



# SERVICE MANUAL

[ U-CROWN SERIES ]

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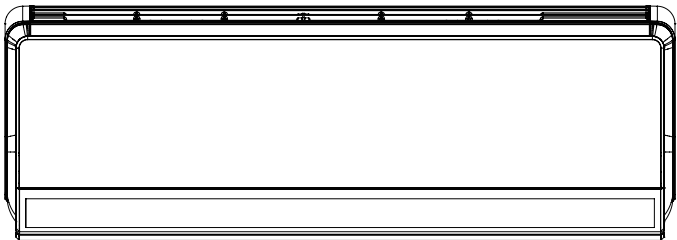
GWH18UC-K6DNA4A  
(GWH18UC-K6DNA4A/I + GWH18UC-K6DNA4A/O)

# Part I : Technical Information

## 1. Summary

Indoor Unit:

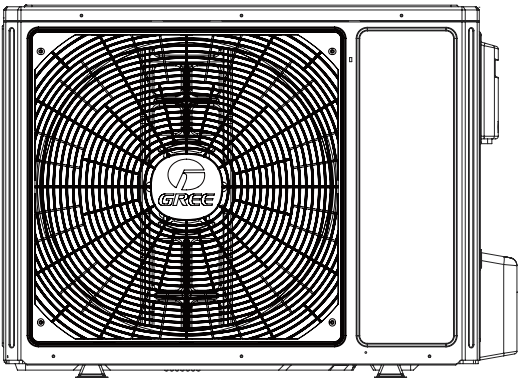
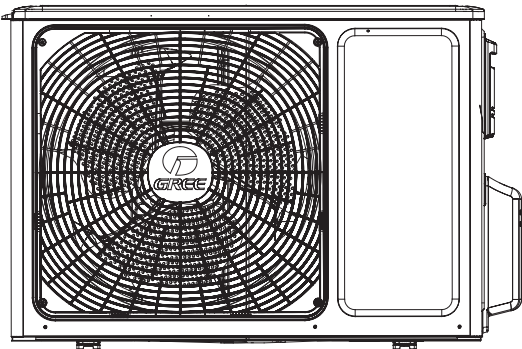
GWH09UB-K6DNA4A/I  
GWH12UB-K6DNA4A/I  
**GWH18UC-K6DNA4A/I**



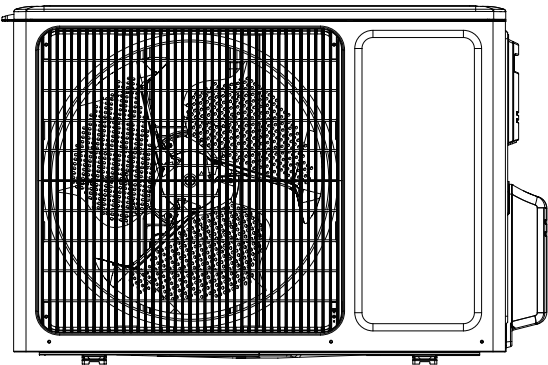
Outdoor Unit:

GWH09UB-K6DNA4A/O

**GWH18UC-K6DNA4A/O**



GWH12UB-K6DNA4A/O



Remote Controller:

**SAA1FB1**



Models List:

No	Model	Product code	Indoor model	Indoor product code	Outdoor model	Outdoor product code	Remote Controller
1	GWH09UB-K6DNA4A	CB264002100	GWH09UB-K6DNA4A/I	CB264N02100	GWH09UB-K6DNA4A/O	CB264W02100	<b>SAA1FB1</b>
2	GWH12UB-K6DNA4A	CB264002200	GWH12UB-K6DNA4A/I	CB264N02200	GWH12UB-K6DNA4A/O	CB264W02200	
3	<b>GWH18UC-K6DNA4A</b>	<b>CB264002000</b>	<b>GWH18UC-K6DNA4A/I</b>	<b>CB264N02000</b>	<b>GWH18UC-K6DNA4A/O</b>	<b>CB264W02000</b>	

## 2. Specifications

### 2.1 Specification Sheet

Parameter		Unit	Value	
Model			GWH09UB-K6DNA4A	GWH12UB-K6DNA4A
Product Code			CB264002100	CB264002200
Power Supply	Rated Voltage	V~	220-240	220-240
	Rated Frequency	Hz	50	50
	Phases		1	1
Power Supply Mode			Outdoor	Outdoor
Cooling Capacity		W	2700	3530
Heating Capacity		W	3200	4000
Cooling Power Input		W	600	883
Heating Power Input		W	780	1000
Cooling Power Current		A	3.68	5.8
Heating Power Current		A	4.42	6.8
Rated Input		W	2300	2400
Rated Current		A	10.5	10.5
Air Flow Volume (SH/H/MH/M/ML/L/SL/SM)		m <sup>3</sup> /h	550/450/390/330/290/250/220/-	650/500/450/400/330/250/200/180
Dehumidifying Volume		L/h	0.8	0.8
EER		W/W	4.50	4.00
COP		W/W	4.10	4.00
SEER			7.5	7.2
SCOP(Average/Warmer/Colder)			4.6/5.7/3.6	4.6/5.5/3.6
Application Area		m <sup>2</sup>	12-18	16-24
Indoor Unit	Model		GWH09UB-K6DNA4A/I	GWH12UB-K6DNA4A/I
	Product Code		CB264N02100	CB264N02200
	Fan Type		Cross-flow	Cross-flow
	Diameter Length(DXL)	mm	Φ92X616	Φ92X616
	Fan Motor Cooling Speed	r/min	1350/1127/1000/870/780/690/600/550	1400/1185/1053/920/829/741/650/550
	Fan Motor Heating Speed	r/min	1400/1151/1074/1000/930/842/750/-	1500/1185/1119/1053/958/842/750/-
	Output of Fan Motor	W	10	10
	Fan Motor RLA	A	0.3	0.3
	Fan Motor Capacitor	μF	/	/
	Input of Heater	W	/	/
	Evaporator Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Row-fin Gap	mm	2-1.5	2-1.5
	Coil Length (LXDXW)	mm	623X25.4X304.8	623X25.4X304.8
	Swing Motor Model		MP24HD/MP20AC	MP24HD/MP20AC
	Output of Swing Motor	W	1.5/1.5	1.5/1.5
	Fuse	A	3.15	3.15
	Sound Pressure Level	dB (A)	Cooling:41/36/32/28/25/23/20/19 Heating:41/36/34/32/29/26/24/-	Cooling:42/37/33/29/26/23/21/19 Heating:58/51/47/43/40/37/35/33
	Sound Power Level	dB (A)	Cooling:57/50/46/42/39/37/34/33 Heating:57/50/48/46/43/40/38/-	Cooling:43/37/35/33/29/26/24/- Heating:58/51/49/47/43/40/38/-
	Dimension (WXHxD)	mm	860X305X170	860X305X170
	Dimension of Carton Box (LXWXH)	mm	932X385X280	932X385X280
	Dimension of Package (LXWXH)	mm	935X388X295	935X388X295
	Net Weight	kg	11.5	11.5
	Gross Weight	kg	14	14

Outdoor Unit	Model		GWH09UB-K6DNA4A/O	GWH12UB-K6DNA4A/O
	Product Code		CB264W02100	CB264W02200
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO., LTD	ZHUHAI LANDA COMPRESSOR CO., LTD
	Compressor Model		QXFT-B123zE170B	QXFT-B123zE170B
	Compressor Oil		FW68DA	FW68DA
	Compressor Type		Rotary	Rotary
	L.R.A.	A	20	20
	Compressor RLA	A	7.9	7.9
	Compressor Power Input	W	1230	1230
	Overload Protector		HPC115/95U1/KSD115°C	HPC115/95U1/KSD115°C
	Throttling Method		Electron expansion valve	Electron expansion valve
	Operation temp	°C	16~30	16~30
	Ambient temp (cooling)	°C	-18~54	-18~54
	Ambient temp (heating)	°C	-30~24	-30~24
	Condenser Form		Aluminum Fin-copper Tube	Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7	Φ7
	Rows-fin Gap	mm	2-1.4	2.5-1.4
	Coil Length (LXDXW)	mm	783X38.1X550	763X57X550
	Fan Motor Speed	rpm	850	850
	Output of Fan Motor	W	30	30
	Fan Motor RLA	A	0.24	0.24
	Fan Motor Capacitor	μF	/	/
	Air Flow Volume of Outdoor Unit	m³/h	2400	2400
	Fan Type		Axial-flow	Axial-flow
	Fan Diameter	mm	Φ438	Φ438
	Defrosting Method		Automatic Defrosting	Automatic Defrosting
	Climate Type		T1	T1
	Isolation		I	I
	Moisture Protection		IPX4	IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5	2.5
	Sound Pressure Level (H/M/L)	dB (A)	52/-/-	53/-/-
	Sound Power Level (H/M/L)	dB (A)	62/-/-	63/-/-
	Dimension (WXHXD)	mm	899X596X378	899X596X378
	Dimension of Carton Box (LXWXH)	mm	945X417X630	945X417X630
	Dimension of Package (LXWXH)	mm	948X420X645	948X420X645
	Net Weight	kg	42	43.5
	Gross Weight	kg	45	46.5
	Refrigerant		R32	R32
	Refrigerant Charge	kg	0.95	0.9
Connection Pipe	Length	m	5	5
	Gas Additional Charge	g/m	16	16
	Outer Diameter Liquid Pipe	mm	Φ6	Φ6
	Outer Diameter Gas Pipe	mm	Φ9.52	Φ9.52
	Max Distance Height	m	10	10
	Max Distance Length	m	15	20
Note: The connection pipe applies metric diameter.				

The above data is subject to change without notice; please refer to the nameplate of the unit.



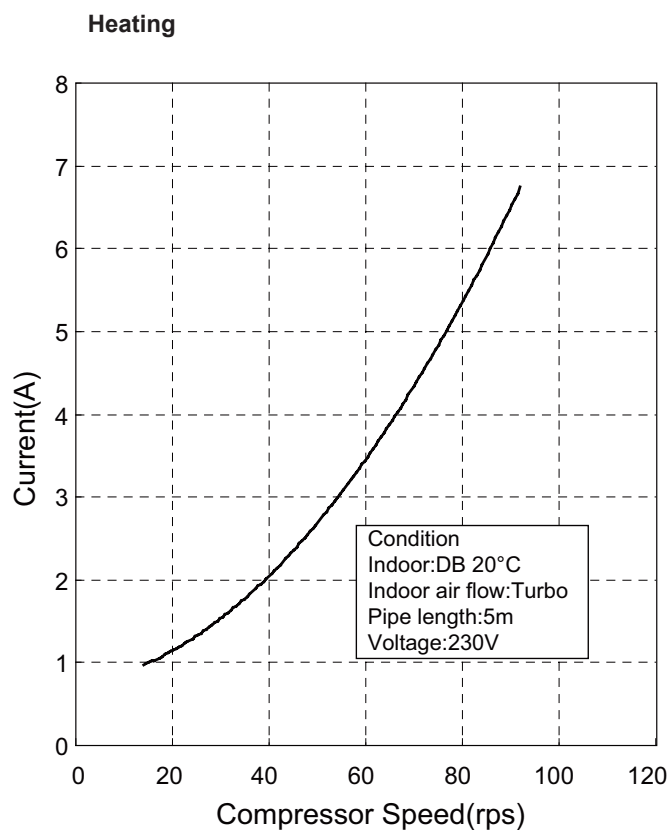
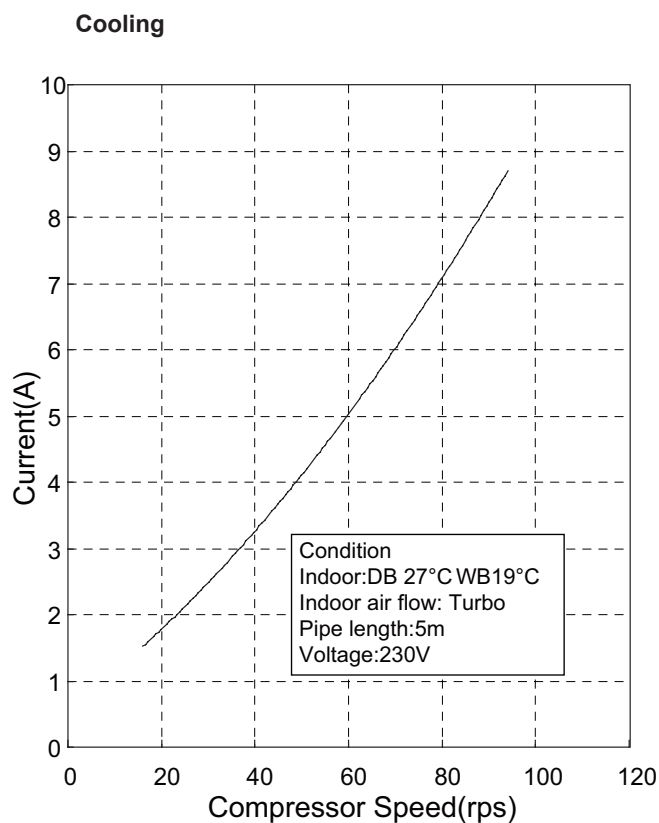
Parameter		Unit	Value
Model			<b>GWH18UC-K6DNA4A</b>
Product Code			<b>CB264002000</b>
Power Supply	Rated Voltage	V~	220-240
	Rated Frequency	Hz	50
	Phases		1
Power Supply Mode			Outdoor
Cooling Capacity		W	5300
Heating Capacity		W	5300
Cooling Power Input		W	1450
Heating Power Input		W	1430
Cooling Power Current		A	6.5
Heating Power Current		A	6.5
Rated Input		W	2500
Rated Current		A	10.6
Air Flow Volume (SH/H/MH/M/ML/L/SL)		m³/h	850/750/650/600/500/400/340
Dehumidifying Volume		L/h	2.0
EER		W/W	3.66
COP		W/W	3.70
SEER			6.8
SCOP(Average/Warmer/Colder)			4/5.1/3.1
Application Area		m²	23-34
Indoor Unit	Model		<b>GWH18UC-K6DNA4A/I</b>
	Product Code		<b>CB264N02000</b>
	Fan Type		Cross-flow
	Diameter Length(DXL)	mm	Φ107X699
	Fan Motor Cooling Speed	r/min	1350/1150/1050/930/800/700650/600
	Fan Motor Heating Speed	r/min	1400/1200/1100/1000/900/800/750
	Output of Fan Motor	W	20
	Fan Motor RLA	A	0.44
	Fan Motor Capacitor	μF	/
	Input of Heater	W	/
	Evaporator Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Row-fin Gap	mm	2-1.5
	Coil Length (LXDXW)	mm	706X25.4X303.8
	Swing Motor Model		MP24HV/MP24AQ
	Output of Swing Motor	W	1.5/1.5
	Fuse	A	3.15
	Sound Pressure Level	dB (A)	Cooling:46/40/37/33/28/24/22/21 Heating:56/50/47/43/38/32/31/-
	Sound Power Level	dB (A)	Cooling:49/43/41/38/36/32/28/- Heating:59/53/51/48/46/42/38/-
	Dimension (WXHDX)	mm	960X320X205
	Dimension of Carton Box (LXWXH)	mm	1040X400X318
	Dimension of Package (LXWXH)	mm	1043X403X333
	Net Weight	kg	14
	Gross Weight	kg	17

Outdoor Unit	Model		GWH18UC-K6DNA4A/O
	Product Code		CB264W02000
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO., LTD
	Compressor Model		QXFT-B123zE170B
	Compressor Oil		FW68DA or equivalent
	Compressor Type		Rotary
	L.R.A.	A	20
	Compressor RLA	A	7.9
	Compressor Power Input	W	1230
	Overload Protector		HPC115/95orKSD115°C
	Throttling Method		Electron expansion valve
	Operation temp	°C	16~30
	Ambient temp (cooling)	°C	-18~54
	Ambient temp (heating)	°C	-30~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Rows-fin Gap	mm	2-1.4
	Coil Length (LXDXW)	mm	852X38.1X660
	Fan Motor Speed	rpm	820
	Output of Fan Motor	W	60
	Fan Motor RLA	A	0.5
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	m³/h	3200
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ520
	Defrosting Method		Automatic Defrosting
	Climate Type		T1
	Isolation		I
	Moisture Protection		IPX4
	Permissible Excessive Operating Pressure for the Discharge Side	MPa	4.3
	Permissible Excessive Operating Pressure for the Suction Side	MPa	2.5
	Sound Pressure Level (H/M/L)	dB (A)	57/-/-
	Sound Power Level (H/M/L)	dB (A)	67/-/-
	Dimension (WXHXD)	mm	965X700X396
	Dimension of Carton Box (LXWXH)	mm	1026X455X735
	Dimension of Package (LXWXH)	mm	1029X458X750
	Net Weight	kg	50.5
	Gross Weight	kg	55
	Refrigerant		R32
	Refrigerant Charge	kg	1.4
Connection Pipe	Length	m	5
	Gas Additional Charge	g/m	20
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ12
	Max Distance Height	m	10
	Max Distance Length	m	25
Note: The connection pipe applies metric diameter.			

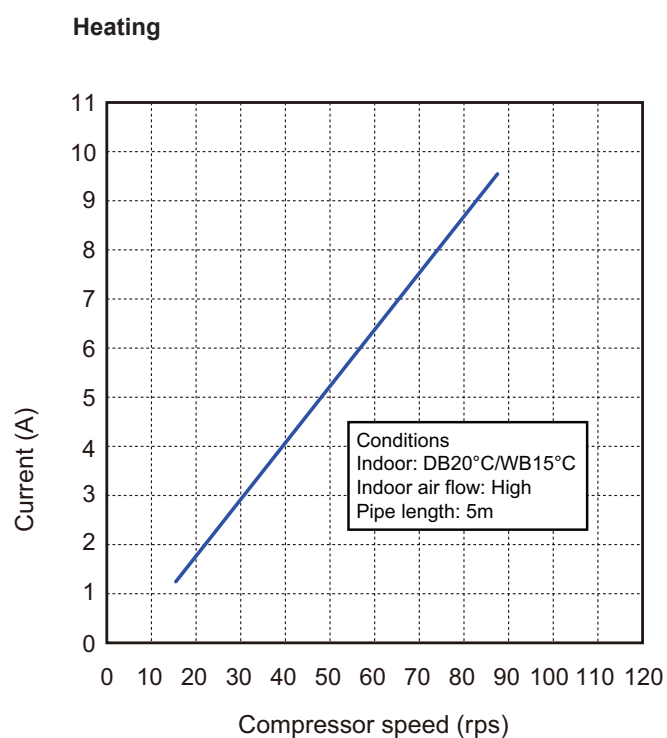
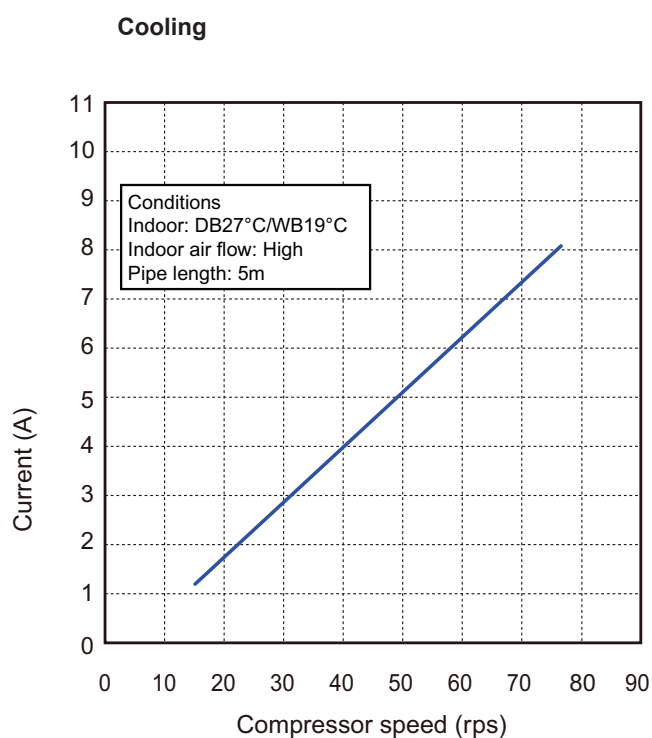
The above data is subject to change without notice; please refer to the nameplate of the unit.

## 2.2 Operation Characteristic Curve

09/12K

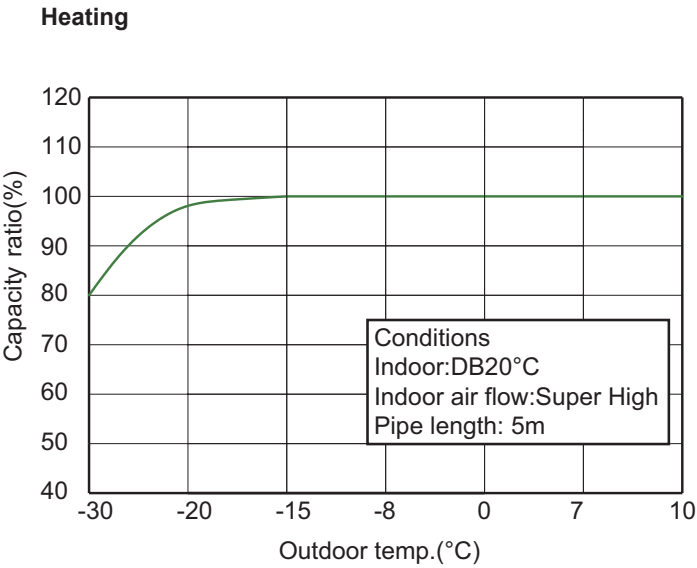
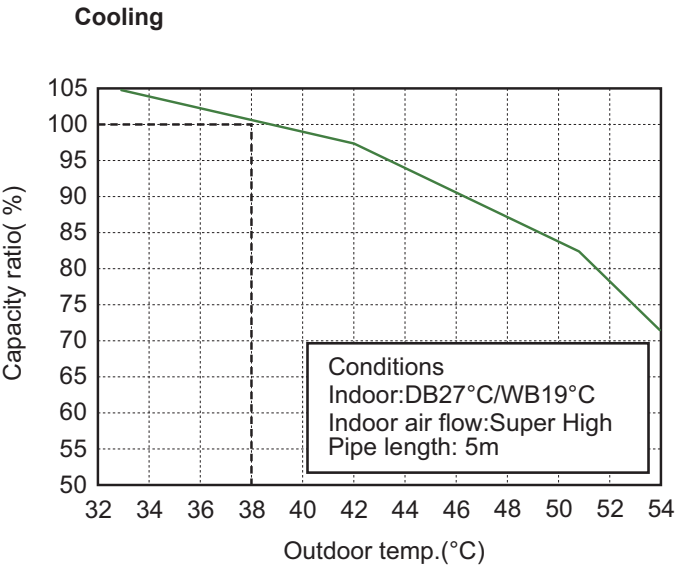


18K

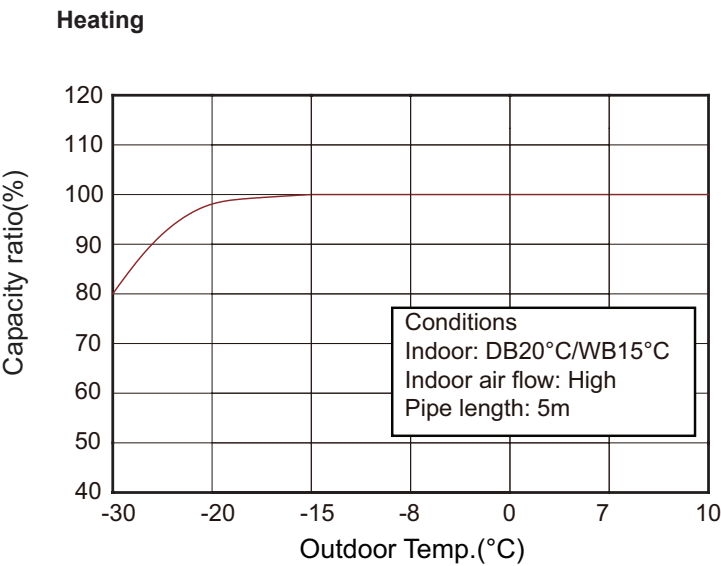
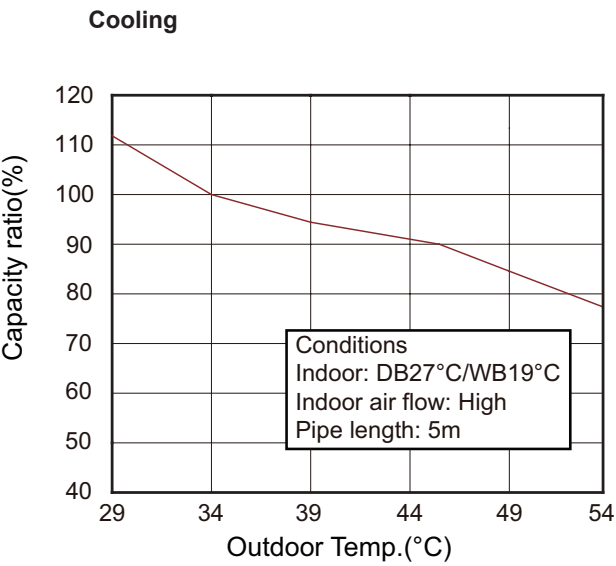


## 2.3 Capacity Variation Ratio According to Temperature

09/12K



18K



## 2.4 Cooling and Heating Data Sheet in Rated Frequency

Cooling:

Rated cooling condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor revolution (Hz)
Indoor	Outdoor			T1 (°C)	T2 (°C)			
27/19	35/24	09/12K	0.9 to 1.1	12 to 14	75 to 37	Super High	High	66
27/19	35/24	18K	0.9 to 1.0	in:8~11 out:11~14	in:75~83 out:37~48	Super High	High	73

Heating:

Rated heating condition(°C) (DB/WB)		Model	Pressure of gas pipe connecting indoor and outdoor unit	Inlet and outlet pipe temperature of heat exchanger		Fan speed of indoor unit	Fan speed of outdoor unit	Compressor revolution (Hz)
Indoor	Outdoor			T1 (°C)	T2 (°C)			
20/-	7/6	09/12K	2.8 to 3.0	70 to 35	2 to 4	Super High	High	66
20/15	7/6	18K	2.2 to 2.4	in:75~83 out:37~45	in:1~3 out:2~6	Super High	High	75

### Instruction:

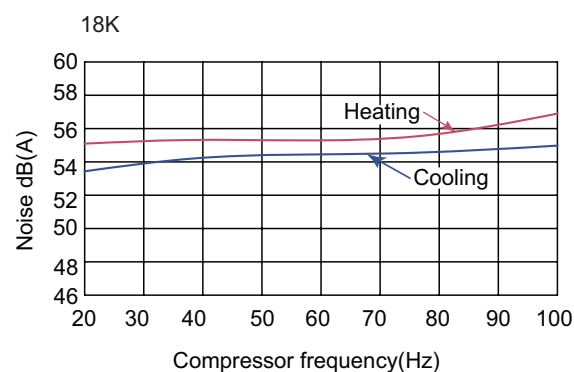
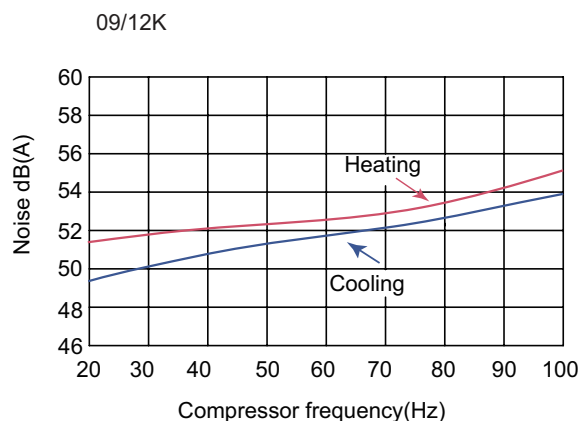
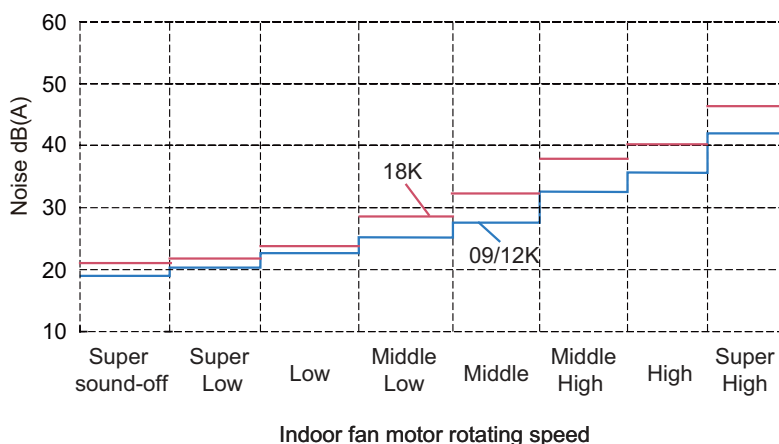
T1: Inlet and outlet pipe temperature of evaporator

T2: Inlet and outlet pipe temperature of condenser

P: Pressure at the side of big valve

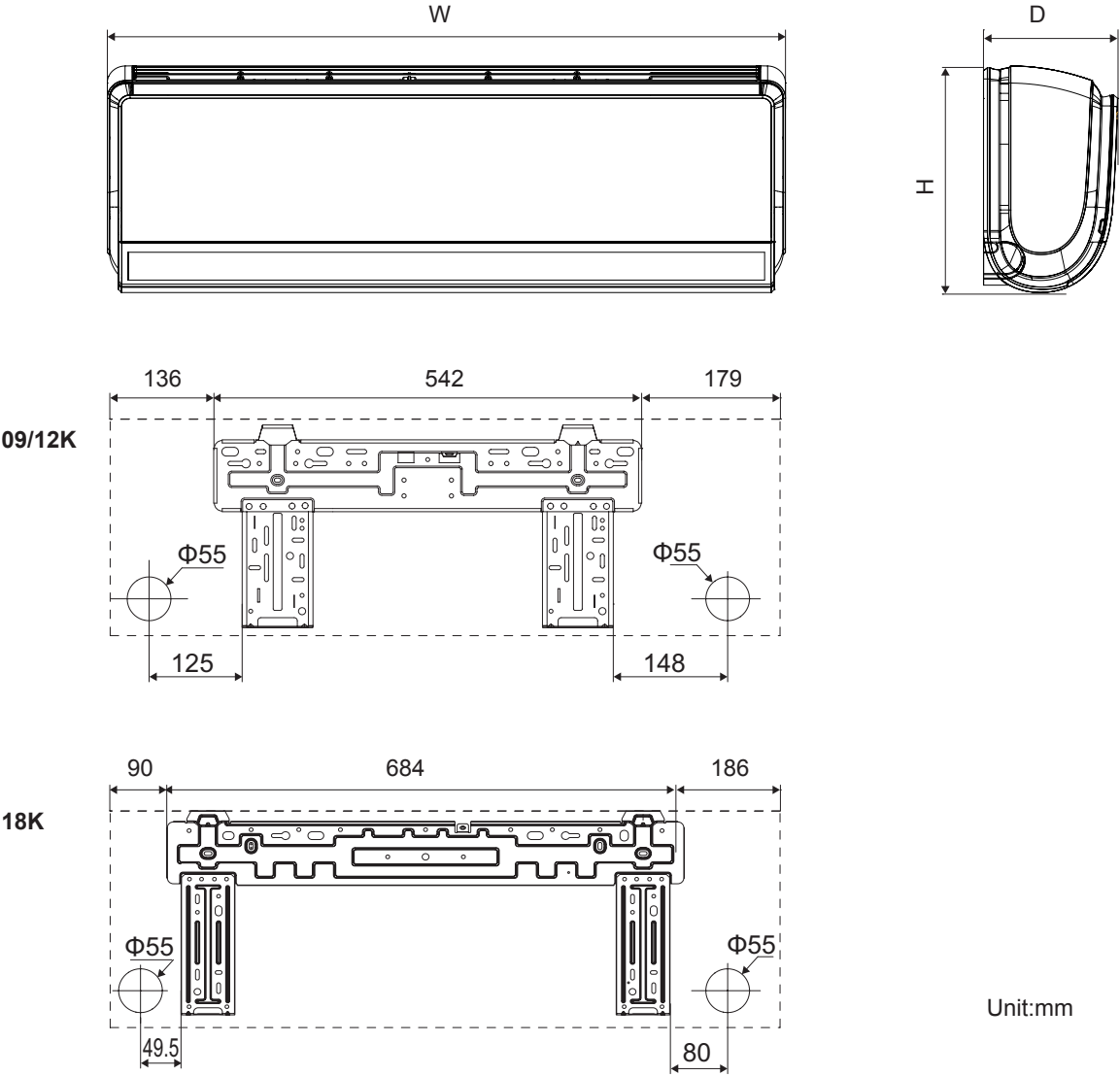
Connection pipe length: 5 m.

## 2.5 Noise Curve



### 3. Outline Dimension Diagram

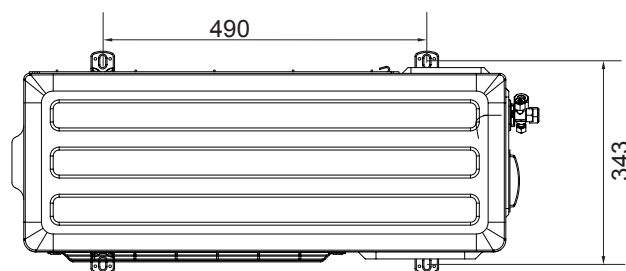
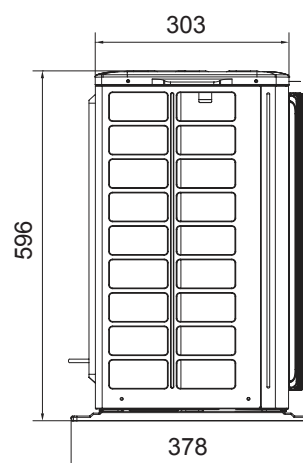
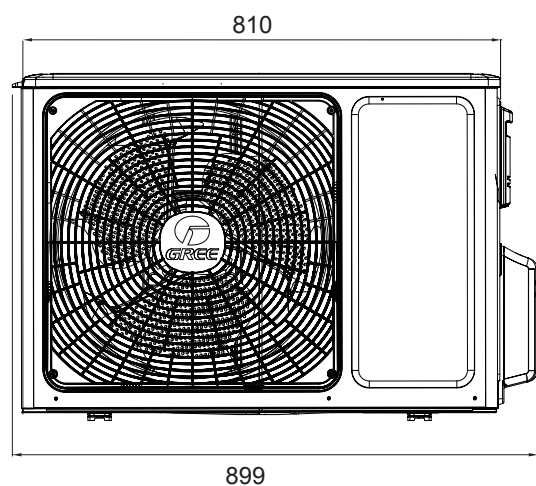
#### 3.1 Indoor Unit



Model	W	H	D
09/12K	860	305	170
18K	960	320	205

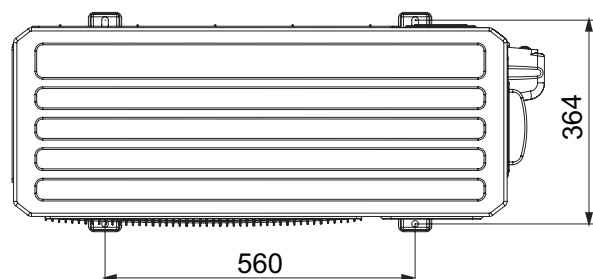
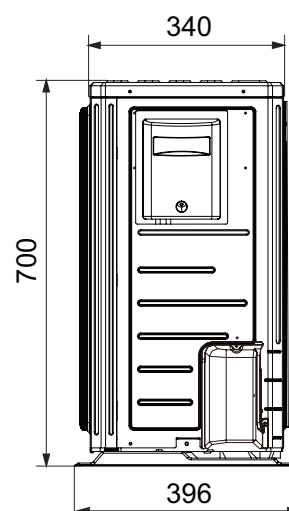
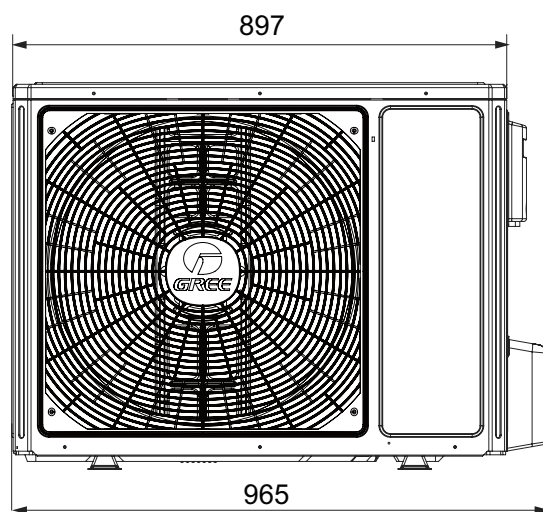
## 3.2 Outdoor Unit

GWH09UB-K6DNA4A/O



Unit:mm

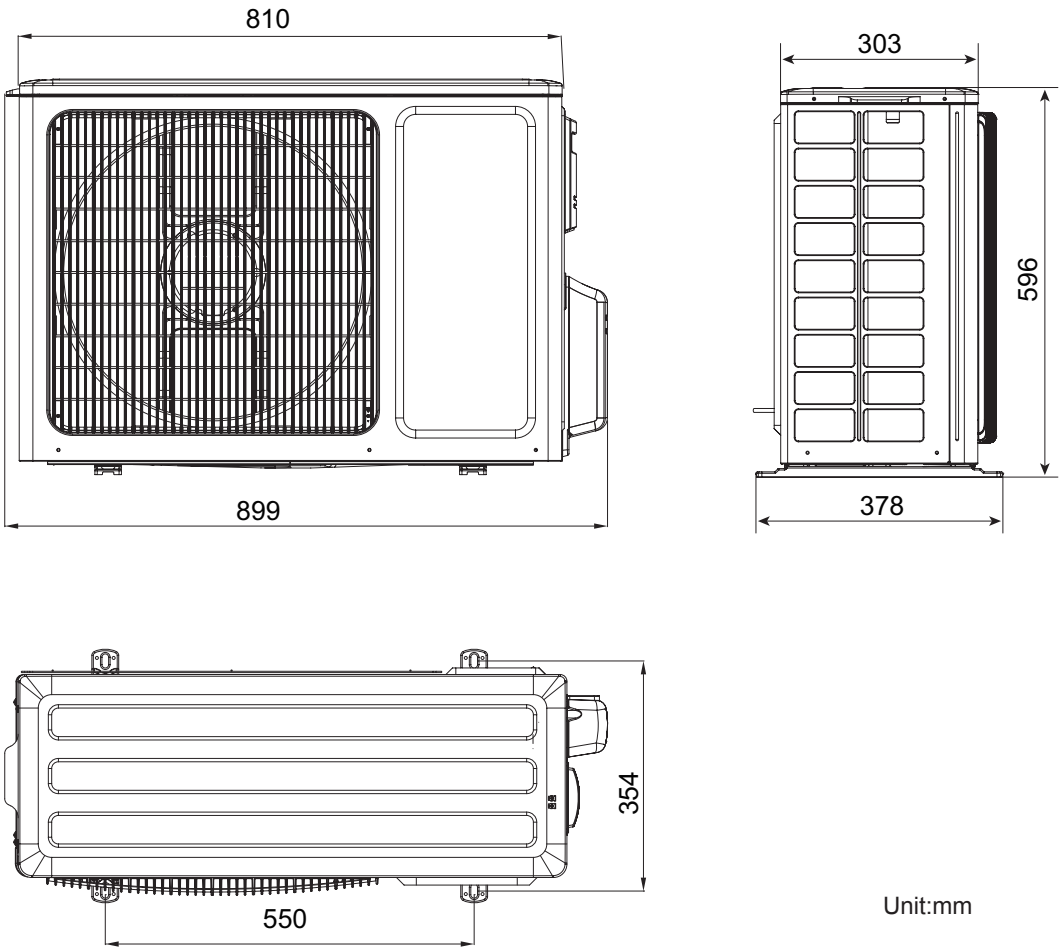
GWH18UC-K6DNA4A/O



Unit:mm



GWH12UB-K6DNA4A/O



## 6. Function and Control

### 6.1 Remote Controller Introduction

#### Specialties note

##### Matching instructions




This model adopts RF remote control. The remote controller shall be matched with the air conditioner before operation, otherwise the remote control will be invalid. Before operation, please read the instructions in this page carefully and then do the corresponding matching operation.

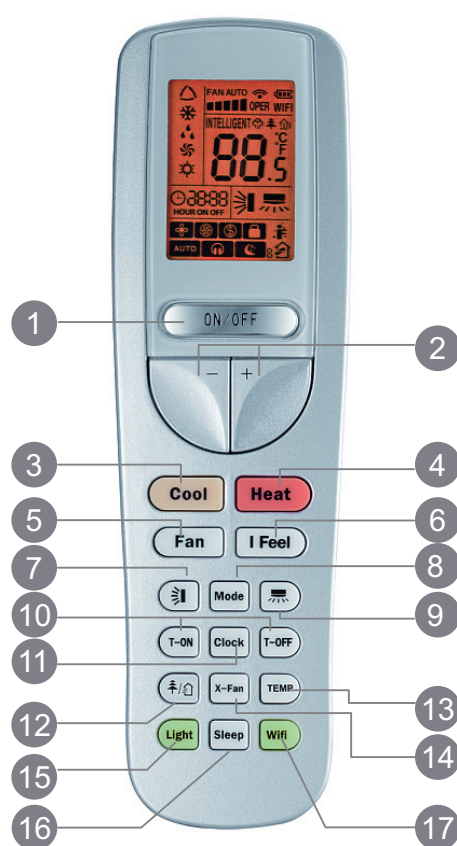
#### Note:


- Please done the following operation within 6.56ft from the unit. Matching is not needed anymore once it is done.
- During matching, please keep the remote controller and air conditioner under standby status.
- When the signal of remote controller cant be received, please match the remote controller with the unit again.

#### Matching of remote controle

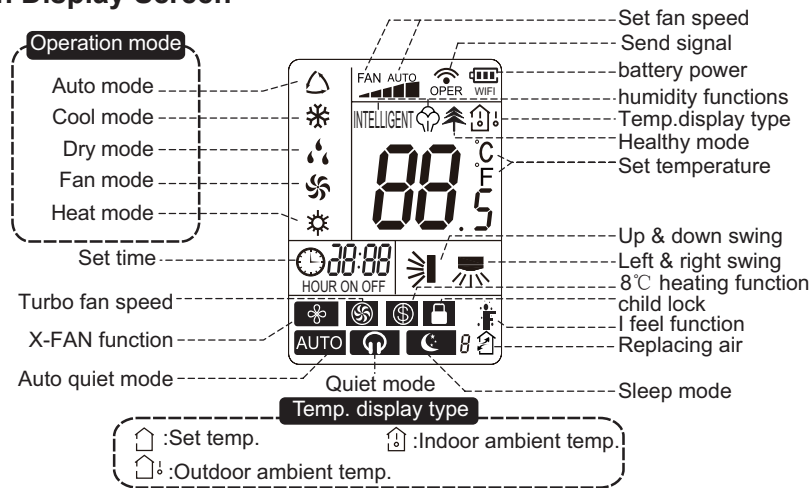
When the unit is under standby status, please get close to the air conditioner within 6.56ft and then hold on pressing  button for 3s. The remote controller and air conditioner will enter matching automatically. If matching is done, the unit will give out three sounds; if matching is failed, please get closer to the unit and arrange matching again.

#### Buttons on Remote Controller



- 1 ON/OFF button
- 2 +/- button
- 3 Cool button
- 4 Heat button
- 5 Fan button
- 6 I Feel button
- 7 Up down swing button
- 8 Mode button
- 9 Left right swing button
- 10 T-ON/T-OFF button
- 11 Clock button
- 12  button
- 13 Temp button
- 14 X-Fan button
- 15 Light button
- 16 Sleep button
- 17 Wifi button

## Introduction for Icons on Display Screen



## Introduction for Buttons on Remote Controller

### Note:

- This is a general use remote controller, it could be used for the air conditioners with multifunction; For some function, which the model don't have, if press the corresponding button on the remote controller that the unit will keep the original running status.
- After putting through the power, the air conditioner will give out a sound. Operation indicator "⏻" is ON (red indicator the colour is different for different models). After that, you can operate the air conditioner by using remote controller.
- Under on status, pressing the button on the remote controller, the signal icon "📶" on the display of remote controller will blink once and the air conditioner will give out a "de" sound, which means the signal has been sent to the air conditioner.

### 1. ON/OFF Button

Press this button can turn on or turn off the air conditioner. After turning on the air conditioner, operation indicator "⏻" on indoor unit's display is ON (green indicator.

The colour is different for different models), and indoor unit will give out a sound

### 2. +/- button

- Press "+" or "-" button once increase or decrease set temperature 0.5 °C. Holding "+" or "-" button, 2s later, set temperature on remote controller will change quickly. On releasing button after setting is finished, temperature indicator on indoor unit will change accordingly. (Temperature can't be adjusted under auto mode)
- When setting TIMER, press "+" or "-" button to adjust time.

### 3. Cool button

Press this button, unit will operate in cool mode.

### 4. Heat button

Press this button, unit will operate in heat mode.

### 5. FAN button

Pressing this button can set fan speed circularly as: low(■), low medium(■■), medium(■■■), medium high(■■■■), high(■■■■■), super(🌀), auto(AUTO), quiet(🔇).



### Note:

- Turbo function is not available under dry and auto mode.
- Automatically operate silent speed when starting sleep function.
- The unit operates at low speed under dry and auto dry mode. The speed can't be adjusted.
- Under AUTO speed, air conditioner will select proper fan speed automatically according to ambient temperature.



### 6. I FEEL button



Press this button to start I FEEL function and "🌡️" will be displayed on the remote controller. After this function is set, the remote controller will send the detected ambient temperature to the controller and the unit will automatically adjust the indoor temperature according to the detected temperature. Press this button again to close I FEEL function and "🌡️" will disappear.

- Please put the remote controller near user when this function is set. Do not put the remote controller near the object of high temperature or low temperature in order to avoid detecting inaccurate ambient temperature.

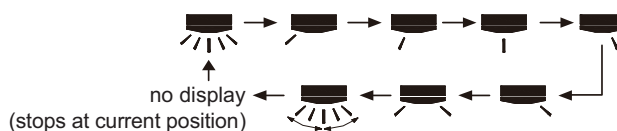
When I FEEL function is turned on, the remote controller should be put within the area where indoor unit can receive the signal sent by the remote controller.

## 7. button

Under simple swing mode, press this button can turn on (display "  " icon ) or turn off ( not display "  " icon) left&right swing function.

Under OFF status, press "+" button and "  " button simultaneously can switch between simple swing mode and fixed swing mode. During switching time, "  " icon on remote controller will flash twice.





Under fixed-angle swing mode, press this button and the left and right swing status will change in the sequence as below:





## 8. MODE button



Press this button to select your required operation mode.



When selecting auto mode, air conditioner will operate automatically according to ambient temperature. Set temperature cant be adjusted and will not be displayed as well. Press "FAN" button can adjust fan speed. Press "  " / "  " button can adjust fan blowing angle. After selecting cool mode, air conditioner will operate under cool mode. Press "+" or "-" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "  " / "  " button to adjust fan blowing angle.

When selecting dry mode, the air conditioner operates at low speed under dry mode. Under dry mode, fan speed cant be adjusted. Press "  " / "  " button to adjust fan blowing angle.

When selecting fan mode, the air conditioner will only blow fan, Press "FAN" button to adjust fan speed. Press "  " / "  " button to adjust fan blowing angle.

When selecting heating mode, the air conditioner operates under heat mode. Press "+" or "-" button to adjust set temperature. Press "FAN" button to adjust fan speed. Press "  " / "  " button to adjust fan blowing angle. (Cooling only unit wont receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button cant start up the unit).


### Note:

- For preventing cold air, after starting up heating mode, indoor unit will delay 1~5 minutes to blow air (actual delay time is depend on indoor ambient temperature).
- Set temperature range from remote controller: 16~30°C (61~86°F);

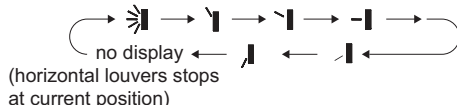
## 9. button

Under simple swing mode, press this button can turn on ( display "  " icon) or turn off ( not display "  " icon) up&down swing function.

Under OFF status, press "+" button and "  " button simultaneously can switch between simple swing mode and fixed swing mode.



During switching time, "  " icon on remote controller will flash twice.

Under fixed swing mode, press this button and up and down swing status will change in the sequence as below:





## 10. T-ON/T-OFF button

### T-ON button

"T-ON" button can set the time for timer on. After pressing this button, "  " icon disappears and the word "ON" on remote controller blinks. Press "+" or "-" button to adjust T-ON setting. After each pressing "+" or "-" button, T-ON setting will increase or decrease 1min. Hold "+" or "-" button, 2s later, the time will change quickly until reaching your required time. Press "T-ON" to confirm it. The word "ON" will stop blinking. "  " icon resumes displaying. Cancel TIMER ON: Under the condition that T-ON is started up, press "T-ON" button to cancel it.

### T-OFF button

"T-OFF" button can set the time for timer off. After pressing this button, "  " icon disappears and the word "OFF" on remote controller blinks. Press "+" or "-" button to adjust T-OFF setting. After each pressing "+" or "-" button, T-OFF setting will increase or decrease 1min. Hold "+" or "-" button, 2s later, the time will change until reaching your required time. Press "T-OFF" to confirm it. The word "ON" will "OFF" will stop blinking. "  " icon resumes displaying. Cancel T-OFF. Under the condition that T-OFF is started up, press "T-OFF" button to cancel it.

**Note:**

- Under on and off status, you can set T-OFF or T-ON simultaneously.
- Before setting T-ON or T-OFF, please adjust the clock time.
- After starting up T-ON or T-OFF, set the constant circulating valid. After that, air conditioner will be turned on or turned off according to setting time. ON/OFF button has no effect on setting. If you don't need this function, please use remote controller to cancel it.

**11. CLOCK button**

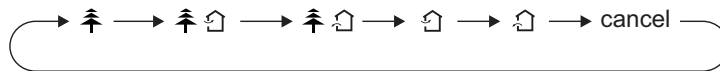
Press this button to set clock time. "🕒" icon on remote controller will blink. Press "+" or "-" button within 5s to set clock time. Each pressing of "+" or "-" button, clock time will increase or decrease 1 minute. Hold "+" or "-" button, 2s later, time will change quickly. Release this button when reaching your required time. Press "CLOCK" button to confirm the time. "🕒" icon stops blinking.

**Note:**

- Clock time adopts 24-hour mode.
- The interval between two operations can't exceed 5s. Otherwise, remote controller will quit setting status. Operation for TIMER ON/TIMER OFF is the same.

**12. 🌿/🏠 button**

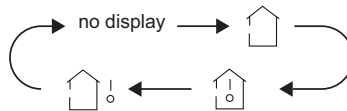
Press this button to activate health function with "🌿" displayed; press this button for the second time to activate health and air in function with "🌿" and "🏠" displayed; press this button for the third time to activate health and air out function with "🌿" and "🏠" displayed; press this button for the fourth time to activate air in function with "🏠" displayed; press this button for the fifth time to activate air out function with "🏠" displayed; press this button for the sixth time to exit health, air in or air out function.



**Note:** there is no this function for this unit. If press this button, the main unit will click, but it also runs under original status.

**13 TEMP button**

By pressing this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor units display. The setting on remote controller is selected circularly as below:



- When selecting "🏠" or no display with remote controller, temperature indicator on indoor unit displays set temperature.
- When selecting "🏠!" with remote controller, temperature indicator on indoor unit displays indoor ambient temperature.
- When selecting "🏠!" with remote controller, temperature indicator on indoor unit displays outdoor ambient temperature.

**Note:**

- Outdoor temperature display is not available for some models. At that time, indoor unit receives "🏠!" signal, while it displays indoor set temperature.
- It's defaulted to display set temperature when turning on the unit. There is no display in the remote controller.
- Only for the models whose indoor unit has dual-8 display.
- When selecting displaying of indoor or outdoor ambient temperature, indoor temperature indicator displays corresponding temperature and automatically turn to display set temperature after three or five seconds.

**14. X-FAN button**

Pressing this button in COOL or DRY mode, the icon "🌀" is displayed and the indoor fan will continue operation for 2 minutes in order to dry the indoor unit even though you have turned off the unit. After energization, X-FAN OFF is defaulted. X-FAN is not available in AUTO, FAN or HEAT mode.

This function indicates that moisture on evaporator of indoor unit will be blown after the unit is stopped to avoid mould.

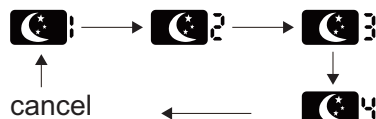
- Having set X-FAN function on: After turning off the unit by pressing ON/OFF button indoor fan will continue running for about 2 min. at low speed. In this period, press X-FAN button to stop indoor fan directly.
- Having set X-FAN function off: After turning off the unit by pressing ON/OFF button, the complete unit will be off directly.

## 15. LIGHT button

Pressing this button to turn off display light on indoor unit. Press this button again to turn on display light.

## 16. SLEEP button

- Pressing this button can select Sleep 1, Sleep 2, Sleep 3, Sleep 4 or cancel Sleep circularly as below:



- In Sleep 1 and Sleep 2, the air conditioner will run according to a group of presetting temperature curves.

- Sleep 3 - the sleep curve setting under DIY Sleep mode:

(1) Under Sleep 3 mode, long press "TEMP" button, the remote controller will enter the setting of personalized sleep. In this case, the timer zone of remote controller will display "1 hr" and the set temperature zone "88" will display the corresponding temperature of the last set sleep curve and blink (The first entering will display according to the initial curve setting value of manufacturer);

(2) Press "+" and "-" button to adjust the corresponding temperature. After adjusting, press "TEMP" button to confirm it;

(3) At this time, the timer time on the remote controller will increase automatically by 1hr (that is "2 hr" or "3 hr" ... or "8 hr"). The set temperature zone "88" will display the corresponding temperature of the last set sleep curve and blink;

(4) Repeat step(2) and step (3) until 8-hour temperature setting is finished, then the sleep curve is set successfully. After that, remote controller will resume displaying the original timer time and temperature zone will resume displaying the original set temperature.

- Sleep 3 - the sleep curve inquiry under DIY Sleep mode:

User can inquire the set sleep curve according to the setting method of sleep curve. Enter the setting of personalized sleep but do not change the temperature. Then press "TEMP" button to confirm the setting.

Note: In the above setting or inquiry procedure, if there is no button pressing within 10s, remote controller will automatically exit the sleep curve setting and resume the original display. If ON/OFF, MODE, TIMER, SLEEP, COOLING or HEATING button is pressed during the setting or inquiry procedure, remote controller will also exit the sleep curve setting.

- Sleep 4 is Siesta mode. The set temperature will change automatically according to the features of siesta.

- Sleep function will be disabled if the air condition is restarted after power failure; when sleep function is turned on, quiet fan speed will be also turned on.

- Sleep function can not be set in AUTO mode.

## 17. Wifi button

Press this button 3s can set wifi function on or OFF.

At OFF status, press mode button and wifi button, can reset wifi mode parameter and open wifi function.

If "H1" is displayed on the remote controller while it's not operated by the professional person/after-sales person, it belongs to the misoperation.

Please operate it as below to cancel it. Under the OFF status of remote controller, hold the "MODE" button and "X-FAN" buttons simultaneously for 5s to cancel "H1" display.

Note:

- If remote controller displays "H1", it belongs to the normal function reminder. If the unit is defrosting under heating mode, it operates according to H1 defrosting mode. "H1" won't be displayed on the panel of indoor unit;
- Once you set H1 mode, if you turn off unit by remote controller, H1 will display 3 times on the remote controller and then disappear;
- Also, when you set H1 mode, when you change to heating mode, H1 will display 3 times on the remote controller and then disappear.

## About X-FAN function

This function indicates that moisture on evaporator of indoor unit will be blown after the unit is stopped to avoid mould.


1. Having set X-FAN function on: After turning off the unit by pressing ON/OFF button indoor fan will continue running for about 2 min. at low speed. In this period, press X-FAN button to stop indoor fan directly.

2. Having set X-FAN function off: After turning off the unit by pressing ON/OFF button, the complete unit will be off directly.

## About AUTO RUN

When AUTO RUN mode is selected, the setting temperature will not be displayed on the LCD, the unit will be in accordance with the room temp. automatically to select the suitable running method and to make ambient comfortable.

### About lock

Press + and - buttons simultaneously to lock or unlock the keyboard. If the remote controller is locked, the icon  will be displayed on it, in which case, press any button, the mark will flicker for three times. If the keyboard is unlocked, the mark will disappear.

### About switch between Fahrenheit and Centigrade

Under status of unit off, press MODE and - buttons simultaneously to switch °C and °F.


### Energy-saving function

Under cooling mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off energy-saving function. When energy-saving function is started up, "SE" will be shown on remote controller, and air conditioner will adjust the set temperature automatically according to ex-factory setting to reach to the best energy-saving effect. Press "TEMP" and "CLOCK" buttons simultaneously again to exit energy-saving function.

#### Note:

- Under energy-saving function, fan speed is defaulted at auto speed and it cant be adjusted.
- Under energy-saving function, set temperature cant be adjusted.
- Sleep function and energy-saving function cant operate at the same time. If energy-saving function has been set under cooling mode, press sleep button will cancel energy-saving function. If sleep function has been set under cooling mode, start up the energy-saving function will cancel sleep function.


### 8°C heating function

Under heating mode, press "TEMP" and "CLOCK" buttons simultaneously to start up or turn off 8°C heating function. When this function is started up, "  " and "8°C " will be shown on remote controller, and the air conditioner keep the heating status at 8°C . Press "TEMP" and "CLOCK" buttons simultaneously again to exit 8°C heating function.


#### Note:


- Under 8°C heating function, fan speed is defaulted at auto speed and it cant be adjusted.
- Under 8°C heating function, set temperature cant be adjusted.
- Sleep function and 8°C heating function cant operate at the same time. If 8°C heating function has been set under heating mode, press sleep button will cancel 8°C heating function. If sleep function has been set under heating mode, start up the 8°C heating function will cancel sleep function.
- Under °F temperature display, the remote controller will display 46 °F heating.

## Operation guide

1. After putting through the power, press "ON/OFF" button on remote controller to turn on the air conditioner.
2. Press "MODE" button to select your required mode: AUTO, COOL, DRY, FAN,HEAT.
3. Press "+" or " - " button to set your required temperature. (Temperature cant be adjusted under auto mode).
4. Press "FAN" button to set your required fan speed: auto, low, medium and high speed.
5. Press "  " button to select fan blowing angle.

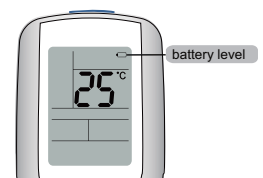
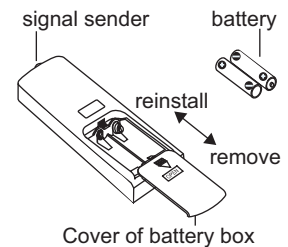
## Replacement of batteries in remote controller

1. Press the back side of remote controller marked with "  "as shown in the fig, and then push out the cover of battery box along the arrow direction.
2. Replace two 7# (AAA 1.5V) dry batteries, and make sure the position of "+" polar and "-" polar are correct.
3. Reinstall the cover of battery box.

Battery level will be displayed on the remote controller. When "  " is flickering, please replace the batteries, otherwise, remote controller cant operate normally.

#### Note:

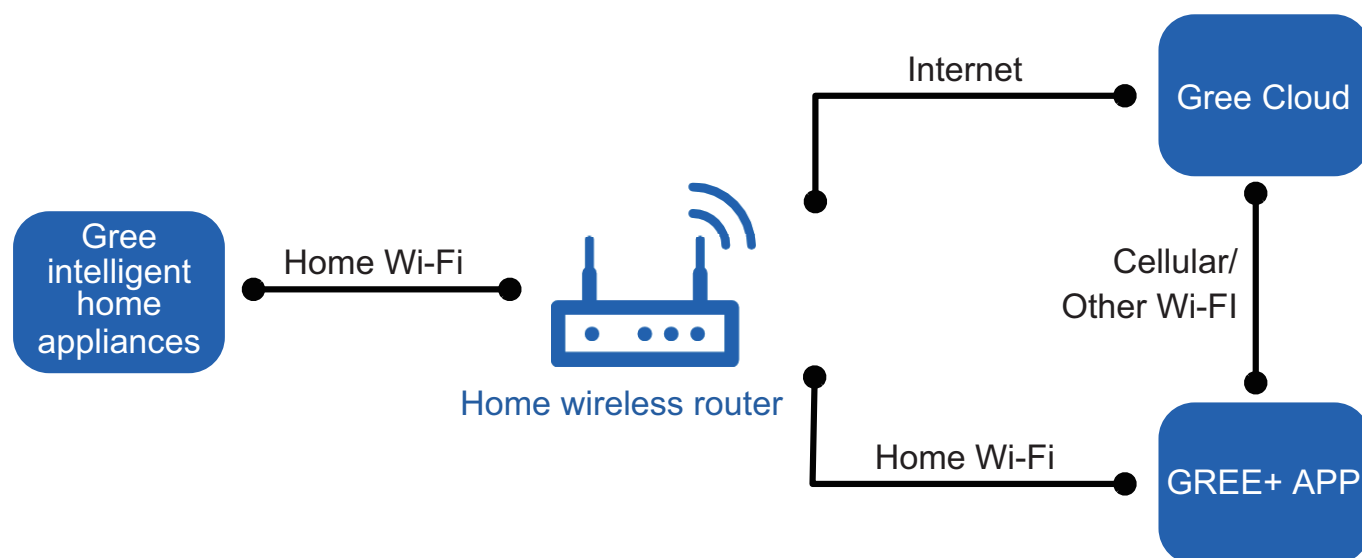
- During operation, point the remote control signal sender at the receiving window on indoor unit.
- The distance between signal sender and receiving window should be no more than 26.25ft , and there should be no obstacles between them.
- Signal may be interfered easily in the room where there is fluorescent lamp or wireless telephone; remote controller should be close to indoor unit during operation.
- Replace new batteries of the same model when replacement is required.
- When you dont use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or theres no display, please replace batteries.





## 6.2 GREE+ App Operation Manual

### Control Flow Chart



### Operating Systems

Requirement for Users smart phone:



iOS system  
Support iOS7.0 and  
above version



Android system  
Support Android 4.4 and  
above version

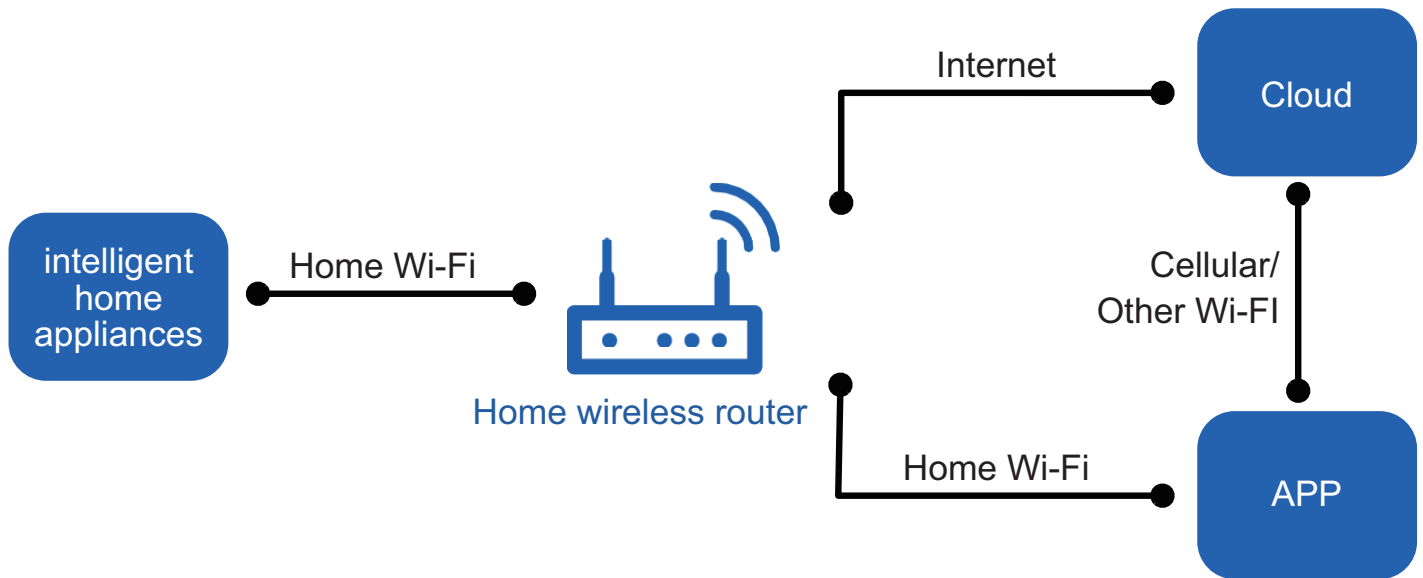
### Download and installation



GREE+ App Download Linkage

Scan the QR code or search "GREE+" in the application market to download and install it. When "GREE+" App is installed, register the account and add the device to achieve long-distance control and LAN control of Gree smart home appliances.

For more information, please refer to "Help" in App.



iOS system  
Support iOS7.0 and  
above version



Android system  
Support Android 4.4 and  
above version



### App Download Linkage

Scan the QR code or search "Ewpe Smart" in the application market to download and install it. When "Ewpe Smart" App is installed, register the account and add the device to achieve long-distance control and LAN control of smart home appliances.  
For more information, please refer to "Help" in App.

## 6.4 Brief Description of Modes and Functions

Conversion formula for Fahrenheit degree and Celsius degree:  $T_f = T_c \times 1.8 + 32$

### Indoor unit

#### 1. This controller includes functions as below

(1) Auto; (2) Cooling; (3) Dry; (4) Fan; (5) Heating

#### 2. Control object of controller

(1) Indoor unit :

Cooling mode: seven kinds of fan speed in total (including quiet, fan 1, fan 2, fan 3, fan 4, fan 5, turbo).

Heating mode: five kinds of fan speed in total (including quiet, fan 1, fan 2, fan 3, fan 4, fan 5, turbo).

Fan mode: Fan speed is same as that under cooling mode.

Dry mode: Low fan and quiet can be set under this mode. The fan speed is same as that for low fan under cooling mode.

Auto mode: Turbo is not available for this mode and the fan speed is same as that under each operation mode (cooling mode, fan mode, heating mode).

(2) Stepping motor for up&down swing.

(3) Stepping motor for swing mechanism.

(4) Stepping motor for left&right swing.

(5) E-heater.

(6) Health function (cold plasma reserved).

(7) Normal buzzer.

#### 3. Basic functions of system

##### (1) Cooling mode

① Operation condition and process for cooling mode ( refer to outdoor unit instruction for inverter unit).

② Protection function ( refer to outdoor unit instruction for inverter unit).

##### (2) Dry mode

① Operation condition and process for dry mode.

② Protection function ( refer to outdoor unit instruction for inverter unit).

##### (3) Heating mode (not for cooling only unit)

① Operation condition and process for heating mode.

② Defrosting condition and process (refer to outdoor unit instruction for inverter unit): As for normal intelligent defrosting; the unit will defrost automatically according to frosting condition and operation indicator will be on 10s and off 0.5s circularly. As for non-stop defrosting, the indoor fan will be started up according to the frosting condition and the operation indicator will be on 10s and off 0.5s circularly.

③ Protection function (refer to outdoor unit instruction for inverter unit).

##### (4) Fan mode

Under this mode, indoor fan operates at set fan speed. Compressor, outdoor fan, 4-way valve and electric heating tube all stop operation. Under this mode, the temperature setting range is 16~30°C . Operation icon and set temperature is displayed.

##### (5) Auto mode

Under auto mode, the system will select the operation mode (cooling, heating, fan) according to the change of ambient temperature. Operation icon, actual operation mode icon and set temperature will be displayed. There's 30s time delay for protection for mode switchover. Protection function is same as that under each mode.

#### 4. Display status of indoor indicator

##### (1) Display status of indoor unit

① After energization, all display icons will be displayed and then only the power indicator is on. When turning on the unit with remote controller, the operation indicator is on and the current set operation mode will be displayed.

② During defrosting, the operation indicator will be on 10s and off 0.5s circularly. Under auto mode, the dual-8 nixie tube displays 25 under cooling mode or fan mode, and 20 under heating mode. Mode indicator is displayed according to the mode.

③ Dual-8 nixie tube displays set temperature.

##### (2) Error indicator display on indoor unit

Display table for error status

Error name	Error definition	Dual-8 code display
Freon recovery mode	Operation status is displayed immediately	Fo
Malfunction of indoor fan	Malfunction of hardware	H6
Malfunction of middle temperature sensor of indoor evaporator	Malfunction of hardware	F2
Malfunction of indoor ambient temperature sensor	Malfunction of hardware	F1
Communication malfunction between indoor unit and outdoor unit	Malfunction of hardware	E6
Malfunction of jumper cap	Malfunction of hardware	C5
Limit/decrease frequency due to module current protection	Display through adjustment with remote controller	En
Limit/decrease frequency due to module temperature protection	Display through adjustment with remote controller	EU
Limit/decrease frequency due to overload protection	Display through adjustment with remote controller	F6
Limit/decrease frequency due to freeze prevention protection	Display through adjustment with remote controller	FH
Limit/decrease frequency due to discharge protection	Display through adjustment with remote controller	F9
Limit/decrease frequency due to AC current protection of outdoor unit	Display through adjustment with remote controller	F8
Malfunction overload temperature sensor	Malfunction of hardware	FE
Malfunction of outdoor discharge temperature	Malfunction of hardware	F5
Malfunction of outdoor ambient temperature sensor	Malfunction of hardware	F3
Malfunction of outdoor condenser temperature sensor	Malfunction of hardware	F4
Circuit malfunction of module temperature sensor	Malfunction of hardware	P7
Overload protection of compressor	Other malfunction	H3
Discharge protection	Other malfunction	E4
Overload protection	Other malfunction	E8
AC current protection of outdoor unit	Other malfunction	E5
Module current protection	Other malfunction	H5
Module temperature protection	Other malfunction	P8
Freeze prevention protection	Other malfunction	E2
High power protection	Other malfunction	L9
Lacking/inverse phase protection of compressor	Other malfunction	U2
PFC current malfunction	Other malfunction	HC
High DC bus bar voltage protection	Other malfunction	PH
Low DC bus bar voltage protection	Other malfunction	PL
Freon-lacking protection	Other malfunction	F0
Mode shock	Malfunction of hardware	E7
Non-matching between indoor unit and outdoor unit	Malfunction of hardware	LP
Read-write malfunction of memory chip	Malfunction of hardware	EE
Abnormal changeover for 4-way valve	Malfunction of hardware	U7
Malfunction of outdoor fan 2	Malfunction of hardware	LA
Malfunction of outdoor fan 1	Malfunction of hardware	L3
Low pressure protection	Other malfunction	E3
High pressure protection	Other malfunction	E1
Drop malfunction of DC bus bar voltage	Other malfunction	U3
Current detection malfunction for the complete unit	Malfunction of hardware	U5
Charging malfunction for capacity	Malfunction of hardware	PU
Phase current detection malfunction of compressor	Malfunction of hardware	U1
Desynchronizing of compressor	Other malfunction	H7
Demagnetizing protection of compressor	Other malfunction	HE
Failure startup of compressor	Other malfunction	Lc
High peak current of compressor	Other malfunction	P5
Conglutination malfunction of relay of refrigerant electric heater of outdoor unit	Malfunction of hardware	A2
Refrigerator heater of outdoor unit is invalid	Display through adjustment with remote controller	A3
Malfunction of temperature sensor of refrigerant heater	Malfunction of hardware	A4
Malfunction exit tube temperature sensor for condenser	Malfunction of hardware	A5
Oil return	Display through adjustment with remote controller	F7
Normal cooling and heating (capacity test code)	Operation status is displayed immediately	P1
Maximum cooling and heating (capacity test code)	Operation status is displayed immediately	P2
Medium cooling and heating (capacity test code)	Operation status is displayed immediately	P3
Minimum cooling and heating (capacity test code)	Operation status is displayed immediately	P0

## 5. Other control

### (1) Timer function

Timer ON: Timer ON can be set under off status. After time is over, the unit will operate at original setting mode. The timer interval is 0.5h and the timer setting range is 05~24h.

Timer OFF: Timer OFF can be set under on status. After time is over, the unit will be turn off. The timer interval is 0.5h and the timer setting range is 05~24h.

### (2) Auto button

Press this button and the unit will operate at auto mode. Indoor fan operates at auto fan speed and the swing motor operates. Press this button again to turn off the unit.

### (3) Buzzer

Upon energization or availably operating the unit or remote controller, the buzzer will give out a beep.

### (4) Sleep function

In SLEEP mode, the unit will automatically select appropriate sleep curve to operate according to different temperature setting.

### (5) Turbo Function

This function can be set in cooling or heating mode.

### (6) X-fan function

X-fan function can be set in cooling or drying mode.

### (7) Compulsory defrosting function

#### ① turn on compulsory defrosting function

Under on status, set heating mode with remote controller and adjust the temperature at 16°C. When pressing “+, -, +, -, +, -” button successively within 5s and the complete unit will enter into compulsory defrosting status. Meanwhile, operation indicator on indoor unit is on 10s and off 0.5s circularly. (Note: If the complete has malfunction or stops operation due to protection, compulsory defrosting function can be started up only after malfunction or protection is resumed.)

#### ② Exit compulsory defrosting mode

After compulsory defrosting is started up, the complete unit will exit defrosting according to actual defrosting result automatically. The complete unit will resume heating operation normally.

### (8) Refrigerant recovery function (applicable for movement or maintenance)

#### ① Start up refrigerant recovery function

Within 5min after energization (on or off status), set cooling mode with remote controller and adjust the temperature at 16°C. When pressing light button on remote controller to any one indoor unit for 3 times within 3s, the complete unit will enter into refrigerant recovery status after setting is succeeded and all indoor unit displayed F0. After that, maintenance staff turns off all liquid valves.

5min later, hold all thimbles at service valves in turn with tools. If theres no refrigerant spurting out, turn off corresponding gas valve immediately, turn off the unit with remote controller and then you can disassemble the connection pipe.

#### ② Quit refrigerant recovery function

During refrigerant recovery process, if any one indoor unit receives any remote control signal or refrigerant recovery function has operated for 25min, the unit will exit refrigerant recovery function. If the complete unit is at standby status before refrigerant recovery, the unit is still at standby status after refrigerant recovery. If the complete unit is at operation status before refrigerant recovery, the unit will operate at original operation mode after refrigerant recovery.

#### ③ After entering refrigeratn recovery function

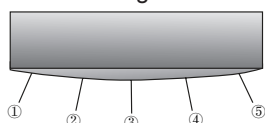
Indoor unit operates at cooling mode. Fan speed is super high fan speed and the set temperature is 16°C. The horizontal louver will stay at the minimum operation angle.

### (9) Auto fan speed control

Under this mode, indoor fan will select high, high-medium, medium, medium-low or low fan speed according to ambient temperature sensor.

### (10) Left&right swing control

Select different left&right swing direction according to remote control status of left&right swing.



### (11) Up&down swing control

Up&down swing is composed of swing mechanism and swing blade;

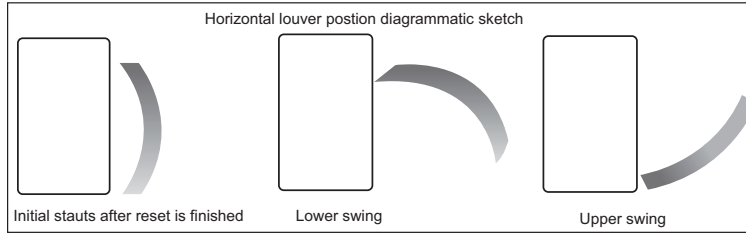
After energization, the swing mechanism will perform reset action. The horizontal louver will open to the maximum angle and then be closed;

After turning on the unit, the swing mechanism will extend different length according to remote control status. By view of the position

of swing blade, there are upper swing and lower swing.

When selecting fixed-angle swing, you can select 5 kinds of swing position for blowing fan;

After selecting free swing, lower swing for heating mode and upper swing for cooling mode.



## (12) Display

### ① Display of operation icon and mode icon

After energization, all icon will be displayed for once. Under standby status, operation icon will be in white. After turning on the unit with remote controller, the icon for the current operation mode will be displayed (mode: cooling, heating, 0.5, defrosting, frequency visual). After pressing light button to turn off light, all displays will be turned off. When turning on the unit, the backlight indicator will be turned on; when turning off the unit or light button, backlight indicator won't be turned on.

### ② Dual-8 nixie tube display

When turning on the unit after energization for the first time, the nixie tube is defaulted to display current set temperature (the temperature setting range is 16~30°C). When it received the signal of display set temperature, the nixie tube displays set temperature; when it received the signal of display ambient temperature, the nixie tube will display current indoor ambient temperature; if remote control to set other status, the display won't change. F1 will be displayed for the malfunction of ambient temperature sensor; F2 will be displayed for the malfunction of indoor tube temperature sensor; C5 will be displayed for the malfunction of jumper cap.

## (13) Locked protection to motor

After turning on the fan, when the motor operates at low speed for a period of time, it will stop operation for preventing auto protection of motor and lockage will be displayed. If it's at on status, dual-8 nixie tube displays lockage error code H6; if it's at off status, lockage information won't be displayed.

## 6. Special Functions

### (1) Rf control function

There are three optional mode—air, humidify and air purifier. After matching is succeeded, you can control the related mode through remote controller.

### (2) I Feel function

When I FEEL command is received, the controller will operate according to the ambient temperature sent by the remote controller (For defrosting and cold blow prevention, the unit operates according to the ambient temperature sensed by the air conditioner). The remote controller will regularly send ambient temperature data to the controller. When the data has not been received for a long time, the unit will operate according to the temperature sensed by the air conditioner. If I FEEL function is not selected, the ambient temperature will be that sensed by the air conditioner. I FEEL function is not to be memorized.

### (3) Malfunction detecting of temperature sensor

When it detected that there's malfunction of indoor ambient temperature sensor, it will display F1; when it detected that there's malfunction of indoor tube temperature sensor, it will display F2.

### (4) Low power consumption standby function

When the air conditioner is in power off and at standby status, it will enter into low power consumption standby status 6 minutes later, and the operation indicator will be turned off.

## 7. Error Analysis

### (1) Error 1: No response after energization, and buzzer does not give out a beep.

Solution: Please check the power supply or replace the controller.

### (2) Error 2: Dual-8 nixie tube of display board displays "C5".

Solution: The jumper cap has not been firmly connected to the controller, please reinsert or replace the jumper cap with the same specification.

### (3) Error 3: Dual-8 nixie tube of display board displays "F1".

Solution: The ambient temperature sensor of air conditioner has not been firmly connected to the controller, please reinsert or replace an ambient temperature sensor.

### (4) Error 4: Dual-8 nixie tube of display board displays "F2".

Solution: The tube temperature sensor of air conditioner has not been firmly connected to the controller, please reinsert or replace a tube temperature sensor.

**(5)Error 5: Dual-8 nixie tube of display board displays “H6”.**

Solution: The feedback wire of indoor fan has not been firmly connected to the controller or the indoor fan motor fails to work, please reinsert the feedback line of indoor fan or replace the main board of controller, or replace the motor.

**(6)Error 6: Dul-8 nixie tube of display board displays “FC”.**

Solution: It is malfunction of swing mechanism, which is caused by the looseness of connecting wire or damage of swing mechanism or main board. Please reconnect the connecting wire, or replace the swing mechanism or controller.

**(7)Error 7: Dul-8 nixie tube of display board displays “JF” or “rF”.**

Solution: It is abnormal of detecting board, which is caused by the looseness of communication line between the main board and detecting board, or the malfunction of detecting board or main board. Please reinsert the connecting wire, or replace the detecting board or controller.

**8.Blockage protection to Motor**

(1) When turning on the fan, the motor speed is not more than 300rpm/min for 1 min consecutively, its blockage protection to motor.

(2)During lockage protection to motor, all load stop operation (indoor fan, outdoor fan, compressor, and electric heating tube stop operation; 4-way valve should delay 2mins to stop operation and then horizontal louver will stop at the current position.

(3)Once theres blockage protection to motor, cut off the power to resume operation.

(4)During blockage protection to motor, remote controller and buttons are valid and they can turn on or turn off the unit, while they wont perform detailed target (indoor fan, outdoor fan, compressor, and electric heating tube stop operation, and 4-way valve should delay 3mins to stop operation; horizontal louver will stop at current position).

(5)During motor blockage protection, if the unit is at on status, the dual-8 nixie tube displayed blockage error code H6; if the unit is at off status, it wont display blockage malfunction information.

**9.Communication malfunction**

If the unit hasnt received correct signal for 3mins consecutively, its the communication malfunction. Outdoor fan stop operation and stop operation after blowing residual heat under auto heating mode or heating mode. Indoor fan operated at set fan speed under other modes.

**10.Auto inspection function**

Mafunction of jumer cap

After energization, when its detected the jumper cap outlet is blank, its the malfunction of jumper cap, which cant resumed. During malfunction protection of jumper cap, if the unit is at on status, the nixie tube displays error code: “C5” and operation indicator is blinking. If the unit is at off status, it wont display error code.

Note: The controller without this function wont detection this malfunction.



## Outdoor unit

### 1. System function

#### 1.1 Cooling mode

##### 1.1.1 Working condition and process for cooling

When the compressor is at off status, turn on the unit under cooling mode. When indoor unit reaches the condition of turning on the unit, the unit operates under cooling mode. Meanwhile, indoor fan, outdoor fan and compressor stops operation.

##### 1.1.2 Stop operation under cooling mode

Compressor stopped operation, compressor stops operation immediately and outdoor fan delay 30s to stop operation.

##### 1.1.3 Switch to heating mode from cooling mode

When switching to heating mode, 4-way will delay 3min to be energized after compressor is stopped. Others are same with that stopped operation under cooling mode.

##### 1.1.4 4-way valve: 4-way valve will be closed under this mode

##### 1.1.5 Outdoor fan control under cooling mode

After compressor stops operation, outdoor fan will operate at current fan speed for another 30s and then stops operation.

#### 1.2 Drying mode

##### 1.2.1 Working condition and process for drying mode: same with that for cooling mode

##### 1.2.2 Status of 4-way valve: OFF.

##### 1.2.3 Temperature setting range: 16~30°C.

##### 1.2.4 Protection function: Same with that under cooling mode.

##### 1.2.5 The startup condition for electronic expansion valve, outdoor fan and compressor is same as that for cooling mode.

#### 1.3 Heating mode

##### 1.3.1 Working condition and process for heating mode

When indoor unit reaches the startup condition of heating, indoor unit will operate under heating mode.

##### 1.3.2 Stop operation under heating mode:

a. When indoor unit reached OFF or stop operation conditioner, compressor stop operation, and outdoor fan will delay 1min to stop operation.

##### b. Switch to cooling(drying) or fan mode

(a) compressor stops operation; (b) 4-way valve will delay 2min to be de-energized;

(c) outdoor fan will delayed 30s to stop operation; (d) status of 4-wayvalve: energized.

##### 1.3.3 Outdoor fan control under heating mode

When compressor stops operation, outdoor fan will delay 30s to stop operation.

##### 1.3.4 Defrosting function

When it satisfied defrosting condition, compressor stops operation. After compressor stoped for 30s, outdoor fan stops operation and 4-way valve will change direction; After 4-way valve chaging direction, compressor will be startup, defrosting will start counting time and compressor frquency will be increased to defrosting frequency.

#### 1.4 Fan mode

##### 1.4.1 Compressor, outdoor fan and 4-way valve will all be stopped or closed.

##### 1.4.2 Temperature setting range is 16~30°C.

### 2. Protection function

#### 2.1 Overload protection function

During cooling mode, measure the temperature of outdoor heat exchanger; during heating mode, measure the temperature of indoor heat exchanger.

(1)When  $T_{tube} \leq T_1$ , resume original operation status;

(2)When  $T_{tube} \geq T_2$ , prohibit increasing frequency;

(3)When  $T_{tube} \geq T_3$ , compressor will decrease frequency to operate.

(4)When  $T_{tube} \geq T_4$ , compressor stops operation;

During cooling or drying mode:  $T_1=52$ ;  $T_2=55$ ;  $T_3=58$ ;  $T_4=62$ ;

During heating mode:  $T_1=50$ ;  $T_2=53$ ;  $T_3=56$ ;  $T_4=60$ ;

Under auto heating or heating mode, indoor unit will stop operation after blow residual heat. Under other modes, indoor fan operates at set fan speed.

## 2.2 Delay protection of compressor

When compressor is stopped, it needs 3min to restart up the compressor. Once compressor is started up, compressor wont stop operate within 6in according to the change of temperature.

## 2.3 Discharge temperature protection of compressor

- (1)When TBdischarge  $B \geq 98^{\circ}\text{C}$ , prohibit increasing frequency;
- (2)When TBdischarge  $B \geq 103^{\circ}\text{C}$ , prohibit decreasing frequency;
- (3)When TBdischarge  $B \geq 110^{\circ}\text{C}$ , compressor stops operation;
- (4)When TBdischarge  $B \leq 90^{\circ}\text{C}$ , protection is released.

## 2.4 Communication malfunction

When the unit hasnt received correct signal for 3mins consecutively, its the communication malfunction. The complete unit will stop operation.

## 2.5 Module protection

During module protection, compressor stops operation. When compressor has stopped operation for 3min, compressor will resume operation. When module protection occurs all the time when starting up compressor for 6 times consecutively, compressor cant be started any more (turn off the unit with remote controller can clear up module, and the accumulative times of module protection).

When the operation time of compressor is more than 6mins, the accumulative times will be cleared up.

2.6 When DC bus voltage is lower than 150V or more than 420V, compressor will delay 30s to stop operation. When DC bus voltage is more than 200C and less than 400V, protection will be resumed. Compressor will resume operation after it has stopped for 3mins. During low pressure protection, main relay will break off. When low voltage protection is resumed, main relay will be closed.

2.7 When overload malfunction is occurred, compressor stopped operation and outdoor fan will delay 30s to stop operation; when malfunction is cleared up and compressor has stopped for 3min, the unit will resume operation.

## 2.8 Power protection of compressor

- (1)When PCB $\geq 1500\text{w}$ , prohibit increasing frequency;
- (2)When PCB $\geq 1600\text{w}$ , decrease frequency to operate;
- (3)When PCB $\geq 1700\text{w}$ , compressor stops operation;
- (4)When PCB $\leq 1400\text{w}$ , protection is released.

## 2.9 Malfunction of temperature sensor

Name of temperature sensor	Malfunction condition
Outdoor ambient	Its detected that the temperature sensor is open/short-circuited for 5s consecutively
Outdoor tube temperature	Its detected that the temperature sensor is open/short-circuited for 5s consecutively; it wont be detected within 10mins after defrosting
Air discharge	After compressor operates for 3min,its detected that the temperature sensor is open/short-circuited for 5s consecutively

2.10 When outdoor fan is open-circuited or current is more than 0.8aA, outdoor fan will stop operation and then be restarted up 4s later. If the fan stops operation for 6 times successively, its the malfunction of fan. And then compressor will stops operation. 3mins later, the malfunction of fan will be cleared and restart up outdoor fan and compressor. If malfunction of fan occurs for 6 times successively, outdoor fan wont be restarted up. Turn off the unit with remote controller can clear up malfunction and the accumulated timer of malfunction. After compressor operates for 6mins successively, the accumulated malfunction times of fan will be cleared.