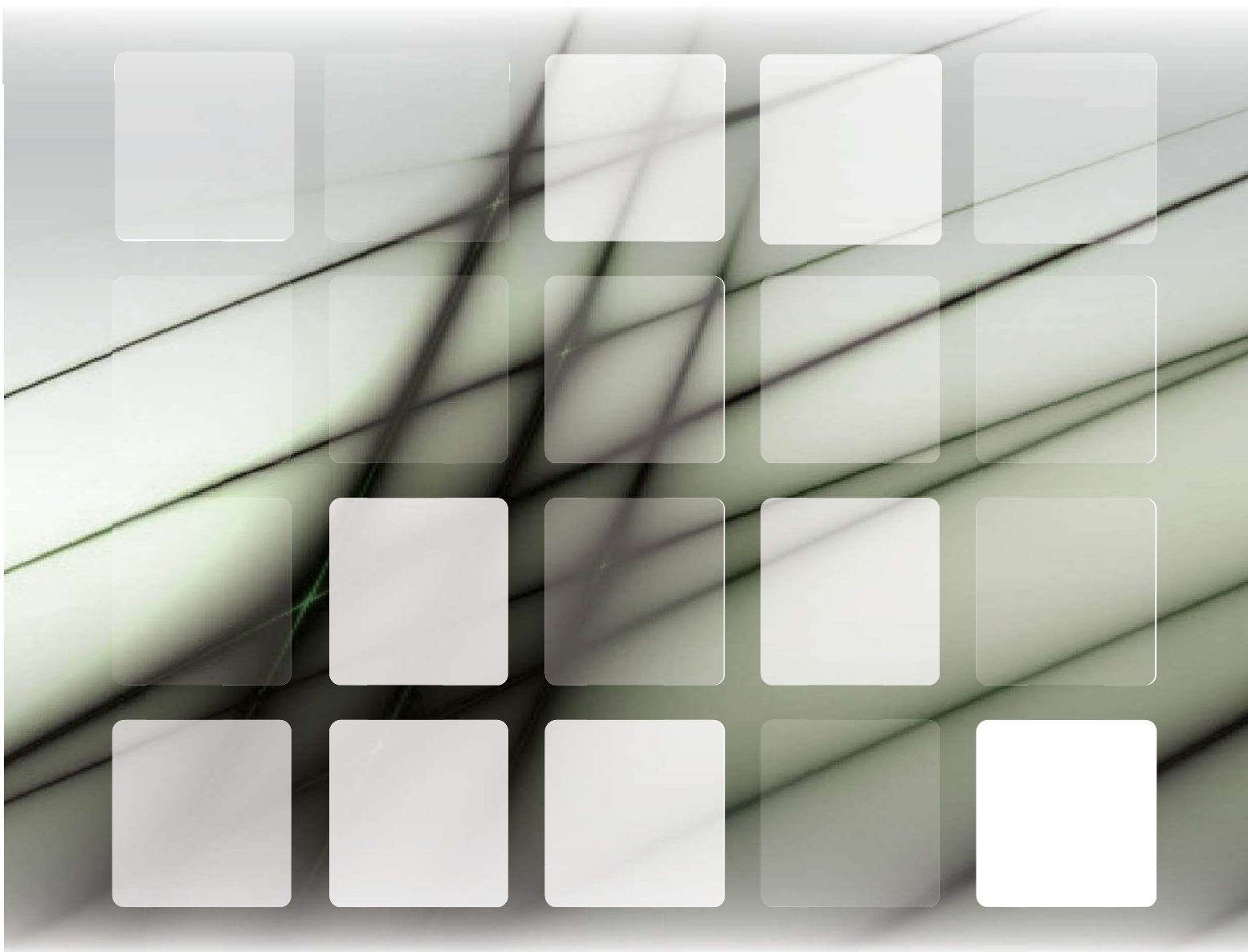


# IEWQ/ICHQ Series High Wall Inverter Technical Manual



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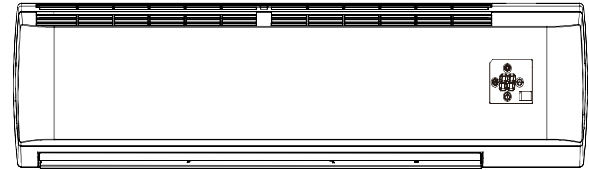
# Part I : Technical Information

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## 1. Summary

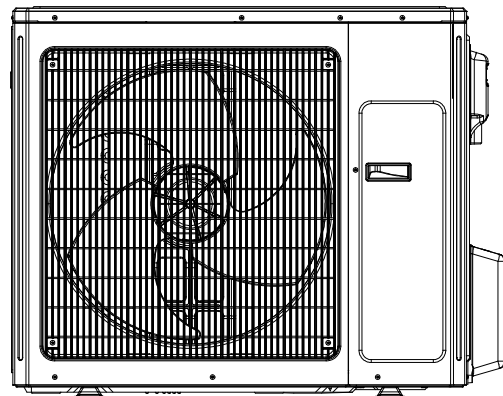
### Indoor Unit

IEWQ036J3A-RWI100



### Outdoor Unit

ICHQ036J3A-RLH100



### Remote Controller:



## 2. Specifications

### 2.1 Specification Sheet

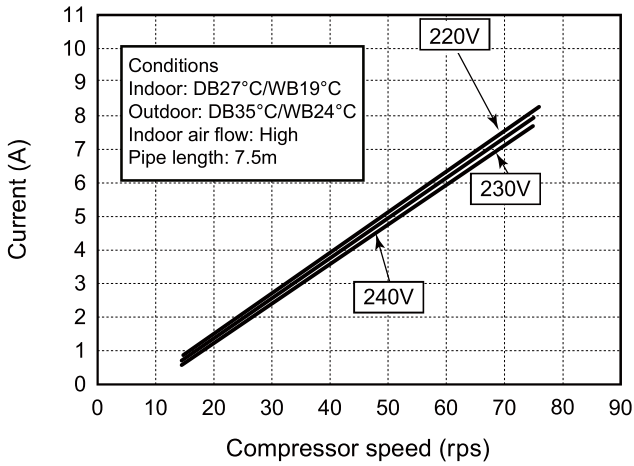
Model			IEWQ036J3A-RWI100	
Product Code			CB434014900 CB432022800	
Power Supply	Rated Voltage	V~	220-240	
	Rated Frequency	Hz	50	
	Phases		1	
Power Supply Mode			Outdoor	
Cooling Capacity(Min~Max)		W	8840	
Heating Capacity(Min~Max)		W	9260	
Cooling Power Input(Min~Max)		W	2430	
Heating Power Input(Min~Max)		W	2350	
Cooling Power Current		A	11	
Heating Power Current		A	10.4	
Rated Input		W	3700	
Rated Current		A	11	
Air Flow Volume(SH/H/MH/M/ML/L/SL)		m <sup>3</sup> /h	1600/1300/1200/1100/950/850/-	
Dehumidifying Volume		L/h	3	
EER		W/W	3.64	
COP		W/W	3.94	
SEER		W/W	/	
SCOP		W/W	/	
Application Area		m <sup>2</sup>	35-52	
Indoor Unit	Model of indoor unit		IEWQ036J3A-RWI100	
	Indoor Unit Product Code		CB434N14900 CB432N22800	
	Fan Type		Cross-flow	
	Diameter Length(DXL)		mm	Φ108X522.7
	Fan Motor Cooling Speed (SH/H/MH/M/ML/L/SL)		r/min	1550/1300/1200/1100/1000/950/850
	Fan Motor Heating Speed (SH/H/MH/M/ML/L/SL)		r/min	1550/1300/1200/1100/1000/950/900
	Output of Fan Motor		W	70
	Fan Motor RLA		A	0.28
	Fan Motor Capacitor		μF	/
	Evaporator Form			Aluminum Fin-copper Tube
	Pipe Diameter		mm	Φ7
	Row-fin Gap		mm	2-1.5
	Coil Length (LXD <sub>X</sub> W)		mm	1074X25.4X381
	Swing Motor Model			MP24BA/MP24CC/MP24CE
	Output of Swing Motor		W	1.5/1.5/1.5
	Fuse		A	5
	Sound Pressure Level (SH/H/MH/M/ML/L/SL)		dB (A)	57/53/51/48/44/43/40
	Sound Power Level (SH/H/MH/M/ML/L/SL)		dB (A)	67/63/61/58/54/53/50
	Dimension (WXHXD)		mm	1350X326X253
	Dimension of Carton Box (LXWXH)		mm	1438X418X352
Dimension of Package (LXWXH)		mm	1441X421X367	
Net Weight		kg	18.5	
Gross Weight		kg	23	

Outdoor Unit	Model of Outdoor Unit		ICHQ036J3A-RLH100
	Outdoor Unit Product Code		CB434W14900
	Compressor Manufacturer/Trademark		ZHUHAI LANDA COMPRESSOR CO., LTD
	Compressor Model		QXFS-D25zX090H
	Compressor Oil		FW68DA
	Compressor Type		Rotary
	Compressor L.R.A	A	24
	Compressor RLA	A	12.50(60Hz)
	Compressor Power Input	W	2420 (60Hz)
	Overload Protector		1NT11L-6233/ HPC115/95U1 /KSD115°C
	Throttling Method		Electron expansion valve
	Operation temp	°C	16~30
	Ambient temp (cooling)	°C	16~48
	Ambient temp (heating)	°C	2~24
	Condenser Form		Aluminum Fin-copper Tube
	Pipe Diameter	mm	Φ7
	Rows-fin Gap	mm	3-1.5
	Coil Length (LXDXW)	mm	994X57.1X748
	Fan Motor Speed	rpm	880
	Output of Fan Motor	W	90
	Fan Motor RLA	A	0.65
	Fan Motor Capacitor	μF	/
	Air Flow Volume of Outdoor Unit	m <sup>3</sup> /h	4000
	Fan Type		Axial-flow
	Fan Diameter	mm	Φ550
	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)	62/-/-
Sound Power Level (H/M/L)	dB (A)	72/-/-	
Dimension (WXHXD)	mm	1003X790X427	
Dimension of Carton Box (LXWXH)	mm	1080X485X840	
Dimension of Package (LXWXH)	mm	1083X488X855	
Net Weight	kg	65	
Gross Weight	kg	70	
Refrigerant		R410A	
Refrigerant Charge	kg	2.3	
Connection Pipe	Length	m	7.5
	Gas Additional Charge	mm	50
	Outer Diameter Liquid Pipe	mm	Φ6
	Outer Diameter Gas Pipe	mm	Φ16
	Max Distance Height	m	10
	Max Distance Length	m	25
Note:The connection pipe applies metric diameter.			

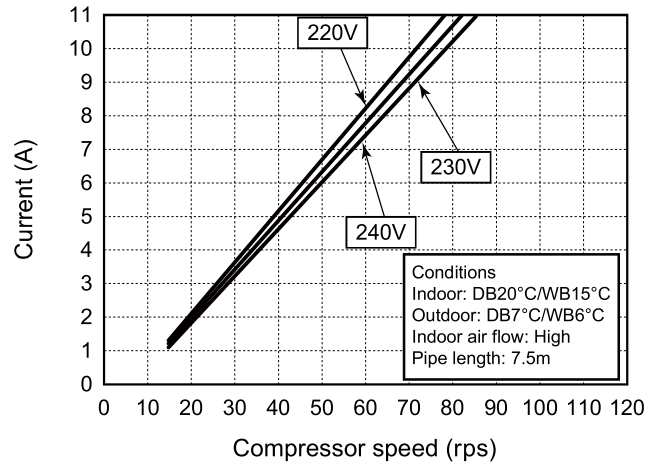
The above data is subject to change without notice. Please refer to the nameplate of the unit.

## 2.2 Operation Characteristic Curve

Cooling



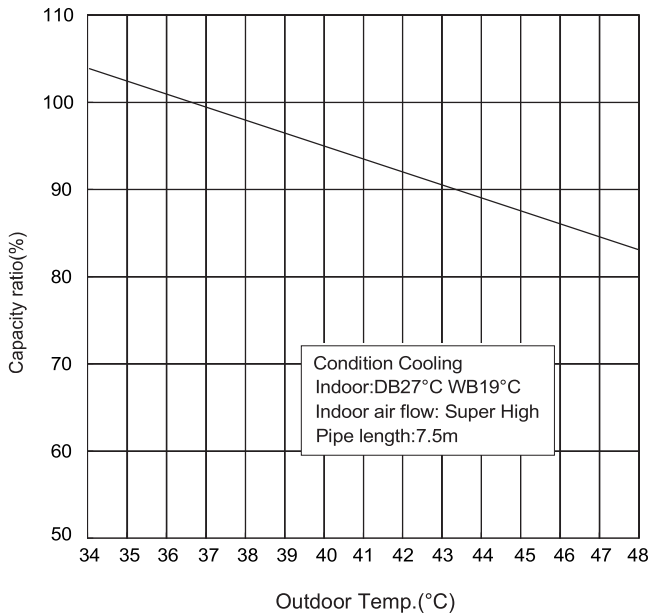
Heating



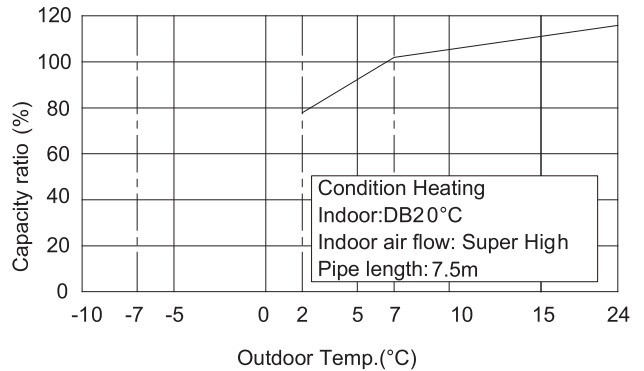
## 2.3 Capacity Variation Ratio According to Temperature

Heating operation ambient temperature range is 2°C~24°C

Cooling



Heating



## 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 frequency (Hz)
Indoor	Outdoor			T1 (°C)	T2 (°C)			
27/19	35/24	36K	P (MPa) 0.9 to 1.2	12 to 14	43 to 41	Super High	High	56

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 frequency (Hz)
Indoor	Outdoor			T1 (°C)	T2 (°C)			
20/-	7/6	36K	P (MPa) 2.0 to 2.5	40 to 39	2 to 5	Super High	High	60

**Instruction:**

T1: Inlet and outlet pipe temperature of evaporator

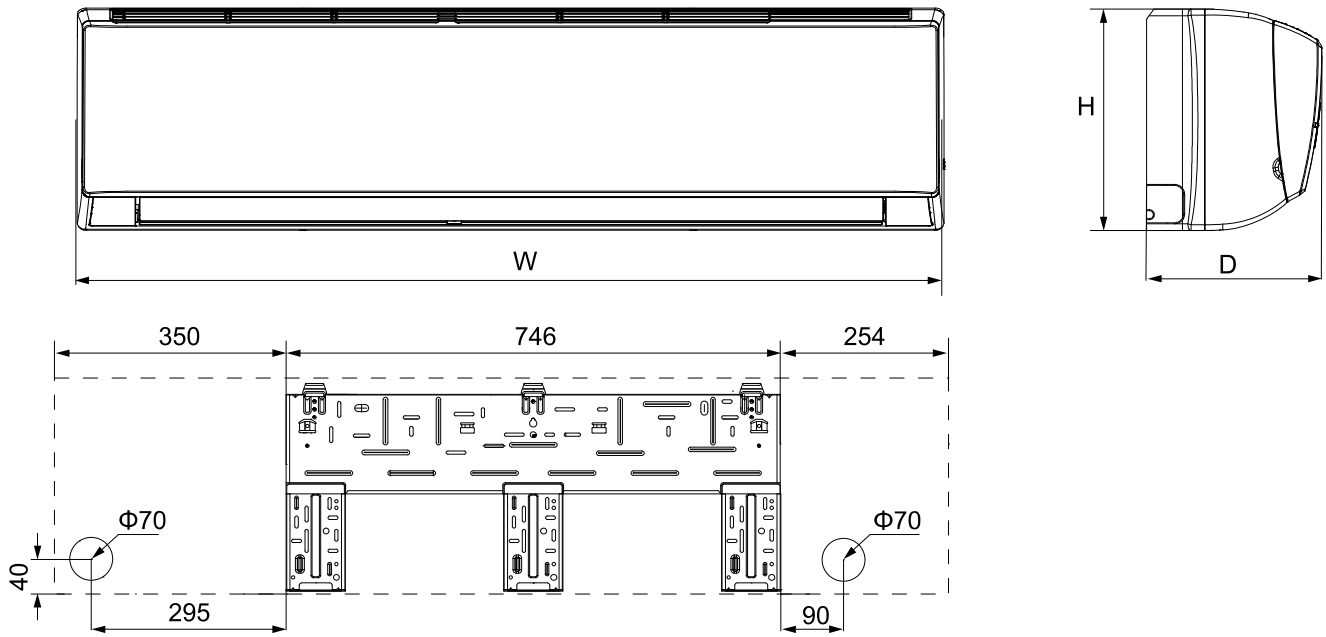
T2: Inlet and outlet pipe temperature of condenser

P: Pressure at the side of big valve

Connection pipe length: 7.5 m.

### 3. Outline Dimension Diagram

#### 3.1 Indoor Unit

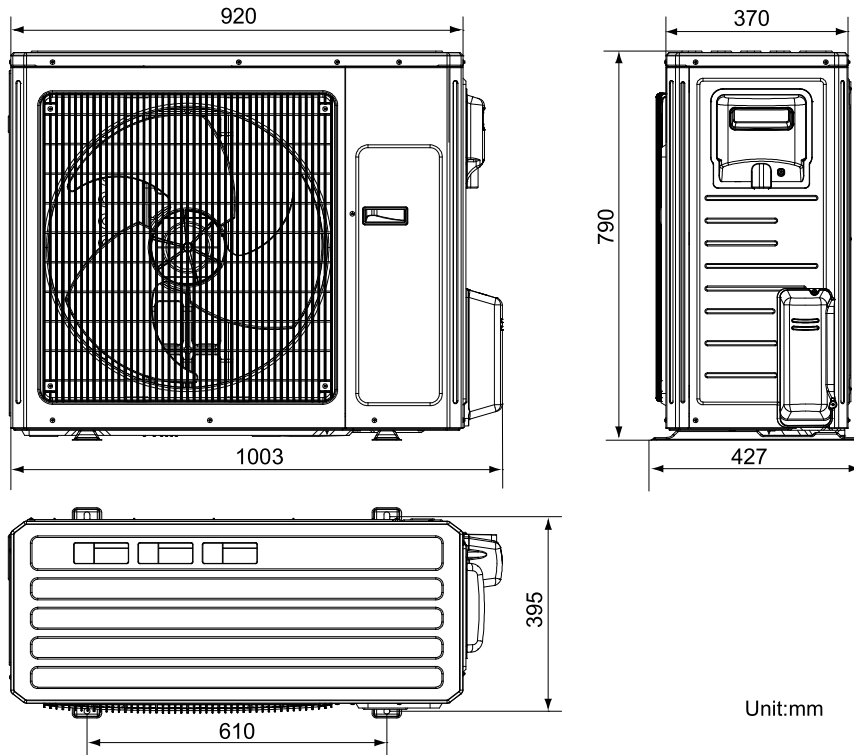


Unit:mm

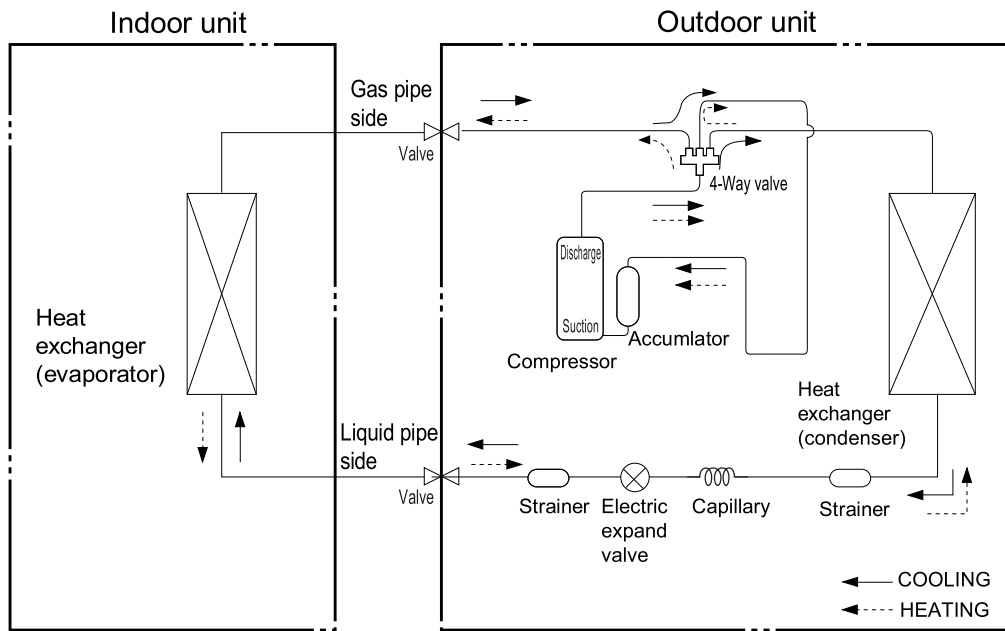
Model	W	H	D
36K	1350	326	253



## 3.2 Outdoor Unit



## 4. Refrigerant System Diagram



Connection pipe specification:

Liquid pipe: 1/4" (6mm)

Gas pipe: 5/8" (16mm)

# 5. Electrical Part

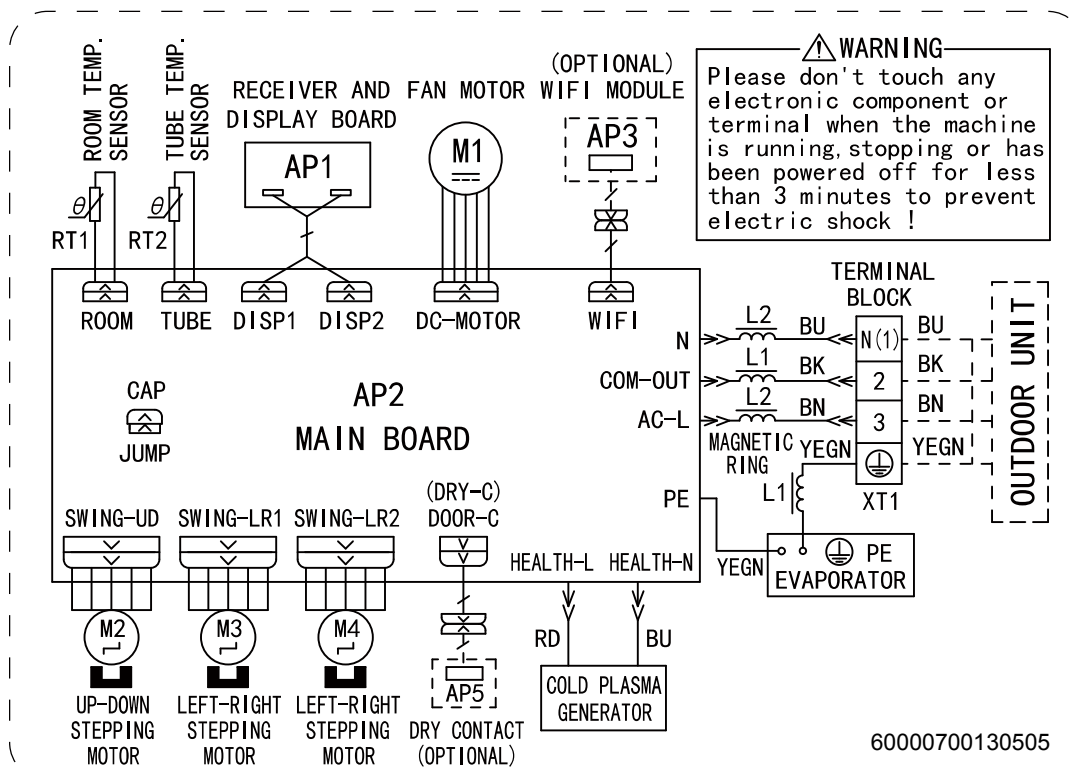
## 5.1 Wiring Diagram

### • Instruction

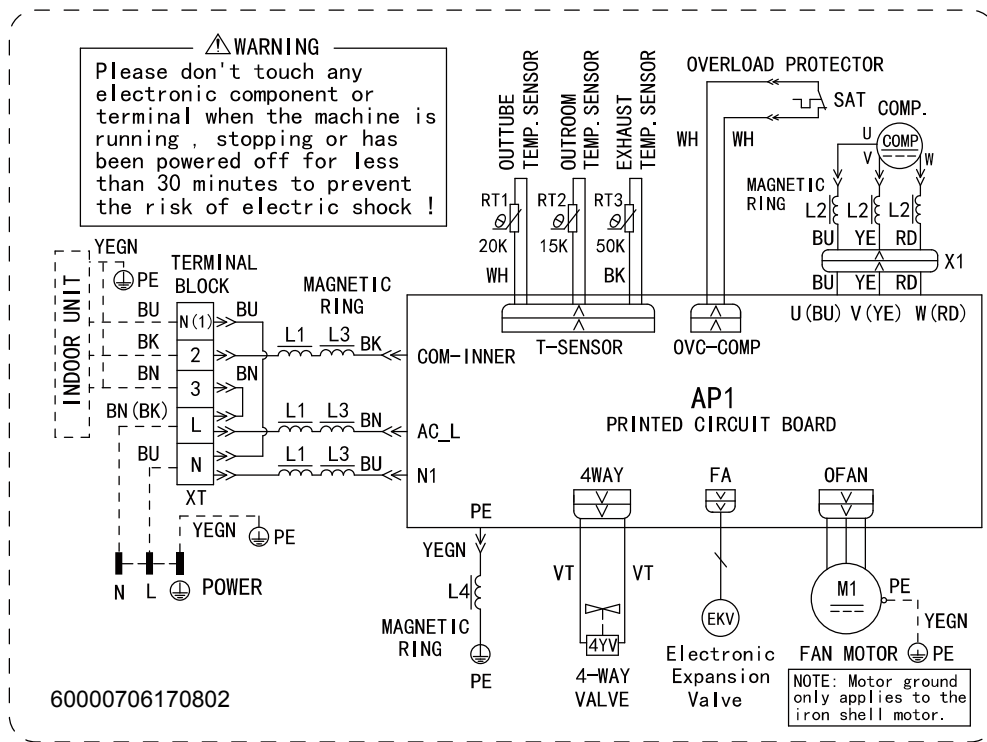
Symbol	Symbol Color	Symbol	Symbol Color	Symbol	Name
WH	White	GN	Green	CAP	Jumper cap
YE	Yellow	BN	Brown	COMP	Compressor
RD	Red	BU	Blue		Grounding wire
YEGN	Yellow/Green	BK	Black	/	/
VT	Violet	OG	Orange	/	/

Note: Jumper cap is used to determine fan speed and the swing angle of horizontal lever for this model.

### • Indoor Unit



● Outdoor Unit

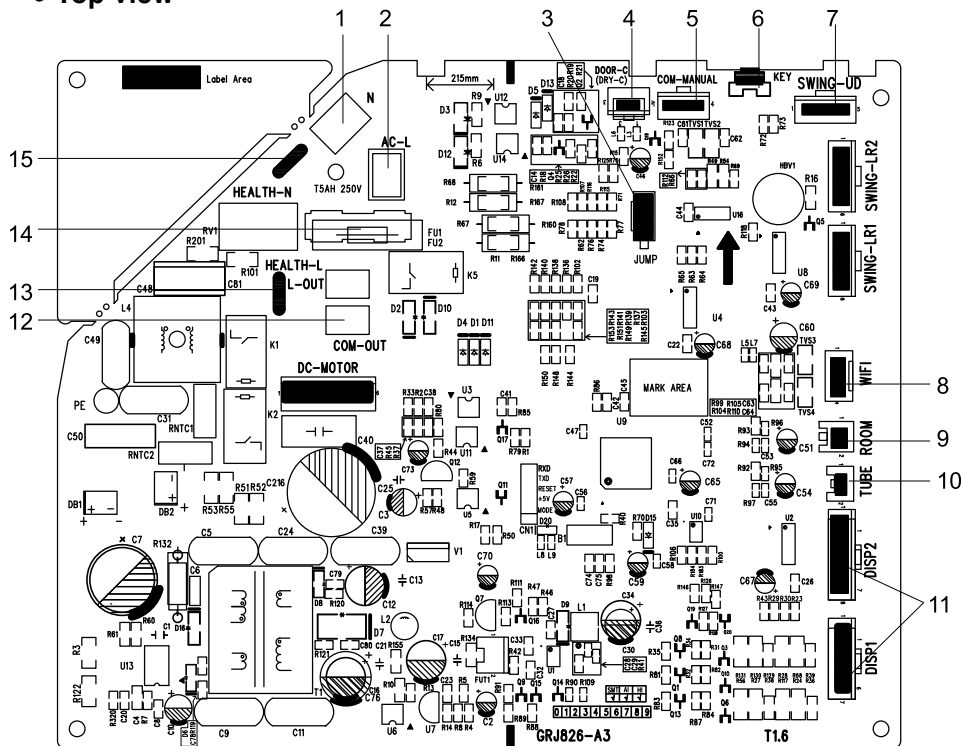


These circuit diagrams are subject to change without notice, please refer to the one supplied with the unit.

## 5.2 PCB Printed Diagram

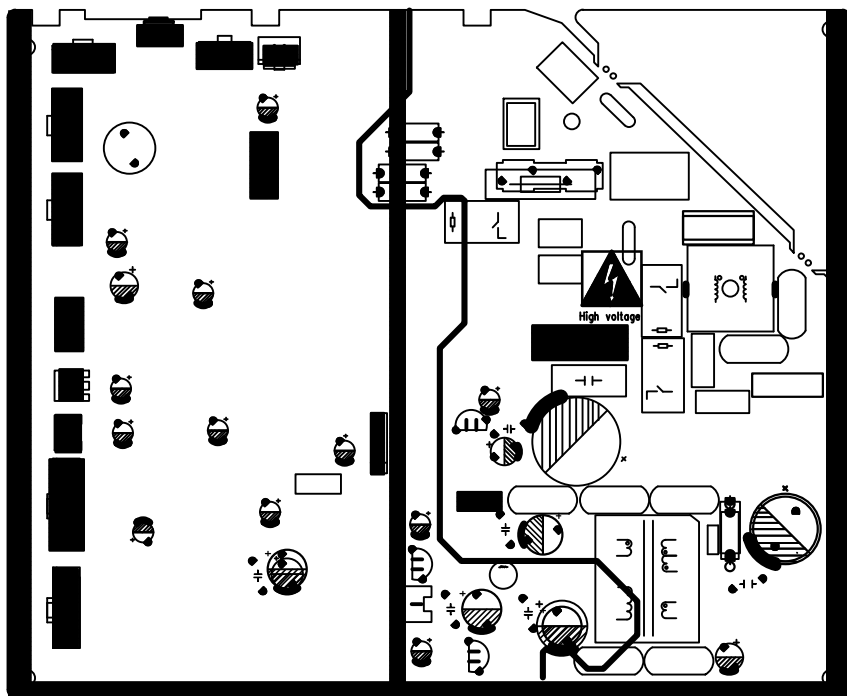
### Indoor Unit

#### ● Top view



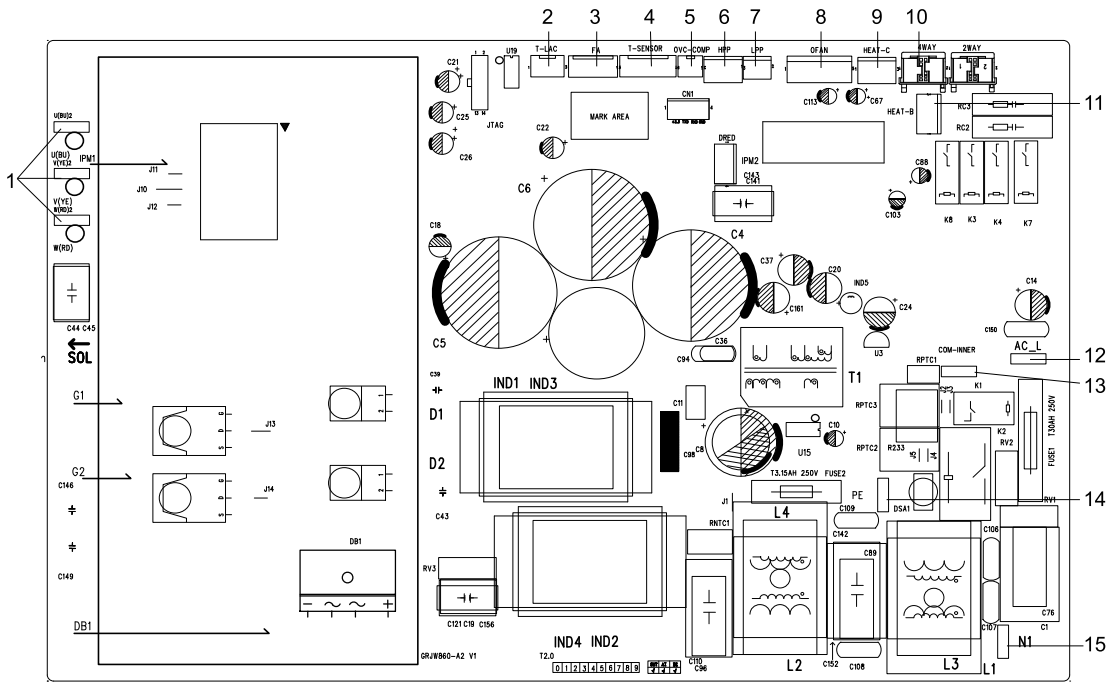
No.	Name
1	Neutral wire
2	Live wire
3	Jump
4	Interface of dry contact(only for the model with this function)
5	Relay used for controlling wire
6	Auto key
7	up&down swing interface
8	WIFI
9	Interface of ambient temperature sensor
10	Interface of tube temperature sensor
11	Display board
12	Interface of communication wire for indoor unit and outdoor unit
13	Interface of health function live wire (Applicable for some models)
14	Fuse
15	Interface of health function neutral wire (Applicable for some models)

#### ● Bottom view



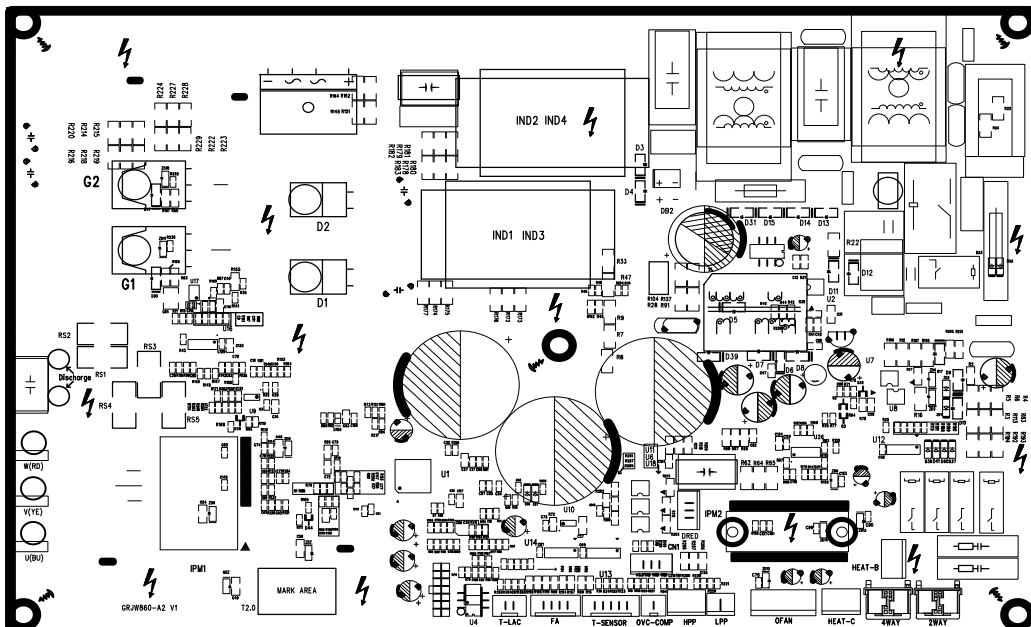
# Outdoor Unit

## • Top View



NO.	Name	NO.	Name	NO.	Name
1	Compressor three phase input interface	6	Terminal of high pressure protection	11	Terminal of chassis electric heating
2	Terminal of low ambient temperature cooling temperature sensor	7	Terminal of low pressure protection	12	Terminal of live wire
3	Terminal of electronic expansion valve	8	Terminal of outdoor fan	13	Terminal of communication
4	Terminal of outdoor temperature sensor	9	Terminal of compressor electric heating	14	Terminal of grounding wire
5	Terminal of compressor overload protection	10	Terminal of 4-way valve	15	Terminal of neutral wire

## • Bottom View



## 1. ON/OFF button

Press this button to turn on the unit. Press this button again to turn off the unit.

## 2. MODE button

Press this button to select your required operation mode.



- When selecting auto mode, air conditioner will operate automatically according to the sensed temperature. Set temperature can't 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. Cool indicator " " on indoor unit is ON.(This indicator is not available for some models). 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. Dry indicator " " on indoor unit is ON(This indicator is not available for some models).

Under dry mode, fan speed can't be adjusted. Press " " / " " button to adjust fan blowing angle.

- When selecting fan mode, the air conditioner will only blow fan, no cooling and no heating. All indicators are OFF, Operation indicator is ON.(This indicator is not available for some models)

Press "FAN" button to adjust fan speed. Press " " / " " button to adjust fan blowing angle.

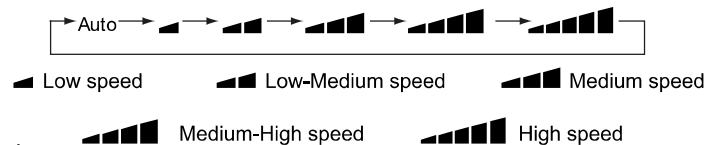
- When selecting heating mode, the air conditioner operates under heat mode. Heat indicator " " on indoor unit is ON (This indicator is not available for some models). Press " " or " " button to adjust set temperature. Press "FAN" button to adjust fan speed. Press " " / " " button to adjust fan blowing angle. (Cooling only unit won't receive heating mode signal. If setting heat mode with remote controller, press ON/OFF button can't 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); Fan speed: auto, low speed, low-medium speed, medium speed, medium-high speed, high speed.

## 3.FAN button

This button is used for setting Fan Speed in the sequence that goes from AUTO, , , to , then back to Auto.



### Note:

- It's Low fan speed under Dry mode.
- X-FAN function: Hold fan speed button for 2s in COOL or DRY mode, the icon " " is displayed and the indoor fan will continue operation for a few 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 a few minutes. at low speed. In this period, Hold fan speed button for 2s 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.

## 4.TURBO button

Under COOL or HEAT mode, press this button to turn to quick COOL or quick HEAT mode. " " icon is displayed on remote controller. Press this button again to exit turbo function and " " icon will disappear.

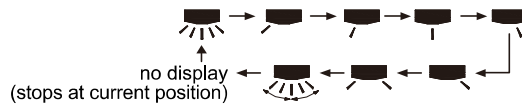
If start this function, the unit will run at super-high fan speed to cool or heat quickly so that the ambient temp. approaches the preset temp. as soon as possible.

## 5. / button



- Press " " or " " button once increase or decrease set temperature 1°C (°F). 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 ON, TIMER OFF or CLOCK, press " " or " " button to adjust time. (Refer to CLOCK, TIMER ON, TIMER OFF buttons)

## 6. button

Press this button can select left & right swing angle. Fan blow angle can be selected circularly as below:

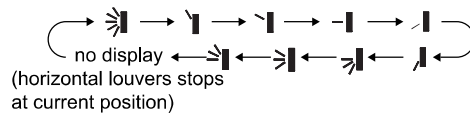

















### Note:

- Press this button continuously more than 2s, the main unit will swing back and forth from left to right, and then loosen the button, the unit will stop swinging and present position of guide louver will be kept immediately
- Under swing left and right mode, when the status is switched from off to  , if press this button again 2s later,  status will switch to off status directly; if press this button again within 2s, the change of swing status will also depend on the circulation sequence stated above.







## 7. button

Press this button can select up & down swing angle. Fan blow angle can be selected circularly as below:






- When selecting "", air conditioner is blowing fan automatically. Horizontal louver will automatically swing up & down at maximum angle.
- When selecting "", "", "", "", "", "", "", "", "", "", air conditioner is blowing fan at fixed position. Horizontal louver will stop at the fixed position.
- When selecting "", "", "", air conditioner is blowing fan at fixed angle. Horizontal louver will send air at the fixed angle.
- Hold "" button above 2s to set your required swing angle. When reaching your required angle, release the button.

### Note:

- "", "", "", "" may not be available. When air conditioner receives this signal, the air conditioner will blow fan automatically
- Press this button continuously more than 2s, the main unit will swing back and forth from up to down, and then loosen the button, the unit will stop swinging and present position of guide louver will be kept immediately.
- Under swing up and down mode, when the status is switched from off to  , if press this button again 2s later,  status will switch to off status directly; if press this button again within 2s, the change of swing status will also depend on the circulation sequence stated above.

## 8. SLEEP button

- Press this button, can select Sleep 1 (  ), Sleep 2 (  ), Sleep 3 (  ) and cancel the Sleep, circulate between these, after electrified, Sleep Cancel is defaulted. Sleep 1 is Sleep mode 1, in Cool modes; sleep status after run for one hour, the main unit setting temperature will increase 1℃, two hours, setting temperature increased 2℃, then the unit will run at this setting temperature; In Heat mode: sleep status after run for one hour, the setting temperature will decrease 1℃, two hours, setting temperature will decrease 2℃, then the unit will run at this setting temperature.
- Sleep 2 is sleep mode 2, that is air conditioner will run according to the presetting a group of sleep temperature curve.
- Sleep 3-the sleep curve setting under Sleep mode by DIY;
  - (1) Under Sleep 3 mode, press "Turbo" button for a long time, remote controller enters into user individuation sleep setting status, at this time, the time of remote controller will display "1hour", the setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink (The first entering will display according to the initial curve setting value of original factory);
  - (2) Adjust "▲" and "▼" button, could change the corresponding setting temperature, after adjusted, press "Turbo" button for confirmation;
  - (3) At this time, 1hour will be automatically increased at the timer position on the remote control, (that are "2hours" or "3hours" or "8hours"), the place of setting temperature "88" will display the corresponding temperature of last setting sleep curve and blink;
  - (4) Repeat the above step (2)~(3) operation, until 8 hours temperature setting finished, sleep, curve setting finished, at this time, the remote controller will resume the original timer display; temperature display will resume to original setting temperature.



- Sleep3- the sleep curve setting under Sleep mode by DIY could be inquired:

The user could accord to sleep curve setting method to inquire the presetting sleep curve, enter into user individuation sleep setting status, but do not change the temperature, press "Turbo" button directly for confirmation. Note: In the above presetting or enquiry procedure, if continuously within 10s, there is no button pressed, the sleep curve setting within 10s, there is no button pressed, the sleep curve setting status will be automatically quit and resume to display the original displaying. In the presetting or enquiry procedure, press "ON/OFF" button, "Mode" button, "Timer" button or "Sleep" button, the sleep curve setting or enquiry status will quit similarly.

### 9.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.

### 10.TIMER ON /TIMER OFF button

- TIMER ON button

"TIMER 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 TIMER ON setting. After each pressing "▲" or "▼" button, TIMER ON setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time. Press "TIMER ON" to confirm it. The word "ON" will stop blinking. "⌚" icon resumes displaying. Cancel TIMER ON: Under the condition that TIMER ON is started up, press "TIMER ON" button to cancel it.

- TIMER OFF button

"TIMER 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 TIMER OFF setting. After each pressing "▲" or "▼" button, TIMER OFF setting will increase or decrease 1min. Hold "▲" or "▼" button, 2s later, the time will change quickly until reaching your required time.

Press "TIMER OFF" word "OFF" will stop blinking. "⌚" icon resumes displaying.

Cancel TIMER OFF. Under the condition that TIMER OFF is started up, press "TIMER OFF" button to cancel it.

#### Note:

- Under on and off status, you can set TIMER OFF or TIMER ON simultaneously.
- Before setting TIMER ON or TIMER OFF, please adjust the clock time.
- After starting up TIMER ON or TIMER 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. If 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 operation can't exceeds 5s. Otherwise, remote controller will quit setting status. Operation for TIMER ON/TIMER OFF is the same.

### 12.QUIET button

Press this button, the Quiet status is under the Auto Quiet mode (display "🔇" and "AUTO" signal) and Quiet mode (display "🔇" signal) and Quiet OFF (there is no signal of "🔇" displayed), after powered on, the Quiet OFF is defaulted.

#### Note:

- The Quiet function can be set up in all modes; Under the Quiet mode, the fan speed is not available.
- When quiet function is selected:

Under cooling mode: indoor fan operates at notch 4 speed. 10 minutes later or when indoor ambient temperature  $\leq 28^{\circ}\text{C}$ , indoor fan will operate at notch 2 speed or quiet mode according to the comparison between indoor ambient temperature and set temperature.

Under heating mode: indoor fan operates at notch 3 speed or quiet mode according to the comparison between indoor ambient temperature and set temperature.

Under dry, fan mode: indoor fan operates at quiet mode.

Under auto mode: the indoor fan operates at the auto quiet mode according to actual cooling, heating or fan mode.

Under auto mode: the indoor fan operates at the auto quiet mode according to actual cooling, heating or fan mode.

- The Quiet function is only available for some models.

### 13. WiFi button

Press "WiFi" button to turn on or turn off WiFi function. When WiFi function is turned on, the "WiFi" icon will be displayed on remote controller; Under status of unit off, press "MODE" and "WiFi" buttons simultaneously for 1s, WiFi module will restore to factory default setting.

- This function is only available for some models.

### 14. LIGHT button

Press this button to turn off display light on indoor unit. "☀️" icon on remote controller disappears. Press this button again to turn on display light. "☀️" icon is displayed.

### 15. 🌳/🏠 button

Press this button to achieve the on and off of healthy and scavenging functions in operation status. Press this button for the first time to start scavenging function; LCD displays "🏠". Press the button for the second time to start healthy and scavenging functions simultaneously; LCD displays "🏠" and "🌳". Press this button for the third time to quit healthy and scavenging functions simultaneously.

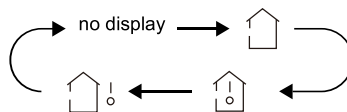
Press the button for the fourth time to start healthy function; LCD display "🌳".

Press this button again to repeat the operation above.

- This function is applicable to partial of models.

### 16. TEMP button

By pressing this button, you can see indoor set temperature, indoor ambient temperature or outdoor ambient temperature on indoor unit's 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.

### 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 can't be adjusted.
- Under energy-saving function, set temperature can't be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and energy-saving function can't 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, "8°C" 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 can't be adjusted.
- Under 8°C heating function, set temperature can't be adjusted. Press "TURBO" button and the remote controller won't send signal.
- Sleep function and 8°C heating function can't operate at the same time. If 8°C heating function has been set under cooling mode, press sleep button will cancel 8°C heating function. If sleep function has been set under cooling mode, start up the 8°C heating function will cancel sleep function.
- Under °F temperature display, the remote controller will display 46 °F heating.

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 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.

## Child lock function

Press "▲" and "▼" simultaneously to turn on or turn off child lock function. When child lock function is on, "🔒" icon is displayed on remote controller. If you operate the remote controller, the "🔒" icon will blink three times without sending signal to the unit.

## Temperature display switchover function

Under OFF status, press "▼" and "MODE" buttons simultaneously to switch temperature display between °C and °F.

## Multi timer function

### • THREE TIMERS

Press uninterruptedly "LIGHT" button 6 times in 5 seconds thus we enter the "Multi Timer" mode as well as three-minute-counting-down stars. If three couples of times commands are valid and well-received in 3 minutes, the "Multi Timer" will be activated along with the success sound of four buzzing, and the former "Multi Timer" settings will be replaced. If not, then "Multi Timer" mode exits along with the failure sound of six buzzing, and the former "Multi Timer" settings still remain effective.

### • TWO TIMERS

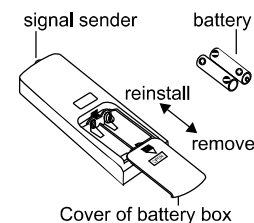
Press uninterruptedly "LIGHT" button 4 times in 5 seconds thus we enter the "Multi Timer" mode as well as two-minute-counting-down stars. If two couples of times commands are valid and well-received in 2 minutes, the "Multi Timer" will be activated along with the success sound of four buzzing, and the former "Multi Timer" settings will be replaced. If not, then "Multi Timer" mode exits along with the failure sound of six buzzing, and the former "Multi Timer" settings still remain effective.

### • TIMER CANCELLATION

Press uninterruptedly "LIGHT" button 8 times in 5 seconds all the "Multi Timer" settings will be erased.

## 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.



### 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 8m, 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 don't use remote controller for a long time, please take out the batteries.
- If the display on remote controller is fuzzy or there's no display, please replace batteries.

## 6.4 Brief Description of Modes and Functions

### 1 Temperature Parameters

- ◆ Indoor preset temperature ( $T_{\text{preset}}$ )
- ◆ Indoor ambient temperature ( $T_{\text{amb.}}$ )

2 Basic Functions (The temperature in this manual is expressed by Centigrade. If Fahrenheit is used, the switchover between them is  $T_f = T_c \times 1.8 + 32$ .)

Once the unit is energized, the compressor shall never be restarted except 3mins interval at least. For the first energization, if the unit is at off status before power failure, the compressor can be restarted without 3-min delay. But if the unit is at on status before power failure, the compressor shall be restarted with 3mins delay. Once the compressor is started up, the compressor won't stop running within 6mins with the change of room temperature.

#### (1) Cooling mode

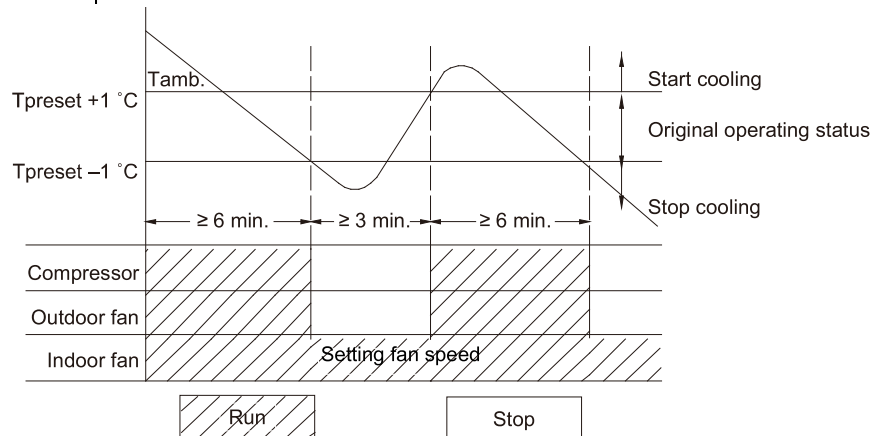
##### ① Cooling conditions and process

When  $T_{\text{amb.}} \geq T_{\text{preset}} + 1^\circ\text{C}$ , the unit starts cooling operation. In this case, the compressor and the outdoor fan operate and the indoor fan operates at set speed.

When  $T_{\text{amb.}} \leq T_{\text{preset}} - 1^\circ\text{C}$ , the compressor and the outdoor fan stop while the indoor fan operated at set speed.

When  $T_{\text{preset}} - 1^\circ\text{C} < T_{\text{amb.}} < T_{\text{preset}} + 1^\circ\text{C}$ , the unit will maintain its previous operation status.

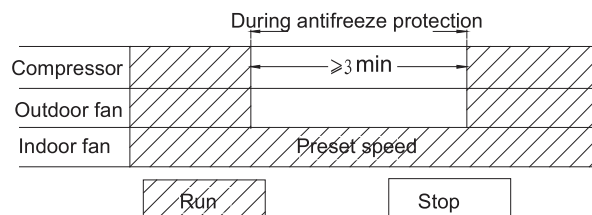
In this mode, the four-way valve is de-energizing. The temperature setting range is  $16 \sim 30^\circ\text{C}$  and the indoor unit displays operation icon, cooling icon and set temperature.



#### ② Protection Functions

##### ◆ Antifreezing protection

If the system is under antifreezing protection, the compressor and the outdoor fan stops operation, and the indoor fan operates at setting speed. If antifreezing protection is eliminated and the compressor has been stopped for 3 minutes, the unit will resume its previous operation status.



#### ③ Overcurrent Protection

If the system current exceeds the specified value in 3 successive seconds, except indoor fan, the complete unit will stop operation. After 3 minutes, if the overcurrent is eliminated, the complete unit will resume previous operation.

If overcurrent protection occurs for 6 successive times (if the compressor operates for 6 minutes continuously, the protective times will be cleared.), except indoor fan, the complete unit will stop operation. In this case, you should turn off the unit by remote controller and then restart it. During overcurrent protection, the nixie tube displays error code "E5", and operation indicator lamp blinks (OFF 3 seconds and blinks 5 times).

#### (2) Dry Mode

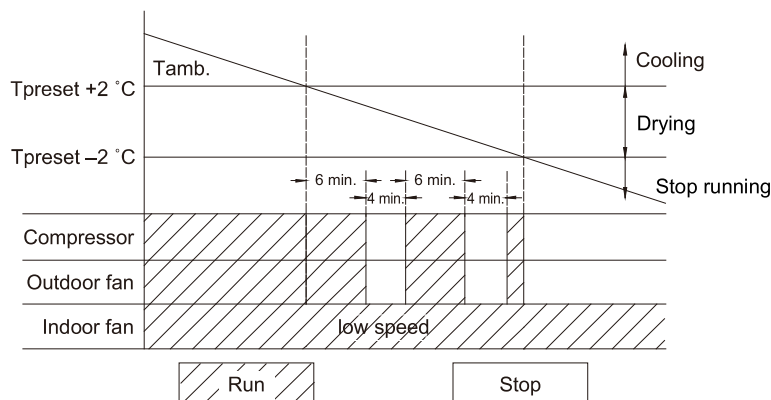
##### ① Dry Conditions and Process

When  $T_{amb.} > T_{preset} + 2^{\circ}\text{C}$ , the unit starts drying and cooling operation. In this case, the compressor and outdoor fan operates and the indoor fan operates at low speed.

When  $T_{preset} - 2^{\circ}\text{C} \leq T_{amb.} \leq T_{preset} + 2^{\circ}\text{C}$ , the unit will start drying operation. In this case, the indoor fan operates at low speed, and the compressor and the outdoor fan operate 6 minutes and stop 4 minutes in cycle.

When  $T_{amb.} < T_{preset} - 2^{\circ}\text{C}$ , the compressor and the outdoor fan stops operation while the indoor fan operates at low speed.

In this mode, the four-way valve is de-energizing. The temperature setting range is  $16 \sim 30^{\circ}\text{C}$  and the indoor unit displays operation icon, dry icon and set temperature.



## ② Protection

### ◆ Antifreezing protection

During drying and cooling operation, if the system is under antifreezing protection, the compressor and outdoor fan stop operation while indoor fan operates at low speed. If antifreezing protection is eliminated and the compressor has been stopped for 3 minutes, the complete unit will resumes its previous operation status.

During the cycle stage of operating 6 minutes and stopping 4 minutes, if antifreezing protection is detected, the compressor and the outdoor fan will stop operation and the indoor fan will operate at low speed. When the antifreezing protection is eliminated and the compressor has been stopped for 4 minutes, the complete unit will resume its previous operation state.

### ③ Other protection

Other protections are the same as those in cooling mode.

## (3) Heating mode (not available for cooling only type)

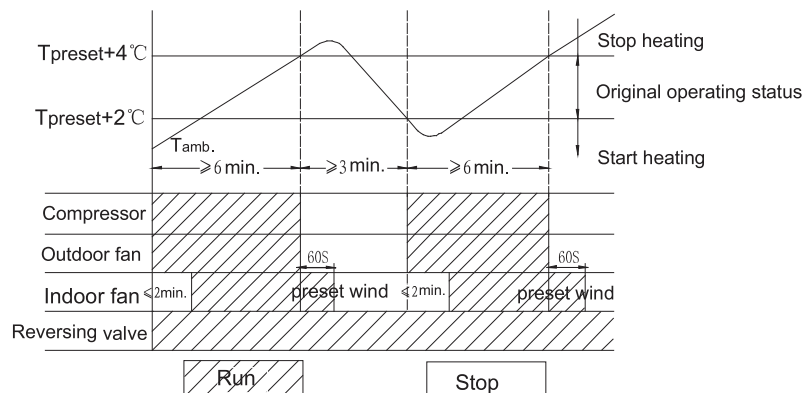
### ① Heating conditions and process

When  $T_{amb.} \leq T_{preset} + 2^{\circ}\text{C}$ , the unit starts heating operation. In this case, the 4-way valve, compressor and outdoor fan operate simultaneously. The indoor fan operates after 2 minutes at most.

When  $T_{amb.} \geq T_{preset} + 4^{\circ}\text{C}$ , the compressor and outdoor fan stop operation. The 4-way valve remains energizing and the indoor fan will stop operation after operate at setting fan speed for 60s.

When  $T_{preset} + 2^{\circ}\text{C} < T_{amb.} < T_{preset} + 4^{\circ}\text{C}$ , the unit will maintain its previous operation status.

In this mode, the 4-way valve is energizing. The temperature setting range is  $16 \sim 30^{\circ}\text{C}$  and the indoor unit displays operation icon, heating icon and set temperature.



## ② Defrosting Conditions and Process

With intelligent defrosting function, the unit can automatically defrost according to the actual condition. Heating indicator on indoor unit will ON 10s and OFF 0.5s successively.

### ③ Protection Functions

#### ◆ Overheating Prevention Protection

If the evaporator tube temperature overheats, the outdoor fan stops operation. When the tube temperature resumes normally, the outdoor fan resumes operation.

#### ◆ Noise Silencing Protection

If the unit is turned off by pressing ON/OFF button or during mode switchover, the 4-way valve stops after 2 minutes.

#### ④ Overcurrent Protection

This protection is the same as that in cooling mode (But indoor fan will blow residual heat).

#### (4) Fan mode

In fan mode, indoor fan operates at setting speed while the compressor, outdoor fan, 4-way valve and electric heating tube stop operation.

In this mode, temperature setting range is 16~30°C. The indoor unit displays operation icon and setting temperature.

#### (5) Auto Mode

In AUTO mode, the unit will automatically select its operation mode (cooling, heating or fan) with the change of ambient temperature. The indoor unit displays the operation icon, operation mode icon and setting temperature. There is 30-second delay protection for mode switchover. Protection functions are the same as those in any other modes.

### 3 Other Control

#### (1) Timer function

General timer and clock timer functions are compatible by equipping different functions of remote controller.

##### ① General Timer

Timer ON can be set at unit OFF. If ON time setting is reached, the unit will start to operate according to previous setting status. Time setting range is 0.5-24hr in 30-minute increments.

Timer OFF can be set at unit ON. If OFF time setting is reached, the unit will stop operation. Time setting range is 0.5-24hr in 30-minute increments.

##### ② Clock Timer

Timer ON

If timer ON is set during operation of the unit, the unit will continue to operate. If timer ON is set at unit OFF, upon ON time reaches the unit will start to operate according to previous setting status.

Timer OFF

If timer OFF is set at unit OFF, the system will keep standby status. If timer OFF is set at unit ON, upon OFF time reaches the unit will stop operation.

Timer Change

Although timer has been set, the unit still can be turned on/off by pressing ON/OFF button of remote controller. You can also set the timer once again, and then the unit will operate according to the last setting.

If timer ON and timer OFF are set at the same time during operation of the unit, the unit will keep operating at current status till OFF time reaches.

If timer ON and timer OFF are set at the same time at unit OFF, the unit will keep stop till ON time reaches.

In the future's every day, the system will operate according to presetting mode till OFF time reaches and stop operation till ON time reaches. If ON time and OFF time are the same, timer OFF has the priority.

#### (2) Auto Button

If this button is pressed, the unit will operate in AUTO mode and indoor fan will operate at auto speed; meanwhile, 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 this mode, the unit will select the suitable sleep curve to operate according to the setting temperature.

#### (5) Turbo Function

This function can be set in cooling or heating mode to quickly cool or heat the room.

#### (6) X-Fan Function

This function can be set in COOL or DRY mode.

#### (7) Automatic Control of Fan Speed

In this mode, the indoor fan will automatically select high, medium or low speed with the change of ambient temperature.

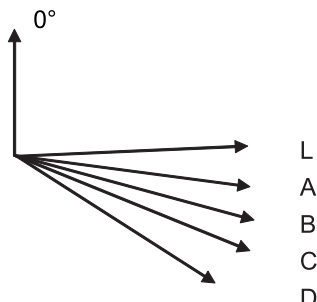
#### (8) Up & Down Swing

After energization, up & down swing motor will firstly let the horizontal louver anticlockwise rotate to position 0 to close air outlet.

If swing function has not been set after startup of the unit, up & down horizontal louver will clockwise turn to position D in HEAT mode, or clockwise turn to level position L in other modes.

If setting swing function while starting up the unit, the horizontal louver will swing between L and D. There are 7 kinds of swing status of horizontal louver: Positions L, A, B, C and D, swing between L and D and stop at any position between L and D (angles between L and D are equiangular). Upon turning off the unit, the horizontal louver will close at position 0. Swing function is available only when swing function set and indoor fan is operating.

Note: If the position is set between L and B, A and C or B and D by remote controller, the horizontal louver will swing between L and D.



#### (9) Display

##### ① Operation and Mode Icons

Upon energization, the unit will display all icons. Under standby state, running indicating mark is displayed in red. If the unit is started by remote controller, running indicating mark gives off light; meanwhile, the mark of current running mode will be displayed (mode LED: cooling, heating and dry mode). If the light button is turned off, no mark will be displayed.

##### ② Display of Dual-8 Nixie Tube

For the first time of startup, the indoor unit defaults to display present set temperature (16~30°C). Then if set temperature display is set by remote controller, it will display set temperature and if room temperature display is set, it will display room temperature. After that, if you operate the remote controller for other settings, the temperature display method will keep original. If you operate the remote controller during set temperature display, the room temperature will be displayed for 3 seconds firstly and then set temperature display returns. "F1" will be displayed upon malfunction of room temperature sensor, "F2" upon malfunction of indoor unit tube temperature sensor and "C5" upon malfunction of jumper cap.

For some models, if set temperature display is set by the remote controller, present set temperature will be displayed.

If you operate the remote controller during set temperature display, the room temperature will be displayed for 3 seconds firstly and then set temperature display returns.

#### (10) Locked protection to PG motor

When starting the fan, if motor's rotational speed is slow for a period of time, the unit will display locked and stop running to avoid auto protection for motor. If the unit is at on status currently, error code H6 will be displayed on the nixie tube. If the unit is off currently, this locked malfunction information won't be displayed.

#### (11) Memory Function

Memory content includes mode, up & down swing, light, set temperature and set fan speed, general timer (clock timer can't be memorized), Fahrenheit/Centigrade..

Upon power failure, the unit after power recovery will automatically start operation according to memorized content. The unit, without timer setting before power failure, will operate according to the last setting after power recovery. The unit, with general timer setting which has not been fulfilled before power failure, will memorize the time setting and re-calculate the time after power recovery. If there is timer function in the last remote controller command but setting time has reached, the system will act as timer on/off setting before power failure. After power failure, the system memorizes the operation states before power failure without timer action. Clock timer can not be memorized.

## 4. Special Functions

### (1) HEALTH Function(optional)

During operation of indoor unit fan, press HEALTH button on the remote controller to start health function (If there is not HEALTH button on the remote controller, the unit defaults to HEALTH function ON).

### (2) I FEEL function

If the controller receives I FEEL command, it will operate according to the ambient temperature sent by the remote controller (except defrosting and anti-cold air operation, during which it will operate according to the ambient temperature sensed by the air conditioner). The remote controller will send the ambient temperature value to the controller every a period of time. If the controller has not received the value for a long time, it will operate according to air conditioner's sensed temperature. If this function is not set, the ambient temperature is sensed by the air conditioner's temperature. This function won't be memorized.

# Appendix:

## Appendix 1: Reference Sheet of Celsius and Fahrenheit

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

### Set temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)
61	60.8	16	69/70	69.8	21	78/79	78.8	26
62/63	62.6	17	71/72	71.6	22	80/81	80.6	27
64/65	64.4	18	73/74	73.4	23	82/83	82.4	28
66/67	66.2	19	75/76	75.2	24	84/85	84.2	29
68	68	20	77	77	25	86	86	30

### Ambient temperature

Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)	Fahrenheit display temperature (°F)	Fahrenheit (°F)	Celsius(°C)
32/33	32	0	55/56	55.4	13	79/80	78.8	26
34/35	33.8	1	57/58	57.2	14	81	80.6	27
36	35.6	2	59/60	59	15	82/83	82.4	28
37/38	37.4	3	61/62	60.8	16	84/85	84.2	29
39/40	39.2	4	63	62.6	17	86/87	86	30
41/42	41	5	64/65	64.4	18	88/89	87.8	31
43/44	42.8	6	66/67	66.2	19	90	89.6	32
45	44.6	7	68/69	68	20	91/92	91.4	33
46/47	46.4	8	70/71	69.8	21	93/94	93.2	34
48/49	48.2	9	72	71.6	22	95/96	95	35
50/51	50	10	73/74	73.4	23	97/98	96.8	36
52/53	51.8	11	75/76	75.2	24	99	98.6	37
54	53.6	12	77/78	77	25			

## Appendix 2: Configuration of Connection Pipe

- Standard length of connection pipe (More details please refer to the specifications.)
- Min. length of connection pipe is 3m.
- Max. length of connection pipe and max. high difference.(More details please refer to the specifications.)
- The additional refrigerant oil and refrigerant charging required after prolonging connection pipe
  - After the length of connection pipe is prolonged for 10m at the basis of standard length, you should add 5ml of refrigerant oil for each additional 5m of connection pipe.
  - The calculation method of additional refrigerant charging amount (on the basis of liquid pipe):
  - Basing on the length of standard pipe, add refrigerant according to the requirement as shown in the table. The additional refrigerant charging amount per meter is different according to the diameter of liquid pipe. See the following sheet.
  - Additional refrigerant charging amount = prolonged length of liquid pipe X additional refrigerant charging amount per meter

Additional refrigerant charging amount for R22, R407C, R410A and R134a			
Diameter of connection pipe		Outdoor unit throttle	
Liquid pipe(mm)	Gas pipe(mm)	Cooling only(g/m)	Cooling and heating(g/m)
Φ6	Φ9.5 or Φ12	15	20
Φ6 or Φ9.5	Φ16 or Φ19	15	50
Φ12	Φ19 or Φ22.2	30	120
Φ16	Φ25.4 or Φ31.8	60	120
Φ19	/	250	250
Φ22.2	/	350	350



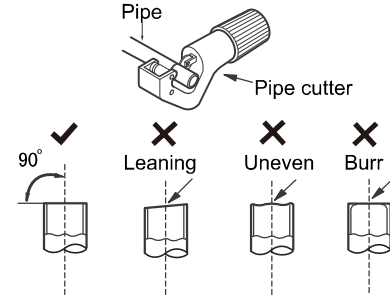
## Appendix 3: Pipe Expanding Method

### ⚠ Note:

**Improper pipe expanding is the main cause of refrigerant leakage. Please expand the pipe according to the following steps:**

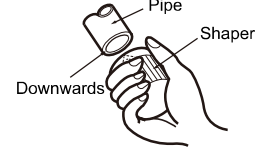
#### A: Cut the pipe

- Confirm the pipe length according to the distance of indoor unit and outdoor unit.
- Cut the required pipe with pipe cutter.



#### B: Remove the burrs

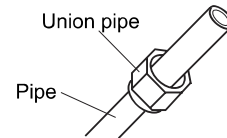
- Remove the burrs with shaper and prevent the burrs from getting into the pipe.



#### C: Put on suitable insulating pipe

#### D: Put on the union nut

- Remove the union nut on the indoor connection pipe and outdoor valve; install the union nut on the pipe.



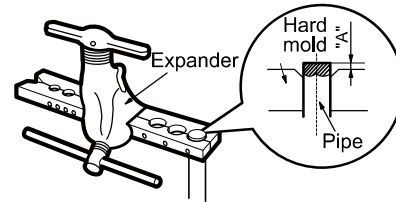
#### E: Expand the port

- Expand the port with expander.

### ⚠ Note:

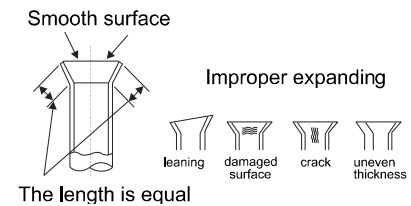
- "A" is different according to the diameter, please refer to the sheet below:

Outer diameter(mm)	A(mm)	
	Max	Min
Φ6 - 6.35 (1/4")	1.3	0.7
Φ9.52 (3/8")	1.6	1.0
Φ12 - 12.70 (1/2")	1.8	1.0
Φ16 - 15.88 (5/8")	2.4	2.2



#### F: Inspection

- Check the quality of expanding port. If there is any blemish, expand the port again according to the steps above.



## Appendix 4: List of Resistance for Temperature Sensor

Resistance Table of Ambient Temperature Sensor for Indoor and Outdoor (15K)

Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)
-19	138.1	20	18.75	59	3.848	98	1.071
-18	128.6	21	17.93	60	3.711	99	1.039
-17	121.6	22	17.14	61	3.579	100	1.009
-16	115	23	16.39	62	3.454	101	0.98
-15	108.7	24	15.68	63	3.333	102	0.952
-14	102.9	25	15	64	3.217	103	0.925
-13	97.4	26	14.36	65	3.105	104	0.898
-12	92.22	27	13.74	66	2.998	105	0.873
-11	87.35	28	13.16	67	2.896	106	0.848
-10	82.75	29	12.6	68	2.797	107	0.825
-9	78.43	30	12.07	69	2.702	108	0.802
-8	74.35	31	11.57	70	2.611	109	0.779
-7	70.5	32	11.09	71	2.523	110	0.758
-6	66.88	33	10.63	72	2.439	111	0.737
-5	63.46	34	10.2	73	2.358	112	0.717
-4	60.23	35	9.779	74	2.28	113	0.697
-3	57.18	36	9.382	75	2.206	114	0.678
-2	54.31	37	9.003	76	2.133	115	0.66
-1	51.59	38	8.642	77	2.064	116	0.642
0	49.02	39	8.297	78	1.997	117	0.625
1	46.6	40	7.967	79	1.933	118	0.608
2	44.31	41	7.653	80	1.871	119	0.592
3	42.14	42	7.352	81	1.811	120	0.577
4	40.09	43	7.065	82	1.754	121	0.561
5	38.15	44	6.791	83	1.699	122	0.547
6	36.32	45	6.529	84	1.645	123	0.532
7	34.58	46	6.278	85	1.594	124	0.519
8	32.94	47	6.038	86	1.544	125	0.505
9	31.38	48	5.809	87	1.497	126	0.492
10	29.9	49	5.589	88	1.451	127	0.48
11	28.51	50	5.379	89	1.408	128	0.467
12	27.18	51	5.197	90	1.363	129	0.456
13	25.92	52	4.986	91	1.322	130	0.444
14	24.73	53	4.802	92	1.282	131	0.433
15	23.6	54	4.625	93	1.244	132	0.422
16	22.53	55	4.456	94	1.207	133	0.412
17	21.51	56	4.294	95	1.171	134	0.401
18	20.54	57	4.139	96	1.136	135	0.391
19	19.63	58	3.99	97	1.103	136	0.382

### Resistance Table of Tube Temperature Sensors for Indoor and Outdoor (20K)

Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)
-19	181.4	20	25.01	59	5.13	98	1.427
-18	171.4	21	23.9	60	4.948	99	1.386
-17	162.1	22	22.85	61	4.773	100	1.346
-16	153.3	23	21.85	62	4.605	101	1.307
-15	145	24	20.9	63	4.443	102	1.269
-14	137.2	25	20	64	4.289	103	1.233
-13	129.9	26	19.14	65	4.14	104	1.198
-12	123	27	18.13	66	3.998	105	1.164
-11	116.5	28	17.55	67	3.861	106	1.131
-10	110.3	29	16.8	68	3.729	107	1.099
-9	104.6	30	16.1	69	3.603	108	1.069
-8	99.13	31	15.43	70	3.481	109	1.039
-7	94	32	14.79	71	3.364	110	1.01
-6	89.17	33	14.18	72	3.252	111	0.983
-5	84.61	34	13.59	73	3.144	112	0.956
-4	80.31	35	13.04	74	3.04	113	0.93
-3	76.24	36	12.51	75	2.94	114	0.904
-2	72.41	37	12	76	2.844	115	0.88
-1	68.79	38	11.52	77	2.752	116	0.856
0	65.37	39	11.06	78	2.663	117	0.833
1	62.13	40	10.62	79	2.577	118	0.811
2	59.08	41	10.2	80	2.495	119	0.77
3	56.19	42	9.803	81	2.415	120	0.769
4	53.46	43	9.42	82	2.339	121	0.746
5	50.87	44	9.054	83	2.265	122	0.729
6	48.42	45	8.705	84	2.194	123	0.71
7	46.11	46	8.37	85	2.125	124	0.692
8	43.92	47	8.051	86	2.059	125	0.674
9	41.84	48	7.745	87	1.996	126	0.658
10	39.87	49	7.453	88	1.934	127	0.64
11	38.01	50	7.173	89	1.875	128	0.623
12	36.24	51	6.905	90	1.818	129	0.607
13	34.57	52	6.648	91	1.736	130	0.592
14	32.98	53	6.403	92	1.71	131	0.577
15	31.47	54	6.167	93	1.658	132	0.563
16	30.04	55	5.942	94	1.609	133	0.549
17	28.68	56	5.726	95	1.561	134	0.535
18	27.39	57	5.519	96	1.515	135	0.521
19	26.17	58	5.32	97	1.47	136	0.509

**Resistance Table of Discharge Temperature Sensor for Outdoor (50K)**

Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)	Temp(°C)	Resistance(kΩ)
-29	853.5	10	98	49	18.34	88	4.75
-28	799.8	11	93.42	50	17.65	89	4.61
-27	750	12	89.07	51	16.99	90	4.47
-26	703.8	13	84.95	52	16.36	91	4.33
-25	660.8	14	81.05	53	15.75	92	4.20
-24	620.8	15	77.35	54	15.17	93	4.08
-23	580.6	16	73.83	55	14.62	94	3.96
-22	548.9	17	70.5	56	14.09	95	3.84
-21	516.6	18	67.34	57	13.58	96	3.73
-20	486.5	19	64.33	58	13.09	97	3.62
-19	458.3	20	61.48	59	12.62	98	3.51
-18	432	21	58.77	60	12.17	99	3.41
-17	407.4	22	56.19	61	11.74	100	3.32
-16	384.5	23	53.74	62	11.32	101	3.22
-15	362.9	24	51.41	63	10.93	102	3.13
-14	342.8	25	49.19	64	10.54	103	3.04
-13	323.9	26	47.08	65	10.18	104	2.96
-12	306.2	27	45.07	66	9.83	105	2.87
-11	289.6	28	43.16	67	9.49	106	2.79
-10	274	29	41.34	68	9.17	107	2.72
-9	259.3	30	39.61	69	8.85	108	2.64
-8	245.6	31	37.96	70	8.56	109	2.57
-7	232.6	32	36.38	71	8.27	110	2.50
-6	220.5	33	34.88	72	7.99	111	2.43
-5	209	34	33.45	73	7.73	112	2.37
-4	198.3	35	32.09	74	7.47	113	2.30
-3	199.1	36	30.79	75	7.22	114	2.24
-2	178.5	37	29.54	76	7.00	115	2.18
-1	169.5	38	28.36	77	6.76	116	2.12
0	161	39	27.23	78	6.54	117	2.07
1	153	40	26.15	79	6.33	118	2.02
2	145.4	41	25.11	80	6.13	119	1.96
3	138.3	42	24.13	81	5.93	120	1.91
4	131.5	43	23.19	82	5.75	121	1.86
5	125.1	44	22.29	83	5.57	122	1.82
6	119.1	45	21.43	84	5.39	123	1.77
7	113.4	46	20.6	85	5.22	124	1.73
8	108	47	19.81	86	5.06	125	1.68
9	102.8	48	19.06	87	4.90	126	1.64



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