

INVERTER WALL SPLIT

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Technical specifications



Heat pump

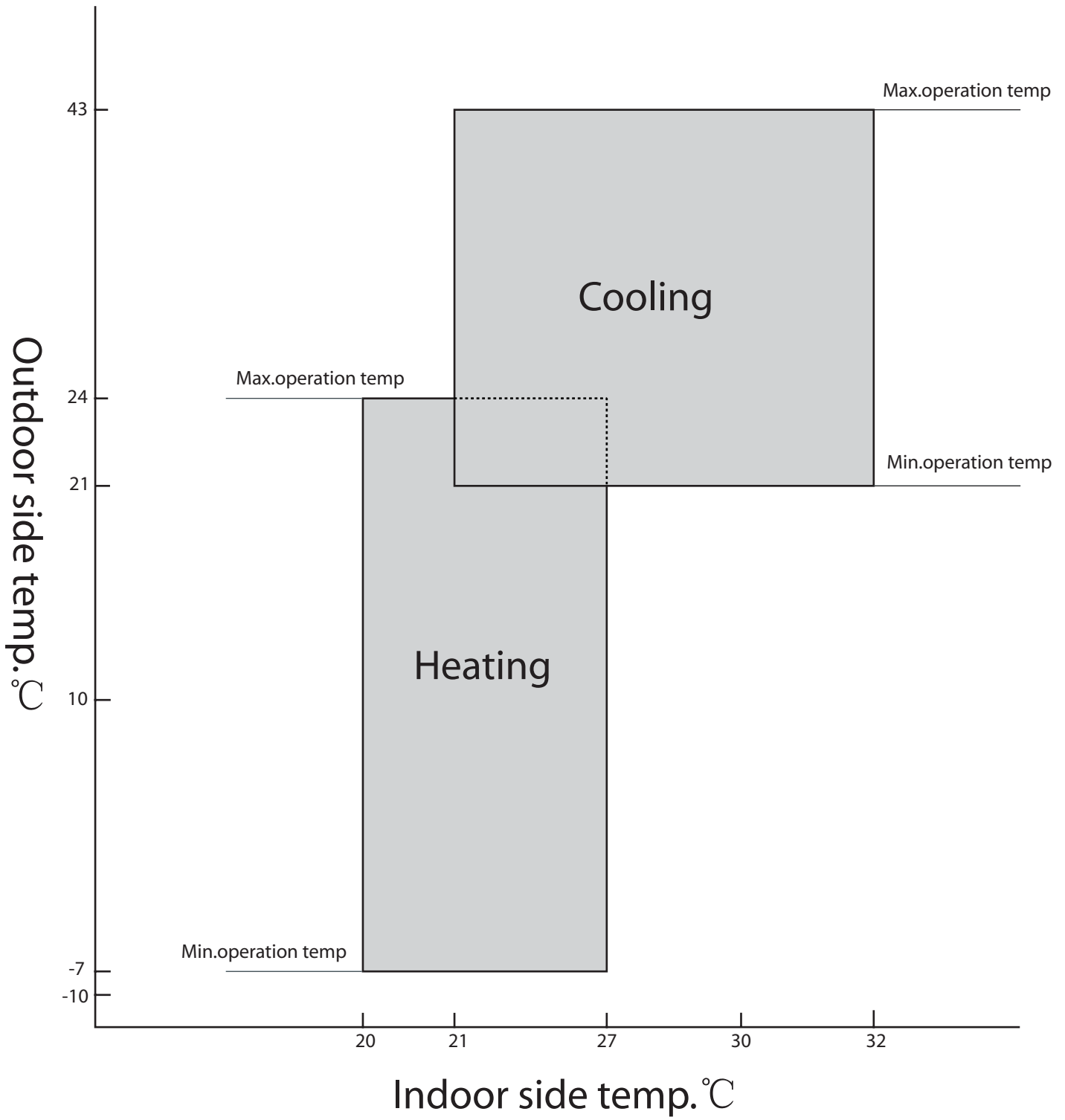
Refrigerant R410A

		9000BTU	12000BTU
Model		KFR-26GW/AZBP	KFR-34GW/AZBP
Cooling capacity	W	2600(900~3200)	3500(1000~3700)
	Btu/h	8870(3100~11000)	12000(3412~13000)
Heating capacity	W	3400(1000~4000)	4100(1000~4500)
	Btu/h	12000(3412~14000)	14000 (3412~15400)
Rated power input	W		
Cooling		780(250~1100)	1020(260~1320)
Heating		950(250~1320)	1130 (250~1500)
Rated current	A		
Cooling		3.7	4.80
Heating		4.5	5.30
Operation frequency	Hz		28~95
Power			220/240V/1/50Hz
Air flow(indoor/high speed)	m ³ /h		520
Noise(indoor/outdoor)	dB(A)		≤42/52
Refrigerant(R410A)	g	770	910
Refrigerant tube size	inch		
Liquid		1/4"	1/4"
Gas?		3/8"	1/2"
Connecting wire	mm ²	3×1.0+1×0.75	3×1.5+1×0.75
Power wire	mm ²	3×1.0/10A	3×1.5/16A
Drain hose(Indoor/Outdoor)	mm		I. d φ 16
Dimension(W×H×D)	mm		
Indoor			815×288×210
Outdoor			820×540×320
Weight	kg		
Indoor		10.5	10.5
Outdoor		32	35

Note:

- ① Rated cooling capacity under below conditions:
Indoor temp:27°CDB, 19°CWB; Outdoor temp:35°CDB, 24°CWB.High speed;4-meter connecting pipe.
- ② Rated heating capacity under below conditions:
Indoor temp:20°CDB;Outdoor temp:7°CDB, 6°CWB.High speed;4-meter connecting pipe.
- ③ We get the noise under heating model meantime.The fan runs at high speed.

Working range



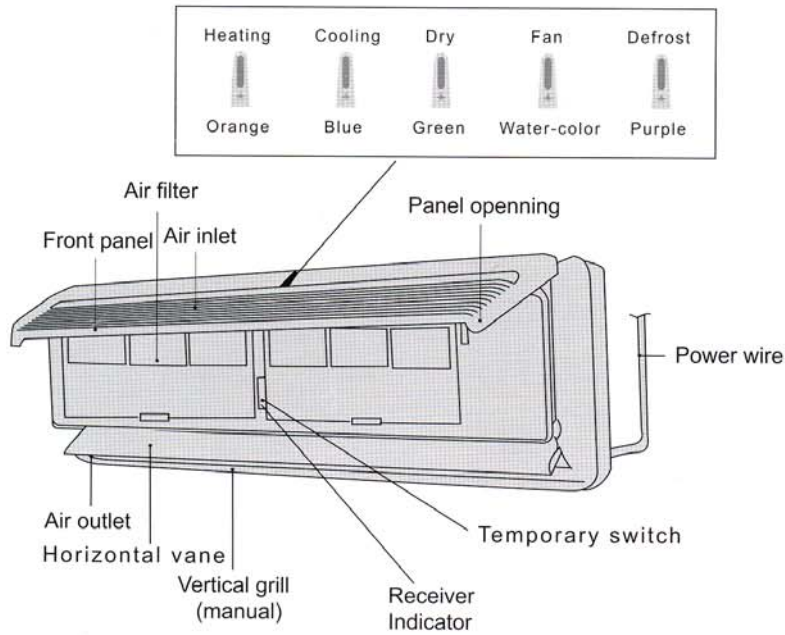
Indoor unit



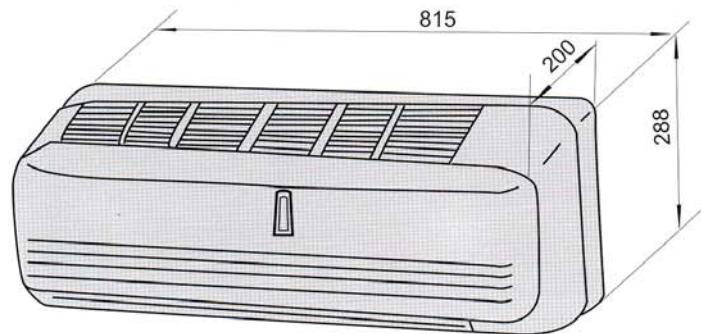
F type

unit(mm)

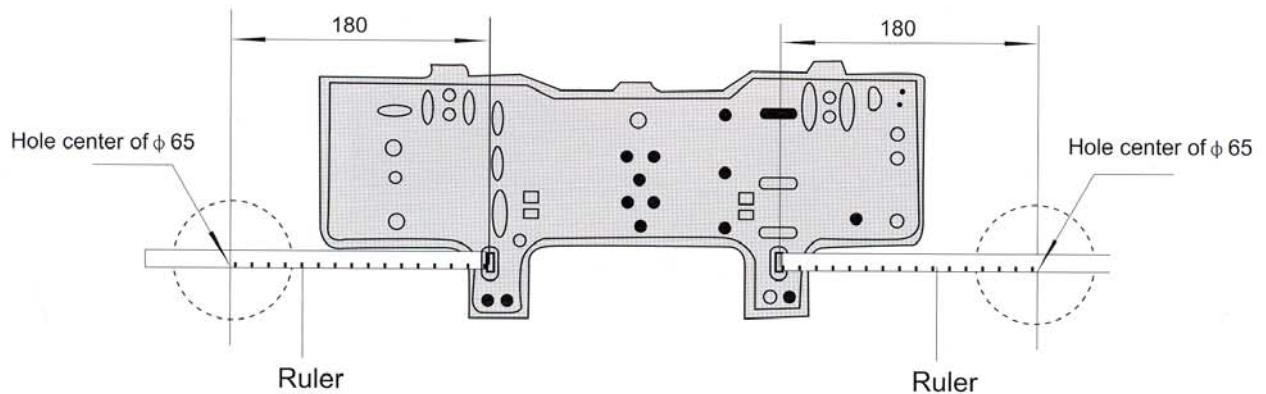
Name of parts



Dimensions



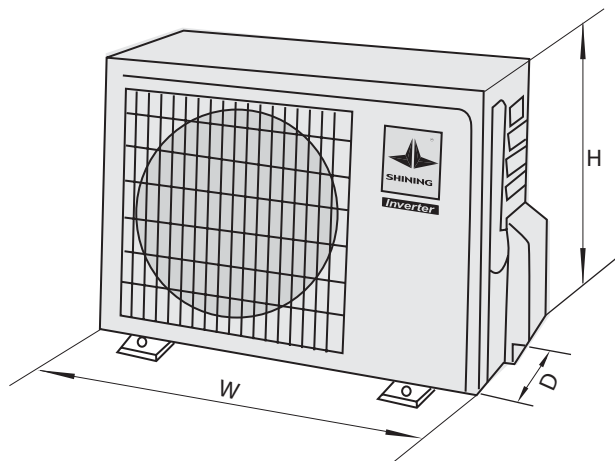
Installation dimension



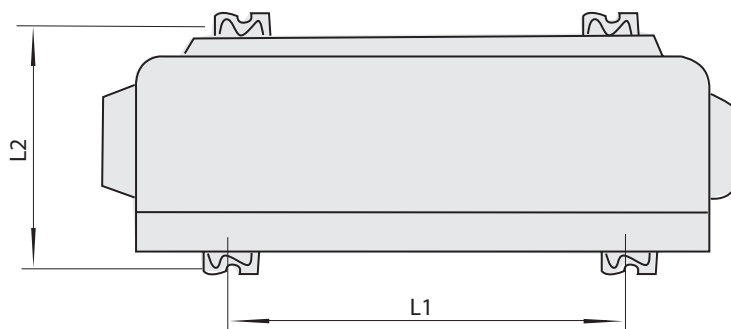
Outdoor unit



Outdoor unit



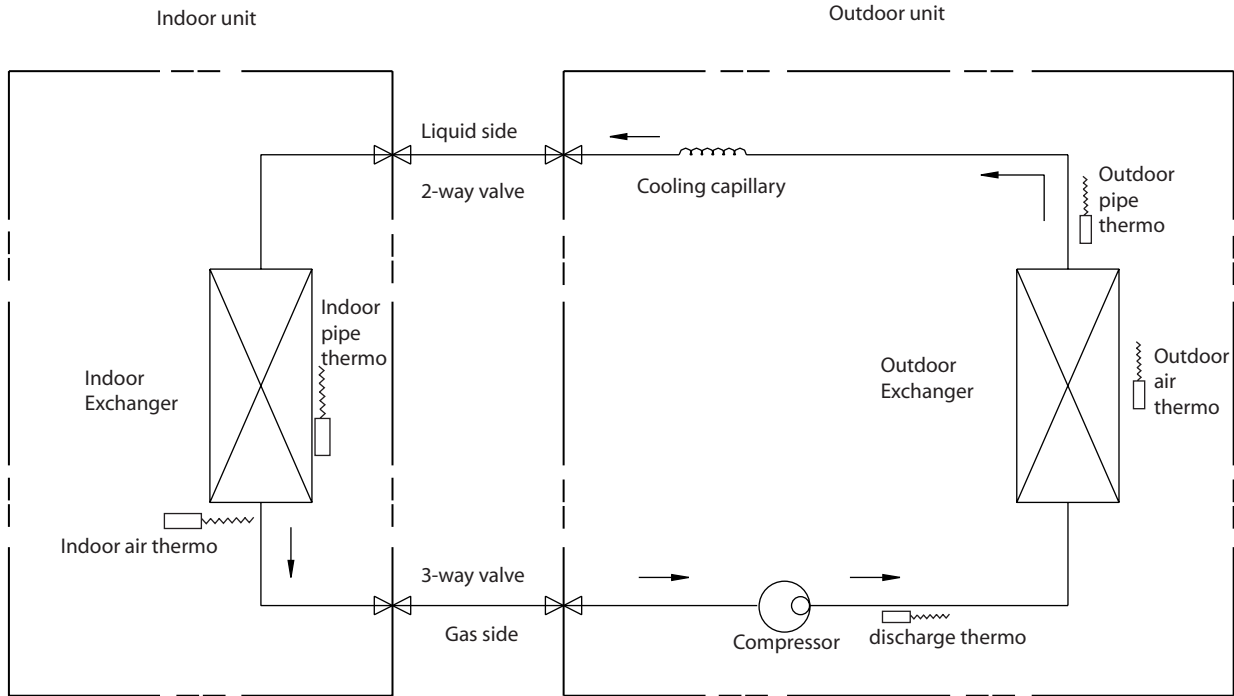
unit(mm)



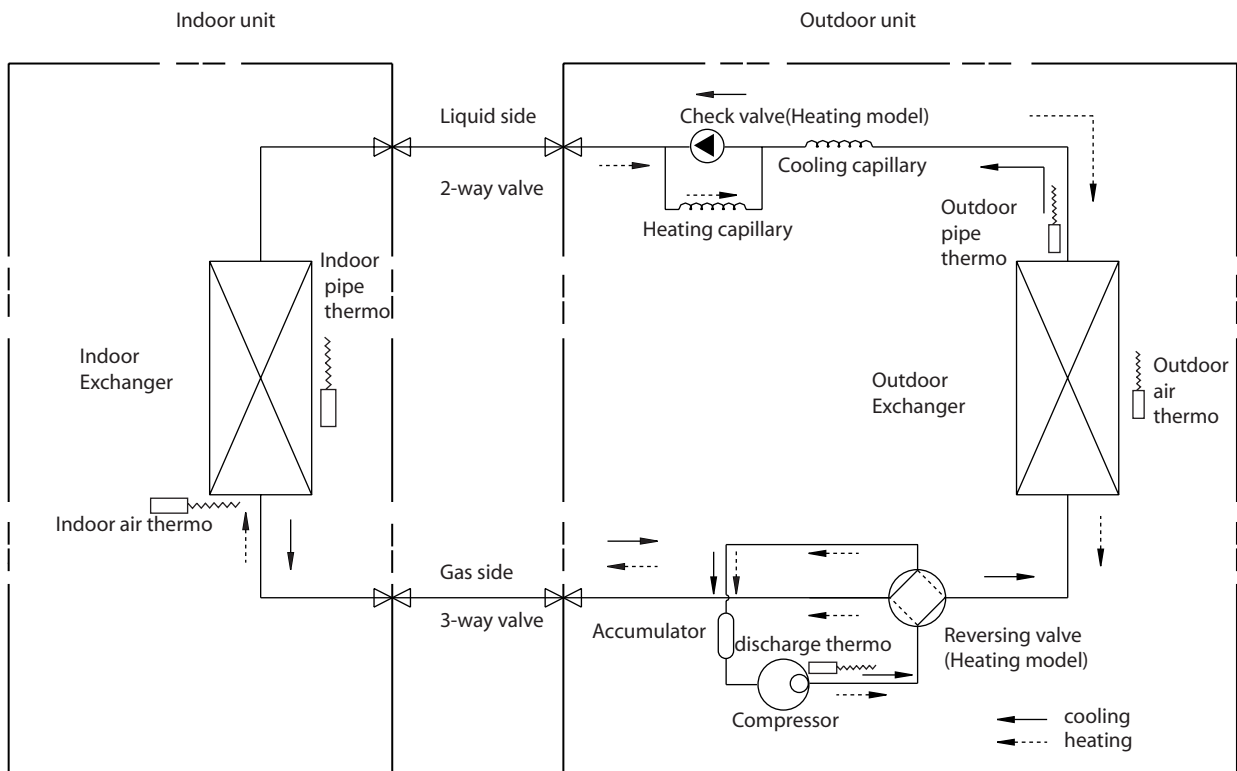
Dimension	9000Btu	12000Btu
W	760	760
H	528	528
D	256	256
L 1	538	538
L 2	283	283

Refrigeration cycle diagram

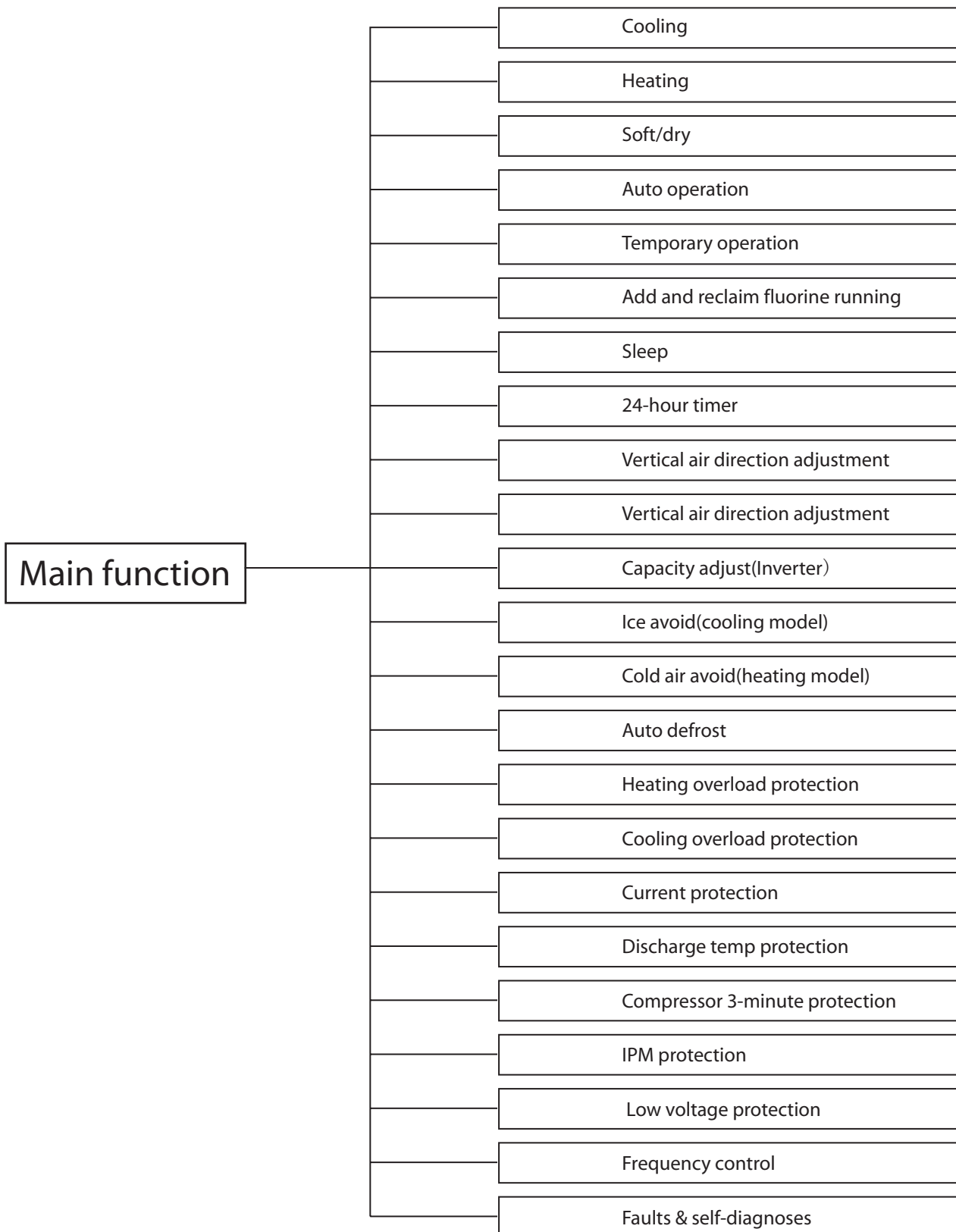
COOLING ONLY MODELS



COOLING AND HEATING MODELS



Main function

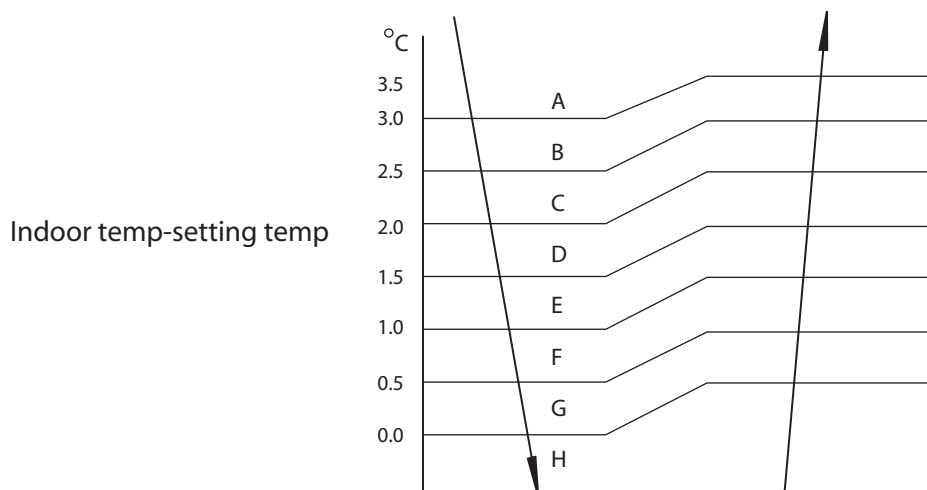


System control



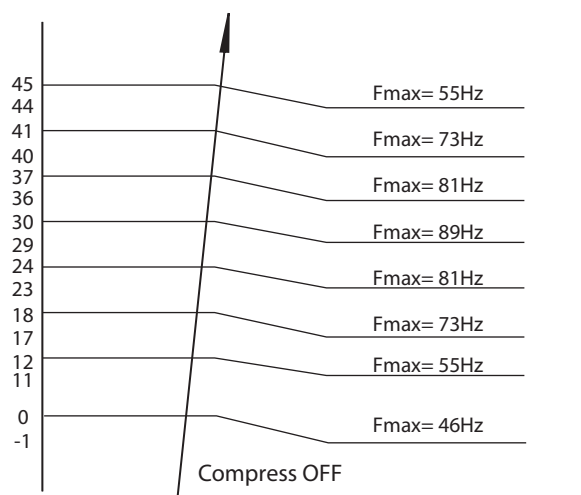
Cooling operation

Frequency control by indoor temp



Temp range	A	B	C	D	E	F	G	H
Frequency(Hz)	89	85	81	77	73	37	28	0

Limit of the most frequency by outdoor temp



Ice avoid

- Inlet condition: ① evaporator temp down $\leq 2^{\circ}\text{C}$, system is running on the lowest frequency(28Hz).
② evaporator temp down $< 0^{\circ}\text{C}$, compressor OFF.
- Return condition: evaporator temp raise $\geq 6^{\circ}\text{C}$ and continuous 10 minutes, the frequency rise to the most.

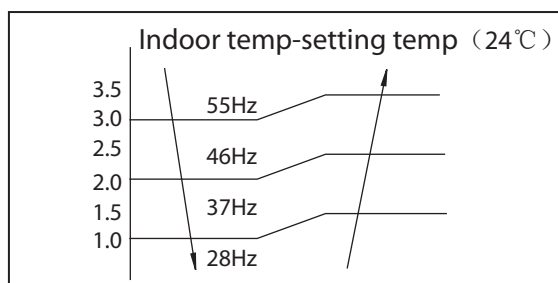
System control

Cooling overload protection

- Inlet condition: ① condenser temp raise $\geq 58^{\circ}\text{C}$, system is running on the lowest frequency (28Hz).
② condenser temp raise $\geq 62^{\circ}\text{C}$, compressor OFF.
- Return condition: condenser temp down $< 54^{\circ}\text{C}$ and continuous 10 minutes when condenser down $< 52^{\circ}\text{C}$, the frequency rise to the most.

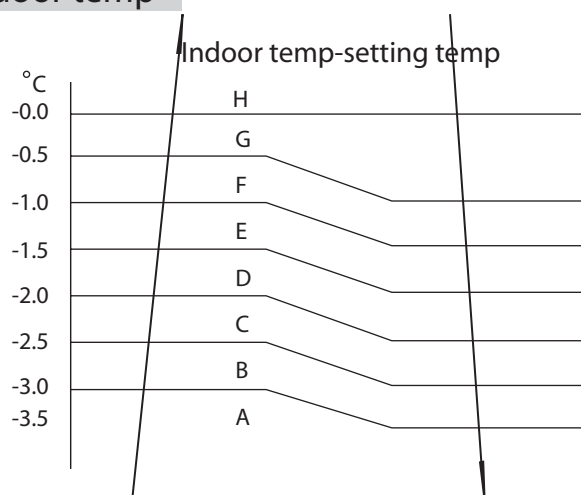
Soft/dry

Automatically choose running frequency according to the numerical value between room temp and setting temp. (CMOS chip enact the temp to 24°C).



Heating operation

Frequency control by indoor temp

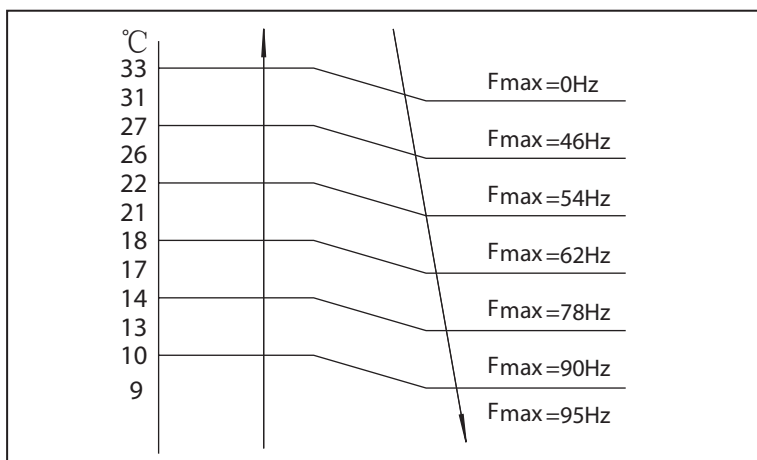


Temp range	A	B	C	D	E	F	G	H
Frequency(Hz)	95	90	85	78	70	38	30	0

System control



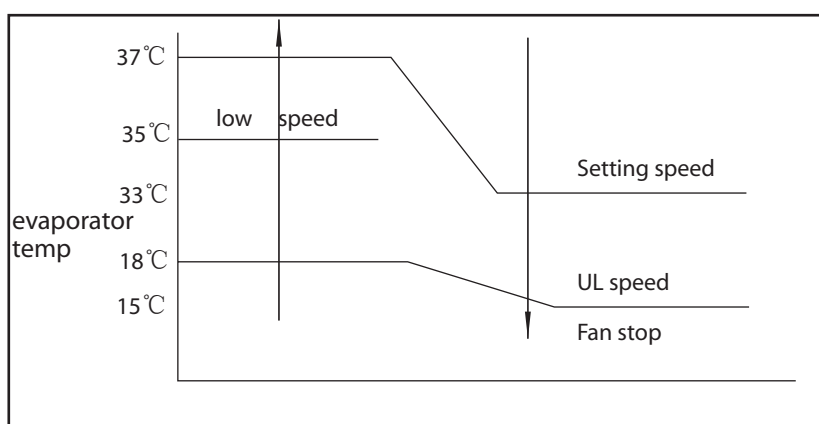
Limit of the most frequency by outdoor temp



Heating overload protection

- Inlet condition:** 1 evaporator temp raise $\geq 55^{\circ}\text{C}$, system is running on the lowest frequency (30Hz).
 2 evaporator temp raise $\geq 62^{\circ}\text{C}$, compressor OFF.
- Return condition:** evaporator temp down $< 47^{\circ}\text{C}$ and continuous 10 minutes, the frequency rise to the most.

Cold air avoid



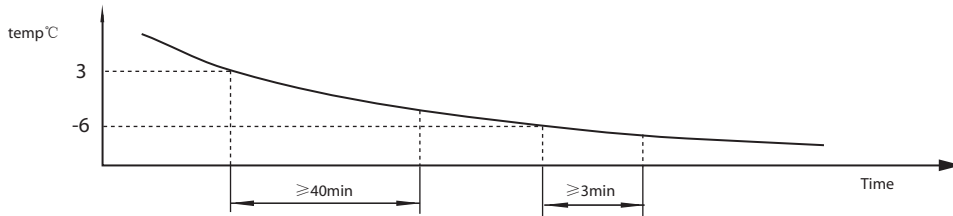
System control



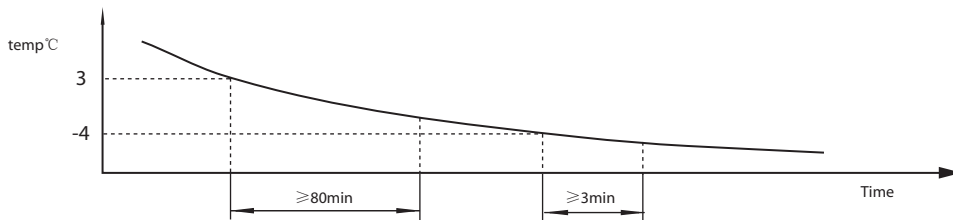
Auto defrost

Inlet condition: (only meet one condition)

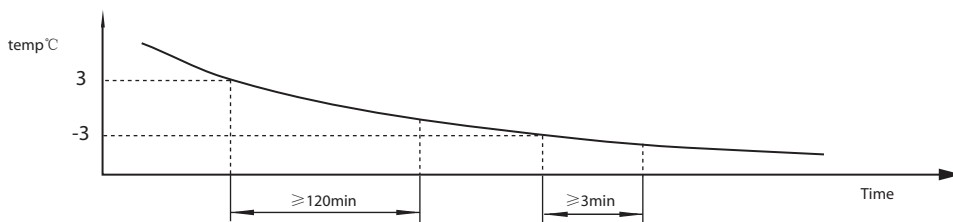
- ① Condenser temp $\leq 3^{\circ}\text{C}$ continuous 40min, and Condenser temp $\leq -6^{\circ}\text{C}$ continuous more 3min.



- ② Condenser temp $\leq 3^{\circ}\text{C}$ continuous 80min, and Condenser temp $\leq -4^{\circ}\text{C}$ continuous more 3min.



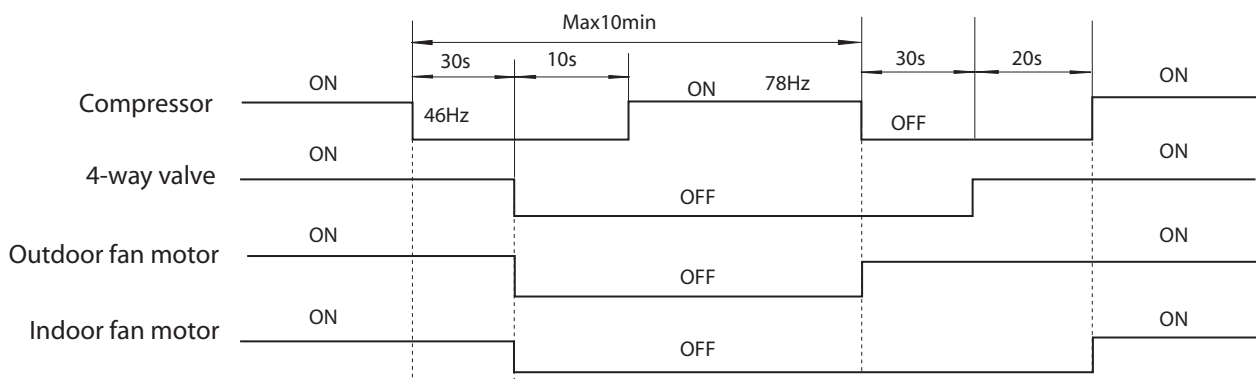
- ③ Condenser temp $\leq 3^{\circ}\text{C}$ continuous 120min, and Condenser temp $\leq -3^{\circ}\text{C}$ continuous more 3min.



Return condition: (only meet one condition)

- ① Condenser temp rising $\geq 15^{\circ}\text{C}$.
- ② Condenser temp rising $\geq 8^{\circ}\text{C}$ and continuous more 80S.
- ③ Defrost continuous 10min.

Defrost action



System control



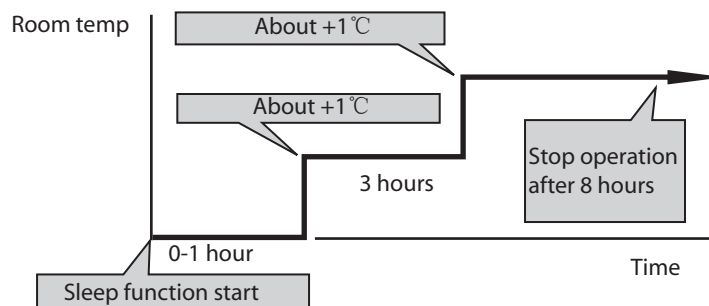
Auto operation

Once enter into auto operation model, the unit automatically choose one running model among cooling, single blowing, heating according to the numerical value between room temp(TA) and setting temp(TS). First enter into auto model, the CMOS chip enact automatically to 24°C.

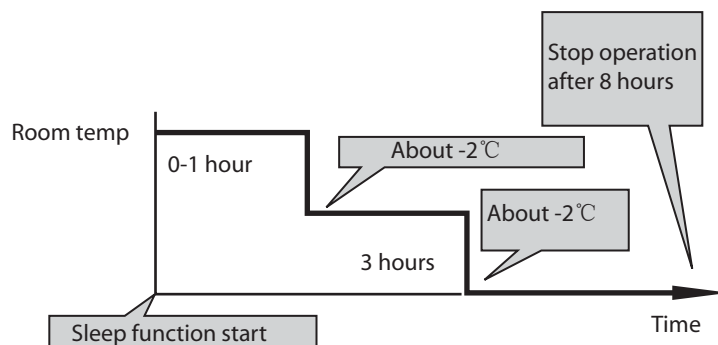
$TA-TS > 1^{\circ}\text{C}$	cooling
$-1^{\circ}\text{C} \leq TA-TS \leq +1^{\circ}\text{C}$	single blowing
$TA-TS \leq -1^{\circ}\text{C}$	heating

Sleep

Cooling



Heating



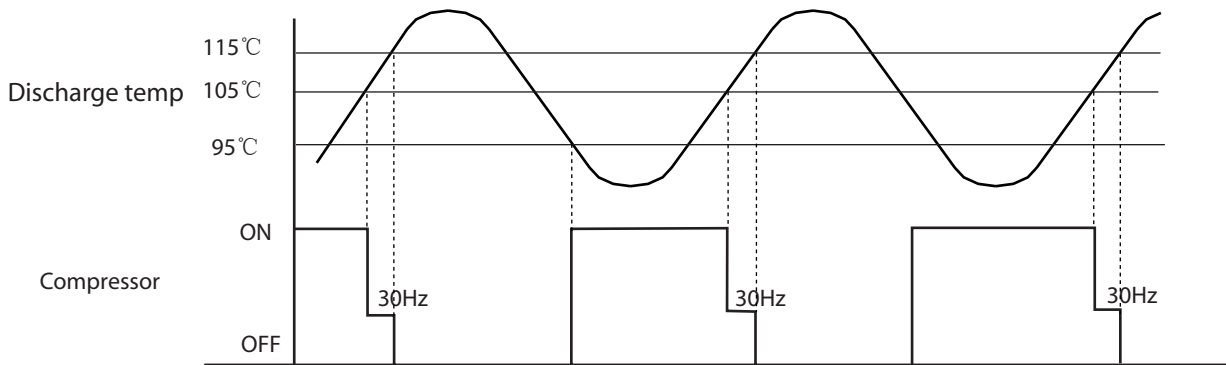
Temporary operation

- If there is a fault with the remote controller or you lose it, you can operate it by this function. Press the temporary switch for more 0.5s, the unit will enter auto operation model.

Protection functions

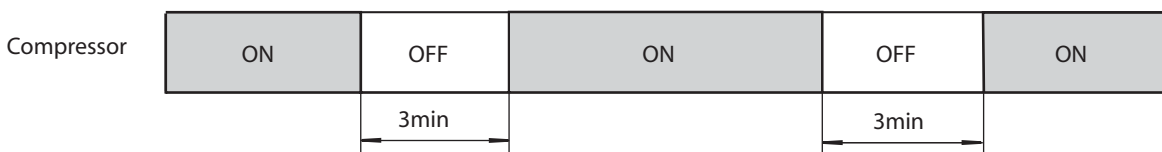
Discharge temp protection

When discharge temp $105^{\circ}\text{C} < t_d < 115^{\circ}\text{C}$, the system limit the frequency to 30Hz.
 When discharge temp $t_d < 95^{\circ}\text{C}$ and continue 10 minutes, rescind the protection.
 When discharge temp $t_d > 115^{\circ}\text{C}$, compressor OFF and compressor restart until $t_d < 95^{\circ}\text{C}$.



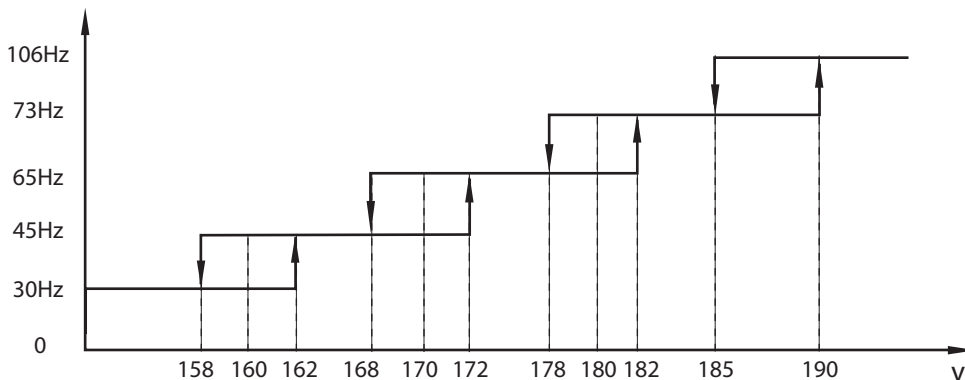
3-minute waiting

- It should wait 3 minutes when we restart the compressor.

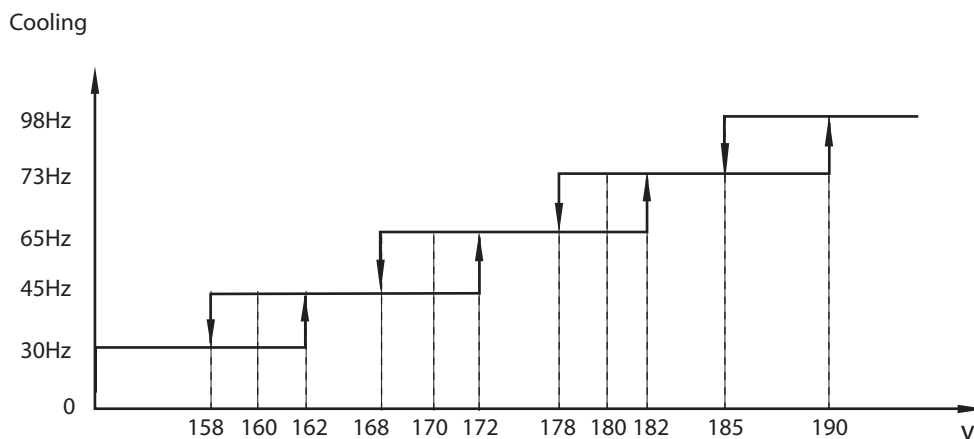


Low voltage protection

Heating



System control



Current protection

- When current of outdoor $I_{down} < I_{ct} < I_{stop}$, the system reduce the frequency by 1Hz/s until $I_{ct} < I_{down}$.
- When $I_{norm} < I_{ct} < I_{down}$, prohibit compressor frequency to rise and can raise until $I_{ct} < I_{norm}$.
- When current of outdoor $I_{ct} > I_{stop}$, compressor off.

I_{CT}	I_{stop}	I_{down}	I_{norm}
Cooling (A)	12.0	10.5	7.5
Heating (A)	14.0	12.0	10.5

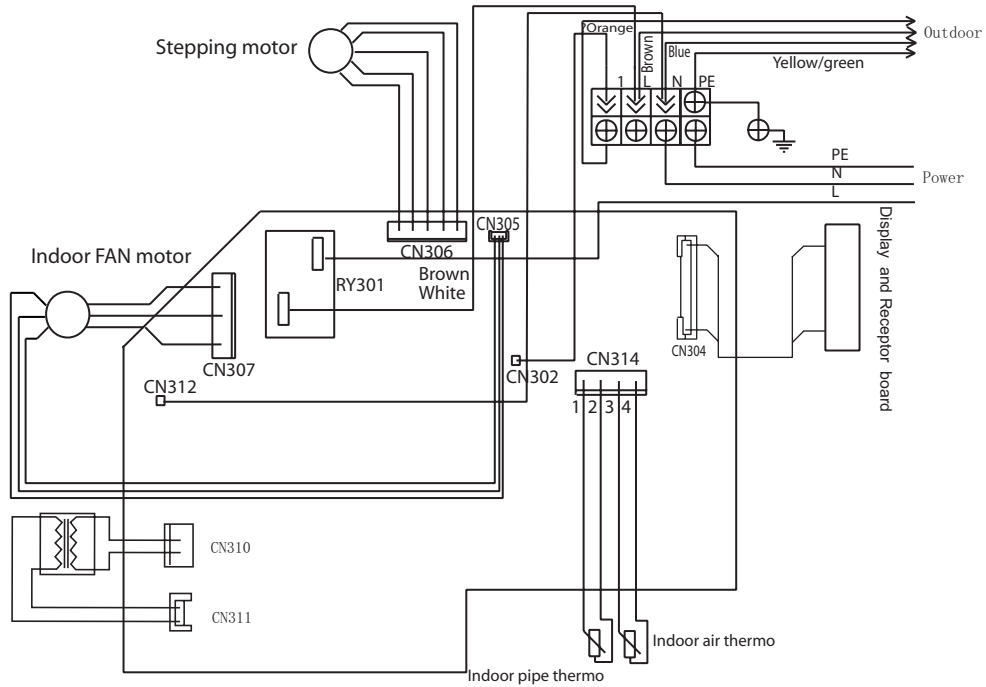
IPM protection

When there is 3 times IPM protection within 30 minutes, it means IPM fault, compressor off.

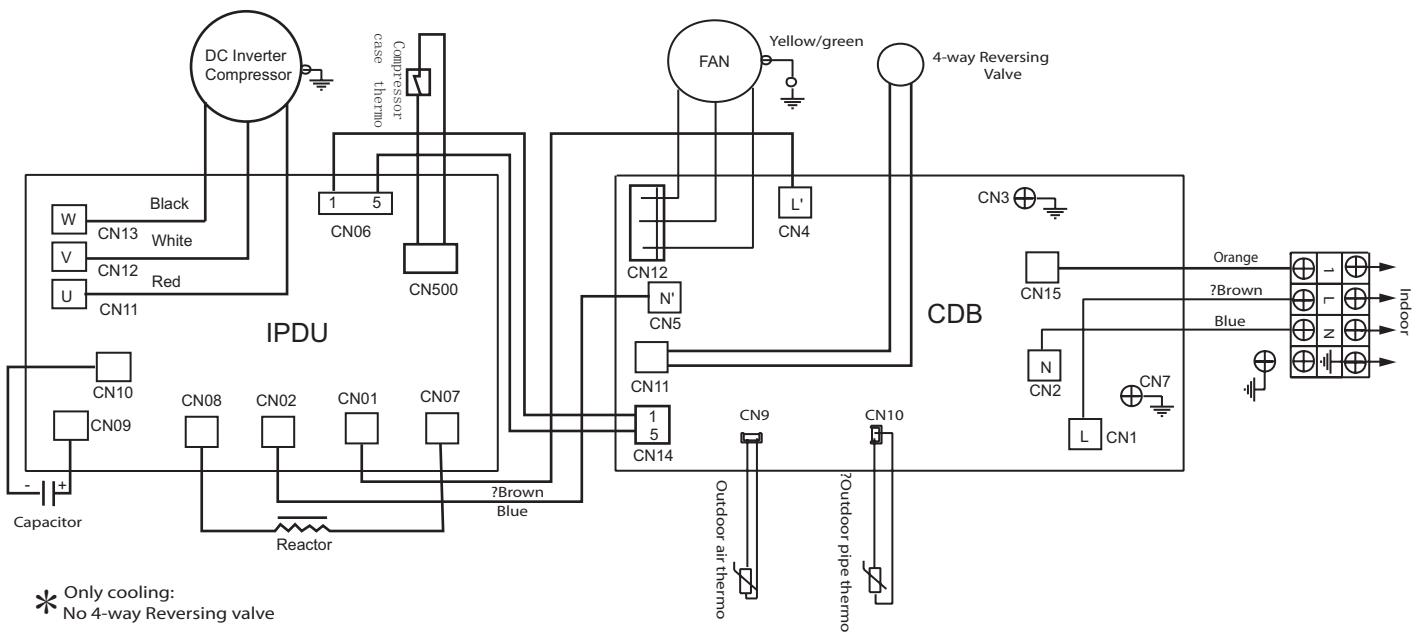
Wiring diagram



Indoor circuit



Outdoor circuit



* Only cooling:
No 4-way Reversing valve

Wiring diagram



Main parts list

name of parts	models	9000Btu	12000Btu
Indoor unit			
Remote controller?		cooling & heating	cooling & heating
Fan motor (PG)		220V/50HZ 0.23A 16W 1.2 μ F/450V	220V/50HZ 0.23A 16W 1.2 μ F/450V
Step motor		25BYJ48-B, 12VDC 300 Ω	25BYJ48-B, 12VDC 300 Ω
Relay		JQX-102F-012 12VDC,20A 250VAC	JQX-102F-012 12VDC,20A 250VAC?
Fan motor capacitor		CBB61,1.2 μ F/450V	CBB61,1.2 μ F/450V
Power wire		3 × 1.0mm ² /10A	3 × 1.5mm ² /16A
Room temp. sensor		R25=5.0K Ω , B25/50=3950K	R25=5.0K Ω , B25/50=3950K
Indoor coil sensor		R50=20.92K Ω , B0/50=3877K B25/50=3950K	R50=20.92K Ω , B0/50=3877K B25/50=3950K
Micro computer		TMP87PH46N	TMP87PH46N
Fuse		T3.15A/250V	T3.15A/250V
Outdoor unit			
Compressor(R410A)		DA89X1F-22FD	DA89X1F-22FD
Compressor(R407C)		DA89X1F-22FD Winding resistance:0.88 Ω (20℃)	DA89X1F-22FD Winding resistance:0.88 Ω (20℃)
4-way valve		DHF-5	?DHF-9
Fan motor		KF20-6M ,20W,6P ,0.32A 220V/50HZ , 2 μ F /450V Temp protector inside: OFF:125℃ ON: 95℃	KF20-6M ,20W,6P ,0.32A 220V/50HZ , 2 μ F /450V Temp protector inside: OFF:125℃ ON: 95℃
Fan motor capacitor		2 μ F /450V	2 μ F /450V
Compressor case thermo		R95=4.1877K Ω R110=2.6325K Ω R115=2.2734K Ω B95/115=4365K	R95=4.1877K Ω R110=2.6325K Ω R115=2.2734K Ω B95/115=4365K
?Outdoor pipe thermo		R0=15.0K Ω ,R25=5.286K Ω B0/100=3450K	R0=15.0K Ω ,R25=5.286K Ω B0/100=3450K
?Outdoor air thermo		R0=15.0K Ω ,R25=5.286K Ω B25/50=3450K	R0=15.0K Ω ,R25=5.286K Ω B25/50=3450K
Current protector(CT)		25A	?25A
Micro computer		TMP87P809N、 TMP88PH47N	TMP87P809N、 TMP88PH47N
IPM		2S16DAI	2S16DAI
Electrolytic capacitor		400VAC 50/60HZ 1500 μ F	400VAC 50/60HZ 1500 μ F
Reactor		19mH 23/10A	19mH 23/10A
Fuse		T20A 250V	T20A 250V
Cooling capillary		Φ 3.0 × 1.5 × 600	Φ 3.0 × 1.6 × 700
Heating capillary		Φ 3.0 × 1.4 × 630	Φ 3.0 × 1.5 × 750

Faults & self-diagnoses



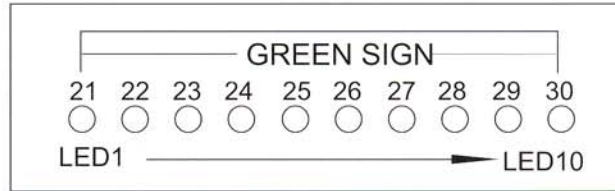
Faults & self-diagnoses

After confirmation that there is a default, or find that the temp indicator is always blinking, please check the fault.

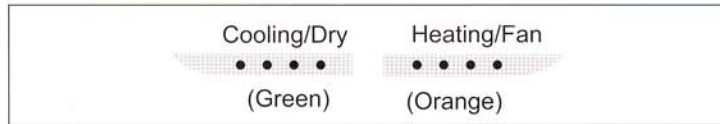
Faults display

V type

Confirm the type of usual fault according as the state of green sign indicator lamp LED1~LED10 in indoor unit light or go out.



E type



● Yellow and green light blinking meanwhile

F type



● Green light blinking

Means Press the temporary switch for 3-5 seconds, there will be two beepers, so we can start the self dia.

Faults display content

■ Indoor LED fault:

V type

No Fault Display									
light	light	light	light	light	light	light	light	light	light
1	2	3	4	5	6	7	8	9	10
on	off	on	off	on	off	on	off	—	—
At Fault Display									
light	light	light	light	light	light	light	Fault content		
	5	6	7	8	9	10			
01	on	off	off	off	off	on	Indoor air thermo		
02	on	off	off	off	on	off	Indoor pipe thermo		
03	on	off	off	off	on	on	Indoor Fan		
04	on	off	off	on	off	off	Communication		
05	on	off	off	on	off	on	IPM		
06	on	off	off	on	on	off	Outdoor thermo		
07	on	off	off	on	on	on	Indoor fan zero-crossing(No voltage)		
08	on	off	on	off	off	off	Model fault		
09	on	off	on	off	off	on	Compressor case thermo		
10	on	off	on	on	off	off	current/voltage transformer		

Faults & self-diagnoses



E type

- Judgment of faults by blinking times of yellow and green light.

LED blinking times	Faults
1	Indoor air thermo fault
2	Indoor pipe thermo fault
3	Indoor fan motor fault
4	Indoor-outdoor communication fault
5	IPM fault
6	Outdoor thermo fault
7	Indoor fan Zero-crossing(No voltage)
8	Model fault
9	Compressor case thermo fault
12	Current/voltage transformer

F type

- Judgment of faults by blinking times of green light.

LED blinking times	Faults
1	Indoor air thermo fault
2	Indoor pipe thermo fault
3	Indoor fan motor fault
4	Indoor-outdoor communication fault
6	Outdoor thermo fault
7	Indoor fan Zero-crossing(No voltage)
9	Compressor case thermo fault
12	Current/voltage transformer
13	IPDU-CDB communication fault

Faults & self-diagnoses



E、F type

Judgment of state by on/off and blinking of LED4 (green) light

- LED4 blinks at 0.5HZ:waiting(compressor stop).
- LED4 always on:the unit runs well(compressor running).
- LED4 off for 1 second,and then blinks N times at 2HZ,the different blinking times show the different faults.

Outdoor Electronic diagram

Inverter Air-conditioner

No	LED4 (green light) flicker	Fault content
1	2 times	Outdoor Air thermo
2	3 times	Outdoor pipe thermo
3	4 times	Compressor case thermo
4	5 times	Current transformer
5	6 times	Voltage transformer
6	8 times	Communication
7	12 times	Over-Current
8	13 times	No enough Voltage
9	14 times	IGBT
10	15 times	IPDU-CDB communication

The way of reclaiming and adding refrigerant (compelliy cooling mode)

please follow this steps when repairing or moving the air condition.

- When the temp is low,make the cooling mode by remote control.
- Press the temporary switch > 5S, When LED light blinking: LED1-LED10 (V type); (green) LED (E type); blue LED (F type),we can reclaim or add refrigerant.

Faults & self-diagnoses

Faults and solution

No	Faults content	Main reasons	?Diagnose	Normal conditions	Solution																																																						
1	AC open circuit	<ul style="list-style-type: none"> ● Wire connecting plate broken or jointing copper foil open 	<ul style="list-style-type: none"> ● Check by eyes 	<ul style="list-style-type: none"> ● Connecting plate and copper foil connected well 	<ul style="list-style-type: none"> ● Change the connecting plate or repair the jointing copper foil 																																																						
		<ul style="list-style-type: none"> ● The transformer broken 	<ul style="list-style-type: none"> ● Check voltage of the transformer 	<ul style="list-style-type: none"> ● AC10~16V 	<ul style="list-style-type: none"> ● Change the transformer 																																																						
2	Can't adjust the indoor fan speed	<ul style="list-style-type: none"> ● Can't adjust the indoor fan speed under sleeping mode (low speed) ● Can't adjust the indoor fan speed under dehumidifying mode (low speed) 	<ul style="list-style-type: none"> ● Check if the units under sleeping mode ● Check the operation mode 	<ul style="list-style-type: none"> ● The speed changeable except sleeping mode ● The speed changeable except dehumidifying mode 	<ul style="list-style-type: none"> ● Explain to user ● Explain to user 																																																						
		<ul style="list-style-type: none"> ● Battery power used up ● Wrong battery connection ● Caused by other light (too near) ● Use the remote control with incorrect place or angle 	<ul style="list-style-type: none"> ● Check the voltage of battery ● Check the direction of battery ● Check after turning off the light ● Use the remote control within the valid angle and distance 	<ul style="list-style-type: none"> ● The total voltage should > 2.5V ● Instruction in the battery box ● The unit recover after turning off the light ● Signal transmits OK within the valid angle and distance 	<ul style="list-style-type: none"> ● Change the battery ● Correct the direction of battery ● Change the location of the light ● Use the remote control according to the User Manual 																																																						
3	Remote control signal transmitting or receiving error	<ul style="list-style-type: none"> ● Broken wire connecting ● Signal receiver error 	<ul style="list-style-type: none"> ● Check the wire connection ● Check the signal receiver 	<ul style="list-style-type: none"> ● No connection broken ● Steady connection, touch well 	<ul style="list-style-type: none"> ● Change the connecting wire ● Repair and correct the connection 																																																						
		<ul style="list-style-type: none"> ● PCB of remote control error ● Chip wrong action 	<ul style="list-style-type: none"> ● Check the weld of signal receiver ● Check the remote controller ● Replace the signal receiver and check it ● Use temporary switch for test ● Try again after turning off the power 	<ul style="list-style-type: none"> ● No rupture and weld ill ● Remote controller transmit well ● Signal receive successfully ● The unit operate well ● The unit start to run after restart 	<ul style="list-style-type: none"> ● Change the signal receiver ● Change the remote controller ● Change the signal receiver ● Change the PCB of remote control ● Anti-jamming to the chip ● Solution to disturbance 																																																						
4	The horizontal grill action error	<ul style="list-style-type: none"> ● Linkage construction fall off 	<ul style="list-style-type: none"> ● Check the linkage parts 	<ul style="list-style-type: none"> ● The horizontal grill move easy 	<ul style="list-style-type: none"> ● Repair the linkage parts? 																																																						
		<ul style="list-style-type: none"> ● The joint ends of the horizontal grill fall off 	<ul style="list-style-type: none"> ● Check both ends of the horizontal grill plate 	<ul style="list-style-type: none"> ● Both ends of horizontal grill plate steady installation 	<ul style="list-style-type: none"> ● Confirm the joint ends well connected 																																																						
		<ul style="list-style-type: none"> ● Step motor error 	<ul style="list-style-type: none"> ● Check the existence of step motor 	<table border="1"> <tr> <td>1-2</td> <td>1-3</td> <td>1-4</td> <td>1-5</td> </tr> <tr> <td>575 Ω</td> <td>575 Ω</td> <td>575 Ω</td> <td>285 Ω</td> </tr> </table>	1-2	1-3	1-4	1-5	575 Ω	575 Ω	575 Ω	285 Ω	<ul style="list-style-type: none"> ● Change the step motor 																																														
1-2	1-3	1-4	1-5																																																								
575 Ω	575 Ω	575 Ω	285 Ω																																																								
5	The compressor don't start	<ul style="list-style-type: none"> ● Wrong wire connection (Communication error) 	<ul style="list-style-type: none"> ● Check the wire connection 	<ul style="list-style-type: none"> ● L-N: AC220V ● 1-N: Being lined signals Running: DC 2.5V Stop: DC 12-18V 	<ul style="list-style-type: none"> ● Correct the wire connection 																																																						
		<ul style="list-style-type: none"> ● IPM protection or default 	<ul style="list-style-type: none"> ● Turn off the power, discharge the power of capacitor and then test the current. ● Check the heat sinker of the IPM 	<ul style="list-style-type: none"> ● Overload current DC<2.5A <table border="1"> <tr> <td>Test data</td> <td>normal data</td> <td>Test data</td> <td>normal data</td> </tr> <tr> <td>+</td> <td>-</td> <td>-</td> <td>+</td> </tr> <tr> <td>P</td> <td>N</td> <td>P</td> <td>N</td> </tr> <tr> <td>U</td> <td>U</td> <td>U</td> <td>U</td> </tr> <tr> <td>V</td> <td>V</td> <td>V</td> <td>V</td> </tr> <tr> <td>W</td> <td>W</td> <td>W</td> <td>W</td> </tr> <tr> <td></td> <td>∞</td> <td></td> <td>530K</td> </tr> <tr> <td></td> <td></td> <td></td> <td>420K</td> </tr> </table> <table border="1"> <tr> <td>Test data</td> <td>normal data</td> <td>Test data</td> <td>normal data</td> </tr> <tr> <td>+</td> <td>-</td> <td>-</td> <td>+</td> </tr> <tr> <td>U</td> <td>N</td> <td>U</td> <td>N</td> </tr> <tr> <td>V</td> <td>V</td> <td>V</td> <td>V</td> </tr> <tr> <td>W</td> <td>W</td> <td>W</td> <td>W</td> </tr> <tr> <td></td> <td>∞</td> <td></td> <td>420K</td> </tr> </table>	Test data	normal data	Test data	normal data	+	-	-	+	P	N	P	N	U	U	U	U	V	V	V	V	W	W	W	W		∞		530K				420K	Test data	normal data	Test data	normal data	+	-	-	+	U	N	U	N	V	V	V	V	W	W	W	W		∞	
Test data	normal data	Test data	normal data																																																								
+	-	-	+																																																								
P	N	P	N																																																								
U	U	U	U																																																								
V	V	V	V																																																								
W	W	W	W																																																								
	∞		530K																																																								
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Test data	normal data	Test data	normal data																																																								
+	-	-	+																																																								
U	N	U	N																																																								
V	V	V	V																																																								
W	W	W	W																																																								
	∞		420K																																																								

Faults & self-diagnoses

No	Faults content	Main reasons	?Diagnose	Normal conditions	Solution																						
5	Compressor don't move	● Electro-analysis capacitor error	<ul style="list-style-type: none"> ● Turn off the power, discharge the power of capacitor and then check it if there is broken or transfiguration ● Check by the current meter 	<ul style="list-style-type: none"> ● No broken and transfiguration ● Positive and negative meter pole connected with capacitor terminals, multimeter needle rotate completely, and then slowly revert, change polarity, the same result (while opposite polarity checked, first discharging) 	● Change the electro-analysis capacitor																						
		● The fuse of the outdoor unit broken	<ul style="list-style-type: none"> Check the resistance by the current meter ● Check the 20A fuse 	R=0 OK R= ∞ Broken	● Change fuse																						
		● The compressor block	<ul style="list-style-type: none"> ● Turn on the power and confirm the start ● The compressor shake and stop. 	● Can start	● Change compressor																						
		● The compressor burnt	● Check the existence R-S R-C and S-C	BH108/BG108: 1.18 Ω BH103/BG130: 1.33 Ω	● Change compressor																						
		● Commutating bridge error	● Turn off the power, discharge the power of capacitor and then check the existence	<table border="1"> <tr> <th colspan="2">Test data</th> <th rowspan="2">normal data</th> </tr> <tr> <td>⊕</td> <td>⊖</td> </tr> <tr> <td>~</td> <td>+</td> <td>∞</td> </tr> <tr> <td>-</td> <td>~</td> <td></td> </tr> </table> <table border="1"> <tr> <th colspan="2">Test data</th> <th rowspan="2">normal data</th> </tr> <tr> <td>⊖</td> <td>⊕</td> </tr> <tr> <td>~</td> <td>+</td> <td>10K Ω</td> </tr> <tr> <td>-</td> <td>~</td> <td></td> </tr> </table>	Test data		normal data	⊕	⊖	~	+	∞	-	~		Test data		normal data	⊖	⊕	~	+	10K Ω	-	~		● Change the commutate bridge
		Test data		normal data																							
⊕	⊖																										
~	+	∞																									
-	~																										
Test data		normal data																									
⊖	⊕																										
~	+	10K Ω																									
-	~																										
● Inductance error	● Check the resistance of the inductance	● About 0.2 ohm	● Change the inductance																								
6	Indoor fan don't move	<ul style="list-style-type: none"> ● Connecting broken Burnt ● Coil of the motor burnt 	<ul style="list-style-type: none"> ● Check it by eyes ● Check it by the current meter 	<ul style="list-style-type: none"> ● Steady connection <table border="1"> <tr> <td>1~2</td> <td>1~3</td> <td>2~3</td> </tr> <tr> <td>1010 Ω</td> <td>526 Ω</td> <td>485 Ω</td> </tr> </table>	1~2	1~3	2~3	1010 Ω	526 Ω	485 Ω	<ul style="list-style-type: none"> ● Repair and correct the connection ● Change the motor 																
		1~2	1~3	2~3																							
		1010 Ω	526 Ω	485 Ω																							
		● The temp sensor of indoor coil open wire (when heating operation)	● Test the resistance of 1-2	<table border="1"> <tr> <td>20℃</td> <td>25℃</td> <td>30℃</td> <td>35℃</td> <td>40℃</td> </tr> <tr> <td>7.3K Ω</td> <td>5.8K Ω</td> <td>4.7K Ω</td> <td>3.8K Ω</td> <td>3.1K Ω</td> </tr> </table>	20℃	25℃	30℃	35℃	40℃	7.3K Ω	5.8K Ω	4.7K Ω	3.8K Ω	3.1K Ω	● Change the sensor												
20℃	25℃	30℃	35℃	40℃																							
7.3K Ω	5.8K Ω	4.7K Ω	3.8K Ω	3.1K Ω																							
● Feed back error	● Check it by the current meter	<table border="1"> <tr> <td>1~2</td> <td>1~3</td> <td>2~3</td> </tr> <tr> <td>16K Ω (positive)</td> <td>15.8K Ω (positive)</td> <td>8.7K Ω (positive)</td> </tr> <tr> <td>19K Ω (negotive)</td> <td>17.1K Ω (negotive)</td> <td>8.9K Ω (negotive)</td> </tr> </table>	1~2	1~3	2~3	16K Ω (positive)	15.8K Ω (positive)	8.7K Ω (positive)	19K Ω (negotive)	17.1K Ω (negotive)	8.9K Ω (negotive)	● Change the motor															
1~2	1~3	2~3																									
16K Ω (positive)	15.8K Ω (positive)	8.7K Ω (positive)																									
19K Ω (negotive)	17.1K Ω (negotive)	8.9K Ω (negotive)																									
● Fan capacitor error	● Confirm by charge and discharge of the capacitor	● Same as above	● Change the capacitor																								
7	Outdoor fan don't move	● Connecting wire broken	● Check by eyes?	● Steady connection	● Repair and correct the connection																						
		● Fan capacitor error	● Confirm by charge and discharge of the capacitor	● Same as Electro analysis capacitor	● Change the capacitor																						
		● Relay error	● Check by the current meter	● No short circuit and open circuit	● Change the relay																						
		● Coil burnt	● Check by the current meter	<table border="1"> <tr> <td>1~3</td> <td>1~9</td> <td>3~9</td> </tr> <tr> <td>158 Ω</td> <td>240 Ω</td> <td>392 Ω</td> </tr> </table>	1~3	1~9	3~9	158 Ω	240 Ω	392 Ω	● Change the motor																
1~3	1~9	3~9																									
158 Ω	240 Ω	392 Ω																									

Faults & self-diagnoses



No	Faults content	Main reasons	?Diagnose	Normal conditions	Solution																				
8	4-way valve don't work (heating mode)	<ul style="list-style-type: none"> ● Connect wire broken ● Coil short circuit or open circuit ● Insulation ageing ● The valve can not move 	<ul style="list-style-type: none"> ● Check by eyes or hands ● Check the resistance ● DC 500V insulation ageing test ● Don't heating after frequency rise 	<ul style="list-style-type: none"> ● Connect OK ● 13K ohm between 1-3 ● >1000M ohm ● can change normally 	<ul style="list-style-type: none"> ● Correct the connection ● Change the coil ● Change the coil ● Change the valve 																				
9	Abnormal high temp with the compressor	<ul style="list-style-type: none"> ● Air inlet or outlet block with the outdoor unit. ● Refrigerant leakage ● Discharge temp sensor error ● Indoor heat exchanger sensor error 	<ul style="list-style-type: none"> ● Check by eye ● Check the leakage ● Resistance test 1-2 ● Resistance test 1-2 	<ul style="list-style-type: none"> ● No block with Air in and out ● No leakage <table border="1"> <tr> <td>20℃</td> <td>25℃</td> <td>30℃</td> <td>35℃</td> <td>40℃</td> </tr> <tr> <td>71.5KΩ</td> <td>57.5KΩ</td> <td>46.1KΩ</td> <td>37.2KΩ</td> <td>30.2KΩ</td> </tr> </table> <table border="1"> <tr> <td>20℃</td> <td>25℃</td> <td>30℃</td> <td>35℃</td> <td>40℃</td> </tr> <tr> <td>7.3KΩ</td> <td>5.8KΩ</td> <td>4.7KΩ</td> <td>3.8KΩ</td> <td>3.1KΩ</td> </tr> </table>	20℃	25℃	30℃	35℃	40℃	71.5KΩ	57.5KΩ	46.1KΩ	37.2KΩ	30.2KΩ	20℃	25℃	30℃	35℃	40℃	7.3KΩ	5.8KΩ	4.7KΩ	3.8KΩ	3.1KΩ	<ul style="list-style-type: none"> ● Confirm the air inlet and outlet ● Fill in refrigerant ● Change the discharge temp sensor ● Change the indoor exchanger sensor
20℃	25℃	30℃	35℃	40℃																					
71.5KΩ	57.5KΩ	46.1KΩ	37.2KΩ	30.2KΩ																					
20℃	25℃	30℃	35℃	40℃																					
7.3KΩ	5.8KΩ	4.7KΩ	3.8KΩ	3.1KΩ																					
10	Indoor temp sensor error	<ul style="list-style-type: none"> ● Resistance abnormal Short circuit or open circuit 	<ul style="list-style-type: none"> ● Resistance test 3-4 	<table border="1"> <tr> <td>20℃</td> <td>25℃</td> <td>30℃</td> <td>35℃</td> <td>40℃</td> </tr> <tr> <td>5.3KΩ</td> <td>5.0KΩ</td> <td>4.0KΩ</td> <td>3.3KΩ</td> <td>2.7KΩ</td> </tr> </table>	20℃	25℃	30℃	35℃	40℃	5.3KΩ	5.0KΩ	4.0KΩ	3.3KΩ	2.7KΩ	<ul style="list-style-type: none"> ● Change the indoor temp sensor 										
20℃	25℃	30℃	35℃	40℃																					
5.3KΩ	5.0KΩ	4.0KΩ	3.3KΩ	2.7KΩ																					
11	Outdoor temp sensor fault	<ul style="list-style-type: none"> ● Resistance abnormal Short circuit or open circuit 	<ul style="list-style-type: none"> ● Resistance test 1-2 	<table border="1"> <tr> <td>20℃</td> <td>25℃</td> <td>30℃</td> <td>35℃</td> <td>40℃</td> </tr> <tr> <td>6.4KΩ</td> <td>5.3KΩ</td> <td>4.4KΩ</td> <td>3.6KΩ</td> <td>3.0KΩ</td> </tr> </table>	20℃	25℃	30℃	35℃	40℃	6.4KΩ	5.3KΩ	4.4KΩ	3.6KΩ	3.0KΩ	<ul style="list-style-type: none"> ● Change the outdoor temp sensor 										
20℃	25℃	30℃	35℃	40℃																					
6.4KΩ	5.3KΩ	4.4KΩ	3.6KΩ	3.0KΩ																					
12	Outdoor heat exchange sensor error	<ul style="list-style-type: none"> ● Resistance abnormal Short circuit or open circuit 	<ul style="list-style-type: none"> ● Resistance test 1-2 	<table border="1"> <tr> <td>20℃</td> <td>25℃</td> <td>30℃</td> <td>35℃</td> <td>40℃</td> </tr> <tr> <td>6.4KΩ</td> <td>5.3KΩ</td> <td>4.4KΩ</td> <td>3.6KΩ</td> <td>3.0KΩ</td> </tr> </table>	20℃	25℃	30℃	35℃	40℃	6.4KΩ	5.3KΩ	4.4KΩ	3.6KΩ	3.0KΩ	<ul style="list-style-type: none"> ● Change the outdoor heat exchange sensor 										
20℃	25℃	30℃	35℃	40℃																					
6.4KΩ	5.3KΩ	4.4KΩ	3.6KΩ	3.0KΩ																					
13	Current inductance error	<ul style="list-style-type: none"> ● Resistance broken ● Current inductance fault 	<ul style="list-style-type: none"> ● Check the resistance ● Creepage check to the capacitor 	<ul style="list-style-type: none"> ● No open-circuit ● Normal charge and discharge with the capacitor 	<ul style="list-style-type: none"> ● Repair the resistance ● Change the current inductance 																				
14	Voltage inductance error	<ul style="list-style-type: none"> ● Resistance broken ● Voltage inductance fault 	<ul style="list-style-type: none"> ● Check the resistanc ● Check the capacitance leakage 	<ul style="list-style-type: none"> ● No open-circuit ● Normal charge and discharge with the capacitor 	<ul style="list-style-type: none"> ● Repair the resistance ● Change the voltage inductance 																				

Service Parts List



Indoor Unit

R410A

REF.NO	Parts Name	Parts No			
		9000Btu (heat pump)	Q'TY	12000Btu (heat pump)	Q'TY
Electrical Parts					
1	Fan motor	AAQ022123002	1	AAQ022123002	1
2	Remote controller	ABK260234202	1	ABK260234202	1
3	Control board ass'y	ABK251326100	1	ABK251334100	1
4	Control board	ABK251326101	1	ABK251334101	1
5	Receiving & Indicator board	AAK161328102	1	AAK161328102	1
6	Power wire	AAX161328002	1	AAX161328002	1
7	Terminal (4P)	AAU161328002	1	AAU161328002	1
8			1		1
9	Temp.sensor indoor	AAD161328010	1	AAD161328010	1
10	Evaporator temp.sensor	AAD161328010	1	AAD161328010	1
11	Step motor	AAQ160245003	1	AAQ022123002	1
Construct Parts					
12	Installation plate	AAE160245001	1	AAE160245001	1
13	Air-outlet ass'y	ABC260234101	1	ABC260234101	1
14	Motion link	AAC140226126	2	AAC140226126	2
15	Horizontal eliminating vane A	AAC140226124	12	AAC140226124	12
16	Horizontal eliminating vane B	AAC140226125	2	AAC140226125	2
17	Vertical eliminating vane	AAC140226123	2	AAC140226123	2
18	Drain plug	AAC140226134	1	AAC140226134	1
19	Drain hose	AAF260235019	1	AAF260235019	1
20	Front panel	AAC140226101	1	AAC140226101	1
21	Front frame	AAC140226105	1	AAC140226105	1

Service Parts List

Indoor Unit

R410A

REFNO	Parts Name	Parts No							
		9000Btu (only cooling)	Q'TY	9000Btu (heat pump)	Q'TY	12000Btu (only cooling)	Q'TY	12000Btu (heat pump)	Q'TY
22	Nail lid			AAC140226106	2			AAC140226106	2
23	Indicator signal cover			AAC140226103	1			AAC140226103	1
24	Indicator signal bracket			AAC140226104	1			AAC140226104	1
25	Basing ass'y			AAC140226108	1			AAC140226108	1
26	Air filter			AAC140226107	2			AAC140226107	2
28	Bearing ass's'y			AAC140226135	1			AAC140226135	1
29	Cross flow fan			AAY160245002	1			AAY160245002	1
30	Control box			AAC140226115	1			AAC140226115	1
31	Receiving and indicating board bracket			AAC140226120	1			AAC140226120	1
32	Sensor bracket			AAC140226136	1			AAC140226136	1
35	Distribution tubing fixed plate			AAC140226112	1			AAC140226112	1
38	Motor fixed plate			AAC140226114	1			AAC140226114	1
Cycle parts									
39	Evaporator induced tube ass'y			AAB140226100	1			AAB140226100	1
40	Evaporator ass'y			AAN260226100	1			AAN260235100	1
Printing parts									
44	Name plate			ABT251326005	1			ABT251334005	1
45	Wiring diagram			ABL260234002	1			ABL260234002	1
46	Inventer sign			AAI161328015	1			AAI161328015	1

Service Parts List

Outdoor Unit

R410A

REF.NO	Parts Name	Parts No							
		9000Btu (only cooling)	Q'TY	9000Btu (heat pump)	Q'TY	12000Btu (only cooling)	Q'TY	12000Btu (heat pump)	Q'TY
Electrical Parts									
1	Fan motor			ABQ251334001	1			ABQ251334001	1
2	IPDU basing board ass'y			AAK161328105	1			AAK161328105	1
5	Control basing board ass'y			AAK161328104	1			AAK161328104	1
7	Discharge temp.sensor			AAD161328003	1			AAD161328003	1
8	Temp.sensor outdoor heater exchanger			AAD161328014	1			AAD161328014	1
9	Ambient air Temp.sensor outdoor			AAD161328013	1			AAD161328013	1
10	Terminal (4P)			AAU161328001	1			AAU161328001	1
12	Compressor wire			AAX161328012	1			AAX161328012	1
14	Electrolytic capacitor			AAR161328001	1			AAR161328001	1
16	4-way valve coil			AAB162145301	1			AAB162145301	1
17	Reator			AAD161328001	1			AAD161328001	1
Construct Parts									
18	Base ass'y			AAE251334500	1			AAE251334500	1
19	Base seal A			AAF160245401	1			AAF160245401	1
20	Base seal B			AAF160245402	5			AAF160245402	5
21	Compressor bottom cover			AAF141226101	1			AAF141226101	1

Service Parts List



Outdoor Unit

R410A

REF: NO	Parts Name	Parts No							
		9000Btu (only cooling)	Q'TY	9000Btu (heat pump)	Q'TY	12000Btu (only cooling)	Q'TY	12000Btu (heat pump)	Q'TY
22	Compressor damping rubber			ABG251334002	3			ABG251334002	3
23	Valve base			AAE160245102	1			AAE160245102	1
24	Valve bolt			AAG150270001	4			AAG150270001	4
25	Compressor damping pad			AAG022123020	3			AAG022123020	3
26	Compressor damping nut			AAG160245003	3			AAG160245003	3
27	Motor angle			AAE251326502	1			AAE251326502	1
28	Motor angle seal A			AAF141226406	1			AAF141226406	1
29	Motor angle seal B			AAF141226407	1			AAF141226407	1
30	Propeller fan			AAY160245001	1			AAY160245001	1
31	Fan fixed nut			AAG022123018	1			AAG022123018	1
32	Bulkhead			AAE130226106	1			AAE130226106	1
34	Sound proof cover A			AAF141226103	1			AAF141226103	1
35	Sound proof cover B			AAF141226104	1			AAF141226104	1
36	Compressor top cover			AAF141226102	1			AAF141226102	1
37	Control box			AAE161328109	1			AAE161328109	1
38	IPDU bracket			AAE161328125	1			AAE161328125	1
39	Heat sinker			AAD161328005	1			AAD161328005	1
40	Bulkhead seal A			AAF161328403	1			AAF161328403	1
41	Bulkhead seal B			AAF161328404	1			AAF161328404	1
44	Condenser seal			AAF161328405	1			AAF161328405	1
45	Right side plate			AAE260235503	1			AAE260235503	1

Service Parts List



Outdoor Unit

R410A

REF.NO	Parts Name	Parts No							
		9000Btu (only cooling)	Q'TY	9000Btu (heat pump)	Q'TY	12000Btu (only cooling)	Q'TY	12000Btu (heat pump)	Q'TY
46	Right side plate seal A			AAF141226409	1			AAF141226409	1
47	Right side plate seal B			AAF141226410	1			AAF141226410	1
49	Wire fixed board			AAE160245107	1			AAE160245107	1
50	Front panel			AAE160245101	1			AAE160245101	1
51	Fan guard			AAC160245203	1			AAC160245203	1
52	Handle			AAC160245205	1			AAC160245205	1
53	Temp.sensor bracket outdoor			AAC161328201	1			AAC161328201	1
54	Air-inlet grill			AAC160245204	1			AAC160245204	1
55	Covering plate			AAE160245104	1			AAE160245104	1
56	Control box cover			AAC161328201	1			AAC161328201	1
Cycle parts									
57	Compressor ass'y			ABP251334001	1			ABP251334001	1
58	Terminal cover			AAF141226102	1			AAF141226102	1
59	Terminal cover gasket			AAF141226101	1			AAF141226101	1
60	Terminal cover nut			AAG022123016	1			AAG022123016	1
61	Ruber-washer			AAG022123024	1			AAG022123024	1
62	Condenser ass'y			AAN251334200	1			AAN251334200	1
63	4-way valve ass'y			ABB251334300	1			ABB251334300	1
64	Capillary tube ass'y			AAM161326001	1			AAM161326001	1
65	2 - way valve(7/16")			ABZ251326703	1			ABZ251326703	1
66	3 - way valve(5/8")			ABZ251326704	1				0
67	3 - way valve(3/4")				0			ABZ251334704	1
68	7/16" nut			AAB022123802	1			AAB022123802	1
69	5/8" nut			AAB022123702	1				0

Service Parts List



Outdoor Unit

R410A

REF:MO	Parts Name	Parts No							
		9000Btu (only cooling)	Q'TY	9000Btu (heat pump)	Q'TY	12000Btu (only cooling)	Q'TY	12000Btu (heat pump)	Q'TY
72	Valve top (big)		1	AAB160245702	1		1	AAB160245702	1
74	Drain plug		0	ABF260234001	1		0	ABF260234001	1
75	Capacitor fixed clip		1	AAE160245108	1		1	AAE160245108	1
Printing parts									
76	Name plate		1	ABT251326006	1		1	ABT251334006	1
77	Wiring diagram		1	ABL161328004	1		1	ABL161328004	1
78	Inventer label		1	ABT251334018	1		1	ABT251334018	1