R22 & R410A 50HZ

Air-cooled Modular Chiller

Ramin CAC Catalogue 2013

RAMIN HEATING & VENTILATION EQUIPMENT CO. LTD

РК, г. Алматы, ул. Муканова 154
Тел: +7 727 386 99 99
Факс: +7 727 378 36 78
E-mail: info@ramin.kz
Web: www.ramin.kz

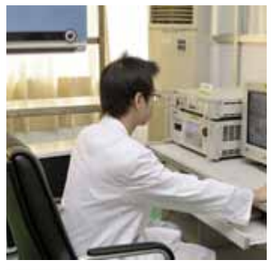
Profile of Testing Center

The Testing Center is a comprehensive, multi-functional labortory, mainly used to engage residential and commercial air-conditioner's performance, safety, reliability and authentication testing. It takes 6000 square meters, 50 million RMB permanent assets.

It has 9 Air-enthalpy Labs, 3 Condition operating labs, 1 Noise Testing Lab, 2 Long-term Operating Labs, Security Structure Analysis Lab, Air Volume Lab; and labs in planning, EMC, Wet State, Thermal Equilibrium, Capacity Testing and so on.

World-class professional laboratory cluster. Cooperated with many certificate agencies like CCC, ETL, TUV, etc.

All engineers have got professional training before commencement.



World-class Professional HR.

Long-term Cooperation with Professional Certification Test Organization.

Denmark B&K 3560 Acousitics and Vibration Noise Test Analysis System.

Directory

How to read the models

CL S - F 65 H W / S R1

Refrigerant
Omit:R22; **R1**:R410A

Power supply
S: 380V/3PH/50Hz
Z: 380-415V/3PH/50Hz
K: 380V/3PH/60Hz

Outdoor unit without hydraulic module

Function code
C:Cooling only; **H**:Heat pump

Capacity(kw)

Compressor code
F:Fixed speed; **V**:Inverter

Condenser code

Light chiller system

Appearance External

30kW

60/65kW

130kW

Feature:

1. Adopts high reliable Copeland compressor

- Better Liquid Handling
  Radial compliance allows the scroll members to separate in the presence of liquid refrigerant, thus, providing protection against liquid damage.
- Greater Efficiency
  With axial compliance, optimized force between two scrolls can be obtained, leading to high efficiency over the entire operating range.
- Unmatched Reliability
  Ability to start under any system load, without start components.
  Easy to service and maintain due to their compact size and lightweight, simple design.
  Engineered for optimum performance with today's chlorine-free refrigerants.
  No complex internal suction and discharge valves for quieter operation and higher reliability.

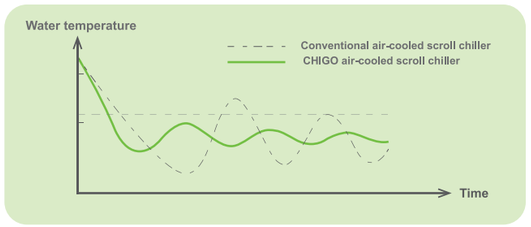
2. 500 steps EXV from Saginomiya Famous Japanese brand)

- Compare to TXV:
  It controls refrigerant flow as per operation mode and temperature condition, because EXV has faster load reaction speed, bigger regulation range, higher refrigerant control accuracy, so the water outlet temperature can be controlled more precisely.

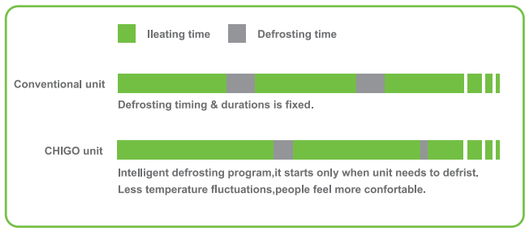
3. Optimized structure and compact size provided a larger loading quantity, 65kW unit can be loaded 12 sets, 130kW unit can be loaded 6 sets.

4. Topical condition is option(R22/R410A,50Hz/60Hz).

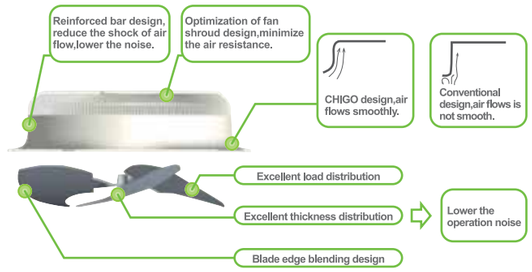
5. Precisely water temperature control, keeps room temperature stable.
Compressors in each units auto respond to the real capacity needs, system provides precisely water temperature controls.



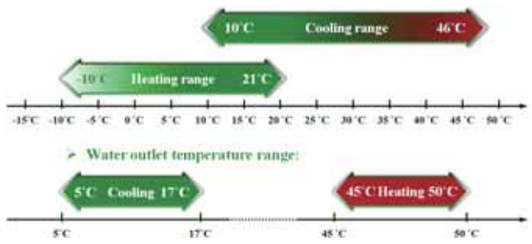
6. Intelligent defrosting program, it starts only when unit needs to.
Defrosting program starts according to a) ambient temperature, b) heat exchanging efficiency & capacity change due to the frost, whereas conventional unit's defrosting timing & duration is fixed, causing fluctuations in temperature and personal comfort.



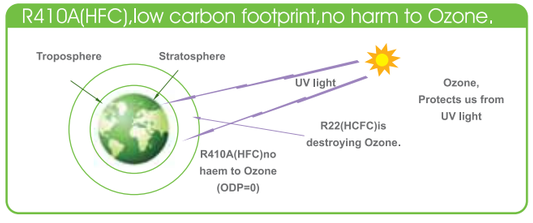
7. Optimization of fan blade and fan shroud design, bigger the air flow, lower the noise.



8. Wide operation range.
Ambient temperature range:

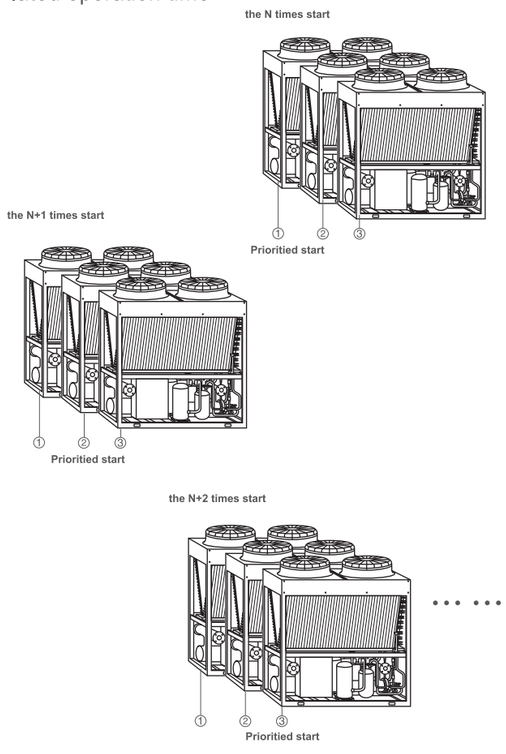


9. ECO friendly
R410A(HFC), low carbon footprint, no harm to Ozone.

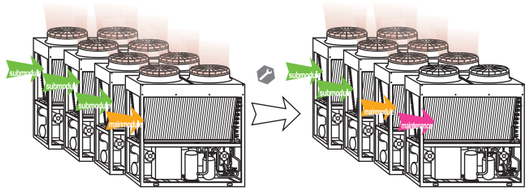


10. Modular design concept, a good solution for agencies to make stocks.
Excellent flexibility in installation, max. 16 units can be combined in group, max. capacity can be up to 2080kW.

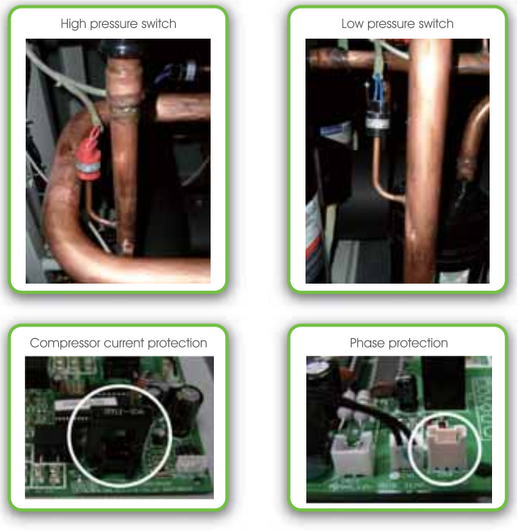
11. Balance operation program, it balances the operation time of every unit according to unit's accumulated operation time.



12. If master unit fails, all the units will stop.
When the master unit fails, any one of the slave units can be set as master unit manually.
If one slave unit fails, this unit will stop but others keep running.



13. Using varieties of protection devices to guarantee the system more safe and reliable.



14. Comprehensive protections to guarantee system's safety.

NO.	Protections
1	Compressor high pressure protection
2	Compressor low pressure protection
3	Compressor malfunction protection
4	Compressor overload protection
5	Condenser fan overload or overheat protection
6	Phase sequence protection
7	Water flow cut-off protection

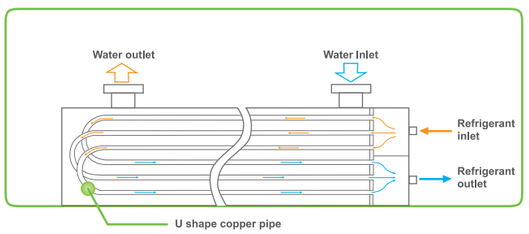
15. Ant-aging PP(polypropylene) plastic air shroud, long life span design.

Panels are galvanized steel with epoxy coating, double anti-corrosion guarantee.

16. High efficiency shell & tube evaporator

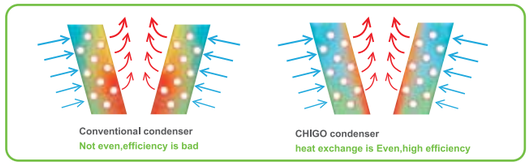
Fouling factor is 0.086m² • ˚C/kW, high fouling tolerance

High Heat Transfer Efficiency copper pipes are used in the heat exchanger.



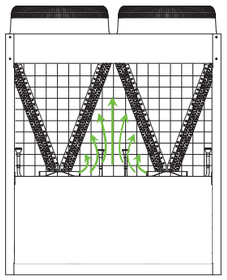
17. High efficiency condenser

Refrigerant flow paths are optimized design, especially for the lower part of condenser coil, it evens the heat exchange between upper part and lower part of condenser, to improve the efficiency of whole unit, also improve the defrosting efficiency in cold Winter.

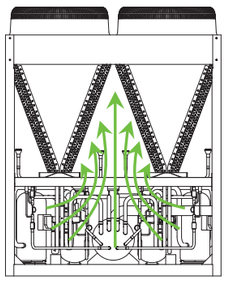


18. Open design, enlarges the air inlet area, increases the heat transfer efficiency by 8%.

Open design, easy for the maintenance.



Conventional unit,close design.



CHIGO unit,open design.

FCU Type			R22/50Hz			R410A/50Hz		
Model			CLS-F30HW/S	CLS-F65HW/S	CLS-F130HW/S	CLS-F30HW/ZR1	CLS-F65HW/ZR1	CLS-F130HW/ZR1
Power supply		V/ph/Hz	380/60/3	380/60/3	380/60/3	380-415/60/3	380-415/60/3	380-415/60/3
Capacity								
Cooling		kW	30	65	130	30	65	130
Heating		kW	32	69	140	35	70	140
Electrical data								
Power input	Cooling	kW	11.1	22	44	11	22	44
	Heating	kW	10.8	21.3	43	10.5	21	42
	Max. power input	kW	16	28	56	15	26	52
Rated current	Cooling	A	19	38	78	19	38	78
	Heating	A	18	37	76	18	37	76
	Max. Current	A	29	51	102	29	51	102
Physical data								
Refrigerant	Weight	kg	7	7.0x2	7.0x4	6.5	6.5x2	6.5x4
	Refrigerant control		EXV+ Capillary	EXV+ Capillary	EXV+ Capillary	EXV+ Capillary	EXV+ Capillary	EXV+ Capillary
	Type		R22	R22	R22	R410A	R410A	R410A
Compressor	Brand		Copeland	Copeland	Copeland	Copeland	Copeland	Copeland
	Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
	Quantity	pcs	1	2	4	1	2	4
Fan motor	Quantity	pcs	1	2	4	1	2	4
	Air flow volume	m³/h	12000	24000	48000	12000	24000	48000
Evaporator (Water side)	Heat-exchanger type		Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube
	Water pressure drop	kPa	30	30	40	30	30	40
	Water inlet/outlet diameter	mm	DN40	DN100	DN65	DN40	DN100	DN65
	Water flow volume	m³/h	5.16	11.18	22.36	5.16	11.18	22.36
	Max. Pressure	MPa	1.1	1.1	1.1	1.1	1.1	1.1
	Connection type		Flange connection	Flange connection	Flange connection	Flange connection	Flange connection	Flange connection
Dimension (W×H×D)	Net	mm	1160×2090×900	2000×2090×900	2000×2090×1700	1160×2090×900	2000×2090×900	2000×2090×1700
	Packing	mm	1240×2250×950	2080×2250×950	2080×2250×1740	1240×2250×950	2080×2250×950	2080×2250×1740
Weight	Net	kg	320	570	1100	320	570	1100
	Gross	kg	330	600	1120	330	600	1120
Control type			Wired controller	Wired controller	Wired controller	Wired controller	Wired controller	Wired controller
Sound level(semi-anechoic)		dB(A)	62	65	68	62	65	68
Quantity per 20GP/40GP/40HQ		Set	10/21/21	6/12/12	3/6/6	10/21/21	6/12/12	3/6/6
Operation range								
Water inlet temperature	Cooling	˚C	9-25	9-25	9-25	9-25	9-25	9-25
	Heating	˚C	30-48	30-48	30-48	30-48	30-48	30-48
Ambient temperature	Cooling	˚C	21-46	21-46	21-46	21-46	21-46	21-46
	Heating	˚C	-10-21	-10-21	-10-21	-10-21	-10-21	-10-21

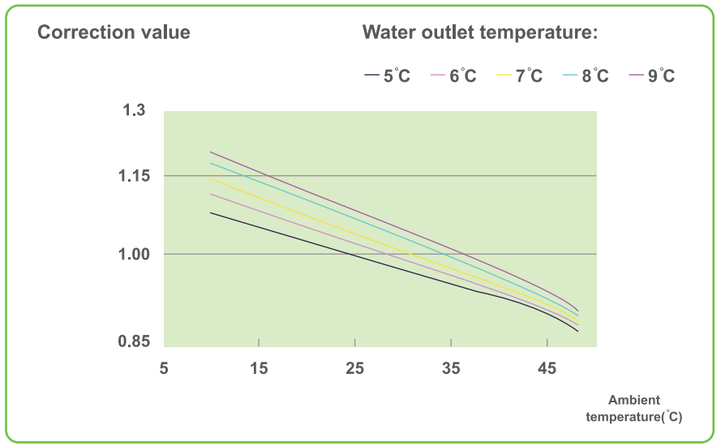
Remarks(specifications are based on the following conditions):
1.Cooling:water inlet/outlet:12˚C / 7˚C,outdoor ambient temp.of 35°C DB. 2.Heating:water inlet/outlet:40˚C / 45˚C,outdoor ambient temp. 7˚C DB/6°CWB.
3.Water side fouling factor:0.086m2˚C /kW.

FCU Type			R22/60Hz			R410A/60Hz		
Model			CLS-F30HW/K	CLS-F65HW/K	CLS-F130HW/K	CLS-F30HW/KR1	CLS-F65HW/KR1	CLS-F130HW/KR1
Power supply		V/ph/Hz	380/60/3	380/60/3	380/60/3	380/60/3	380/60/3	380/60/3
Capacity								
Cooling		kW	30	65	130	30	65	130
Heating		kW	32	69	140	35	70	140
Electrical data								
Power input	Cooling	kW	11.1	23	45	11	22	44
	Heating	kW	10.8	22	44	10.5	21	42
	Max. power input	kW	16	30	57	15	26	52
Rated current	Cooling	A	21	40	80	21	38	76
	Heating	A	19	39	78	19	36	74
	Max. Current	A	29	55	105	29	51	102
Physical data								
Refrigerant	Weight	kg	7	7.0x2	7.0x4	6.5	6.5x2	6.5x4
	Refrigerant control		EXV+ Capillary	EXV+ Capillary	EXV+ Capillary	EXV+ Capillary	EXV+ Capillary	EXV+ Capillary
	Type		R22	R22	R22	R410A	R410A	R410A
Compressor	Brand		SANYO	SANYO	SANYO	Danfoss	Danfoss	Danfoss
	Type		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
	Quantity	pcs	1	2	4	1	2	4
Fan motor	Quantity	pcs	1	2	4	1	2	4
	Air flow volume	m^3/h	12000	24000	48000	12000	24000	48000
Evaporator (Water side)	Heat-exchanger type		Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube	Shell and tube
	Water pressure drop	kPa	30	30	40	30	30	40
	Water inlet/outlet diameter	mm	DN40	DN100	DN65	DN40	DN100	DN65
	Water flow volume	m^3/h	5.16	11.18	22.36	5.16	11.18	22.36
	Max. Pressure	MPa	1.1	1.1	1.1	1.1	1.1	1.1
	Connection type		Flange connection	Flange connection	Flange connection	Flange connection	Flange connection	Flange connection
Dimension (W×H×D)	Net	mm	1160×2090×900	2000×2090×900	2000×2090×1700	1160×2090×900	2000×2090×900	2000×2090×1700
	Packing	mm	1240×2250×950	2080×2250×950	2080×2250×1740	1240×2250×950	2080×2250×950	2080×2250×1740
Weight	Net	kg	330	590	1100	320	570	1100
	Gross	kg	340	620	1120	330	600	1120
Control type			Wired controller	Wired controller	Wired controller	Wired controller	Wired controller	Wired controller
Sound level(semi-anechoic)		dB(A)	62	65	68	62	65	68
Quantity per 20GP/40GP/40HQ		Set	10/21/21	6/12/12	3/6/6	10/21/21	6/12/12	3/6/6
Operation range								
Water inlet temperature	Cooling	˚C	9-25	9-25	9-25	9-25	9-25	9-25
	Heating	˚C	30-48	30-48	30-48	30-48	30-48	30-48
Ambient temperature	Cooling	˚C	21-46	21-46	21-46	21-46	21-46	21-46
	Heating	˚C	-10-21	-10-21	-10-21	-10-21	-10-21	-10-21

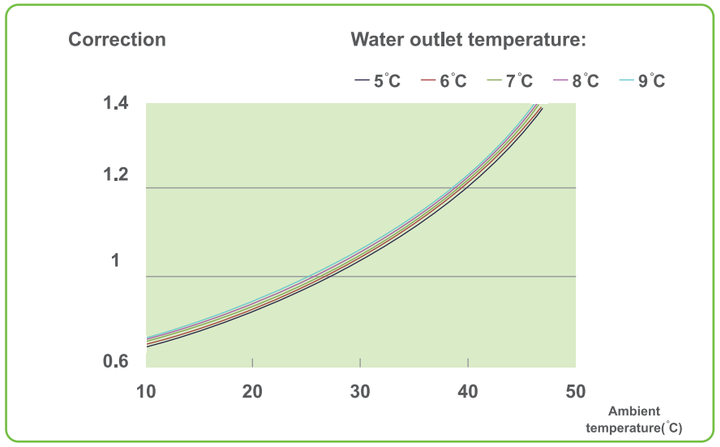
Remarks(specifications are based on the following conditions):
1.Cooling:water inlet/outlet:12˚C / 7˚C,outdoor ambient temp. of 35°C DB. 2.Heating:water inlet/outlet:40˚C / 45˚C,outdoor ambient temp.7˚C DB/6°CWB.
3.Water side fouling factor:0.086m2˚C /kW.

Performance curve

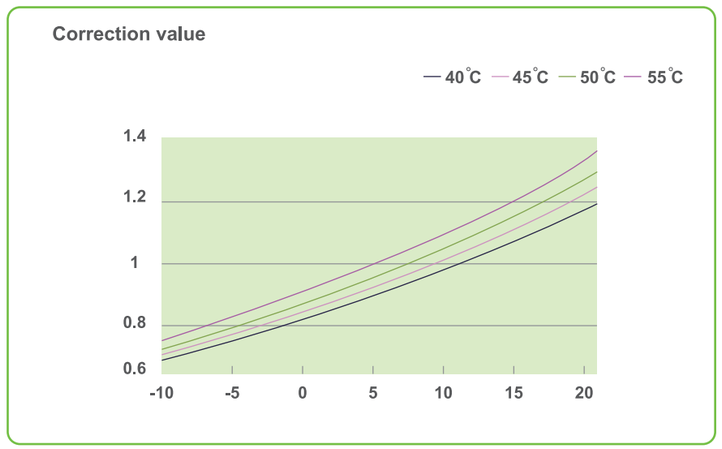
Cooling capacity correction factor curve:



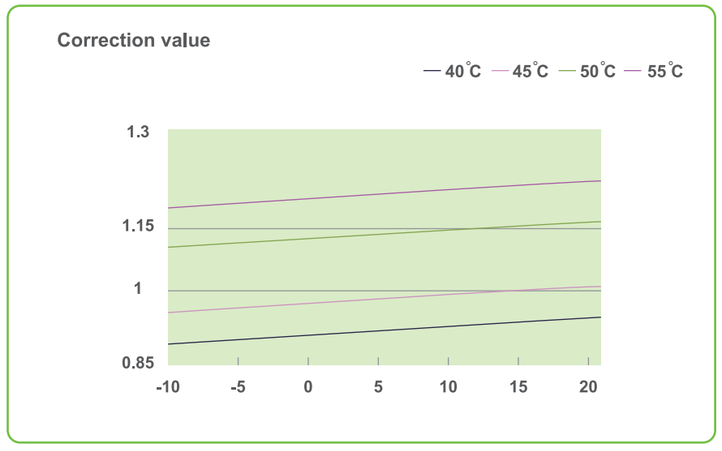
Cooling power input correction factor curve:



Heating capacity correction factor curve:

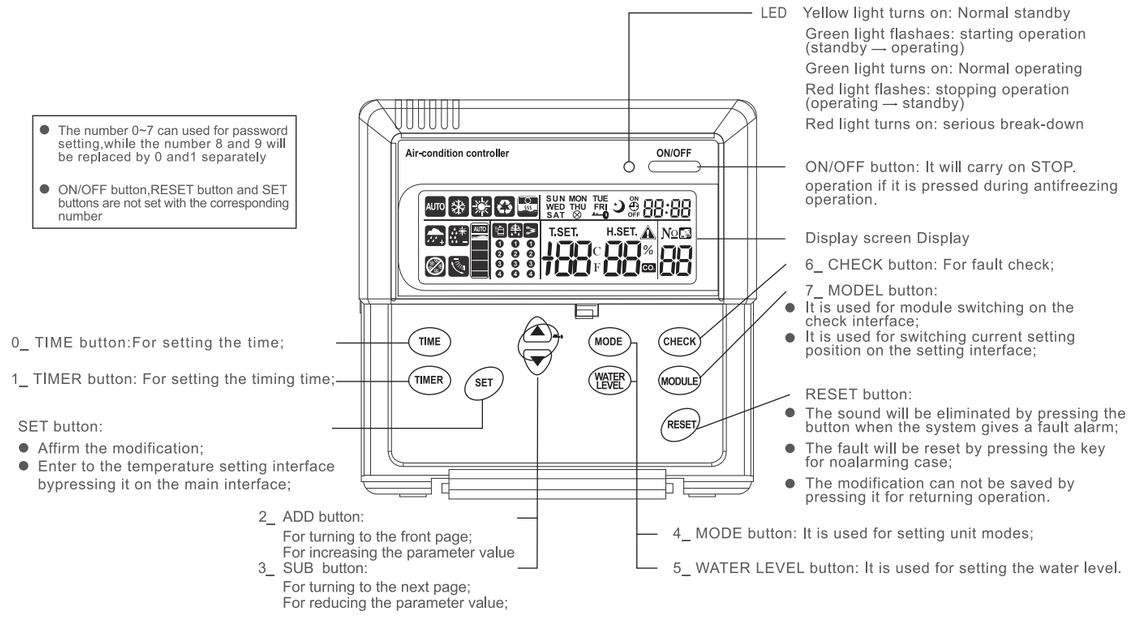


Heating power input correction factor curve:



Wired Controller

Panel introduction



Long key press event and key combition:

1. Long keys and key combination(Press down both keys at the same time)

1) ▲ + ▼ :All keys will be locked/unlocked;

2) SET + RESET :Preheating operation will be cancelled;

3) Press down and hold TIMER for 3s:Timing function will be set;

4) SET + MODE :The current module will carry on forced-defrost operation;

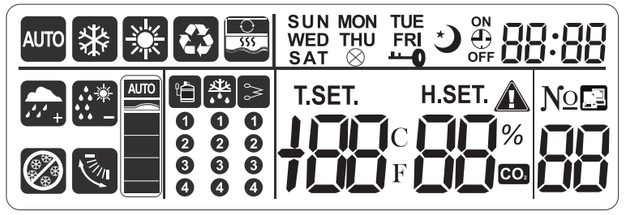
5) Press down and hold SET and CHECK for 3s: The system will enter to the interface for factory setting;

6) SET + MODE :The system will enter to the interface for maintenance setting;

7) Press down and hold SET for 3s: The system will enter to the interface for project setting;

8) Press down and hold CHECK for 3s: The system will enter to the interface for monitor setting;

Display section



1) Operating modes:

AUTO AUTO　COOL　HEAT　FAN　Heat recovery　Hot water

2) Operating states of the unit:

HUMI　DRY　ANTI-FR　FAULT　No Module number　SWING

3) Operating states of equipment:

Water level　Wind apeed　Indicating the compressor running　Sleeping　Timing

When it turns on,it means defrosting function.
Number
When it turns on,it means that the corresponding compressor is defrosting;
When it flashes,it means the forced-defrost order is received.

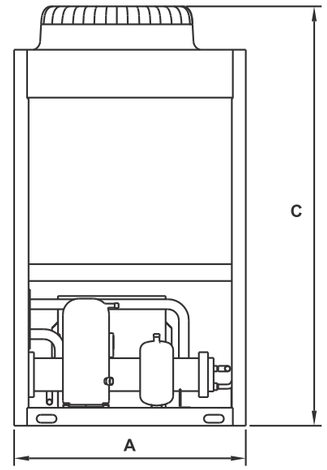
When it turns on,it means that the electric heating is operating;
When it flashes,it means the unit is carrying on preheating operation.

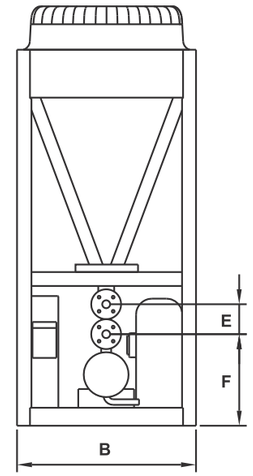
4) Buttons state:

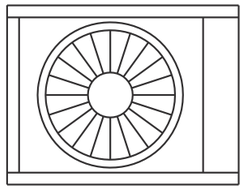
Buttons locked　Invalid button

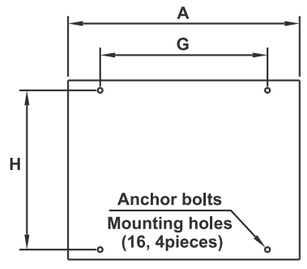
Outlook drawing

30kW(CLS-F30HW/S, CLS-F30HW/K, CLS-F30HW/ZR1, CLS-F30HW/KR1)



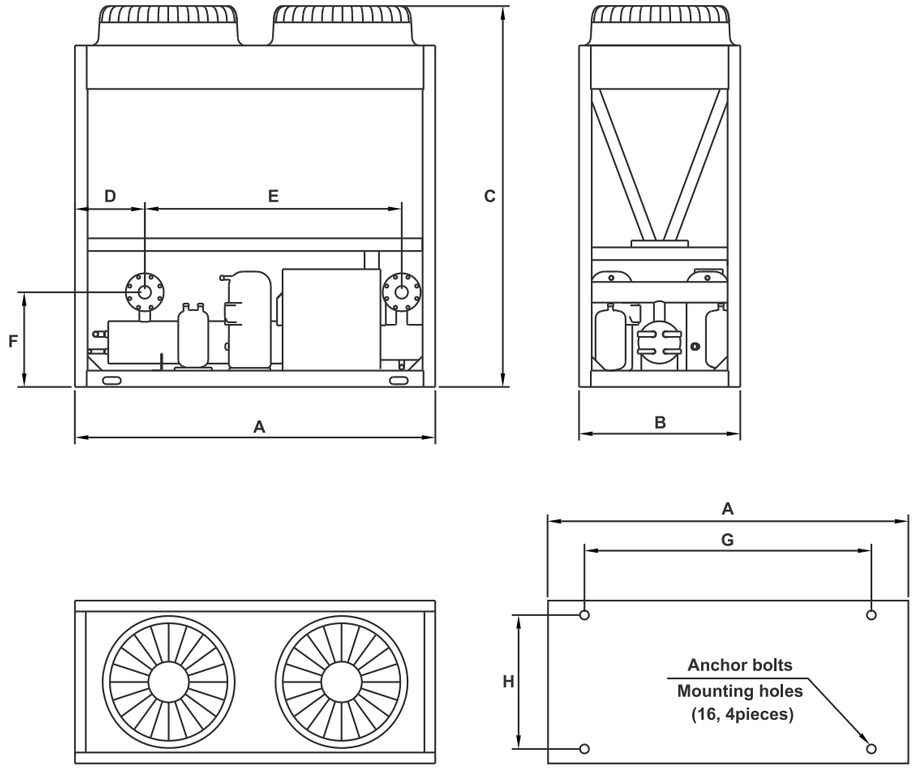






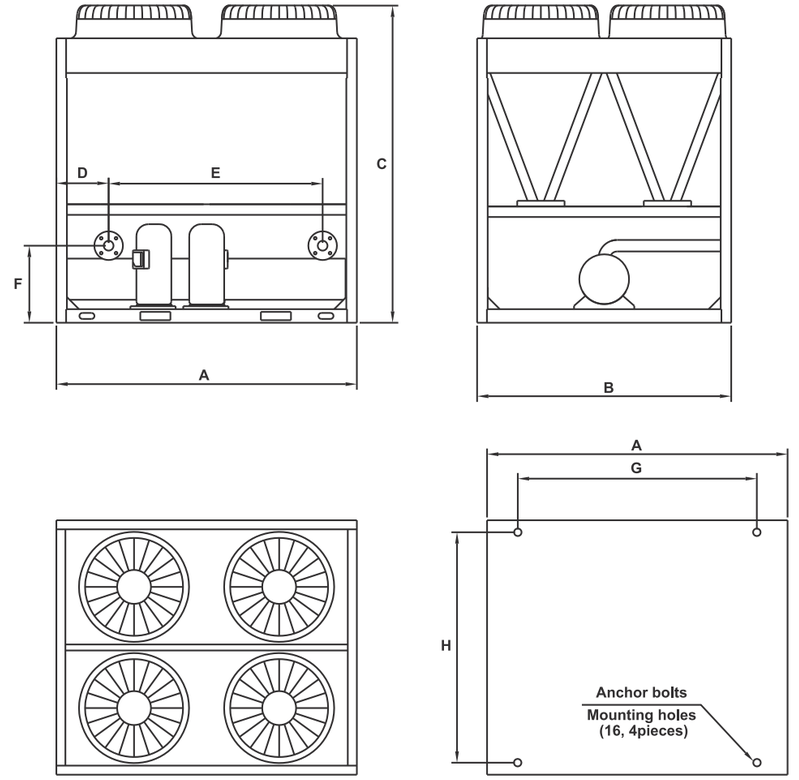
Rated cooling capacity(kW)	A	B	C	D	E	F	G	H
30	1160	900	2090	——	150	460	840	850

65kW(CLS-F65HW/S, CLS-F65HW/K, CLS-F65HW/ZR1, CLS-F65HW/KR1)



Rated cooling capacity(kW)	A	B	C	D	E	F	G	H
65	2000	900	2090	386	1420	522	1586	850

130kW(CLS-F130HW/S, CLS-F130HW/K, CLS-F130HW/ZR1, CLS-F130HW/KR1)



Rated cooling capacity(kW)	A	B	C	D	E	F	G	H
130	2000	1700	2090	347	1420	510	1586	1640

Installation space

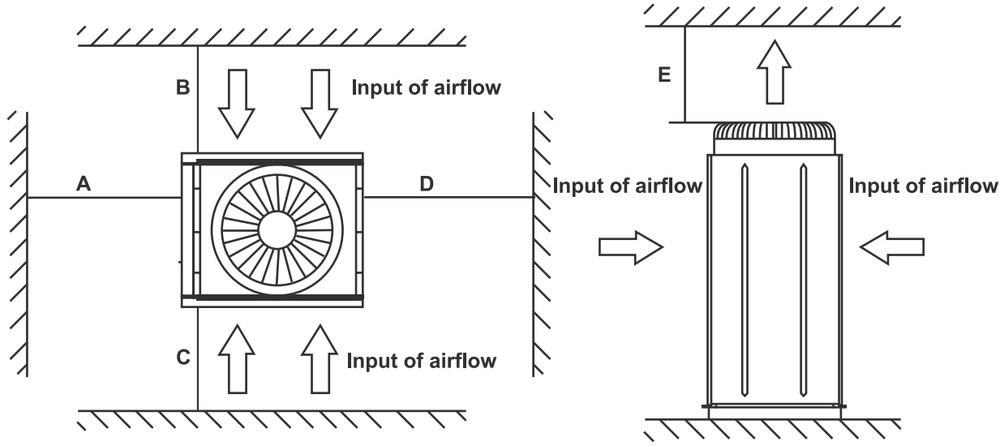
Requirements of arrangement space of the unit

1. To ensure adequate airflow entering the condenser, the influence of descending airflow caused by the high-rise buildings around upon the unit should be taken into account when installing the unit.

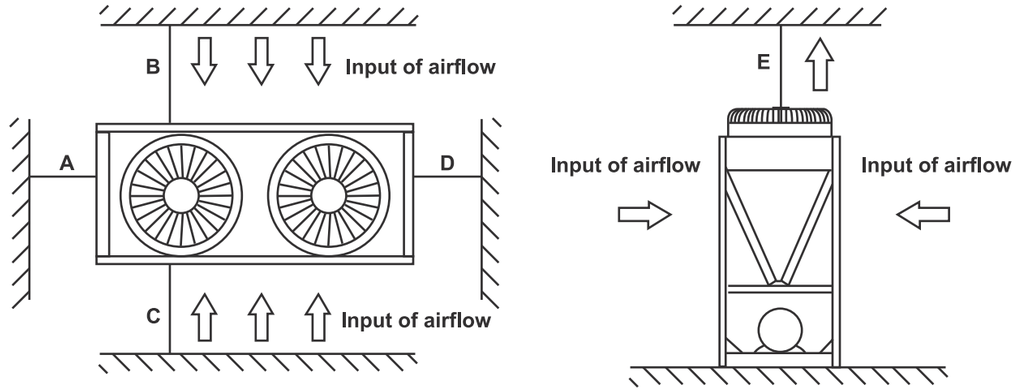
2. If the unit is installed where the flowing speed of air is high, such as on the exposed roof, the measures including sunk fence and Persian blinds can be taken, to prevent the turbulent flow from disturbing the air entering the unit. If the unit needs to be provided with sunk fence, the height of the latter should not be more than that of the former; if Persian blinds are required, the total loss of static pressure should be less than the static pressure outside the fan. The space between the unit and sunk fence or Persian blinds should also meet the requirement of the minimum installation space of the unit.

3. If the unit needs to operate in winter, and the installation site may be covered by snow, the unit should be located higher than the snow surface, to ensure that air flows through the coils smoothly.

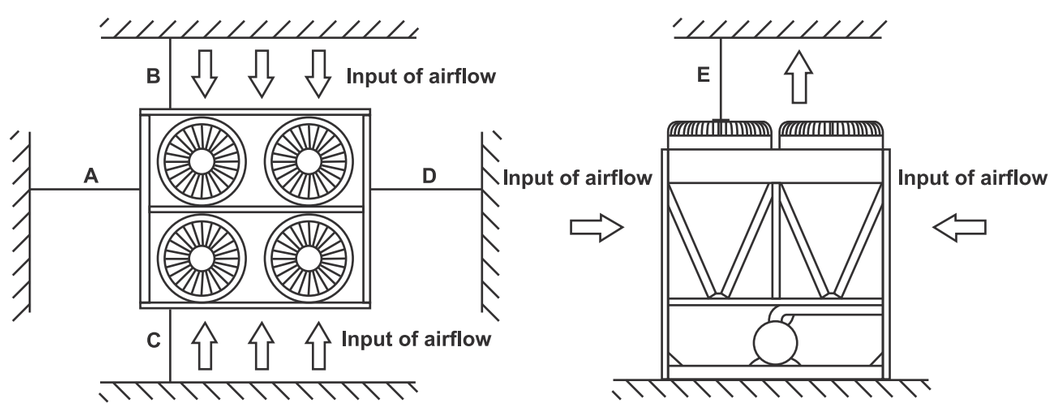
CLS-F30HW/S,CLS-F30HW/K,CLS-F30HW/SR1,CLS-F30HW/KR1



CLS-F65HW/S,CLS-F65HW/K,CLS-F65HW/SR1,CLS-F65HW/KR1



CLS-F130HW/S,CLS-F130HW/K,CLS-F130HW/SR1,CLS-F130HW/KR1



The recommend space parameter

Module	Installation space (mm)				
	A	B	C	D	E
Power supply	≥1500	≥2000	≥1500	≥2000	≥8000

Fan Coil Unit

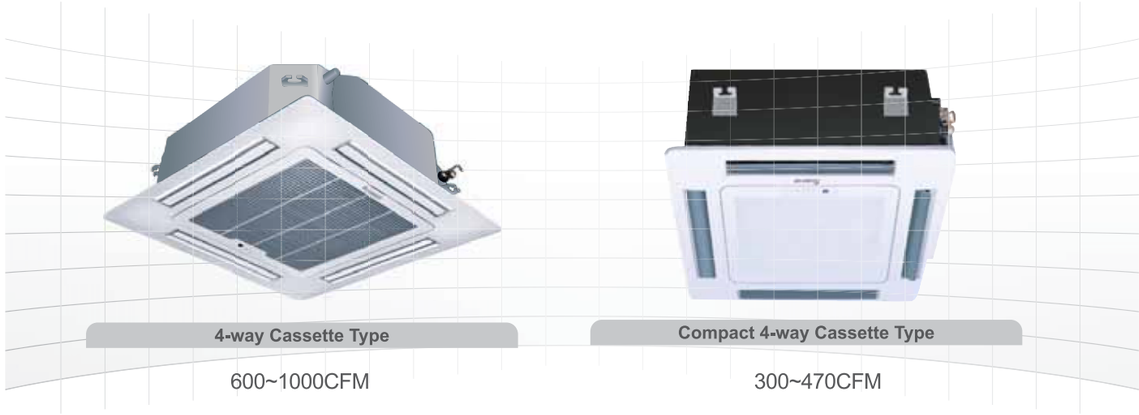
How to read the models

C S T - 600 R P12

- **P**:Static pressure; **12**:Static pressure value
- **R**:Remote;**W**:Wire
- **Air Flow**:CFM
- **Q**:4-way cassette;**Q4**:Cassaette **T**:Low ESP Duct
- **Product series** **S**:Fan Coil Unit
- **C**:Ceiling

4-way cassette

External Appearance



Feature:

1. Low operation noise.
- Streamline plate ensures quietness.
- Creates natural and comfortable environment.

2. The adoption of the most advanced 3-Dimensional Screw fan.
- Reduces the air resistance passing through.
- Smoothes the air flow.
- Makes air speed distribution to the heat exchange uniform.

3. Electrical heater is optional.

4. A full series of controller give you the most suitable solution according to the different requirement from different customers.

5. Optimized structure makes the air volume and capacity improved rapidly.

6. Improvement for easy installation and maintenance
- Little space is required for installation into a shallow ceiling.
- Because of the compactness and weight reduction of the main unit and panel, all models can be installed without a hoist.

7. Drainage pump can take up the condenser water to 1200mm.

FCU type			Compact 4-way Cassette Type		
Model			CSQ4-300R	CSQ4-350R	CSQ4-470R
Power supply		V/ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50
Capacity					
Air-flow volume	Hi/Med/Lo	CFM	300/260/180	350/300/210	470/400/280
		m^3/h	500/430/310	600/510/360	800/680/480
Cooling	Hi/Med/Lo	kW	2.8/2.4/1.8	3.5/3.0/2.3	4.5/3.9/2.9
Heating	Hi/Med/Lo	kW	4.2/3.7/2.7	5.3/4.6/3.4	6.8/5.9/4.4
Physical data					
Noise level (High-speed)		dB(A)	40	44	44
Water flow volume		m^3/h	0.48	0.60	0.78
Water pressure drop		kPa	25	28	30
Indoor coil	Number Of Rows		2	2	2
	Fin type		copper tube, aluminum fin		
Fan motor	Quantity	pcs	1	1	1
	Power Input	W	43	64	65
Indoor unit	Dimension (W×H×D)	mm	580×275×580	580×275×580	580×275×580
	Packing (W×H×D)	mm	745×350×675	745×350×675	745×350×675
	Net/Gross weight	kg	22/24	22/24	22/24
panel	Dimension (W×H×D)	mm	650×30×650	650×30×650	650×30×650
	Packing (W×H×D)	mm	710x120x710	710x120x710	710x120x710
	Net/Gross weight	Kg	4/5	4/5	4/5
Pipe	Water-inlet pipe	mm	DN20	DN20	DN20
	Water-outlet pipe	mm	DN20	DN20	DN20
	Drainage pipe	mm	DN25	DN25	DN25
Quantity per 20GP/40GP/40HQ		Set	116/260/280	116/260/280	116/260/280
Controller			Wired controller(optional),remote controller(standard)		

Remark:
1. Cooling capacity test condition:air side temperature:27DB˚C/19WB˚C,water inlet temperature 7˚C,water temperature difference 5˚C.
2. Heating capacity test condition:air side temperature:21DB˚C,ater inlet temperature 60 DB˚C,water temperature difference 5˚C.

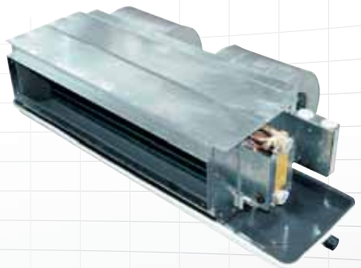
FCU type			4-way Cassette Type			
Model			CSQ-600R	CSQ-760R	CSQ-880R	CSQ-1000R
Power supply		V/ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50
Capacity						
Air-flow volume	Hi/Med/Lo	CFM	600/510/360	760/646/456	880/748/528	1000/850/600
		m^3/h	1000/867/612	1300/1098/775	1500/1272/898	1700/1445/1020
Cooling	Hi/Med/Lo	kW	5.3/4.6/3.4	7.2/6.3/4.7	8.5/7.4/5.5	10.0/8.7/6.5
Heating	Hi/Med/Lo	kW	8.0/7.0/5.2	10.8/9.4/7.0	12.8/11.1/8.3	15.0/13.1/9.8
Physical data						
Noise level (High-speed)		dB(A)	44	47	56	56
Water flow volume		m^3/h	1.10	1.24	1.46	1.55
Water pressure drop		kPa	36	36	38	40
Indoor coil	Number Of Rows		2	2	2	2
	Fin type		copper tube, aluminum fin			
Fan motor	Quantity	pcs	1	1	1	1
	Power Input	W	125	130	150	165
Indoor unit	Dimension (W×H×D)	mm	840×230×840	840×230×840	840×285×840	840×285×840
	Packing (W×H×D)	mm	920×310×920	920×310×920	920×375×920	920×375×920
	Net/Gross weight	kg	28/32	28/32	40/44	40/44
panel	Dimension (W×H×D)	mm	950×50×950	950×50×950	950×50×950	950×50×950
	Packing (W×H×D)	mm	1030×105×1030	1030×105×1030	1030×105×1030	1030×105×1030
	Net/Gross weight	Kg	5/7	5/7	5/7	5/7
Pipe	Water-inlet pipe	mm	DN20	DN20	DN20	DN20
	Water-outlet pipe	mm	DN20	DN20	DN20	DN20
	Drainage pipe	mm	DN25	DN25	DN25	DN25
Quantity per 20GP/40GP/40HQ		Set	70/157/174	70/157/174	63/136/150	63/136/150
Controller			Wired controller(optional),remote controller(standard)			

Remark:
1. Cooling capacity test condition: air side temperature:27DB˚C/19WB˚C,water inlet temperature 7˚C,water temperature difference 5˚C.
2. Heating capacity test condition: air side temperature:21DB˚C,ater inlet temperature 60 DB˚C,water temperature difference 5˚C.

Duct Type

External Appearance

Pro Series



Plus Series

Feature:

1. Nested in the ceiling, space-saving and noble.

2. High capacity of cooling/heating performance, high efficiency and energy-saving.

3. Adjust the indoor temperature rapidly and averagely.

4. Low noise fan direct driven by single phase, 3 speed permanent split capacitor motor.

5. The air outlet is laid out in the way you desire.

6. Unit constructed by electrostatic galvanized sheet.

7. providing maximum protection against corrosion. Heavy gauge zinc coated steel drainage pan with good insulation processing, avoiding sweating and corrosion.

8. Unit tested performance comply with GB4706.32-2004、JB9063-1999 and JB/T4283-1991.

9. Return box and filter are potion.

FCU type			Ducted type (Pro Series)			
Model NO.			CST3-200P12	CST3-300P12	CST3-400P12	CST3-500P12
Power supply		V/ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50
Capacity						
Air-flow volume	Hi/Med/Lo	CFM	200/170/120	300/250/190	400/340/250	500/410/310
		m^3/h	340/290/210	510/420/320	680/580/420	850/700/520
Cooling	Hi/Med/Lo	kW	2.2/1.7/1.1	3.3/2.5/1.6	4.2/3.3/2.0	4.6/3.6/2/2
Heating	Hi/Med/Lo	kW	3.5/2.7/2.2	5.3/4.1/3.4	6.8/5.2/4.4	7.9/6.1/5.1
Physical data						
External static pressure		Pa	12	12	12	12
Noise level (High-speed)		dB(A)	36	37	40	43
Water flow volume		m^3/h	0.37	0.56	0.72	0.83
Water pressure drop		kPa	14	20	22	24
Indoor coil	Number Of Rows		3	3	3	3
	Fin type		copper tube, aluminum fin			
Fan motor	Quantity	pcs	1	1	1	1
	Power Input	W	30	39	60	76
Indoor unit	Dimension (W×H×D)	mm	770*240*472	827*240*472	927*240*472	927*240*490
	Packing (W×H×D)	mm	790*265*500	865*265*500	940*265*500	940*265*500
	Net/Gross weight	kg	13/15	15/17	17/20	17/20
Pipe	Water-inlet pipe	mm	DN20	DN20	DN20	DN20
	Water-outlet pipe	mm	DN20	DN20	DN20	DN20
	Drainage pipe	mm	DN25	DN25	DN25	DN25
Quantity per 20GP/40GP/40HQ		Set	266/565/630	245/510/580	225/470/530	220/448/530
Remark:						
1. All performance data above are based upon 12Pa ESP.						
2. Cooling capacity test condition:air side temperature:27DB˚C/19WB˚C,water inlet temperature 7˚C,water temperature difference 5˚C.						
3. Heating capacity test condition:air side temperature:21DB˚C,ater inlet temperature 60 DB˚C,water temperature difference 5˚C.z						

FCU type			Ducted type (Pro Series)				
Model NO.			CST-600P30	CST-800P30	CST-1000P30	CST-1200P30	CST-1400P30
Power supply		V/ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50
Capacity							
Air-flow volume	Hi/Med/Lo	CFM	600/490/370	800/680/490	1000/820/590	1200/970/740	1400/1180/870
		m^3/h	1020/840/620	1360/1150/840	1700/1400/1000	2040/1650/1250	2380/2000/1480
Cooling	Hi/Med/Lo	kW	5.8/4.5/2.8	7.9/6.2/3.8	9.1/7.1/4.4	11.5/9.0/5.6	13.0/10.1/6.3
Heating	Hi/Med/Lo	kW	10.0/7.7/6.4	13.6/10.5/8.7	16.0/12.3/10.3	20.3/15.6/13.0	22.6/17.4/14.4
Physical data							
External static pressure		Pa	30	30	30	30	30
Noise level (High-speed)		dB(A)	47	47	50	51	52
Water flow volume		m^3/h	1.00	1.36	1.56	1.97	2.24
Water pressure drop		kPa	34	34	40	42	50
Indoor coil	Number Of Rows		3	3	3	3	3
	Fin type		copper tube, aluminum fin				
Fan motor	Quantity	pcs	1	2	2	2	2
	Power Input	W	106	150	172	210	250
Indoor unit	Dimension (W×H×D)	mm	1140*240*472	1440*240*472	1546*240*472	1835*240*472	1835*240*472
	Packing (W×H×D)	mm	1155*265*500	1475*265*500	1565*265*500	1835*265*500	1835*265*500
	Net/Gross weight	kg	20/23	27/31	32/35	36/41	36/41
Pipe	Water-inlet pipe	mm	DN20	DN20	DN20	DN20	DN20
	Water-outlet pipe	mm	DN20	DN20	DN20	DN20	DN20
	Drainage pipe	mm	DN25	DN25	DN25	DN25	DN25
Quantity per 20GP/40GP/40HQ		Set	185/380/430	145/298/340	140/280/315	115/240/270	115/240/270

Remark:
1. All performance data above are based upon 30Pa ESP.
2. Cooling capacity test condition: air side temperature: 27DB˚C/19WB˚C, water inlet temperature 7˚C, water temperature difference 5˚C.
3. Heating capacity test condition: air side temperature: 21DB˚C, ater inlet temperature 60 DB˚C, water temperature difference 5˚C.

FCU type			Ducted type (Plus Series)			
Model NO.			FP-34PA-3	FP-51PA-3	FP-68PA-3	FP-85PA-3
Power supply		V/ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50
Capacity						
Air-flow volume	Hi/Med/Lo	CFM	200/150/110	300/240/150	400/340/220	500/420/270
		m^3/h	340/260/180	510/400/260	680/580/380	850/720/460
Cooling	Hi/Med/Lo	kW	1.8/1.4/1.0	2.7/2.1/1.4	3.6/3.1/2.0	4.5/3.8/2.4
Heating	Hi/Med/Lo	kW	2.7/2.1/1.4	4.1/3.2/2.1	5.4/4.6/3.0	6.8/5.7/3.7
Physical data						
External static pressure		Pa	12	12	12	12
Noise level (High-speed)		dB(A)	36	37	40	43
Water flow volume		m^3/h	0.36	0.54	0.72	0.9
Water pressure drop		kPa	5	9	19	19
Indoor coil	Number Of Rows		3	3	3	3
	Fin type		copper tube, aluminum fin			
Fan motor	Quantity	pcs	1	1	1	1
	Power Input	W	34	39	60	75
Indoor unit	Dimension (W×H×D)	mm	758×238×495	758×238×495	806×238×495	916×238×495
	Packing (W×H×D)	mm	790×253×515	790×253×515	840×253×515	950×253×515
	Net/Gross weight	kg	12.5/15	12.5/15	16.2/18.7	16.5/19
Pipe	Water-inlet pipe	mm	DN20	DN20	DN20	DN20
	Water-outlet pipe	mm	DN20	DN20	DN20	DN20
	Drainage pipe	mm	DN25	DN25	DN25	DN25
Quantity per 20GP/40GP/40HQ		Set	270/565/635	270/565/635	255/530/600	220/480/530

Remark:
1. All performance data above are based upon 12Pa ESP.
2. Cooling capacity test condition: air side temperature: 27DB˚C/19WB˚C, water inlet temperature 7˚C, water temperature difference 5˚C.
3. Heating capacity test condition: air side temperature: 21DB˚C, ater inlet temperature 60 DB˚C, water temperature difference 5˚C.

FCU type			Ducted type (Plus Series)				
Model NO.			FP-102PA-3	FP-136PA-3	FP-170PA-3	FP-204PA-3	FP-238PA-3
Power supply		V/ph/Hz	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50	220~240/1/50
Capacity							
Air-flow volume	Hi/Med/Lo	CFM	600/500/390	800/640/520	1000/820/650	1200/960/780	1400/1120/840
		m^3/h	1020/850/670	1360/1080/880	1700/1400/1100	2040/1630/1320	2380/1900/1430
Cooling	Hi/Med/Lo	kW	5.4/4.5/3.5	7.2/5.7/4.7	9.0/7.4/5.8	10.8/8.6/7.0	12.6/10.0/7.5
Heating	Hi/Med/Lo	kW	8.1/6.8/5.3	10.8/8.6/7.0	13.5/11.1/8.7	16.2/12.9/10.5	18.9/15.0/11.5
Physical data							
External static pressure		Pa	30	30	30	30	30
Noise level (High-speed)		dB(A)	47	47	50	51	52
Water flow volume		m^3/h	1.44	1.44	1.8	2.16	2.52
Water pressure drop		kPa	25	27	26	26	40
Indoor coil	Number Of Rows		3	3	3	3	3
	Fin type		copper tube, aluminum fin				
Fan motor	Quantity	pcs	1	2	2	2	2
	Power Input	W	106	150	172	210	250
Indoor unit	Dimension (W×H×D)	mm	1016×238×495	1221×238×495	1431×238×495	1681×238×495	1849×238×495
	Packing (W×H×D)	mm	1050×253×515	1260×260×525	1470×260×525	1720×260×525	1890×260×525
	Net/Gross weight	kg	19.4/21.9	23/26	28/32	33/37	36/41
Pipe	water-inlet pipe	mm	DN20	DN20	DN20	DN20	DN20
	water-outlet pipe	mm	DN20	DN20	DN20	DN20	DN20
	Drainage pipe	mm	DN25	DN25	DN25	DN25	DN25
Quantity per 20GP/40GP/40HQ		Set	208/420/490	166/360/405	135/300/335	120/260/290	110/240/270

Remark:
1. All performance data above are based upon 30Pa ESP.
2. Cooling capacity test condition: air side temperature: 27DB˚C/19WB˚C, water inlet temperature 7˚C, water temperature difference 5˚C.
3. Heating capacity test condition: air side temperature: 21DB˚C, ater inlet temperature 60 DB˚C, water temperature difference 5˚C.

Accessories

Wireless controller (standard)

- a Wireless 8m transmission
- b 5 operation modes: Auto, Cooling, Dehumidification, Heating, Fan
- c Timer ON/OFF setting up to 24Hr
- d Temperature control range 16-32˚C
- e Three fan speed selection
- f Sleep mode function

JL-01

Thermostat (optional):

- a LCD display, user-friendly interface
- b Flame retardant ABS/ PC alloy
- c Anti-condensation
- d Temperature control range 5-35˚C
- e The mode of fan controlled can be set whenever you want.

  Fan under control:run or stop the FCU depending on indoor temperature.

  Fan out of control:run or stop the FCU depending on master switch, nothing to do with indoor temperature and the electric valve.

AE-Y308

Two-way valve and three-way valve (optional):

- a Unique closed structure guarantees the motor run reliably.
- b Low power consumption and long life.
- c Occupied small space when installation.
- d Drive and valve can be split that easy to install and maintain.
- e The valve can withstand the pressure up to 1.6M pa.
- f Manual switching. When debugging or maintain the system, manual operation is convenient.

DN25mm