



R410A 60Hz Air Handler Unit

Technical Manual

AHUAC-24-1S 16E

AHUAC-36-1S 16F

AHUAC-60-1S 16G

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1.Nomenclature

Indoor unit

Model name	Dimension(W×H×D) (mm)	Power supply
AHUAC-24-1S	774*520*460	208~230V-1Ph-60Hz
AHUAC-36-1S	774*520*460	208~230V-1Ph-60Hz
AHUAC-60-1S	970*550*500	208~230V-1Ph-60Hz

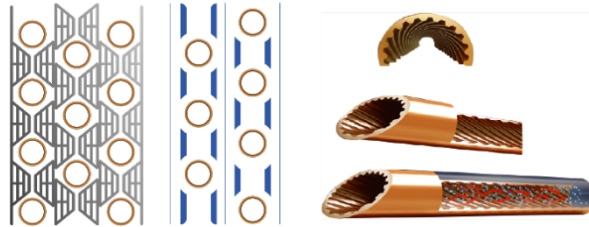
2.External Appearance

Indoor unit



3.Features

“A” shape coils, constructed with copper tubing and enhanced aluminum fins



DC fan motors(for 48 60K outdoor units), 3 speed , provides lections of air flow to meet desired applications.Large scroll case, which provides powerful wind., and motor is covered with thermal insulator, keep motor running in safety status.

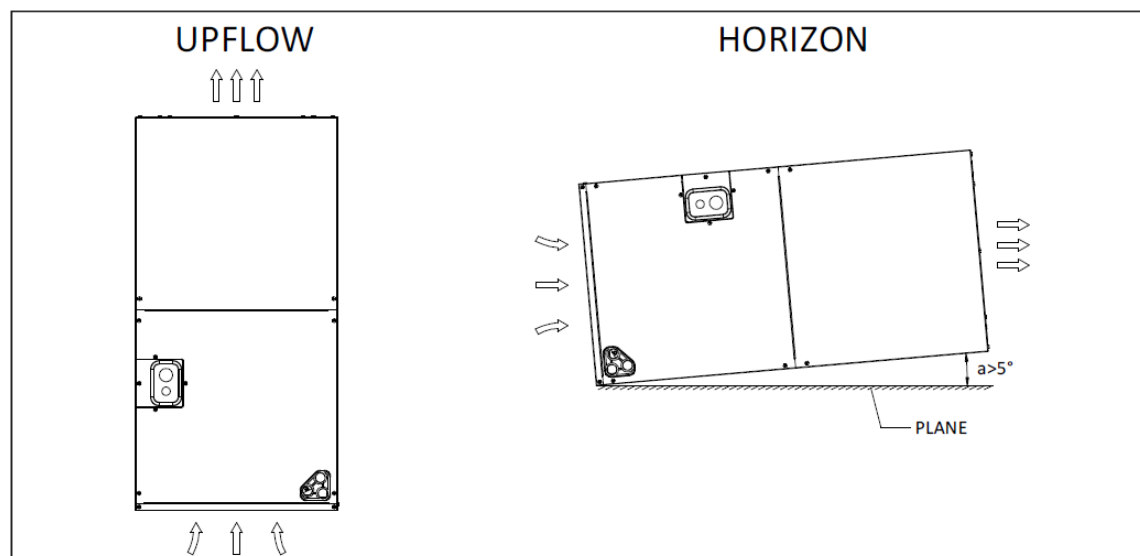


Use **TXV** as expansion device (18 SEER air handler)



Detachable air filter for cleaning or renewal

Versatile 4-way convertible design for vertical up airflow, horizontal right airflow.



Wide operating temperature range

Mode Temperature	Cooling operation	Heating operation	Drying operation
Room temperature	17°C~32°C (62°F~90°F)	0°C~30°C (32°F~86°F)	17°C~32°C (62°F~90°F)
Outdoor temperature	18°C~43°C (64°F~109°F)	-7°C~24°C (20°F~76°F)	18°C~43°C (64°F~109°F)
	-7°C~43°C (20°F~109°F) : For the models with low temperature cooling system		18°C~52°C (64°F~126°F) : For special tropical models
	18°C~52°C (64°F~126°F) : For special tropical models		

CAUTION :

1. If air conditioner is used outside of the above conditions, Certain safety protection features may come into operation and cause the unit to function abnormally.
2. Room relative humidity less than 80%. If the air conditioner operates in excess of this figure, the surface of the air conditioner may attract condensation. Please sets the vertical air flow 1ouver to its maximum angle(vertically to the floor), and set HIGH fan mode.
3. Optimum performance will be achieved within these operating temperature.

4.Specification

Model			AHUAC-24-1S	AHUAC-36-1S	AHUAC-60-1S
BOM			820044600001	820044600002	820044600003
Power supply			208-230V/1N/60Hz	208-230V/1N/60Hz	208-230V/1N/60Hz
Capacity	Cooling	kW	7.1	10.5	16
	Heating	kW	8	11.5	18
Power Input		W	290	290	517
Fan motor	Model		YDK130-6G03	YDK130-6G03	YDK-350F-6P3
	Type		AC	AC	AC
	Brand		Kangbao	Kangbao	Kangbao
	Capacitor	μF	-	-	-
	Speed (Hi/Low)	r/min	910/780	910/780	930/880
Indoor coil	Number of rows		2	2	2
	Fin type		Hydrophilic Aluminum	Hydrophilic Aluminum	Hydrophilic Aluminum
	Tube diameter and type	mm	Ø7, Innergroove tube	Ø7, Innergroove tube	Ø7, Innergroove tube
Air flow (High speed)		m³/h	1500	1500	2500
External static pressure		Pa	25	37	50
Sound pressure level		dB(A)	51~54	51~54	57~60
Body	Dimension (W×H×D)	mm	774x520x460	774x520x460	970x550x500
	Packing (W×H×D)	mm	834x520x565	834x520x565	1030x560x595
	Net/Gross weight	kg	36/39	36/39	48/52
Refrigerant type			R410A	R410A	R410A
Throttle type			EXV	EXV	EXV
Design pressure		MPa	4.5	4.5	4.5
Liquid pipe / Gas pipe		mm	Ø9.52/ Ø15.88	Ø9.52/ Ø15.88	Ø9.52/ Ø15.88
Connecting wire	Power wire	mm²	2.5*2+2.5(L≤20m)	2.5*2+2.5(L≤20m)	2.5*2+2.5(L≤20m)
			4*2+2.5(20m<L≤50m)	4*2+2.5(20m<L≤50m)	4*2+2.5(20m<L≤50m)
	Signal wire	mm²	0.75*2 shield	0.75*2 shield	0.75*2 shield
Drainage water pipe (Outer diameter)		mm	Ø20	Ø20	Ø20
Controller	Standard		Wired controller	Wired controller	Wired controller
Operation temperature		°C	16~32	16~32	16~32

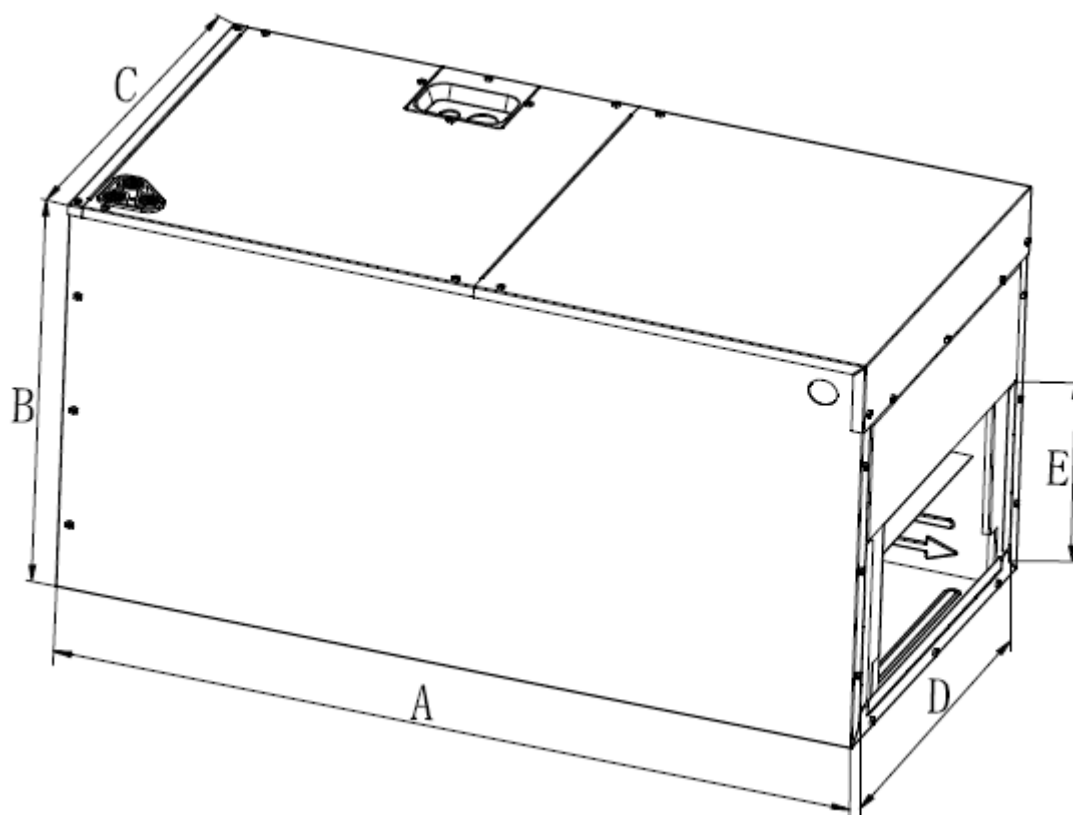
Notes:

1. Nominal cooling capacities are based on the following conditions:

Indoor temp: 27°CDB, 19°CWB; Outdoor temp: 35°CDB; Equivalent ref. piping: 5m (horizontal)

1. Actual noise level may differ, depending on the room structure, etc., since these noise values are from an anechoic room.

5.Dimension



MODEL	Dimensions(mm)				
	A(Height)	B(Depth)	C(Width)	D	E
18	774	520	460	414	245
24	774	520	460	414	245
36	774	520	460	414	245
48	970 (1160)	550	500	454	266
60	970 (1160)	550	500	454	266

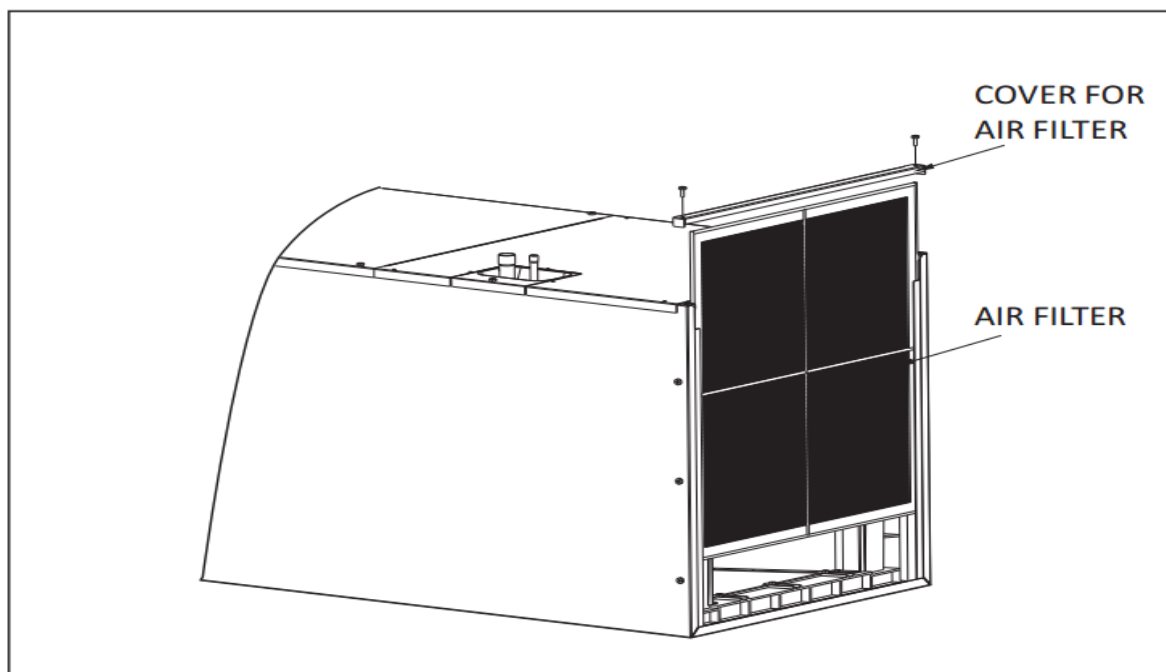
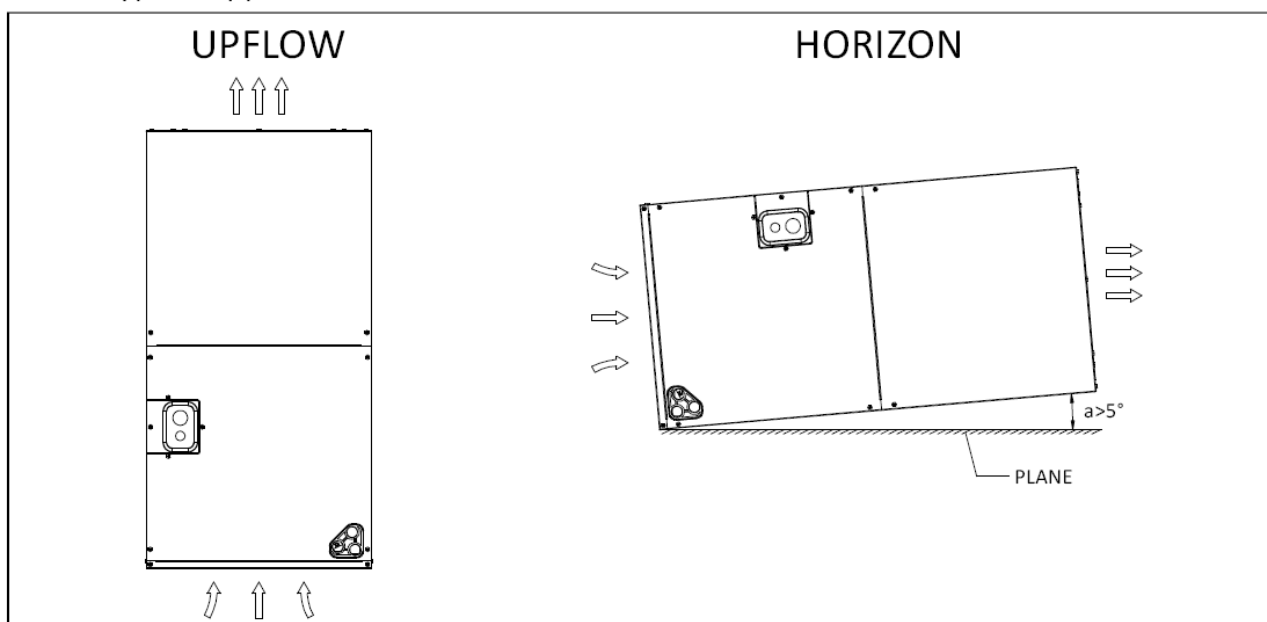
Note: (1160) is custom model's height.

6.Service Space

The indoor unit should be installed in a location that meets the following requirements:

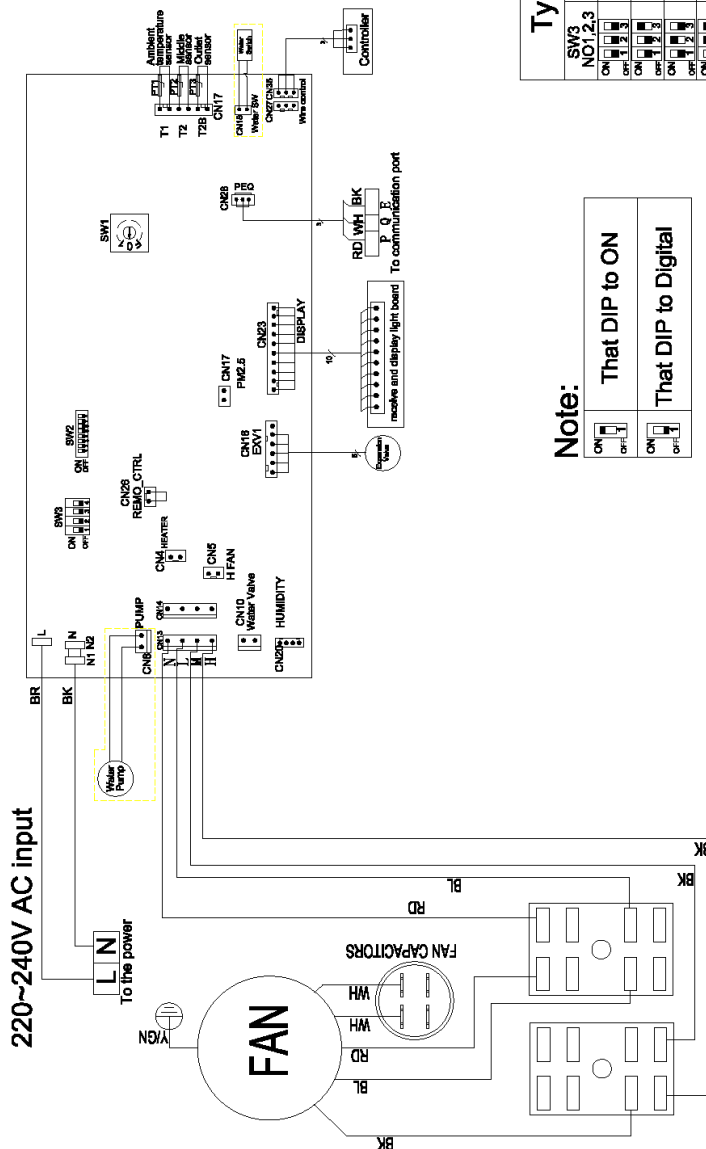
INSTALLATION NOTES: .

- When up hand discharge , how to trap or plug all drains is see the left Figure.
- When right hand discharge , how to trap or plug all drains is see the top Figure.
- The seal-plugs are supplied as accessories , and be screwed tightly only with hand.



7.Wiring Diagrams

7.1KW / 10.5KW / 16KW



The power (PH) of indoor units can be set through DIP switch SW1 (16-bit disc DIP) on the indoor control panel before delivery, the detailed information is as follows:

HP	0.8	1	1.2	1.7	2	2.5	3	3.2	4	5	6
Power	18/22	25/26/28	32/35/36	40/45/46	50/51/56	60/63/66/71	80	88/90	100/105/110/112	120/125/140/150/160	
Dial code	0	1	2	3	4	5	6	7	8	9	A

NOTE:

1. The factory default WATER-SW CN2 need cables short circuit
2. The water pump outlet are connected by a field installation

Type selection	SW3 NO1,2,3	Type
Normal duct unit		Normal duct unit
Fresh air processor		Fresh air processor
One-way cassette		One-way cassette
Two-way cassette		Two-way cassette
HRV		HRV
10HP floor standing unit		10HP floor standing unit
Reserve		Reserve

Note:

ON  OFF	That DIP to ON
ON  OFF	That DIP to Digital

Factory default

Mode Select bits	
SW3	Automatic Address-sing mode and (Factory default)
NO.4	Test mode (to allow clear address)

According to the contract custom power lost memory functions	OK	power-down memory
	OK	(Factory default)
SW2	OK	No power-down memory

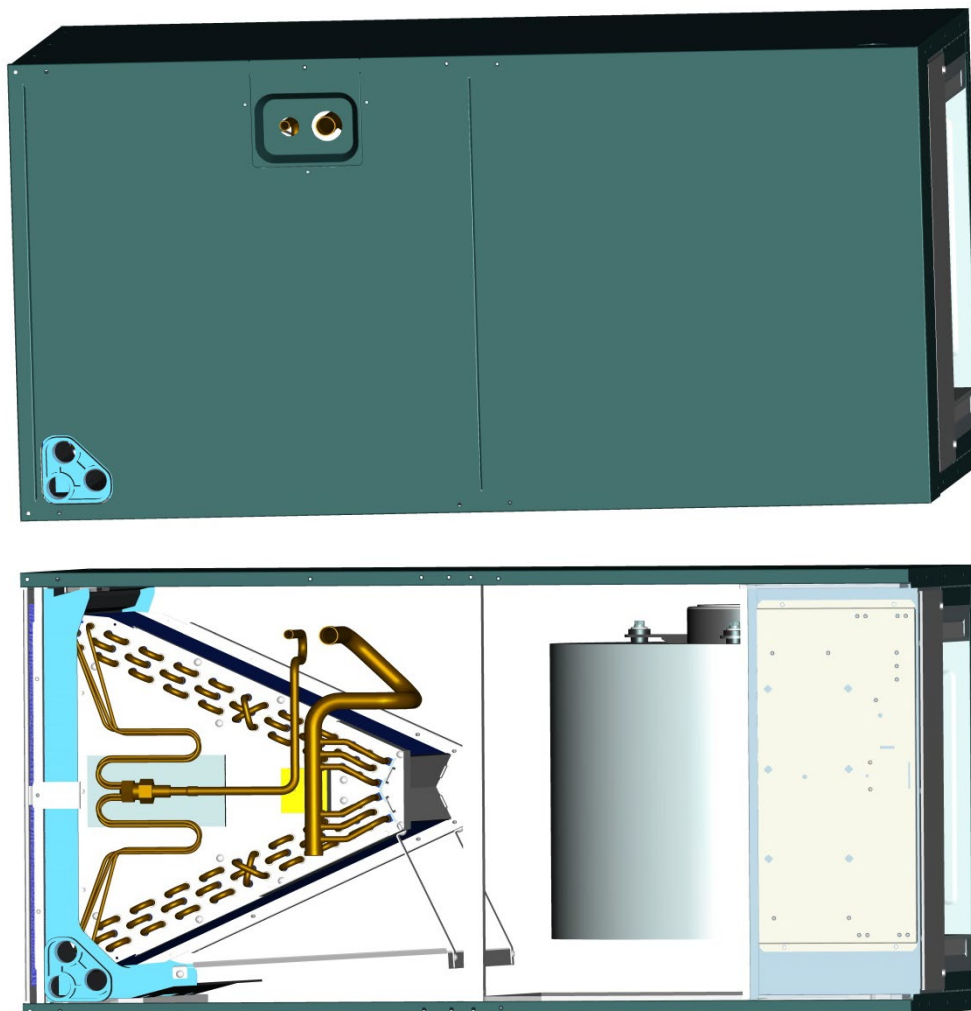
Refrigeration temperature compensation temperature values select bits	SW2	 ON	3°C	Factory default
	NO.1	 ON	1°C	

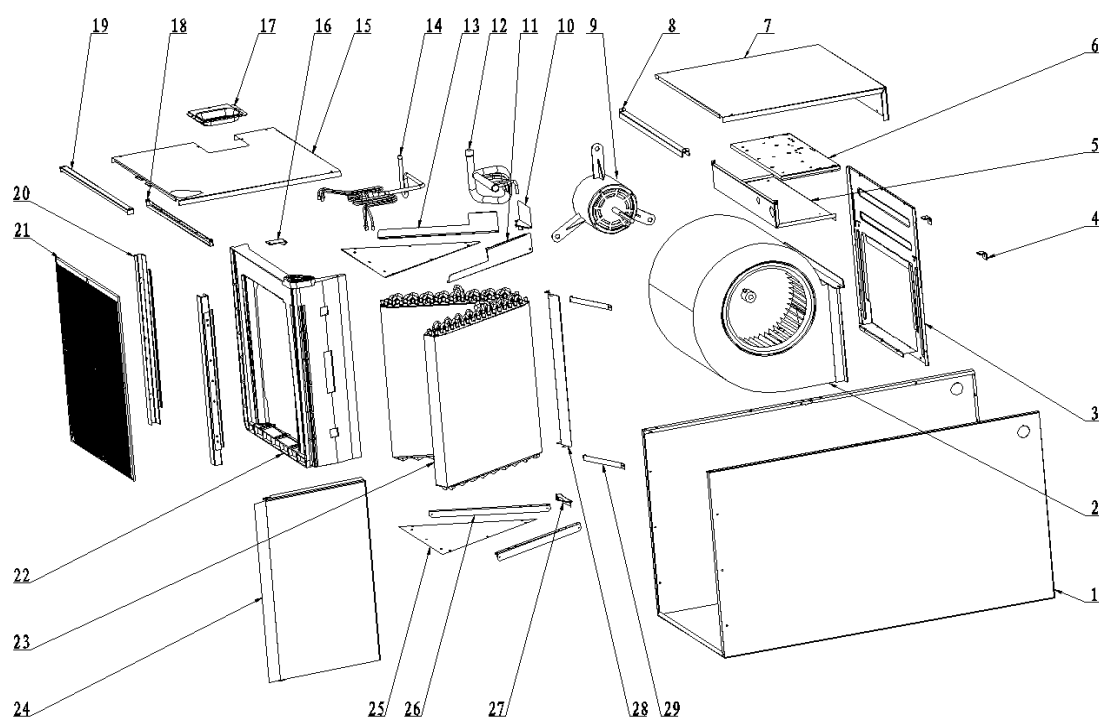
Heating temperature compensation temperature value select bits	SW2	 ON	6°C	Factory default
	NO.2	 OFF	2°C	

Anti-cold wind off the fan	ON	Factory default	15°C
temperature selection bit	ON	Factory default	20°C
SW2 NO.3&4	ON	Factory default	24°C
Temperature selection	ON	Factory default	26°C

Heating stop the fan time to chooset	SW2		4min Factory default
	NO.5		8min

8.Exploded View





No.	Part Name	Qua.	No.	Part Name	Qua.
1	Chassis assembly	1	14	Diverter Assembly	1
2	Right Volute Wind Wheel	1	15	Lower side plate assembly	1
3	Fan Motor Fixing plate	1	16	Water pan fixed block	1
4	Wind Wheel Fixed Block	2	17	Pipe Cover plate assembly	1
5	Electronic Control Fixing Plate Welding Assembly	1	18	Supporter	1
6	Electronic Control Components	1	19	Filter Cover plate	1
6.1	Electronic Control Mounting Plate	1	20	Water pan supporter assembly	2
6.2	Main Board	1	21	Filter	1
6.3	Temperature Sensor	1	22	Water pan# 1	1
6.4	Fan Motor Capacitor	1	23	Evaporator	2
7	Upper side plate assembly	1	24	Water pan# 2	1
8	Middle Cross Beam Assembly	1	25	Evaporator Baffle	2
9	Indoor Motor	1	26	Evaporator Water Baffle #1	2
10	Evaporator Fixing Plate #2	1	27	Evaporator Fixing Plate #1	1
11	Evaporator Water Baffle #2	1	28	Evaporator Junction Plate	1
12	Air header Assembly	1	29	Water pan brace	1
13	Evaporator Water Baffle #1	1			

9.The Specification of Wiring

Note:

The cross-section areas of wires or lines should not be less than the corresponding ones listed in the table below; Besides, if the power wires is quite long from the unit, please choose the windings with larger cross-section area to guarantee the normal power supply.

Name Model	Outdoor power supply line (quantity , diameter) H05RN-F	Indoor power supply line (quantity, diameter) H05VV-F	Indoor /outdoor connection line (quantity, Diameter)	Power supply method
Single phase 5.3kW model	/	3 x 2.5mm ²	4 x 2.5mm ²	Indoor Power Supply
Single phase 7.0 kW model	/	3 x 2.5mm ²	4 x 2.5mm ²	Indoor Power Supply
Single phase 10.5 kW model	3 x 4mm ²	3 x 1.5mm ²	3 x 1mm ²	Indoor / outdoor separately powerd
3-phase ≥10.5kw model	5 x 2.5mm ²	3 x 1.5mm ²	3 x 1mm ²	Indoor / outdoor separately powerd

10.Troubleshooting

The fault codes for indoor unit as follows:

Fault Description	4LED fault indication	Digital display	Wired remote display
Three-phase power phase sequence fault		E0	E0
Indoor and outdoor unit communication failure	Timing lights flash	E1	E1
Temperature sensor (T1) fault	Running lights flash	E2	E2
Pipe temperature sensor in the evaporator (T2) fault	Running lights flash	E3	E3
Pipe temperature sensor in the evaporator (T2B) fault	Running lights flash	E4	E4
Outdoor unit failure	Warning lights flash slowly	E5	E5
The indoor unit EEPROM fault	Defrost lights flash slowly	E7	E7
Water over protection	Warning lights flash	EE	EE
Indoor unit with line controller communication failure		E9	E9
Note: The flash frequency for each of the above indicator is 2.5Hz, slow flashing frequency is 1Hz			