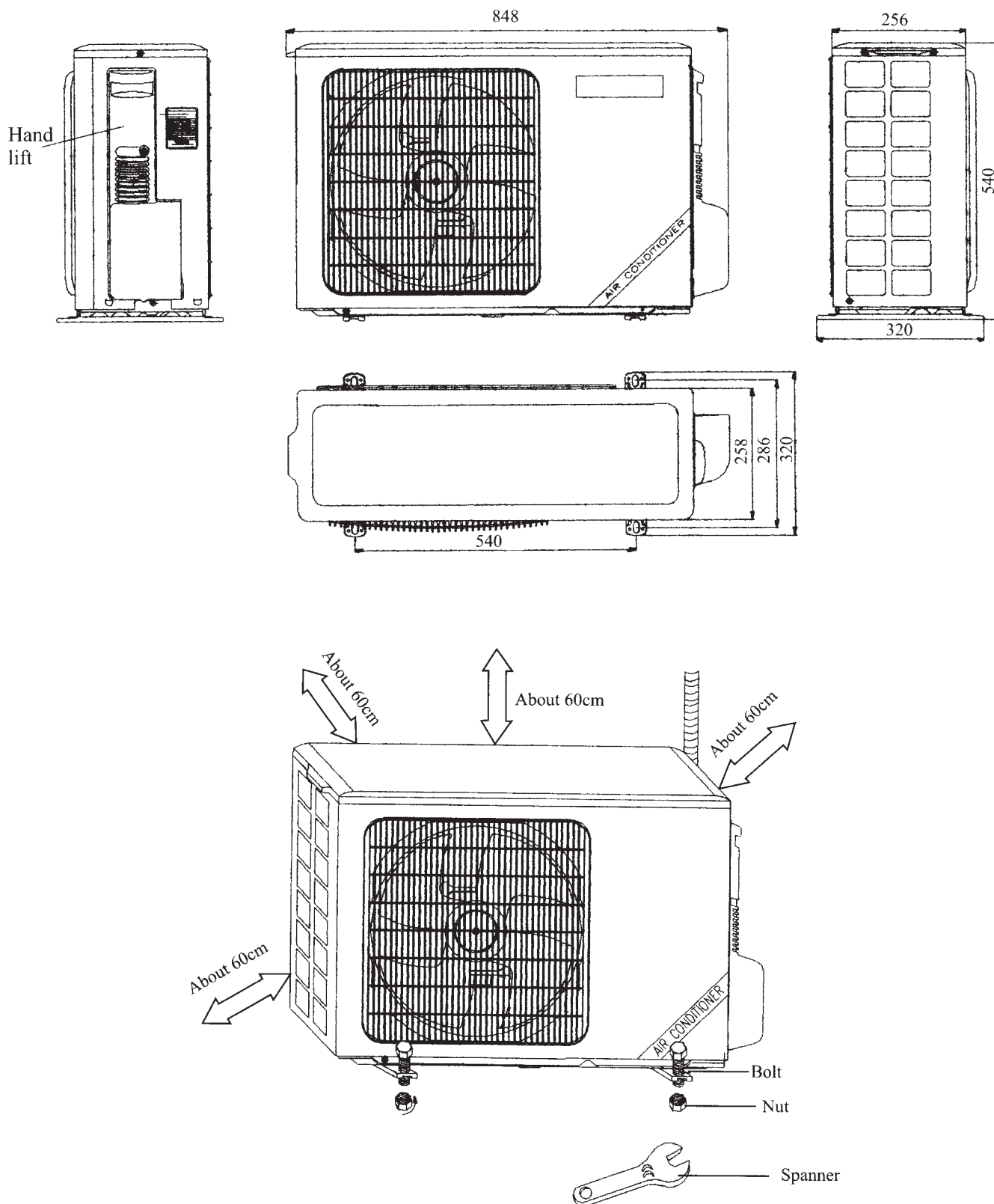


Fig. 8

6. Explosive view and spare parts list of indoor unit

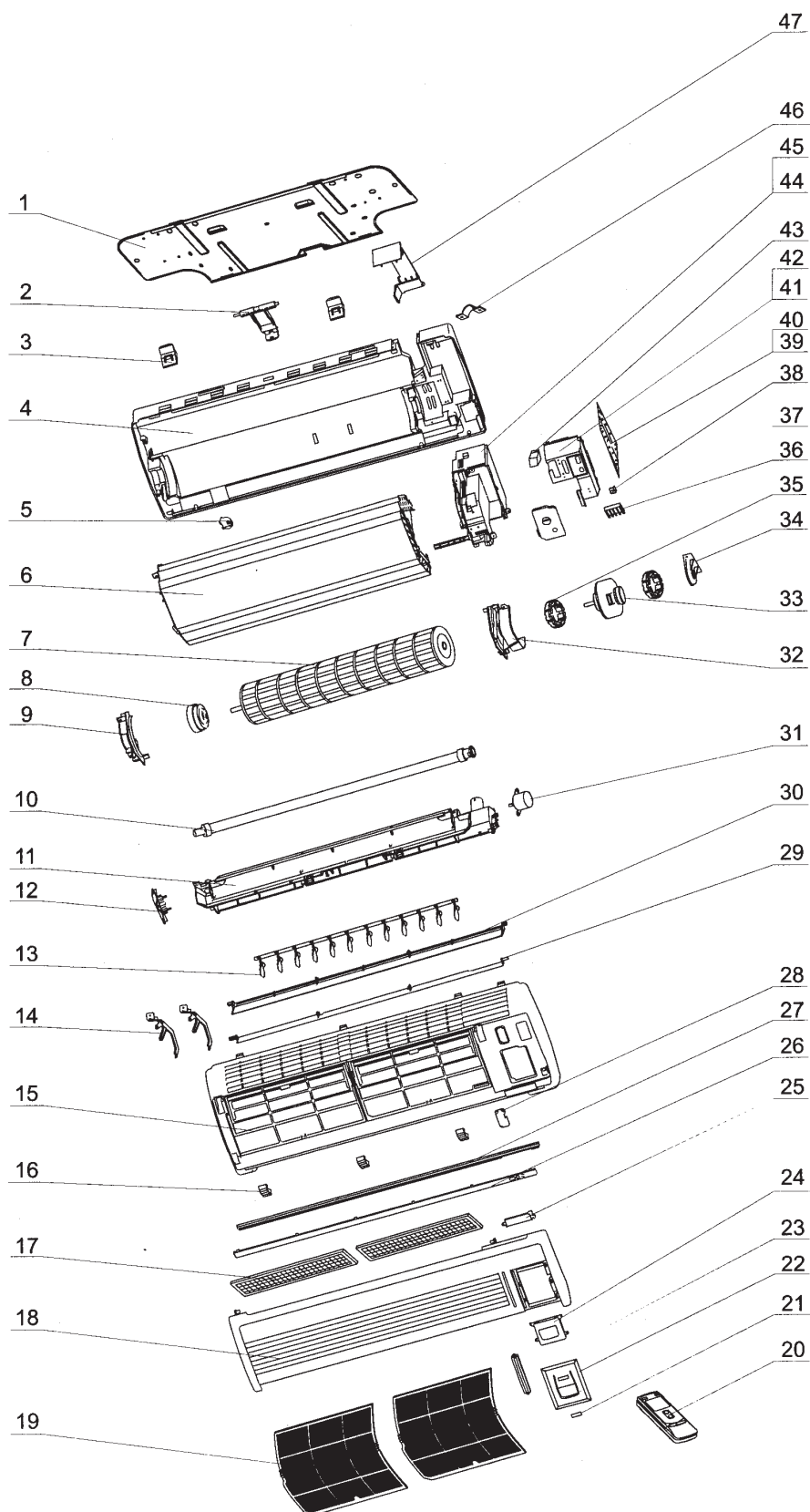


Fig. 9

Digital 2000 Series

Table 6

No.	Description		Part No.					Qty
			KFR-25G/NA70	KF-25G/NA70	KFR-25G/NA71	KF-25G/NA71	KF-25G/A7-12206	
1	Wall-mounting frame	壁挂板	01252382	01252382	01252382	01252382	01252382	1
2	Pipe clamp	卡管板	26112425	26112425	26112425	26112425	26112425	1
3	Hook	挂板钩	26272421	26272421	26272421	26272421	26272421	2
4	Rear case	底壳	222020052	222020052	22202005	22202005	22202005	1
5	Stepping motor MP24CA	步进电机 MP24CA	15212102	15212102	15212102	15212102	15212106	1
6	Evaporator assy	蒸发器部件	01002032	010021291	010021291	010021291	01002133	1
7	Cross flow fan assy	贯流风叶部件	10352405	10352405	10352405	10352405	10352405	1
8	Ring of bearing	轴承胶座	76712015	76712015	76712015	76712015	76712015	1
9	Left motor clamp	电机左卡板	261124281	261124281	261124281	261124281	261124281	1
10	Drain pipe	排水管	05232411	05232411	05232411	05232411	05232411	1
11	Water tray	接水盘	20182440	20182440	20182442	20182442	20182442	1
12	Stepping motor gear	导风电机齿轮组	10592001	10592001	10592001	10592001	10592001	1
13	Swing assy	扫风部件	10102001	10102001	10102001	10102001	10102001	1
14	Guide louver holder	导风板支撑架	24212429	24212429	24212403	24212403	24212403	2
15	Front case	面板体	200020850	200020850	20002085	20002085	20002085	1
16	Screw cover	螺钉盖	242524401	242524401	24252445	24252445	24252445	3
17	Nano-light accelerant-deodorization filter	纳米级光触媒高效脱臭网	11122007	11122007	11122007	11122007	11122007	1
	Biology sterilization-static filter	生物杀菌静电过滤网	11122008	11122008	11122008	11122008	11122008	1
18	Front panel	面板	200020840	200020840	20002084	20002084	20002084	1
19	Filter	过滤网	11122440	11122440	11122444	11122444	11122444	2
20	Remote controll	遥控器	30515011	30515011	30515011	30515011	30515008	1
21	Metal trade	高光金属商标	62212501	62212501	62212501	62212501	62212501	1
22	Tessellation of front case	面板镶块	22432008	22432008	22432008	22432008	22432008	1
23	Front panel indicator assy	面板指示灯组件(不含线路板)	22432505	22432505	22432505	22432505	22432505	1
24	Display 5H53	显示器 5H53	30545603	30545603	30545603	30545603	/	1
25	Wire clamp	固线夹	71010253	71010253	71010253	71010253	71010253	1
26	Inlaid-strip of front case	面板体镶条	22432016	22432016	22432016	22432016	22432016	1
27	Silver inlaid-strip of front case	面板体银镶条	22432017	22432017	22432017	22432017	22432017	1
28	Shelter of LCD wire	液晶连线护盖	224325040	224325040	22432504	22432504	22432504	1
29	Guide louver	小导风板	105124281	105124281	10512433	10512433	10512433	1
30	Guide louver	大导风板	105124321	105124321	10512432	10512432	10512432	1
31	Stepping motor MP24GA	步进电机 MP24GA	15212102	15212102	15212102	15212102	15212102	1
32	Right motor clamp	电机右卡板	261124291	261124291	261124291	261124291	261124291	1
33	Motor FN20H-PG	电机 FN20H-PG	/	/	/	/	15012027	1
	Motor FN6A	电机 FN6A	15012052	15012052	15012052	15012052	/	1
34	Beareing holder	轴承座	26152423	26152423	26152423	26152423	26152423	1
35	Motor rubbing ring	电机轴套(自带)	26242001	26242001	26242001	26242001	26242001	2
36	Row of connection	接线排 T4A3A7377	42010183	42010183	42010183	42010183	42010183	1
37	Electric box top cover	电器盒顶盖	222420140	222420140	222420140	222420140	22242014	1
38	Switching plate	开关拨动片	26272422	26272422	26272422	26272422	26272422	1
39	Main board 5H51	主板 5H51	/	30055562	/	30055562	/	1
	Main board 5H52	主板 5H52	30055563	/	30055563	/	/	1
	Main board 5H53	主板 5H53	/	/	/	/	30055557	1
40	Received board	接收板	30046030	30046030	30046030	30046030	30046055	1
41	Electric box cover plate	电器盒盖板	20102059	20102059	20102059	20102059	20102059	1
42	Uppershieldcoverofelectricbox	电器盒上屏蔽盖	01412001	01412001	01412001	01412001	01412001	1
43	Transformer	电源变压器 SC28D	43110194	43110194	43110194	43110194	43110194	1
44	Electric box	电器盒	20102058	20102058	20102058	20102058	20102058	1
45	Lowershieldcoverofelectricbox	电器盒下屏蔽盖	01412412	01412412	01412412	01412412	01412412	1
46	Wire clamp	电线夹	71010103	71010103	71010103	71010103	71010103	1

Digital 2000 Series

Table 6 continue

No.	Description		Part No.					Qty
			KFR- 25G/NA70	KF- 25G/NA70	KFR- 25G/NA71	KF- 25G/NA71	KF- 25G/A7 -12206	
47	Rear clamp	后板卡板	261124301	261124301	26112431	26112431	26112431	1
48	Room sensor	室温感温包	390000431	390000431	390000431	390000431	39000155	1
49	Tube sensor	管温感温包	39000058	39000058	39000058	39000058	39000159	1

The data are subject to change without notice.

Digital 2000 Series

Table 7

No.	Description		Part No.					Qty
			KFR-35G/NA70	KF-35G/NA70	KFR-35G/NA71	KF-35G/NA71	KF-35G/A7-12206	
1	Wall-mounting frame	壁挂板	01252382	01252382	01252382	01252382	01252382	1
2	Pipe clamp	卡管板	26112425	26112425	26112425	26112425	26112425	1
3	Hook	挂板钩	26272421	26272421	26272421	26272421	26272421	2
4	Rearcase	底壳	222020052	222020052	22202005	22202005	22202005	1
5	Stepping motor MP24CA	步进电机 MP24CA	15212102	15212102	15212102	15212102	15212106	1
6	Evaporator assy	蒸发器部件	01002129	01002129	01002129	01002129	01002104	1
7	Cross flow fan assy	贯流风叶部件	10352405	10352405	10352405	10352405	10352405	1
8	Ring of bearing	轴承胶座	76712015	76712015	76712015	76712015	76712015	1
9	Left motor clamp	电机左卡板	261124281	261124281	261124281	261124281	261124281	1
10	Drain pipe	排水管	05232411	05232411	05232411	05232411	05232411	1
11	Water tray	接水盘	20182440	20182440	20182442	20182442	20182442	1
12	Stepping motor gear	导风电机齿轮组	10592001	10592001	10592001	10592001	10592001	1
13	Swing assy	扫风部件	10102001	10102001	10102001	10102001	10102001	1
14	Guide louver holder	导风板支撑架	24212429	24212429	24212403	24212403	24212403	2
15	Front case	面板体	200020850	200020850	20002085	20002085	20002085	1
16	Screw cover	螺钉盖	242524401	242524401	24252445	24252445	24252445	3
17	Nano-light accelerant-deodorization filter	纳米级光触媒高效脱臭网	11122007	11122007	11122007	11122007	11122007	1
	Biologysterilization-staticfilter	生物杀菌静电过滤网	11122008	11122008	11122008	11122008	11122008	1
18	Front panel	面板	200020840	200020840	20002084	20002084	20002084	1
19	Filter	过滤网	11122440	11122440	11122444	11122444	11122444	2
20	Remote controller	遥控器	30515011	30515011	30515011	30515011	30515008	1
21	Metal trade	高光金属商标	62212501	62212501	62212501	62212501	62212501	1
22	Tessellation of front case	面板镶块	22432008	22432008	22432008	22432008	22432008	1
23	Front panel indicator assy	面板指示灯组件(不含线路板)	22432505	22432505	22432505	22432505	22432505	1
24	Display 5H53	显示器 5H53	30545603	30545603	30545603	30545603	30545604	1
25	Wire clamp	固线夹	71010253	71010253	71010253	71010253	71010253	1
26	Inlaid-strip of front case	面板体镶条	22432016	22432016	22432016	22432016	22432016	1
27	Silver inlaid-strip of front case	面板体银镶条	22432017	22432017	22432017	22432017	22432017	1
28	Shelter of LCD wire	液晶连线护盖	224325040	224325040	22432504	22432504	22432504	1
29	Guide louver	小导风板	105124281	105124281	10512433	10512433	10512433	1
30	Guide louver	大导风板	105124321	105124321	10512432	10512432	10512432	1
31	Stepping motor MP24GA	步进电机 MP24GA	15212102	15212102	15212102	15212102	15212102	1
32	Right motor clamp	电机右卡板	261124291	261124291	261124291	261124291	261124291	1
33	Motor FN18H	电机 FN8H	15012051	15012051	15012051	15012051	/	1
	Motor FN20H-PG	电机 FN20H-PG	/	/	/	/	15012027	1
34	Beareing holder	轴承座	26152423	26152423	26152423	26152423	26152423	1
35	Motor rubbing ring	电机轴套(自带)	26242001	26242001	26242001	26242001	26242001	2
36	Row of connection	接线排 T4A3A7377	42010183	42010183	42010183	42010183	42010183	1
37	Electric box top cover	电器盒顶盖	222420140	222420140	222420140	222420140	22242014	1
38	Switching plate	开关拨动片	26272422	26272422	26272422	26272422	26272422	1
39	Main board 5H51	主板 5H51	/	30055562	/	30055562	30055558	1
	Main board 5H52	主板 5H52	30055563	/	30055563	/	/	1
40	Received board	接收板	30046030	30046030	30046030	30046030	30046055	1
41	Electric box cover plate	电器盒盖板	20102059	20102059	20102059	20102059	20102059	1
42	Upper shield cover of electric box	电器盒上屏蔽盖	01412001	01412001	01412001	01412001	01412001	1
43	Transformer	电源变压器 SC28D	43110194	43110194	43110194	43110194	43110194	1
44	Electric box	电器盒	20102058	20102058	20102058	20102058	20102058	1
45	Lower shield cover of electric box	电器盒下屏蔽盖	01412412	01412412	01412412	01412412	01412412	1
46	Wire clamp	电线夹	71010103	71010103	71010103	71010103	71010103	1
47	Rear clamp	后板卡板	261124301	261124301	26112431	26112431	26112431	1

Digital 2000 Series

Table 7 continue

No.	Description		Part No.					Qty
			KFR- 35G/NA70	KF- 35G/NA70	KFR- 35G/NA71	KF- 35G/NA71	KF- 35G/A7 -12206	
48	Room sensor	室温感温包	390000431	390000431	390000431	390000431	39000155	1
49	Tube sensor	管温感温包	39000058	39000058	39000058	39000058	39000159	1

The data are subject to change without notice.

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7. Explosive view and spare parts list of outdoor unit

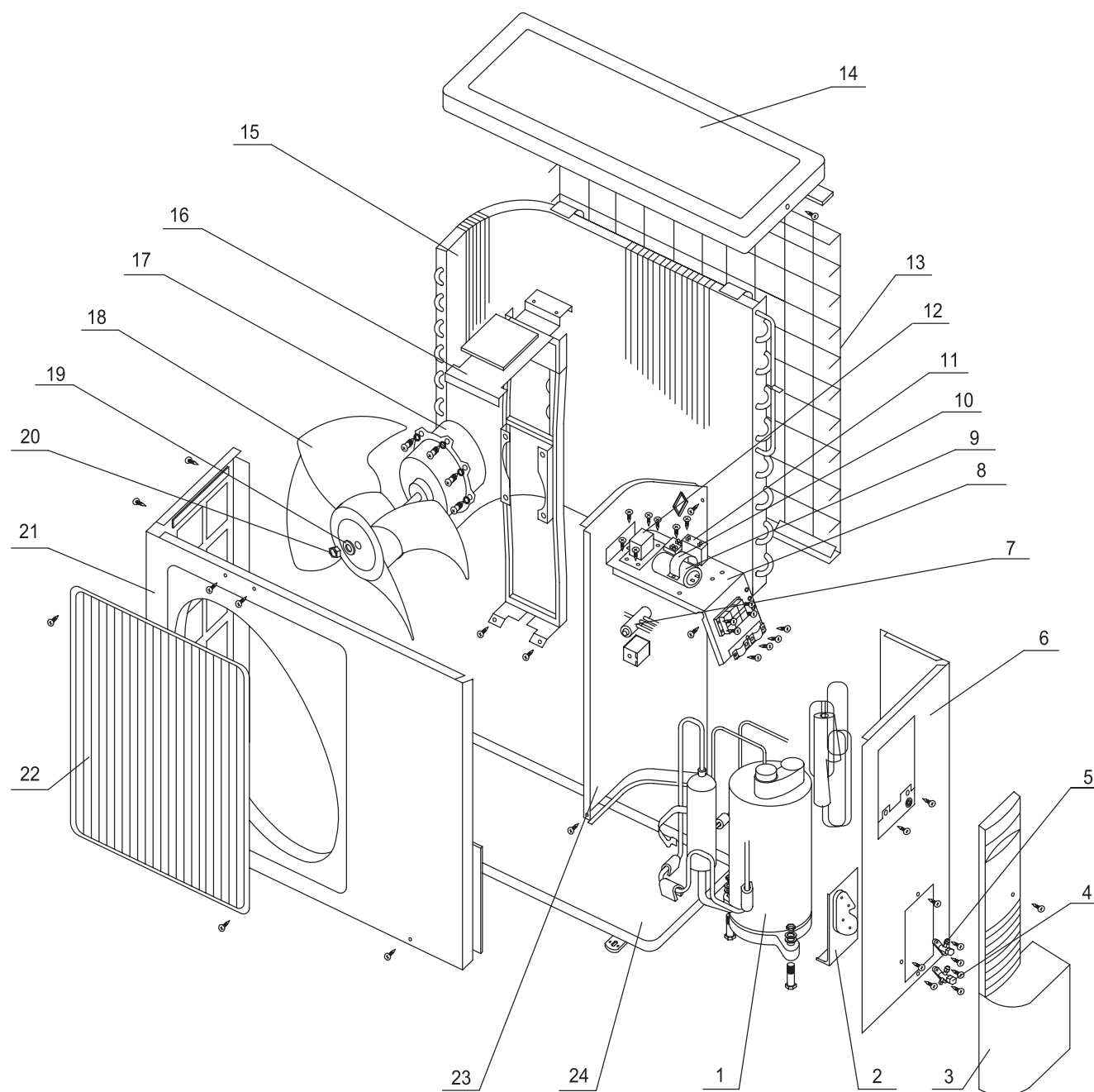


Fig. 10

Digital 2000 Series

Table 8

No.	Description		Part No.					Qty
			KFR-25W/NA70	KF-25W/NA70	KFR-25W/NA71	KF-25W/NA71	KF-25W/A7-12206	
1	Compressor and fittings	压缩机及配件 C-RV167H01AA	00100355	00100355	00100355	00100355	/	1
		压缩机及配件 P14S236A1J	/	/	/	/	00100253	1
2	Valve support	阀门支架	01713041	01713041	01713041	01713041	01713424	1
3	Handle	大提手	26233433	26233433	26233433	26233433	26233431	1
4	Valve 3/8"	阀门 3/8 "	07100135	07100135	07100135	07100135	07100145	1
5	Valve 1/4"	阀门 1/4 "	07100134	07100134	07100134	07100134	07100120	1
6	Right side plate assy	右侧板组件	01302004	01302004	01302004	01302004	01302000	1
7	4-way Valve	四通阀 (1 匹)	430004021	/	430004021	/	/	1
	4-way Valve fittings	四通阀配件	43000400	/	43000400	/	/	1
8	Electric plate	电器盒	01413425	01413425	01413425	01413425	01413425	1
9	Capacitor CBB65 22.5uF/450VAC	电容 CBB65 22.5uF/450VAC(TUV/VDE)	33000002	33000002	33000002	33000002	/	1
	Capacitor CBB65 30uF/450VAC	电容 CBB65 30uF/450VAC	/	/	/	/	33000018	1
10	Capacitor clamp	电容夹	02143401	02143401	02143401	02143401	02143401	1
11	Capacitor CBB61 2.5uF/450VAC	电容 CBB61 2.5uF/450VAC(TUV/VDE)	33010026	33010026	33010026	33010026	33010026	1
12	Terminal board 2-8	接线板 2-8	42011103	/	42011103	/	/	1
13	Rear grill assy	后护网组件	11123402	11123402	11123402	11123402	11123402	1
14	Top cover	顶盖板	01253443	01253443	01253443	01253443	01253443	1
15	Condenser assy	冷凝器组件	01103124	01103341	01103124	01103341	01103247	1
16	Motor support	电机支架	01703391	01703391	01703391	01703391	01703391	1
17	Motor FW30A	电机 FW30A	15013101	15013101	15013101	15013101	/	1
	Motor FW25P	电机 FW25P	/	/	/	/	15013152	1
18	Axial flow fan	轴流风叶	10333412	10333412	10333412	10333412	10333412	1
19	Washer 6	垫圈 6	70410252	70410252	70410252	70410252	70410252	1
20	Nut M6(left)	左旋螺母 M6	70310132	70310132	70310132	70310132	70310132	1
21	Front plate assy	面板组件	20002015	20002015	20002015	20002015	20002015	1
22	Front grill	面板格栅	22413431	22413431	22413431	22413431	22413431	1
23	Isolation sheet assy	隔板组件	01233417	01233417	01233417	01233417	01233417	1
24	Metal base	底盘组件	01203324	01203324	01203324	01203324	01203035	1

The data are subject to change without notice.

Table 9

No.	Description		Part No.					Qty
			KFR-35W/NA70	KF-35W/NA70	KFR-35W/NA71	KF-35W/NA71	KF-35W/A7-12206	
1	Compressor and fittings	压缩机及其配件 C-RV227H01AA	/	00100352	/	00100352	/	1
		压缩机及其配件 C-RV237H01AA	00100353	/	00100353	/	/	1
		压缩机及其配件 2P19S236A1J	/	/	/	/	00100260	1
2	Valve support	阀门支架	01713041	01713041	01713041	01713041	01713041	1
3	Handle	大提手	26233433	26233433	26233433	26233433	26233433	1
4	Valve 1/2"	阀门 1/2"	07100133	07100133	07100133	07100133	07100147	1
5	Valve 1/4"	阀门 1/4"	07100134	07100134	07100134	07100134	07100115	1
6	Right side plate assy	右侧板组件	01302004	01302004	01302004	01302004	01302004	1
7	4-way Valve	四通阀 (1 匹)	430004021	/	430004021	/	/	1
	4-way Valve fittings	四通阀配件	43000400	/	43000400	/	/	1
8	Electric plate	电器盒	01413425	01413425	01413425	01413425	01413425	1
9	Capacitor CBB65 25uF/450VAC	电容 CBB65 25uF/450VAC(TUVVDE)	33000020	33000020	33000020	33000020	/	1
	Capacitor CBB65 30uF/450VAC	电容 CBB65 30uF/450VAC	/	/	/	/	33000018	1
10	Capacitor clamp	电容夹	02143401	02143401	02143401	02143401	02143401	1
11	Capacitor CBB61 3uF/450VAC	电容 CBB61 3uF/450VAC(TUVVDE)	33010027	33010027	33010027	33010027	33010021	1
12	Terminal board 2-8	接线板 2-8	42011103	/	42011103	/	/	1
13	Rear grill assy	后护网组件	11123402	11123402	11123402	11123402	11123402	1
14	Top cover	顶盖板	01253443	01253443	01253443	01253443	01253443	1
15	Condenser assy	冷凝器组件	01133049	01133049	01133049	01133049	01103248	1
16	Motor support	电机支架	01703391	01703391	01703391	01703391	01703391	1
17	Motor FW48C	电机 FW48C	15013039	15013039	15013039	15013039	/	1
	Motor FW48B	电机 FW48B	/	/	/	/	15013305	1
18	Axial flow fan	轴流风叶	10333412	10333412	10333412	10333412	10333412	1
19	Washer 6	垫圈 6	70410252	70410252	70410252	70410252	70410252	1
20	Nut M6(left)	左旋螺母 M6	70310132	70310132	70310132	70310132	70310132	1
21	Front plate assy	面板组件	20002015	20002015	20002015	20002015	70410252	1
22	Front grill	面板格栅	22413431	22413431	22413431	22413431	22413431	1
23	Isolation sheet assy	隔板组件	01233417	01233417	01233417	01233417	01233417	1
24	Metal base	底盘组件	01203008	01203008	01203008	01203008	01203112	1

The data are subject to change without notice.

8. Circuit diagram

These circuit diagrams are subject to change.
Please refer to the stickers on the machines.

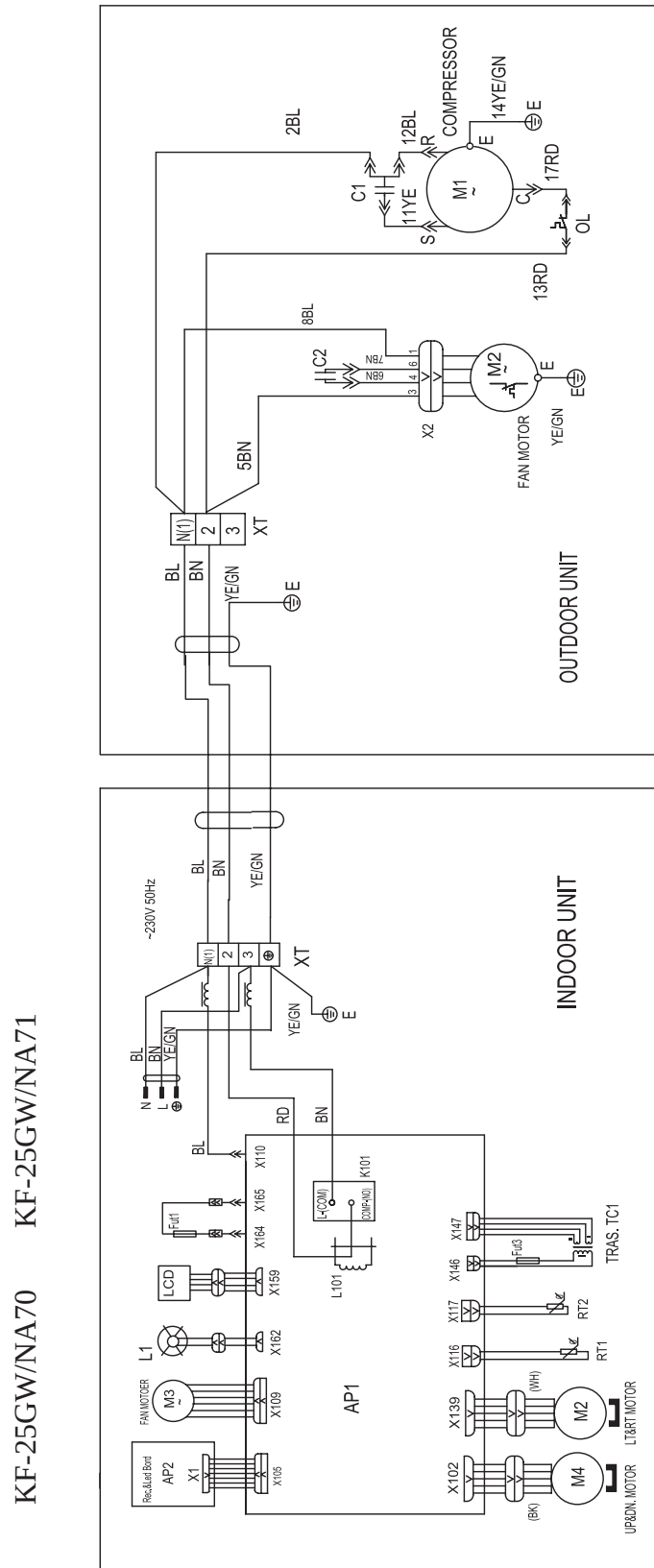


Fig. 11

KFR-25GW/NA70 KFR-25GW/NA71

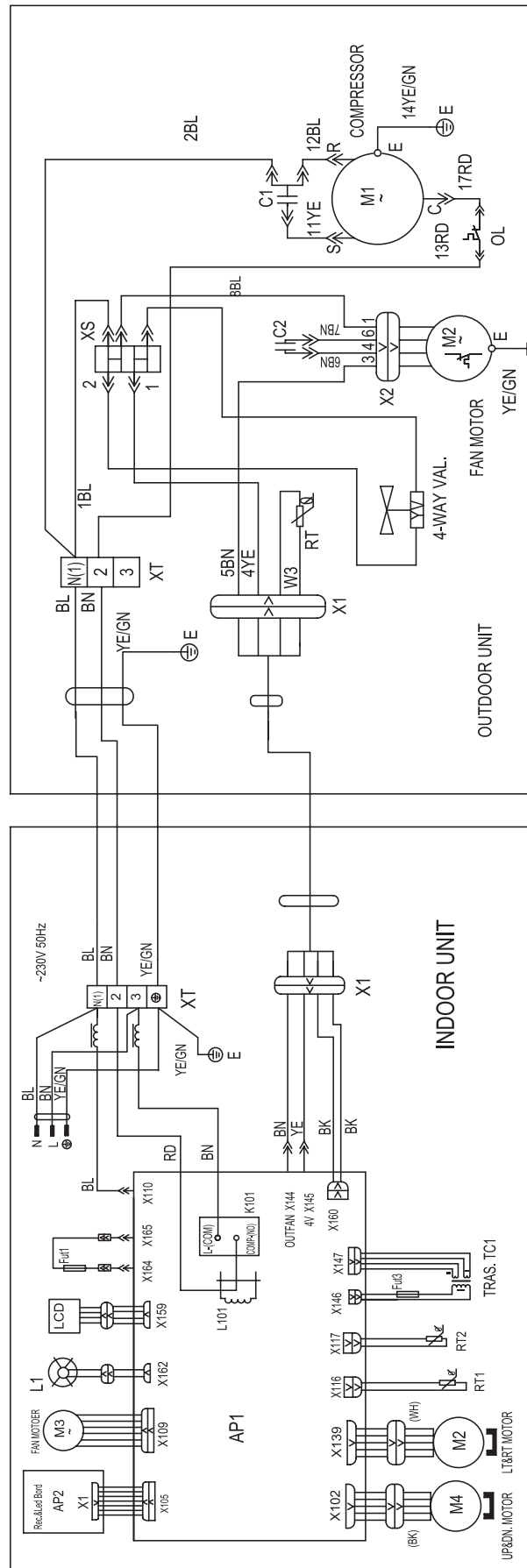


Fig. 12

KF-35GW/NA70 KF-35GW/NA71

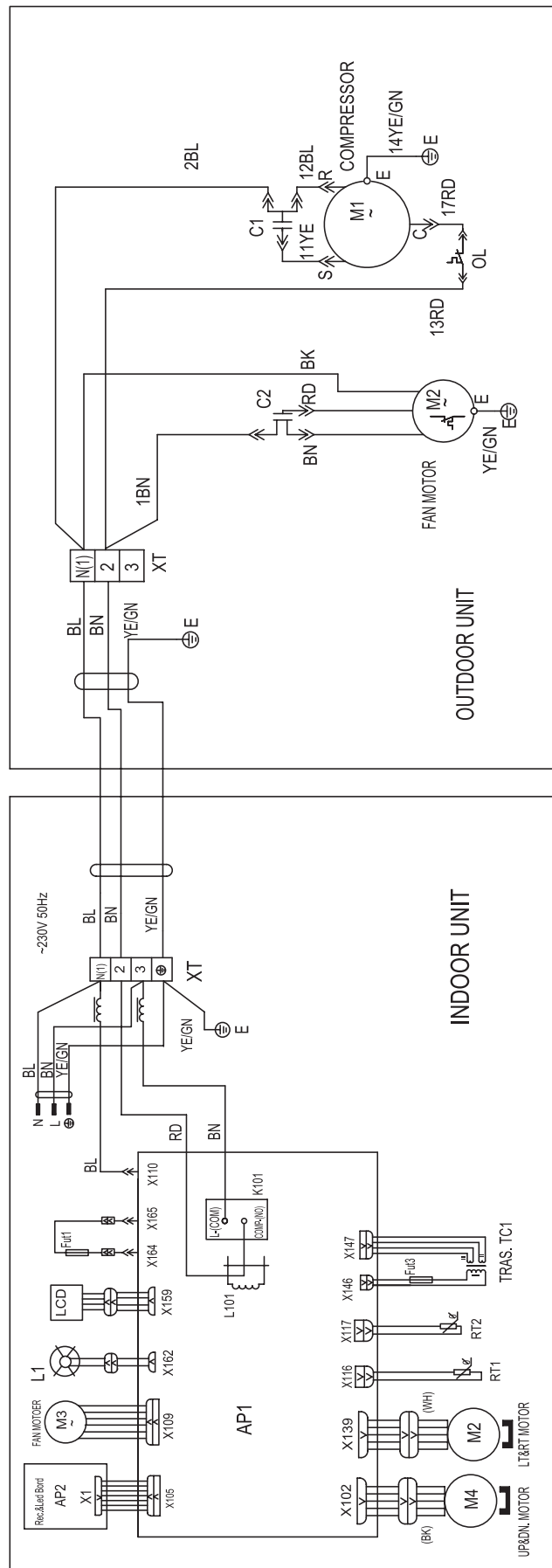


Fig. 13

KFR-35GW/NA70 KFR-35GW/NA71

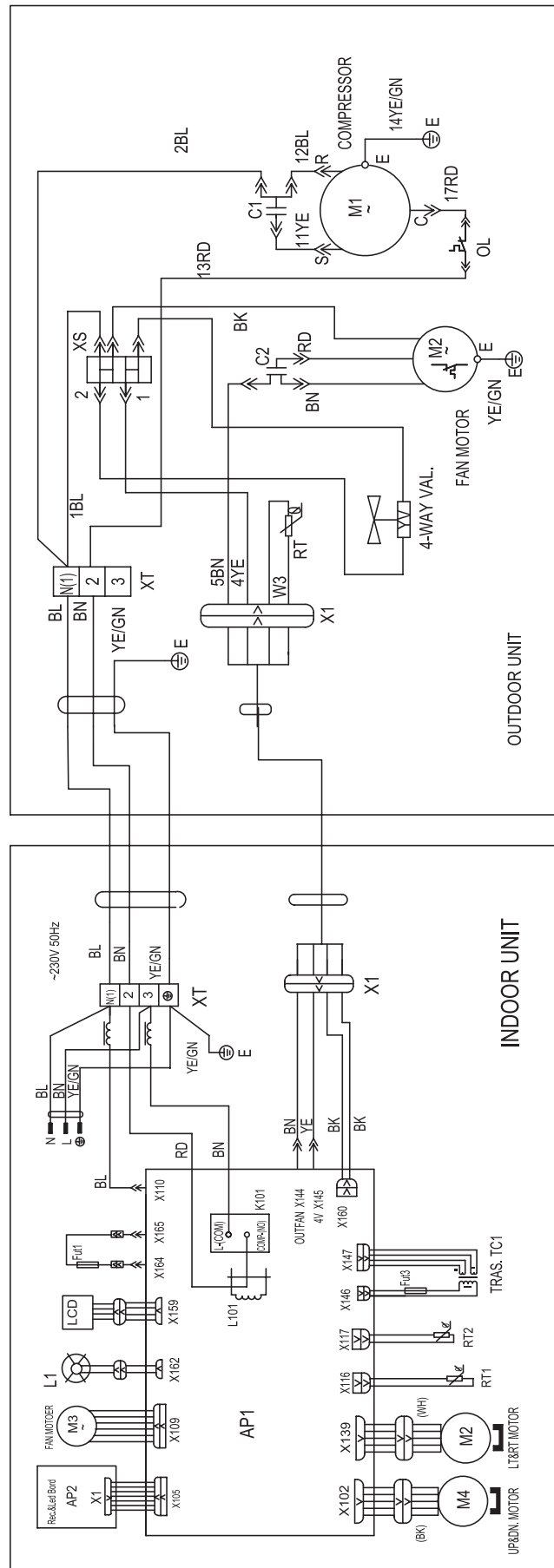


Fig. 14

KF-25GW/A7-12206

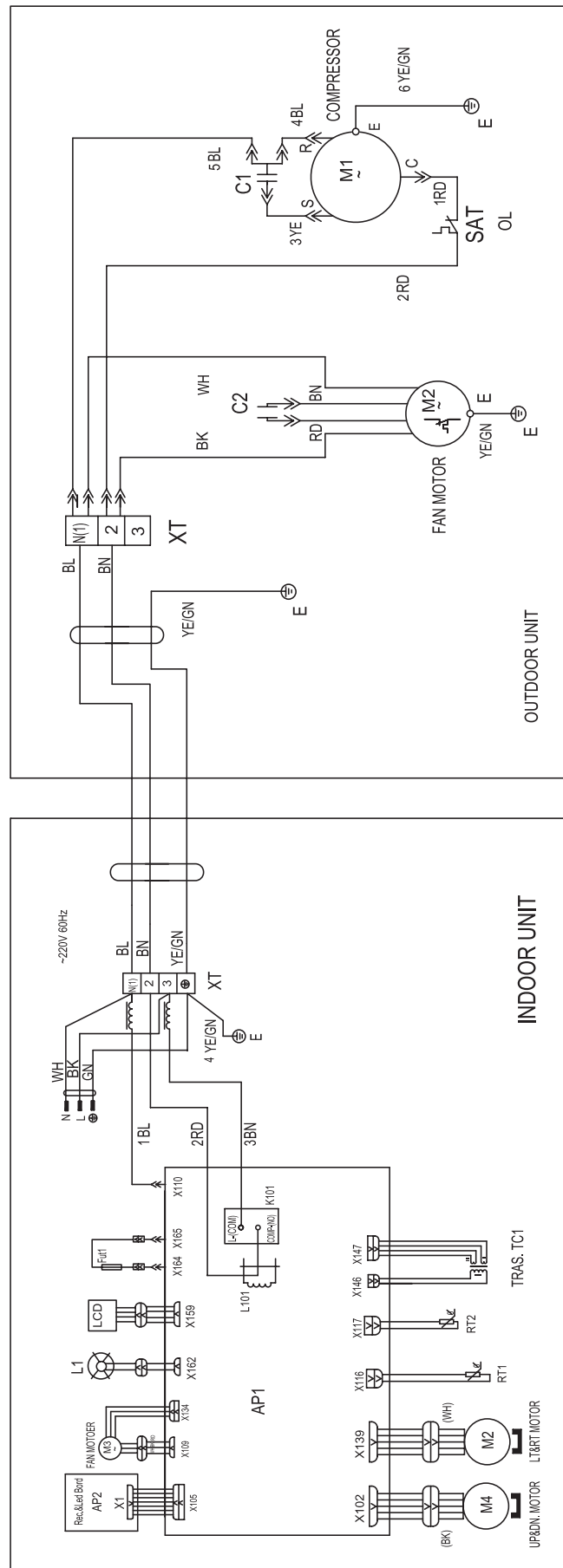


Fig. 15

KF-35GW/A7-12206

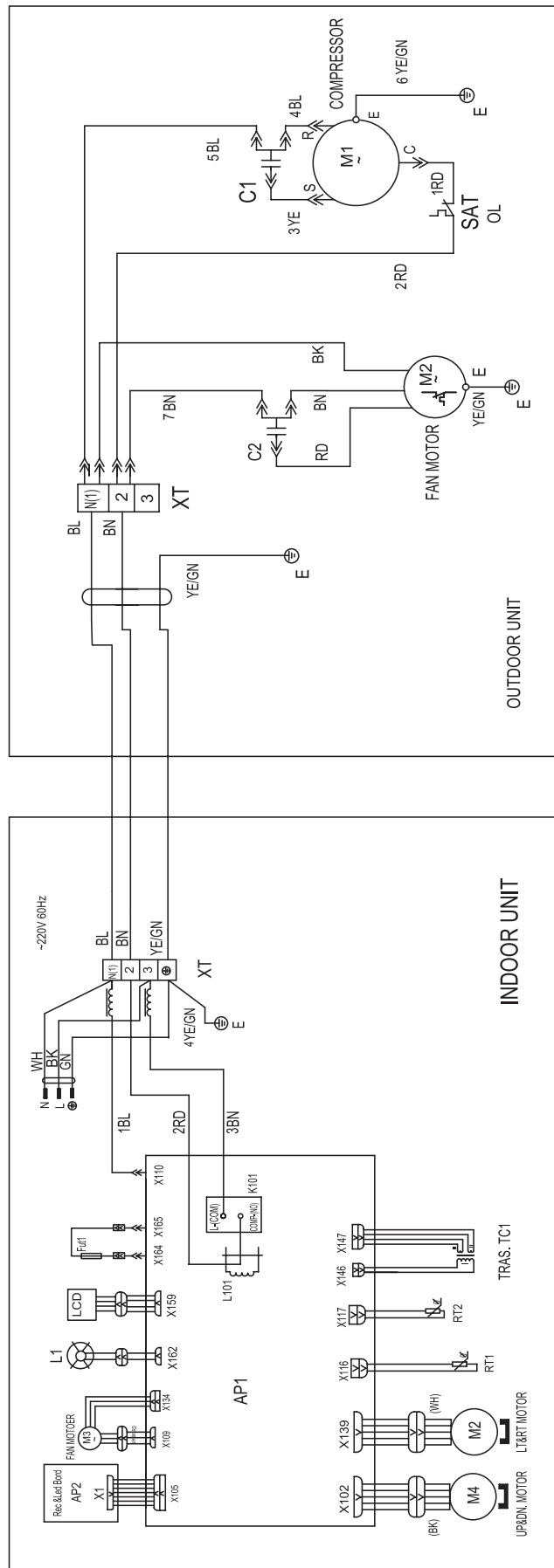


Fig. 16

9. PCB function manual

PCB function manual for Digital 2000

A. running mode

1. cooling 2. dehumidifying 3. heating 4. fan 5. auto

B. input parameters

1. indoor ambient temp. T_{in}
2. evaporator tube temp. T_{eva}
3. setting temp. T_{set}
4. condenser tube temp. T_{con}
5. human induction signal
6. the total current I_t
7. indicator light of human induction

C. targets

1. indoor motor (motor)
2. swing motor
3. outdoor motor
4. compressor
5. four-way reversing valve
6. auxiliary electric heater
7. LCD
8. human induction function

D. fundamental functions

1. cooling mode

(1) the running conditions and control measures

- a. if $T_{in} \geq T_{set} + 1^{\circ}\text{C}$, the machine runs at the cooling mode. Compressor runs, outdoor motor runs at low speed, indoor fan runs at the set fan speed.
- b. if $T_{in} \leq T_{set} - 1^{\circ}\text{C}$, the machine stops. Compressor stops first, outdoor motor stops after 15 seconds, indoor motor runs at the set fan speed.
- c. if $T_{set} - 1^{\circ}\text{C} < T_{in} < T_{set} + 1^{\circ}\text{C}$, keep the previous state.

(2) in this mode, the reversing valve is inactive, the temp. setting range is from 16°C to 30°C .

(3) Protect function

- a. anti-freezing function.

if compressor has run 6 minutes, and detects $T_{eva} < 0^{\circ}\text{C}$ for continuous 3 minutes, then the compressor stops first, outdoor fan stops after 15 seconds, indoor fan runs at the set fan speed.

After 3 minutes later, it will run at the original state if $T_{eva} \geq 10^{\circ}\text{C}$.

b. compressor protection

Compressor's starting interval should be more than 3 minutes no matter in whatever modes and conditions. If it's plugged in first time, the compressor does not have 3 minutes delay. When compressor is started, it will not stop within 5 minutes unless it is plugged out.

c. overload protection

If it detects the system current surpass the designed 15 A for continuous 3 minutes, the machine goes into fan mode, when 3 minutes passed and it detects the current no more than 15 A, it will be back to original state. If it detects overload states for 3 consecutive times within 30 minutes, the machine stops, and the unit must be restarted by remote controller.

2. dehumidifying mode

(1) the working conditions and control measures

- a. if $T_{in} > T_{set} + 2^{\circ}\text{C}$, it is in cooling mode, the indoor motor speed can be selected, and outdoor motor runs.
- b. If $T_{set} - 2^{\circ}\text{C} \leq T_{in} \leq T_{set} + 2^{\circ}\text{C}$, it goes into dehumidifying mode, the indoor motor run at the low speed, 6 minutes later the compressor stops, another 15 seconds later the outdoor fan stops and another 30 seconds later, the indoor motor stops, 3 and a half minutes later, compressor and outdoor fan run again, indoor motor runs at the low speed, then the machine repeats the above cycles.
- c. If $T_{in} < T_{set} - 2^{\circ}\text{C}$, compressor, outdoor motor and indoor motor stop.

(2) in this mode, the reversing valve is inactive, the temp. range is from 16°C to 30°C .

(3) Anti-freezing protection.

If $T_{in} > T_{set} + 2^{\circ}\text{C}$, it goes into cooling mode, anti-freezing function is the same with cooling mode, but the compressor must stop for 4 minutes. when it goes into dehumidifying mode, compressor runs for 6 minutes, if it detects $T_{eva} < 0^{\circ}\text{C}$, compressor stops and outdoor motor stop, after 15 seconds indoor motor runs at low speed, after 4 minutes delay, and $T_{eva} \geq 10^{\circ}\text{C}$, it will be back to its original state.

(note: in dehumidifying mode, if you turn on/off the switch in the machine to reset during the period that compressor stops, compressor will not start until stopping for 4 minutes.)

(4) overload protection is the same with cooling mode.

3. heating mode

(1) the working conditions and control measures

- a. If $T_{in} \leq T_{set} + 2^{\circ}\text{C} + T_r$, it goes into heating mode, reversing valve, compressor and outdoor motor all work in the same time, indoor fan will run at the same procedures with anti cool air function.
- b. If $T_{in} \geq T_{set} + 4^{\circ}\text{C} + T_r$, compressor stops first, 15 seconds later, outdoor motor stops, but reversing valve keeps working, indoor motor run at the procedures of blowing surplus heat.
- c. If $T_{set} + 2^{\circ}\text{C} + T_r < T_{in} < T_{set} + 4^{\circ}\text{C} + T_r$, keep the previous running state. (note: $T_r = 1^{\circ}\text{C}$, or 0°C , can be selected).

(2) in this mode, the temp. range is from 16°C to 30°C.

(3) The working conditions of auxiliary electric heater.

In heating mode, when compressor is working, indoor motor runs at high speed and medium speed .if it detects $T_{eva} < 48^{\circ}\text{C}$ for continuous 8 seconds and $T_{in} \leq 25^{\circ}\text{C}$, electric heater will work ,if compressor stops or indoor motor runs at low speed or $T_{eva} \geq 51^{\circ}\text{C}$ or $T_{in} \geq 25^{\circ}\text{C}$ or 10 seconds before defrosting , the electric heater will stop.

(4) protections

a .anti cool air

when the machine starts heating and $T_{eva} \leq 39^{\circ}\text{C}$, indoor motor and swing motor run at the set speed after 1 minute, if $T_{eva} \geq 40^{\circ}\text{C}$, indoor motor and swing motor will run at the set speed .

b .anti high temp.

In heating mode, if it detects $T_{eva} \geq 56^{\circ}\text{C}$ for continuous 4 seconds, outdoor motor will stop(in this period it will not detect the defrosting temp.). if $T_{eva} \leq 52^{\circ}\text{C}$, outdoor motor will work again. (it will not detect defrosting temp. in the first 5 seconds).

c. blowing surplus heat

In heating mode, when set temp is reached ,compressor stops first,15 seconds later outdoor fan stops, Indoor motor blows 90 seconds at low speed ,swing motor makes the louver at the horizontal position.

d. Compressor's protection is the same with the one in cooling mode.

e. Overload protection

If it detects that the system current surpassed the designed 15 A for continuous 3 seconds, compressor, electric heater and outdoor motor stop. After 3 minutes and current no more than 15 A, the machine will be back to its original state, indoor motor runs as the anti cool air condition. If it detects overloading state for 3 consecutive times within 30 minutes, the machine stops, and it must be restarted by remote controller.

f. defrosting conditions and procedures

In heating mode, if compressor has run for 44 minutes (in the first 6 minutes it will not detect defrosting temp.) , and it has detected $T_{con} \leq -4^{\circ}\text{C}$ for continuous 1 minutes , it begins to defrost , electric heater will stop for 10 seconds (even if electric heater is not working) , then indoor motor stops , reversing valve becomes inactive in another 2 seconds, another 2 seconds later, outdoor motor stops, when $T_{con} \geq 10^{\circ}\text{C}$ or defrosting lasts for 10 minutes , outdoor motor and reversing valve becomes active , indoor motor will run as the anti cool air condition, then it cycles again, recalculates the compressor's running time again. (In this period , if any protection works ,and after the machine is back to work , it will re-start defrosting state. it will not detect outdoor tube temp when compressor is in the first 6 minutes)

g. noise eliminated protection

When you use “1/0” button to turn off the machine, reversing valve will become inactive in 2 minutes.

4. AUTO mode

(1) in AUTO mode, standard cooling $T_{set}=25^{\circ}\text{C}$, standard heating $T_{set}=20^{\circ}\text{C}$.

(2) working procedures

- a. If $T_{in} \geq T_{set} + 2^{\circ}\text{C}$, select cooling mode, from this time, $T_{set} = 25^{\circ}\text{C}$. If $T_{in} \leq T_{set} - 1^{\circ}\text{C}$, compressor and outdoor motor stop, indoor motor runs at the set speed, if $T_{set} - 1^{\circ}\text{C} < T_{in} < T_{set} + 1^{\circ}\text{C}$, keep the original state.
- b. If $T_{in} \leq T_{set} + 2^{\circ}\text{C}$, select heating mode, from this time, $T_{set} = 20^{\circ}\text{C}$, if $T_{in} \geq T_{set} + 4^{\circ}\text{C}$, compressor stops first, outdoor motor stops 15 seconds later, reversing valve is always active, indoor motor runs as the blowing surplus heat condition. If $T_{set} + 2^{\circ}\text{C} < T_{in} < T_{set} + 4^{\circ}\text{C}$, keeps the original state.

Cooling & heating AUTO mode: in AUTO mode, when the heating mode is shift to the other modes, reversing valve becomes inactive in 90 seconds.

Cooling only AUTO mode: there is no heating function in this mode.

(3) protections

It is the same as the one in cooling or heating mode.

E. other controls

1. human induction function.

This function is controlled by “sense” button on the remote controller, when the button is closed, this function is inactive. when it is opened, and someone is in the room, red indicator will flash.

When human induction function is active, if some one enters the room, the machine will start automatically, it runs in auto mode, auto fan speed, swing motor will swings up and down. it will stop automatically if it can't detect any human's action in 20 minutes. (swinging right and left, electricity-saving should set before turn off the unit, or they won't work in auto mode).

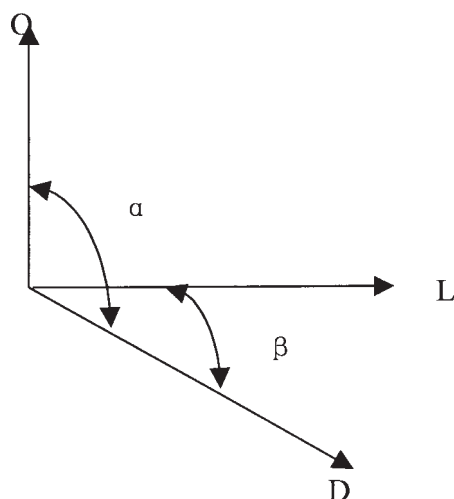
When you turn off the machine by remote controller, 10 minutes later the human induction function is active.

In the evening: when people's activities reduced, it runs at low speed automatically.

Note: when turn on/off the machine because of human induction, the beeper is on, when you set the timer on, human induction function is inactive, it works once the timer on is inactive.

2. Swinging up and down

- a. When it is active, the louver returns to position O, close the air outlet.
- b. When machine works, it turns to the max. Air output position D, then returns back to position L to stand by (position L is the horizontal place mentioned before).
- c. In swing state, the louver swings between position L and position D.
- d. When the machine is switched off, it is back to position O.



$$\alpha = 93^\circ \quad \beta = 45^\circ$$

3. Swinging right and left

When swinging right and left is active, it swings right and left, stops when switching off.

4. beeper

When PCB becomes active or receives the signal from the remote controller, the beeper will beep.

5. Running indicator (green)

running indicator will flash during frosting.

6. the auto, test, run, stop function of switch

- a. In auto position, the machine runs in the auto-mode, and if there is remote signal, the machine runs according to the remote signal, in this auto-mode swinging right and left and human induction function is inactive, but the light and swinging up and down are active.
- b. In the test position, the machine runs only in the cooling mode, indoor motor runs at high speed, swinging up and down runs, the light is turned on, and human induction function is active, if there is remote signal, the machine runs according to the remote controller command. if indoor temp. sensor is break or in short circuit, the beeper works at 2Hz frequency.

Note: When the electricity saving function is set, remote control cooling and heating is forced to work.

- c. In the run position, the machine runs according to the remote controller command.
- d. In the stop position, the machine stops.

7. SLEEP mode.

- a. In cooling or dehumidifying mode, 1 hour after you set the sleep timer, T_{set} will add 1°C automatically, another 1 hour, another 1°C will be added.
- b. In heating mode, 1 hour after you set the sleep timer, T_{set} will lower 1°C automatically, another 1 hour, another 1°C will be lowered.

8. auto-wind

In COOL/HEAT mode, auto-wind can be stepless timing according to the set temp. and ambi-

ent temp.

9. timer function

timer-on: At stopping, press TIMER ON button, set ON TIME in range of 0 to 24 hours at the interval of 0.5h to start the unit automatically.

timer-off: At operating, press TIMER ON button, set ON TIME in range of 0 to 24 hours at the interval of 0.5h to stop the unit automatically.

10. fixed frequency luxury split display.

1) First image when power on.

The image will like the following after three seconds in power.

2) Display the "SET TEMPERATURE"

When the air condition is run, LCD display the setting temperature as well as "SET TEMP" and "°C".

3) Human induction display.

When the human induction is in the run, there is " " on the screen, There will not be the sign



" " when this function is off.

4) Light display

The lightening function under controller of remote control and show at one time with it.

11. Automatic fan speed .

- | | |
|---|--------------|
| a. in cooling mode, if $T_{in} > T_{set} + 5^{\circ}\text{C}$ | high speed |
| $T_{in} \geq T_{set} + 3^{\circ}\text{C}$ | medium speed |
| $T_{in} \geq T_{set} + 1^{\circ}\text{C}$ | low speed |
| b. in heating mode, if $T_{in} \leq T_{set} - 5^{\circ}\text{C}$ | high speed |
| $T_{in} \leq T_{set} - 3^{\circ}\text{C}$ | medium speed |
| $T_{in} \leq T_{set} - 1^{\circ}\text{C}$ | low speed |
| c. in dehumidify mode, if $T_{in} \geq T_{set} + 5^{\circ}\text{C}$ | high speed |
| $T_{in} \geq T_{set} + 2^{\circ}\text{C}$ | low speed |