GREE

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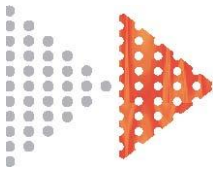


Service Manual

Models: **JKFD5DQS/Na-E、JKFD5DC/Na-E**
JKFD7DQS/Na-E、JKFD7DC/Na-E
JKFD7QS/Na-M、JKFD7C/Na-M
JKFD13QS/Na-M、JKFD13C/Na-M、JKFD13SX/Na-M
JKFD19QS/Na-M、JKFD19C/Na-M、JKFD19SX/Na-M
JKFD25QS2/Na-M、JKFD25C2/Na-M、JKFD25SX2/Na-M
JKFD40QS2/Na-M、JKFD40C2/Na-M、JKFD40SX2/Na-M
JKFD40QS/Na-M、JKFD40C/Na-M
(Refrigerant R410A)

GREE ELECTRIC APPLIANCES,INC.OF ZHUHAI

Table of Contents

Ⅰ Product

Indoor Unit

Outdoor Unit

1. Naming Convention of Products

JK	F	D	40	□	QS	□	2	□	Y	□	(I)
1	2	3	4	5	6	7	8	9	10	11	12

NO.	Description	Option
1	Product Classification	JK-Closed Control Air Conditioner
2	Cooling Down Method and Structure	Omitted—Water-cooled Packaged Unit F—Air-cooled Split Unit Y—Ethylene Glycol-cooled Split Unit
3	The Unit Type	Omitted—Cooling Only Unit D—Cooling Only Unit +Electric Heater+ Humidifier Z—Cooling Only Unit+ Refrigerant plus Heater
4	Cooling Capacity	Nominal Cooling Capacity--number kW
5	Power Supply	Omitted-Three-phase (380V 3N~ 50Hz) D-Single-phase (220V ~ 50Hz)
6	The Direction of Air Intake and Discharge	C—Direct Air Supply SX—Top Air Intake and Botton Air Discharge(air supplied from floor) QS—Front Air Intake and Top Air Discharge (air duct is connected)
7	StructureType	Omitted—Compressor Indoors W—Compressor Outdoors
8	The Outdoor Unit Number of Combination	Omitted—One Outdoor Unit 2—Two Outdoor Units
9	Type of Compressor	Omitted-Fixed frequency P-AC Inverter Pd-DC Inverter
10	Mode of Control	Omitted—Routine Y—Long Distance Monitoring
11	Refrigerant	Omitted—R22 N—R407c Na—R410A
12	Codes of Indoor and Outdoor Units	Omitted—Complete Unit and Integral Type I—Indoor Units O—Outdoor Units

2. Features of Product

Gree JKF Series Air-cooled Closed Control Unit is specially designed for the room where communication equipment, computer, and precise instruments are placed. Applying components with high performance, wide and touchable screen, advanced system design as well as powerful control logic, the unit can efficiently control ambient humidity and keep stable and long-term operation. The unit has been thoroughly tested with high standard and has been under strict production control. All units have reserved remote monitoring function. Cooling capacity of a single unit is between 5kW～40kW and can be expanded by combination of modules.

◆ Powerful control function

Touchable screen control: with 5.6' touch screen to achieve easy, swift and convenient control and operation.

All-sided monitoring: inspect the operation of the unit in all sides, including ambient temp and humidity, temperature of evaporator, status of each component of the unit. (such as indoor or outdoor fan, compressor, electric heater, etc), voltage, current, etc)

Multi functions display: use value, phrases, and curves to display data regarding operation of the unit or environmental phenomenon.

Human-friendly control: each parameter or warning can be set according to the demand of user. If malfunction occurs, the unit will give warning and, at the same time, it will keep running or stop, which is selected according to the type of the malfunction.

Operation without watch: the unit can automatically operate according to set time of starting or turning off. If the unit stops due to power failure, the unit will automatically operate at previous status after power recovery. The operation of the unit can be remotely monitored and at any time, the unit can be set from long distance.

◆ High performance and high reliability

High performance: using brandname scroll compressor, female screw thread copper pipe, Hyrophilic film aluminum fin, condensate fan with stepless regulation, the unit can reach high efficiency and be energy-saving.

High reliability: All components are brandname products and be inspected by IQC of Gree. The unit is strictly tested and can stably operate for long-term.

Operation under ultra low temperature: the unit can reliably operate even though outdoor temperature is -35℃. The room temperature and humidity can be stable under all kinds of rough conditions.

High sensible heat: it is designed for work condition with high sensible heat and can reduce repeated humidifying as well as avoid condensate.

Huge air volume: use high efficient centrifugal fan which produces huge circulated air volume to rapidly make temperature and humidity in the room even and clear local heat generation.

Rapid dry: the evaporator has two-stage. In dry mode, by reducing heat exchange area of evaporator and evaporating temperature, the unit can rapidly dry and precisely control ambient temperature and humidity.

◆ Modular Design

High Precision: High precision: each module can be individually controlled. The cooling capacity can also be individually controlled to flexibly adapt to environment and decrease fluctuation of temperature and humidity.

Alternate operation: According to accumulated operation time, the unit which has less operation time will start operation firstly while the unit which has more operation time will stop firstly. Each module can alternately operate and be evenly controlled. If any module has malfunction, others will automatically operate.

Convenient expanding of capacity: max. 253 master modules can be connected so the problem of increasing heat load of the room can be flexibly handled and cost of further capacity expanding by customer can be reduced.

Flexible installation: Single module can be casually installed according to layout of the room, which makes the humidity and temperature of the room more even.

Convenient transportation: the single module is separately packaged so transportation and installation are more convenient.

◆Structure Features

Separate electric control: electric control cabinet is totally separate with cold air circulation system so there is no incipient fault caused by condensate and short circuit.

Convenient disassembly: main front panel Assy is fixed by clasp so the disassembly is very convenient and the appearance is also nice.

High efficient filtering: There is G4 grade wide air filter in air return inlet of indoor unit to guarantee cleanness and reduce loss of air pressure.

Snow-proof design: for outdoor unit, the air returned from the bottom and supplied from the top to prevent the vent from being blocked by snow.

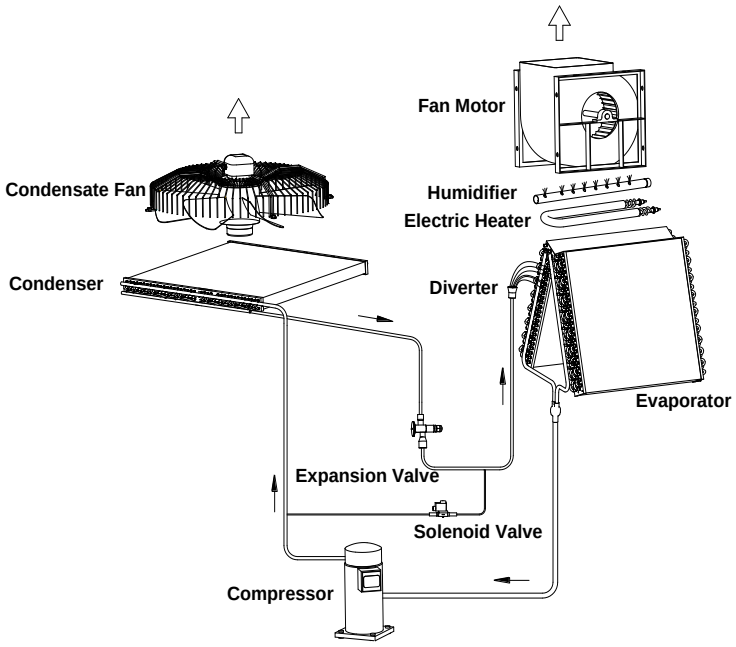
◆ Multi products

Wide cooling range: GREE JKF series air-cooled closed control units include 5kW, 7kW, 13kW, 19kW, 25kW and 40kW units. And also, with combination of modules, customers can easily select proper units according to their demand.

Various air outlet ways: Each kind of unit has three ways of air outlet, including free air outlet (with cap), front air inlet and top air outlet (connecting to duct type), top air inlet and bottom air outlet (air supplied from floor). Customers can freely select the units according to specific conditions.

3. System Principle

3.1 Flowchart of the System



3.2 Description of the System

Structural features and system layout of JKF Series Air-cooled Closed Control Air Conditioner are illustrated as above.

By compressor used for cooling and dehumidifying, electric heater for heating and temperature adjustment, electrode humidifier for humidifying and logical program to control the even running of every functional part, the unit adjusts the ambient temperature and humidity so that it can meet the requirement of maintaining the precise temperature and humidity.

When the unit is running, the flowchart of refrigerant system is as below :

Scroll compressor → Air cooled condenser (brass forge louver type aluminum plate-fin) →Liquid filter→ Expansion valve→Tritorium → Evaporator (Brass forge louver type aluminum plate-fin) → Scroll compressor

Flow direction of air supply system:

Return air → Plate type filter → Evaporator→Electric Heater→Nozzle of humidifier → Centrifugal fan→ Air-conditioned room.

4. Performance Parameters

Form 1

Class	Item		Model / Unit	JKFD5DC/Na-E	JKFD5DQS/Na-E
	Code of Product			EJ13000380	EJ13000250
Characteristics of Units	Total Cooling Capacity / Sensible Cooling Capacity(22℃/50%)		kW	5.0/4.5	
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/17℃)		kW	5.3/4.8	
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/45%)		kW	5.2/4.7	
	Total Cooling Capacity / Sensible Cooling Capacity(26℃/50%)		kW	5.5/5.0	
	Heating Capacity		kW	3	
	Rated Humidifying Capacity		kg/h	2	
	Air Flow Volume		m^3/h	1850	1900
	External Static Pressure		Pa	0	15
	Acoustic Noise of Indoor Units		dB(A)	61	62
	Range of Temp. Controlling and Precision			17～28℃±1℃	
	Range of Humidity and Precision			40～60%±5%	
	Power Supply			220V ～ 50Hz	
Cooling System	Compressor	Type		Hermetic Scroll Type	
	Evaporator	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin	
	Condenser	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin	
	Refrigerant			R410A	
	Throttling Method			Electronic Expansion Valve	
Air Supply System	Indoor Unit	Fan	Type	Low Noise and Centrifugal External-rotor	
			Type of	Direct Drive	
		Air Filter	Type	Plate Filter (G4)	
Heating System	Heater	Type		Electric Heating	
Humidifying System	Humidifier	Type		Electrode Type	
		Control Mode		Automatic Control by Mainboard	
Indoor Unit	Indoor Unit Model			JKFD5DC/Na-E(I)	JKFD5DQS/Na-E(I)
	Dimension	W	mm	800	800
		D	mm	690	690
		H	mm	2250	1950
	Net Weight		kg	235	215
Outdoor Unit	Outdoor Unit Model			JKFD5/Na-E(O)	
	Qty		Set	1	

	Condensing Fan	Type		Low Noise Axial Type
		Type of Drive		Direct Drive
	Noise		dB(A)	64
	Dimension	W	mm	890
		D	mm	980
		H	mm	1000
	Net Weight		kg	65
Connection pipe	Liquid Refrigerant		mm×pcs	Φ9.52×1
	Gas Refrigerant Pipe		mm×pcs	Φ12×1
	Method of Connection			Flared-fitting Joint

Form 2

Class	Item		Model / Unit	JKFD7DC/Na-E	JKFD7DQS/Na-E
	Code of Product			EJ13000230	EJ13000040
Characteristics of Units	Total Cooling Capacity / Sensible Cooling Capacity(22℃/50%)		kW	6.9/5.9	
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/17℃)		kW	7.2/6.5	
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/45%)		kW	7.0/6.4	
	Total Cooling Capacity / Sensible Cooling Capacity(26℃/50%)		kW	7.3/6.5	
	Heating Capacity		kW	3	
	Rated Humidifying Capacity		kg/h	2	
	Air Flow Volume		m^3/h	2000	2200
	External Static Pressure		Pa	0	15
	Acoustic Noise of Indoor Units		dB(A)	61	62
	Range of Temp. Controlling and Precision			17～28℃±1℃	
	Range of Humidity and Precision			40～60%±5%	
	Power Supply			220V ～ 50Hz	
Cooling System	Compressor	Type		Hermetic Scroll Type	
	Evaporator	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin	
	Condenser	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin	
	Refrigerant			R410A	
	Throttling Method			Electronic Expansion Valve	
Air Supply System	Indoor Unit	Fan	Type	Low Noise and Centrifugal External-rotor	
			Type of	Direct Drive	
		Air Filter	Type	Plate Filter (G4)	
Heating System	Heater	Type		Electric Heating	
Humidifying System	Humidifier	Type		Electrode Type	
		Control Mode		Automatic Control by Mainboard	
Indoor Unit	Indoor Unit Model			JKFD7DC/Na-E(I)	JKFD7DQS/Na-E(I)

	Dimension	W	mm	800	800
		D	mm	690	690
		H	mm	2250	1950
	Net Weight		kg	235	215
Outdoor Unit	Outdoor Unit Model			JKFD7/Na-E(O)	
	Qty		Set	1	
	Condensing Fan	Type		Low Noise Axial Type	
		Type of Drive		Direct Drive	
	Noise		dB(A)	64	
	Dimension	W	mm	890	
		D	mm	980	
		H	mm	1000	
	Net Weight		kg	65	
Connection pipe	Liquid Refrigerant Pipe		mm×pcs	Φ9.52×1	
	Gas Refrigerant Pipe		mm×pcs	Φ12×1	
	Method of Connection			Flared-fitting Joint	

Form 3

Class	Item		Model / Unit	JKFD7C/Na-M	JKFD7QS/Na-M
	Code of Product			EJ13000370	EJ13000290
Characteristics of Units	Total Cooling Capacity / Sensible Cooling Capacity(22℃/50%)		kW	6.8/5.8	
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/17℃)		kW	7.2/6.5	
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/45%)		kW	7.0/6.3	
	Total Cooling Capacity / Sensible Cooling Capacity(26℃/50%)		kW	7.3/6.6	
	Heating Capacity		kW	3	
	Rated Humidifying Capacity		kg/h	2	
	Air Flow Volume		m^3/h	2000	2200
	External Static Pressure		Pa	0	15
	Acoustic Noise of Indoor Units		dB(A)	61	62
	Range of Temp. Controlling and Precision			17～28℃±1℃	
	Range of Humidity and Precision			40～60%±5%	
	Power Supply			380V 3N～ 50Hz	
Cooling System	Compressor	Type		Hermetic Scroll Type	
	Evaporator	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin	
	Condenser	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin	
	Refrigerant			R410A	
	Throttling Method			Electronic Expansion Valve	
Air Supply System	Indoor Unit	Fan	Type	Low Noise and Centrifugal External-rotor	
			Type of	Direct Drive	
		Air Filter	Type	Plate Filter (G4)	
Heating System	Heater	Type		Electric Heating	

Humidifying System	Humidifier	Type		Electrode Type	
		Control Mode		Automatic Control by Mainboard	
Indoor Unit	Indoor Unit Model			JKFD7C/Na-M(I)	JKFD7QS/Na-M(I)
	Dimension	W	mm	800	800
		D	mm	690	690
		H	mm	2250	1950
	Net Weight		kg	235	215
Outdoor Unit	Outdoor Unit Model			JKFD7/Na-M(O)	
	Qty		Set	1	
	Condensing Fan	Type		Low Noise Axial Type	
		Type of Drive		Direct Drive	
	Noise		dB(A)	64	
	Dimension	W	mm	890	
		D	mm	980	
		H	mm	1000	
	Net Weight		kg	65	
Connection pipe	Liquid Refrigerant Pipe		mm×pcs	Φ9.52×1	
	Gas Refrigerant Pipe		mm×pcs	Φ12×1	
	Method of Connection			Flared-fitting Joint	

Form 4

Class	Item	Model / Unit	JKFD13C/Na-M	JKFD13QS/Na-M	JKFD13SX/Na-M
	Code of Product		EJ13000390	EJ13000300	EJ13000340
Characteristics of Units	Total Cooling Capacity / Sensible Cooling Capacity(22℃/50%)	kW	13.8/12.5		
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/17℃)	kW	14.0/12.6		
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/45%)	kW	13.9/12.8		
	Total Cooling Capacity / Sensible Cooling Capacity(26℃/50%)	kW	15.6/14.0		
	Heating Capacity	kW	6		
	Rated Humidifying Capacity	kg/h	4		
	Air Flow Volume	m^3/h	4900	4800	4500
	External Static Pressure	Pa	0	50	50
	Acoustic Noise of Indoor Units	dB(A)	62	64	64
	Range of Temp. Controlling and Precision		17～28℃±1℃		
	Range of Humidity and Precision		40～60%±5%		
	Power Supply		380V 3N～ 50Hz		
Cooling System	Compressor	Type	Hermetic Scroll Type		
	Evaporator	Type	Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin		
	Condenser	Type	Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin		
	Refrigerant		R410A		
	Throttling Method		Electronic Expansion Valve		

Air Supply System	Indoor Unit	Fan	Type	Low Noise and Centrifugal External-rotor		
			Type of	Direct Drive		
		Air Filter	Type	Plate Filter (G4)		
Heating System	Heater	Type		Electric Heating		
Humidifying System	Humidifier	Type		Electrode Type		
		Control Mode		Automatic Control by Mainboard		
Indoor Unit	Indoor Unit Model			JKFD13C/Na-M(I)	JKFD13QS/Na-M(I)	JKFD13SX/Na-M(I)
	Dimension	W	mm	1100	1100	1100
		D	mm	810	810	810
		H	mm	2250	1950	1950
	Net Weight		kg	355	325	325
Outdoor Unit	Outdoor Unit Model			JKFD13/Na-M(O)		
	Qty		Set	1		
	Condensing Fan	Type		Low Noise Axial Type		
		Type of Drive		Direct Drive		
	Noise		dB(A)	64		
	Dimension	W	mm	1080		
		D	mm	1180		
		H	mm	960		
	Net Weight		kg	100		
Connection pipe	Liquid Refrigerant Pipe		mm×pcs	Φ12×1		
	Gas Refrigerant Pipe		mm×pcs	Φ16×1		
	Method of Connection			Flared-fitting Joint		

Form 5

Class	Item		Model / Unit	JKFD19C/Na-M	JKFD19QS/Na-M	JKFD19SX/Na-M
	Code of Product			EJ13000240	EJ13000310	EJ13000280
Characteristics of Units	Total Cooling Capacity / Sensible Cooling Capacity(22℃/50%)		kW	18.0/17.0		
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/17℃)		kW	19.0/17.4		
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/45%)		kW	18.8/17.8		
	Total Cooling Capacity / Sensible Cooling Capacity(26℃/50%)		kW	20.3/18.9		
	Heating Capacity		kW	9		
	Rated Humidifying Capacity		kg/h	4		
	Air Flow Volume		m^3/h	7200	6600	6600
	External Static Pressure		Pa	0	100	100
	Acoustic Noise of Indoor Units		dB(A)	65	67	67
	Range of Temp. Controlling and Precision			17～28℃±1℃		
	Range of Humidity and Precision			40～60%±5%		
	Power Supply			380V 3N～ 50Hz		
Cooling System	Compressor	Type		Hermetic Scroll Type		
	Evaporator	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin		

	Condenser	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin		
	Refrigerant			R410A		
	Throttling Method			Electronic Expansion Valve		
Air Supply System	Indoor Unit	Fan	Type	Low Noise and Centrifugal External-rotor		
			Type of	Direct Drive		
		Air Filter	Type	Plate Filter (G4)		
Heating System	Heater	Type		Electric Heating		
Humidifying System	Humidifier	Type		Electrode Type		
		Control Mode		Automatic Control by Mainboard		
Indoor Unit	Indoor Unit Model			JKFD19C/Na-M(I)	JKFD19QS/Na-M(I)	JKFD19SX/Na-M(I)
	Dimension	W	mm	1380	1380	1380
		D	mm	810	810	810
		H	mm	2250	1950	1950
	Net Weight		kg	435	395	430
Outdoor Unit	Outdoor Unit Model			JKFD19/Na-M(O)		
	Qty		Set	1		
	Condensing Fan	Type		Low Noise Axial Type		
		Type of Drive		Direct Drive		
	Noise		dB(A)	64		
	Dimension	W	mm	1080		
		D	mm	1180		
		H	mm	1040		
	Net Weight		kg	100		
Connection pipe	Liquid Refrigerant Pipe		mm×pcs	Φ16×1		
	Gas Refrigerant Pipe		mm×pcs	Φ19×1		
	Method of Connection			Flared-fitting Joint		

Form 6

Class	Item	Model / Unit	JKFD25C2/Na-M	JKFD25QS2/Na-M	JKFD25SX2/Na-M
	Code of Product		EJ13000400	EJ13000320	EJ13000350
Characteristics of Units	Total Cooling Capacity / Sensible Cooling Capacity(22℃/50%)	kW	26.5/23.8		
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/17℃)	kW	27.0/24.3		
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/45%)	kW	26.8/24.0		
	Total Cooling Capacity / Sensible Cooling Capacity(26℃/50%)	kW	27.6/24.5		
	Heating Capacity	kW	12		
	Rated Humidifying Capacity	kg/h	8		
	Air Flow Volume	m^3/h	7800	7500	7500
	External Static Pressure	Pa	0	100	100
	Acoustic Noise of Indoor Units	dB(A)	66	68	68
	Range of Temp. Controlling and Precision		17～28℃±1℃		
	Range of Humidity and Precision		40～60%±5%		
	Power Supply		380V 3N～ 50Hz		

Cooling System	Compressor	Type		Hermetic Scroll Type		
	Evaporator	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin		
	Condenser	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin		
	Refrigerant			R410A		
	Throttling Method			Electronic Expansion Valve		
Air Supply System	Indoor Unit	Fan	Type	Low Noise and Centrifugal External-rotor		
			Type of Drive	Direct Drive		
		Air Filter	Type	Plate Filter (G4)		
Heating System	Heater	Type		Electric Heating		
Humidifying System	Humidifier	Type		Electrode Type		
		Control Mode		Automatic Control by Mainboard		
Indoor Unit	Indoor Unit Model			JKFD25C2/Na-M(I)	JKFD25QS2/Na-M(I)	JKFD25SX2/Na-M(I)
	Dimension	W	mm	1900	1900	1900
		D	mm	810	810	810
		H	mm	2250	1950	1950
	Net Weight		kg	585	570	535
Outdoor Unit	Outdoor Unit Model			JKFD13/NaA-M(O)		
	Qty		Set	2		
	Condensing Fan	Type		Low Noise Axial Type		
		Type of Drive		Direct Drive		
	Noise		dB(A)	64		
	Dimension	W	mm	1080		
		D	mm	1180		
		H	mm	960		
	Net Weight		kg	100		
Connection pipe	Liquid Refrigerant Pipe		mm×pcs	Φ12×2		
	Gas Refrigerant Pipe		mm×pcs	Φ16×2		
	Method of Connection			Flared-fitting Joint		

Form 7

Class	Item	Model / Unit	JKFD40C2/Na-M	JKFD40QS2/Na-M	JKFD40SX2/Na-M
	Code of Product		-	EJ13000330	EJ13000360
Characteristics of Units	Total Cooling Capacity / Sensible Cooling Capacity (22℃/50%)	kW	39.4/36.0		
	Total Cooling Capacity / Sensible Cooling Capacity (24℃/17℃)	kW	40.0/36.1		
	Total Cooling Capacity / Sensible Cooling Capacity (24℃/45%)	kW	39.2/37.5		
	Total Cooling Capacity / Sensible Cooling Capacity (26℃/50%)	kW	42.5/38.0		
	Heating Capacity	kW	18		

	Rated Humidifying Capacity		kg/h	8		
	Air Flow Volume		m^3/h	13000	12500	12500
	External Static Pressure		Pa	0	100	100
	Acoustic Noise of Indoor Units		dB(A)	68	70	70
	Range of Temp. Controlling and Precision			17～28℃±1℃		
	Range of Humidity and Precision			40～60%±5%		
	Power Supply			380V 3N～ 50Hz		
Cooling System	Compressor	Type		Hermetic Scroll Type		
	Evaporator	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin		
	Condenser	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin		
	Refrigerant			R410A		
	Throttling Method			Electronic Expansion Valve		
Air Supply System	Indoor Unit	Fan	Type	Low Noise and Centrifugal External-rotor		
			Type of	Direct Drive		
		Air Filter	Type	Plate Filter (G4)		
Heating System	Heater	Type		Electric Heating		
Humidifying System	Humidifier	Type		Electrode Type		
		Control Mode		Automatic Control by Mainboard		
Indoor Unit	Indoor Unit Model			JKFD40C2/Na-M(I)	JKFD40QS2/Na-M(I)	JKFD40SX2/Na-M(I)
	Dimension	W	mm	2480	2480	2480
		D	mm	810	810	810
		H	mm	2250	1950	1950
	Net Weight		kg	725	660	660
Outdoor Unit	Outdoor Unit Model			JKFD19/NaA-M(O)		
	Qty		Set	2		
	Condensing Fan	Type		Low Noise Axial Type		
		Type of Drive		Direct Drive		
	Noise		dB(A)	64		
	Dimension	W	mm	1080		
		D	mm	1180		
		H	mm	1040		
	Net Weight		kg	100		
Connection pipe	Liquid Refrigerant		mm×pcs	Φ16×2		
	Gas Refrigerant Pipe		mm×pcs	Φ19×2		
	Method of Connection			Flared-fitting Joint		

Form 8

Class	Item	Model / Unit	JKFD40C/Na-M	JKFD40QS/Na-M
	Code of		EJ13000100	EJ13000080

Characteristics of Units	Total Cooling Capacity / Sensible Cooling Capacity(22℃/50%)		kW	39.4/36.0	
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/17℃)		kW	40.0/36.1	
	Total Cooling Capacity / Sensible Cooling Capacity(24℃/45%)		kW	39.2/37.5	
	Total Cooling Capacity / Sensible Cooling Capacity(26		kW	42.5/38.0	
	Heating Capacity		kW	18	
	Rated Humidifying Capacity		kg/h	8	
	Air Flow Volume		m^3/h	13000	12500
	External Static Pressure		Pa	0	100
	Acoustic Noise of Indoor Units		dB(A)	68	70
	Range of Temp. Controlling and Precision			17～28℃±1℃	
	Range of Humidity and Precision			40～60%±5%	
	Power Supply			380V 3N～ 50Hz	
Cooling System	Compressor	Type		Hermetic Scroll Type	
	Evaporator	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin	
	Condenser	Type		Inner Screw Thread Pipe with Hydrophilic Film Aluminum Fin	
	Refrigerant			R410A	
	Throttling Method			Electronic Expansion Valve	
Air Supply System	Indoor Unit	Fan	Type	Low Noise and Centrifugal External-rotor	
			Type of	Direct Drive	
		Air Filter	Type	Plate Filter (G4)	
Heating System	Heater	Type		Electric Heating	
Humidifying System	Humidifier	Type		Electrode Type	
		Control Mode		Automatic Control by Mainboard	

Indoor Unit	Indoor Unit Model			JKFD40C/Na-M(I)	JKFD40QS/Na-M(I)
	Dimension	W	mm	2480	2480
		D	mm	810	810
		H	mm	2250	1950
	Net Weight	kg		755	690
Outdoor Unit	Outdoor Unit Model			JKFD40/Na-M(O)	
	Qty	Set		1	
	Condensing Fan	Type		Low Noise Axial Type	
		Type of Drive		Direct Drive	
	Noise	dB(A)		64	
	Dimension	W	mm	2500	
		D	mm	1150	
		H	mm	1250	
	Net Weight	kg		240	
Connection pipe	Liquid	mm×pcs		Φ19×1	
	Gas	mm×pcs		Φ22×1	
	Method of Connection			Welding	

Notes:

1. This unit was designed, manufactured and tested according to National Standard GB/T 19413-2010.

2. Ambient temperature when testing cooling capacity：dry-bulb temperature indoors is 24℃ and wet-bulb temperature is 17℃; dry-bulb temperature of outdoor side: 35℃.

3. The noise value was tested in the semi-anechoic chamber but the actual value will be a little higher for the change of ambient temperature.

4. Refer to nameplate on the unit for parameters of the unit. And the unit is Subject to change without further notice.

5. The temperature range of running environment is between：-35℃～48℃。

6. All models above can realize modular operation.

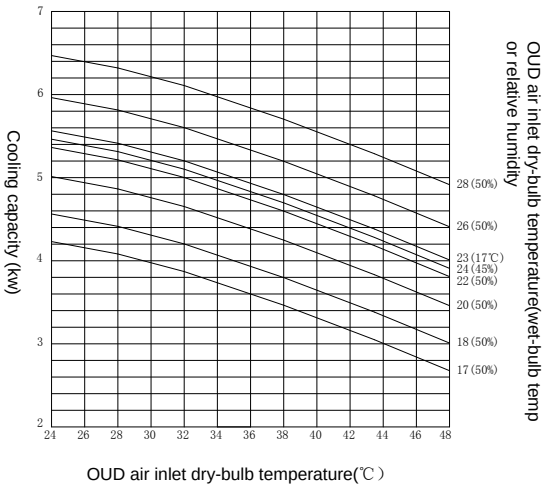
7. If there is any special requirement, please contact us.

5. Rformance correctlon

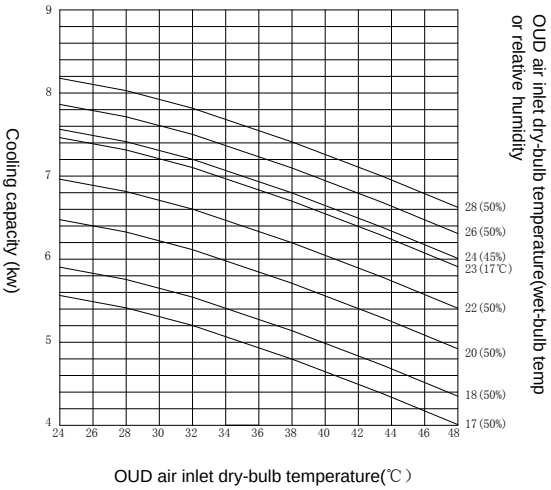
5.1 Correction of Cooling Capacity

Under different indoor or outdoor ambient temperatures, the cooling capacity of the unit will be different. The below diagram can be reference when customer select models.

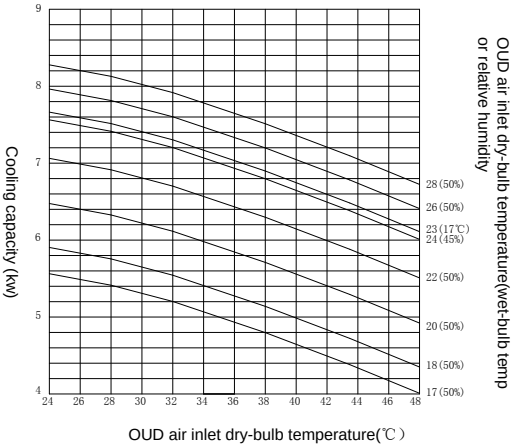
JKFD5XXX Cooling capacity correction for single-phase unit



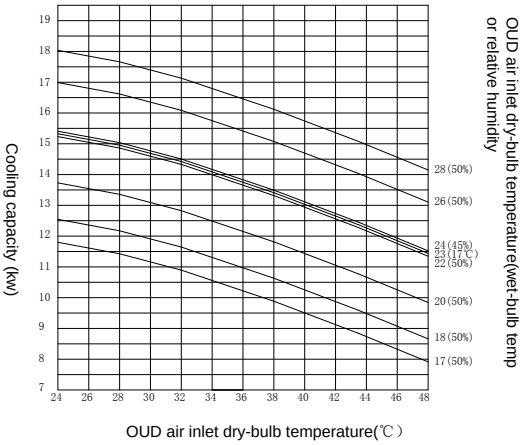
JKFD7XXX Cooling capacity correction for single-phase unit



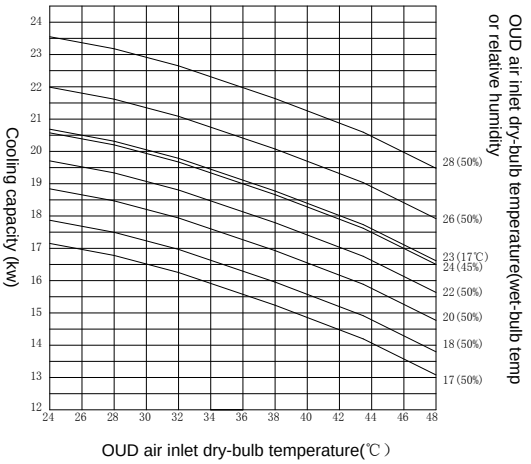
JKFD7XXX Cooling capacity correction for three-phase unit



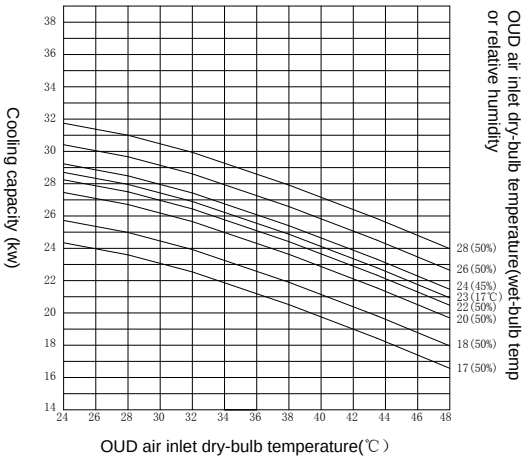
JKFD13XXX Cooling capacity correction for three-phase unit



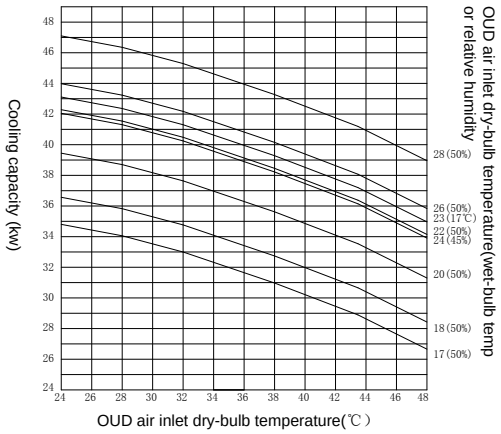
JKFD19XXX Cooling capacity correction for three-phase unit



JKFD25XXX Cooling capacity correction for three-phase unit



JKFD40XXX Cooling capacity correction for three-phase unit



5.2 Coefficient of Correction Table for Various Conditions of Installation

The cooling capacity can be affected by the long connecting pipe, as well as the high drop between outdoor and indoor units. The below is the reference for coefficient of correction of cooling capacity.

Equivalent Pipe Length		Coefficient of Correction for Cooling Capacity									
		5m	10m	15m	20m	25m	30m	35m	40m	45m	50m
High Drop for Indoor Units Lowering than Outdoor Units	0m	1.0	0.98	0.96	0.94	0.92	0.9	0.89	0.88	0.87	0.86
	5m	1.0	0.97	0.95	0.93	0.91	0.89	0.88	0.87	0.86	0.85
	10m	-	0.96	0.94	0.92	0.9	0.88	0.87	0.86	0.85	0.84
	15m	-	-	0.93	0.91	0.89	0.87	0.86	0.85	0.84	0.83
	20m	-	-	-	0.9	0.88	0.86	0.85	0.84	0.83	0.82
	25m	-	-	-	-	0.87	0.85	0.84	0.83	0.82	0.81
	30m	-	-	-	-	-	0.84	0.83	0.82	0.81	0.8
High Drop for Indoor Units Highering than Outdoor Units	0m	1.0	0.98	0.96	0.94	0.92	0.9	0.88	0.87	0.86	0.85
	5m	1.0	0.97	0.95	0.93	0.91	0.89	0.87	0.86	0.85	0.84
	10m	-	0.96	0.94	0.92	0.9	0.88	0.86	0.85	0.84	0.83

the relative equivalent length of elbow and oil loop

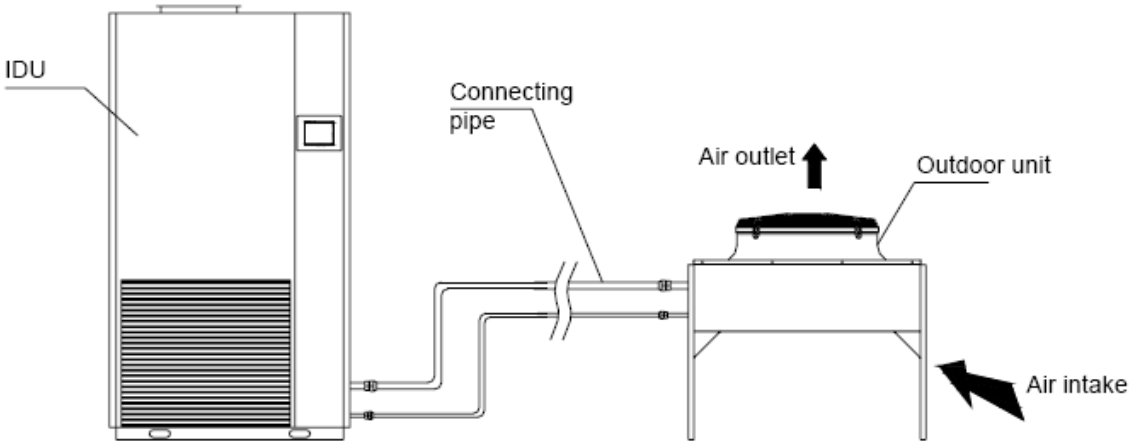
Outside Diameter of Connecting Pipe(mm)	Elbow (m)	Oil Loop (m)
Φ9.52	0.2	1.4
Φ12	0.25	1.8
Φ16	0.3	2
Φ19	0.35	2.4
Φ22	0.4	2.8

Note: The equivalent pipe length equals the length of straight pipe plus the equivalent length of elbow and oil loop.

6. Installation of the unit

6.1 Installation Diagram of the Complete Unit

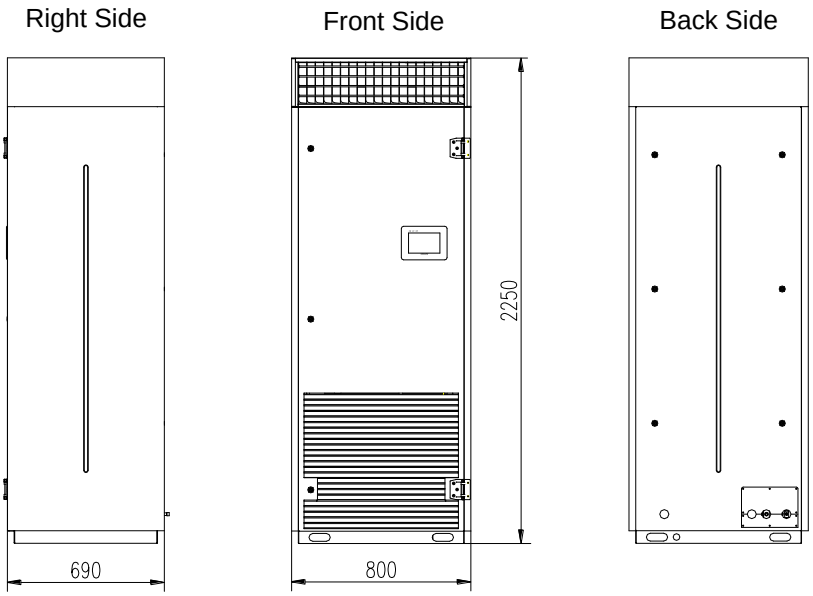
The complete unit consists of outdoor unit and indoor unit, which is shown as below:



6.2 Outline Dimension of the Unit

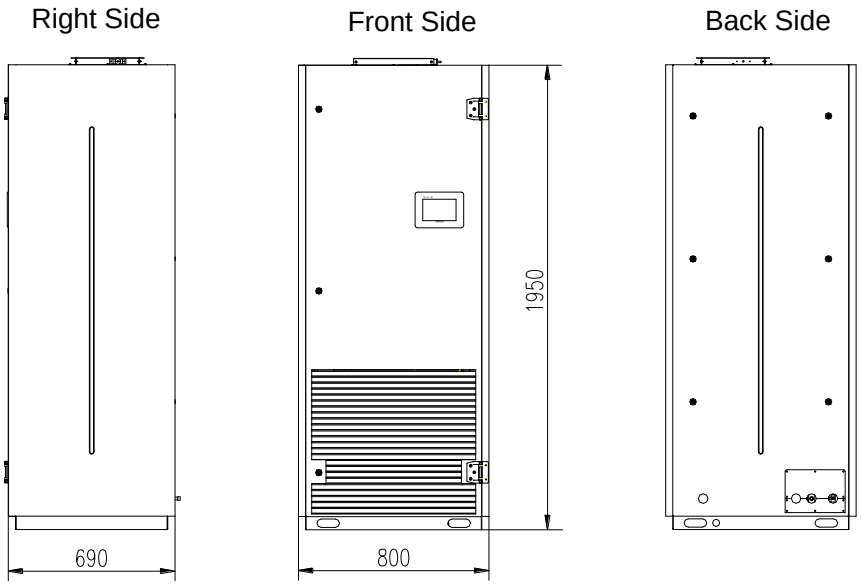
6.2.1 Indoor Unit

◆Outline Dimension of JKFD5 and JKFD7 Series (Direct Air Supply)

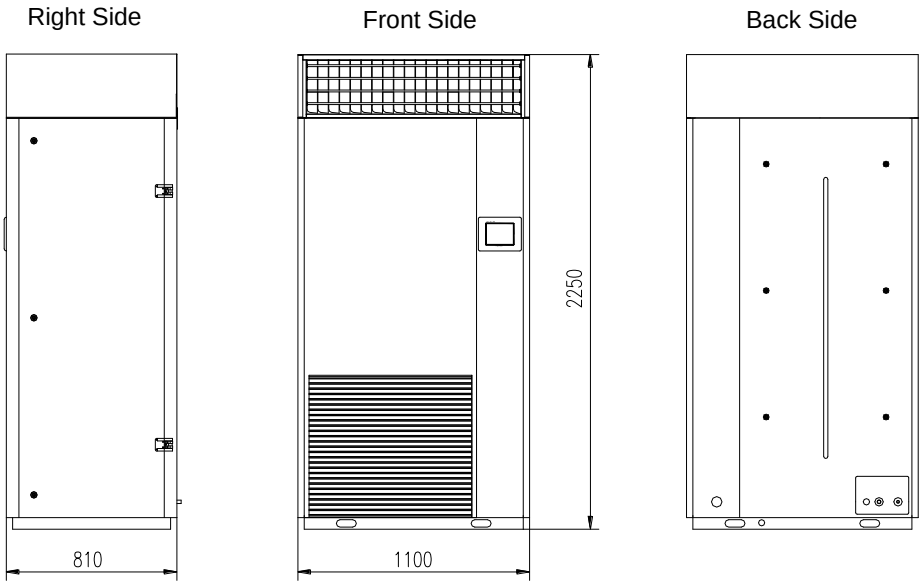


(The picture is for a reference only and the actual item is the standard. Unit: mm)

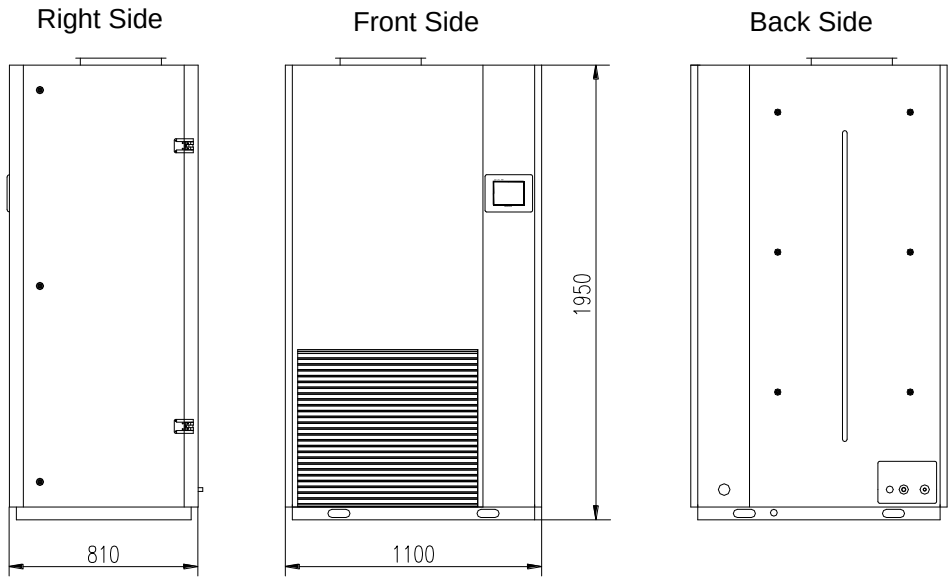
◆ Outline Dimension of Indoor units of JKFD5 and JKFD7 Series (Top Air Outlet)



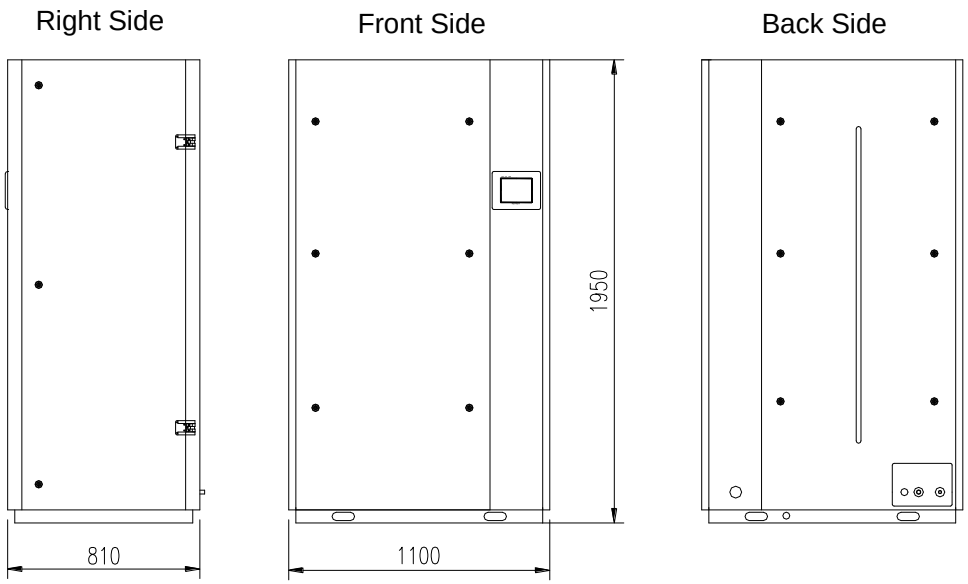
◆ Outline Dimension of Indoor Units of JKFD13 Series (Direct Air Supply)



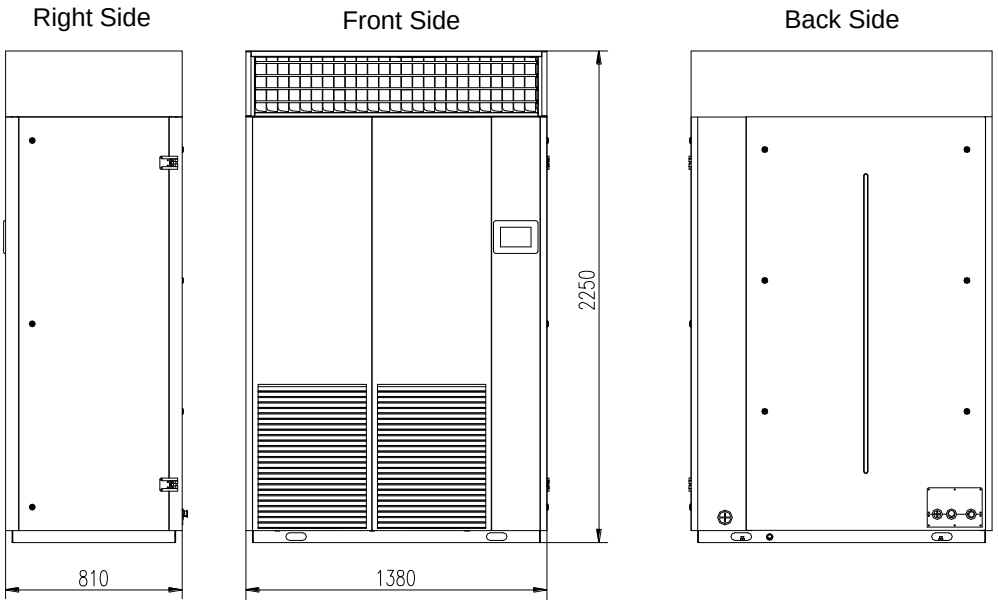
◆Outline Dimension of Indoor Units of JKFD13 Series (Top Air Outlet)



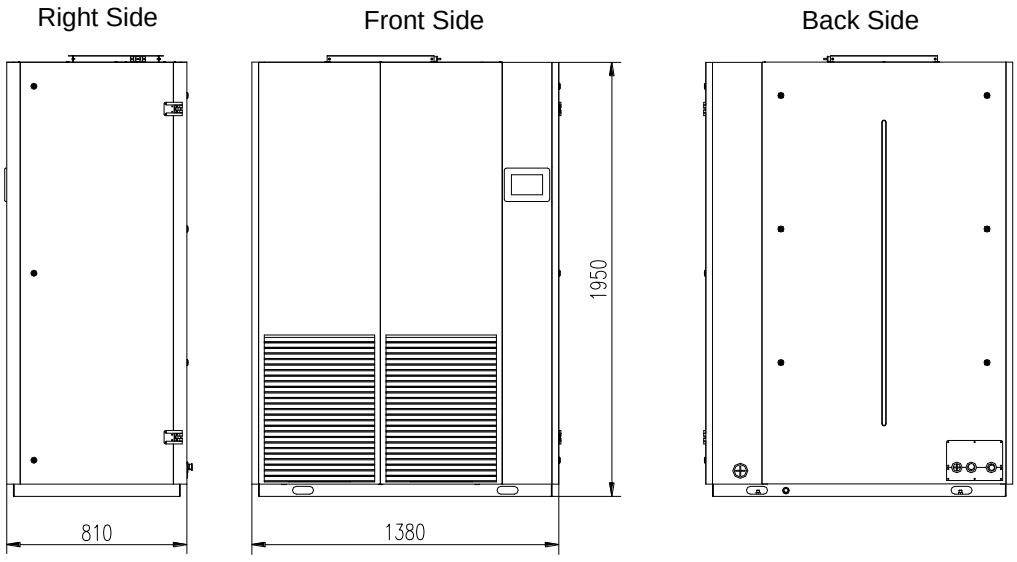
◆Outline Dimension of Indoor Units of JKFD13 Series (Bottom Air Outlet)



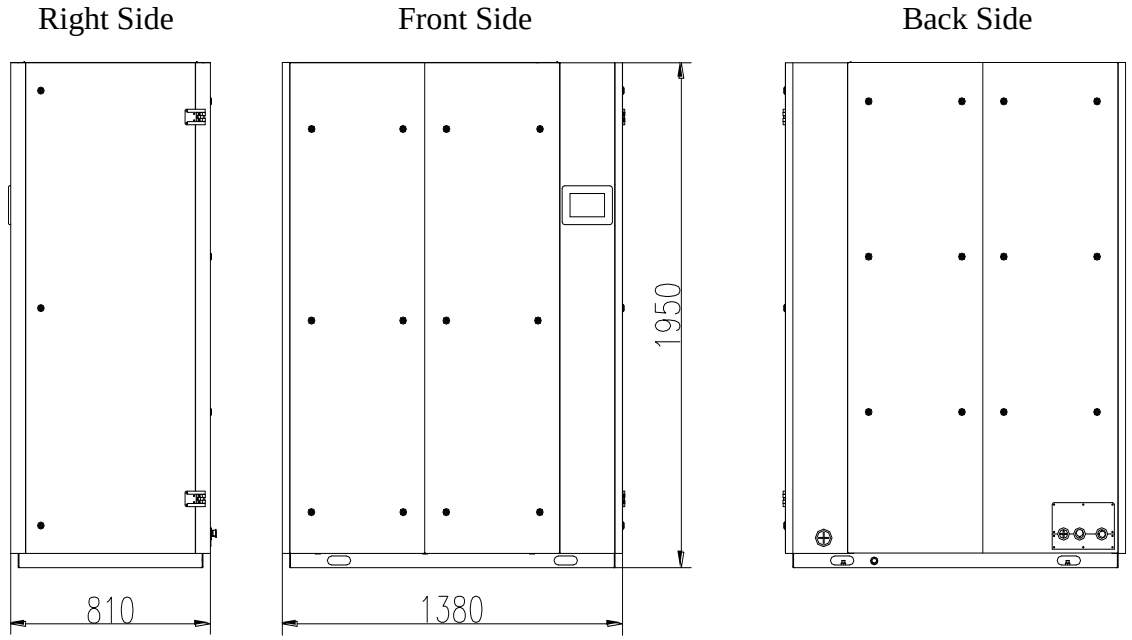
◆Outline Dimension of Indoor Units of JKFD19 Series (Direct Air Supply)



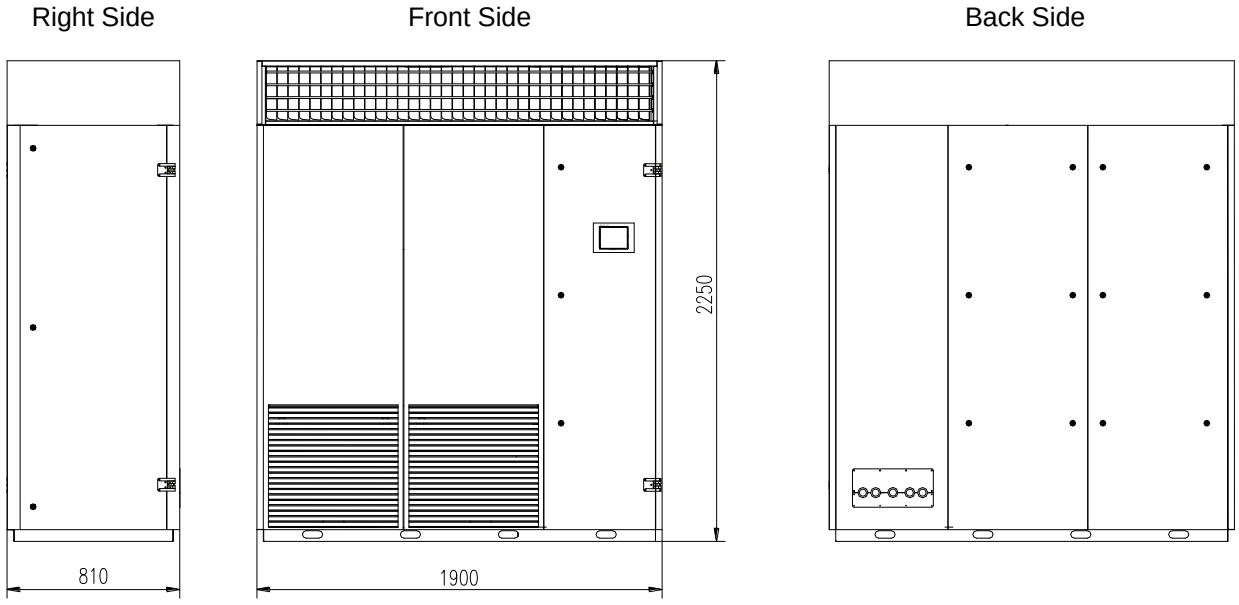
◆Outline Dimension of Indoor Units of JKFD19 Series (Top Air Outlet)



◆Outline Dimension of Indoor Units of JKFD19 Series (Bottom Air Outlet)

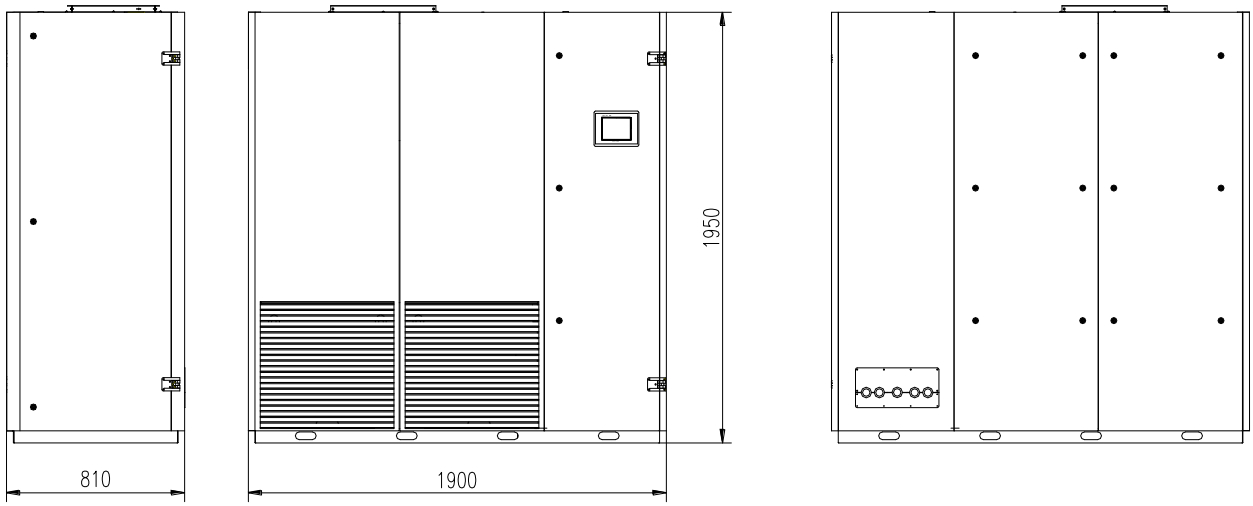


◆Outline Dimension of Indoor Units of JKFD25 Series (Direct Air Supply)



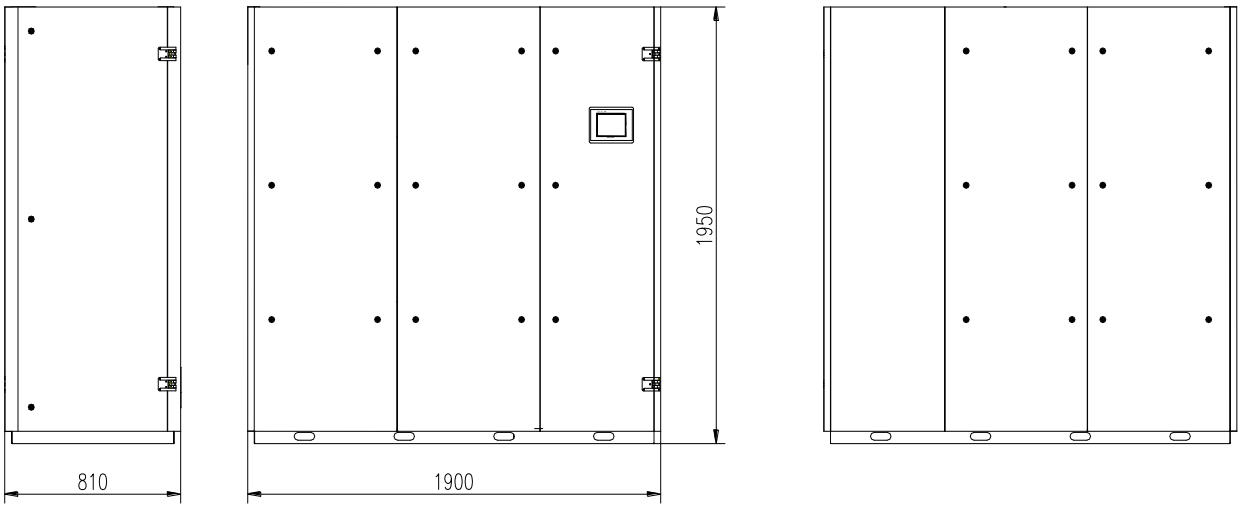
◆Outline Dimension of Indoor Units of JKFD25 Series (Top Air Outlet)

Right Side Front Side Back Side

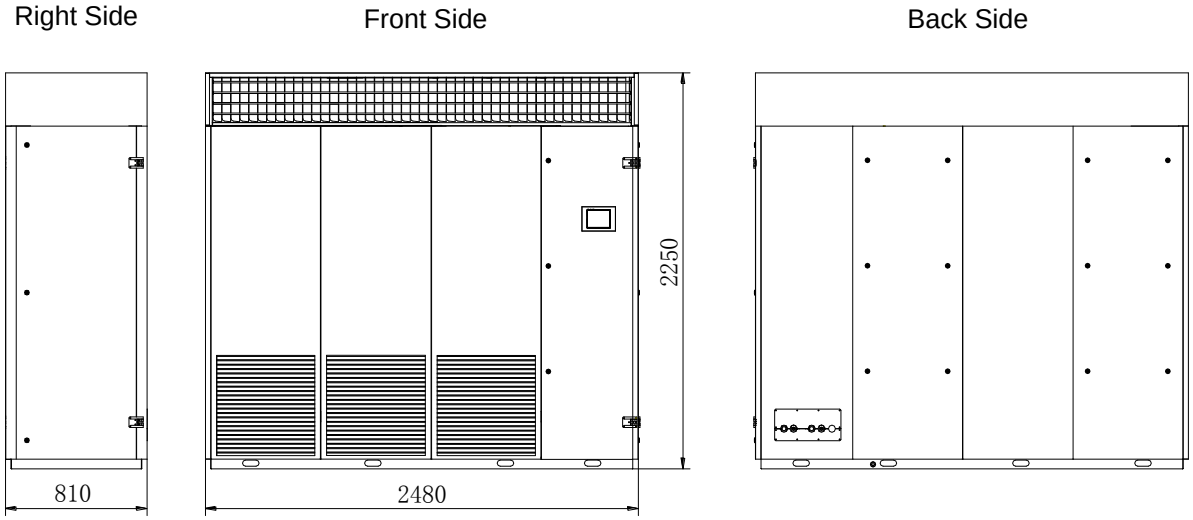


◆Outline Dimension of Indoor Units of JKFD25 Series (Bottom Air Outlet)

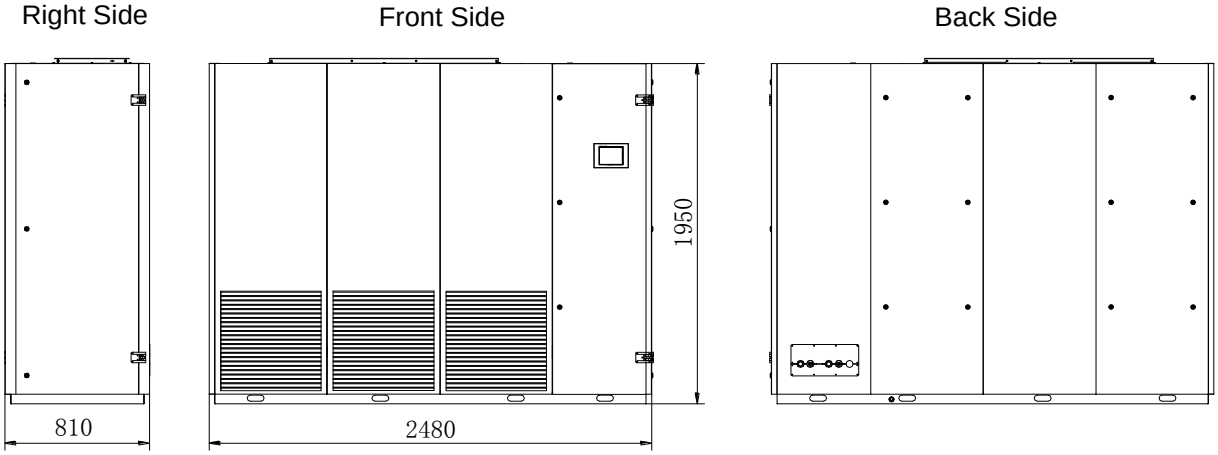
Right Side Front Side Back Side



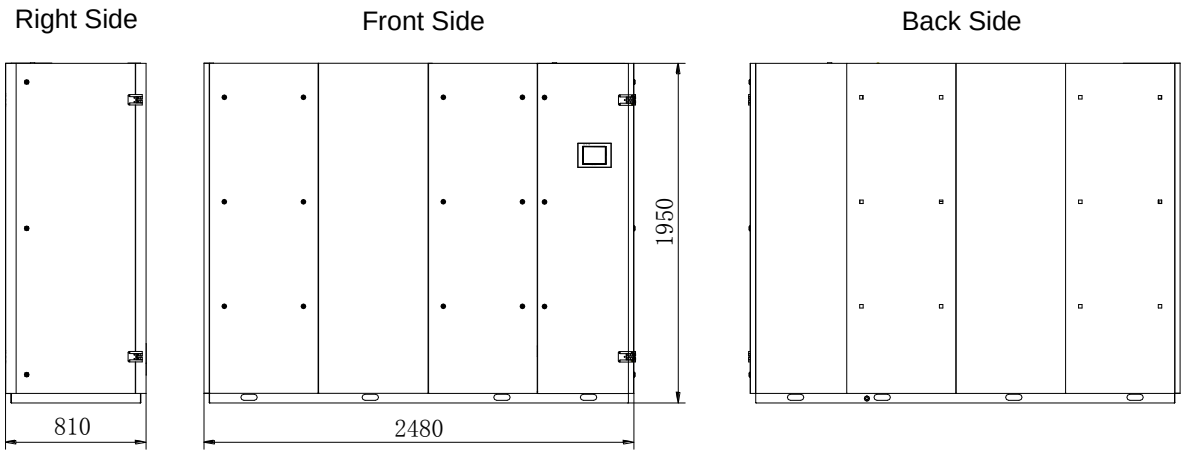
◆Outline Dimension of Indoor Units of JKFD40 Series (Direct Air Supply)



◆Outline Dimension of Indoor Units of JKFD40 Series (Top Air Outlet)

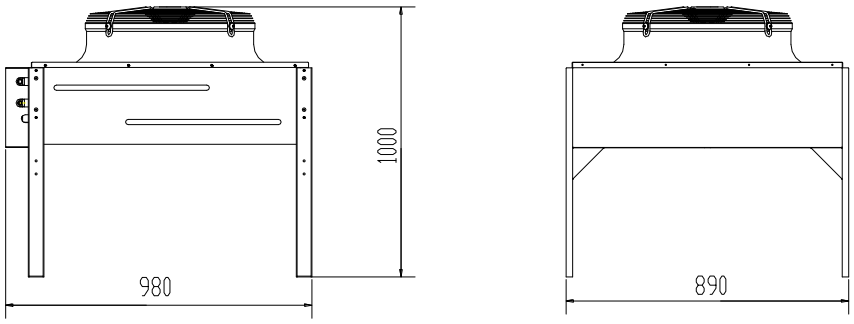


◆Outline Dimension of Indoor Units of JKFD40 Series (Bottom Air Outlet)



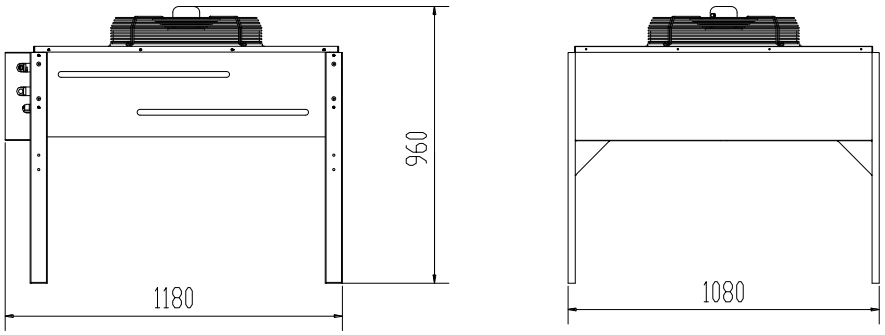
6.2.2 Outdoor Unit

◆ Outline Dimensions of JKFD5/Na-E(O)and JKFD7/Na-E(O)

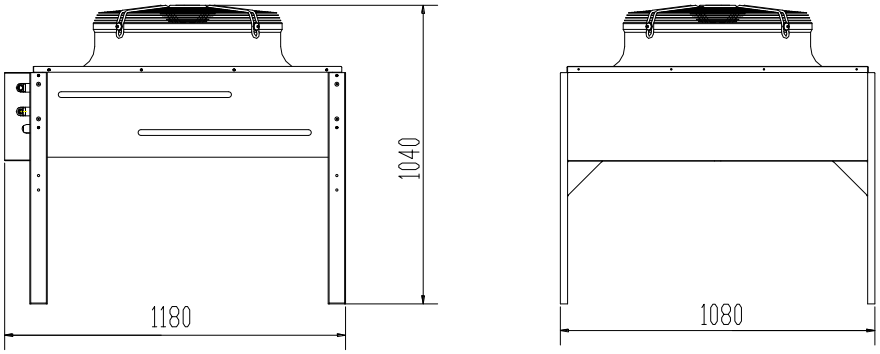


(The picture is for a reference only and the actual item is the standard. Unit: mm)

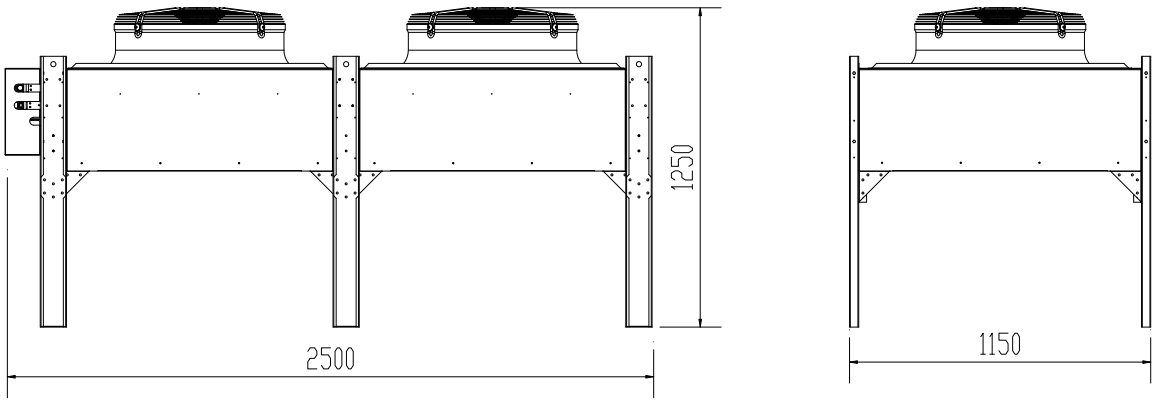
◆ JKFD13/Na-M(O)、JKFD13/NaA-M(O)



◆ JKFD19/Na-M(O)、JKFD19/NaA-M(O)



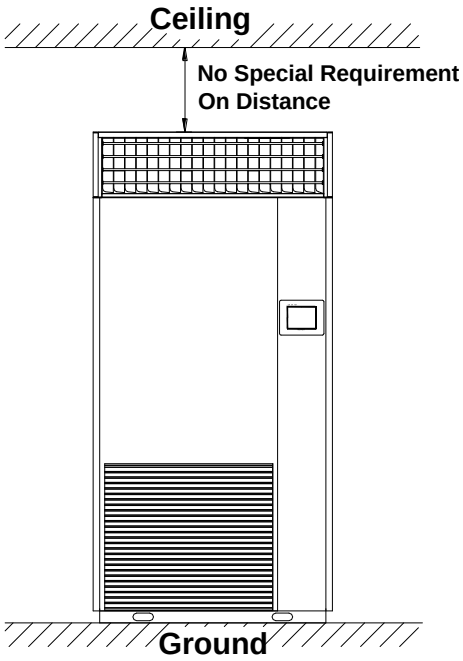
◆ JKFD40/Na-M(O)

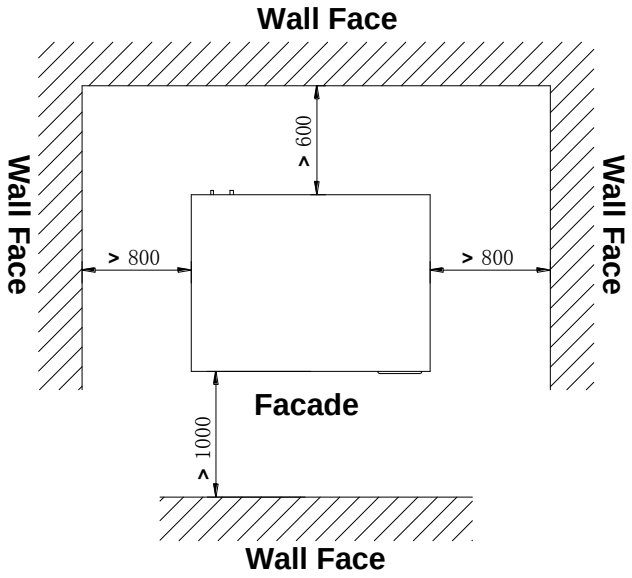


6.3 Installation Dimension and Space

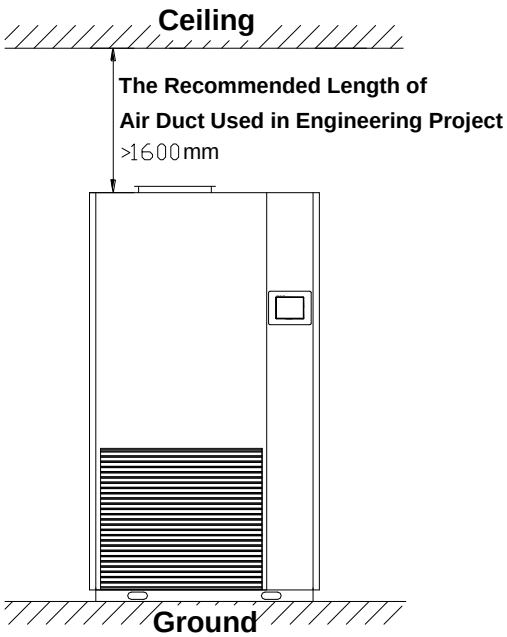
6.3.1 The Installation of Indoor Unit

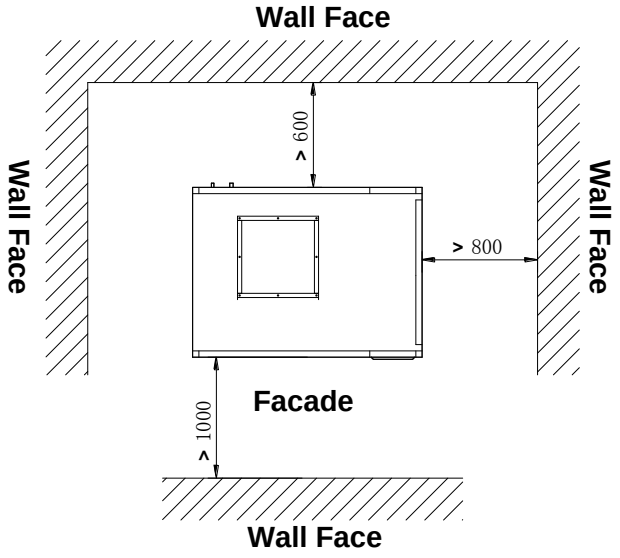
◆Direct Air Supply (with cowl)



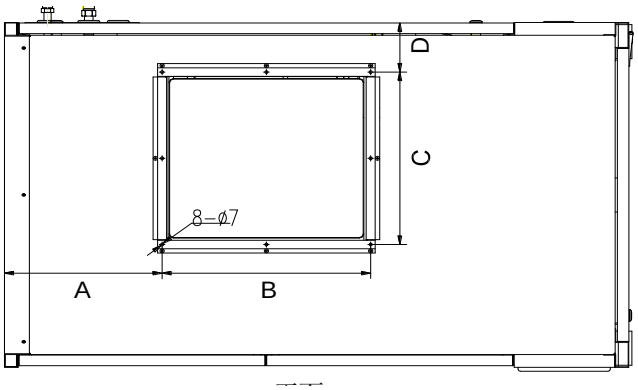


◆ Front Air Intake and Top Air Discharge （connecting with air duct）

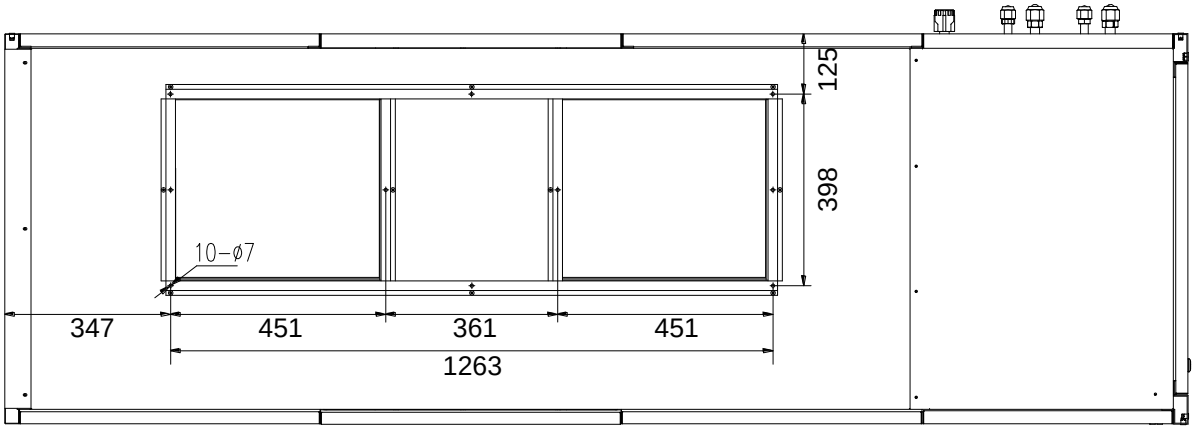




the Flange Size of Air Outlet on Top of the unit

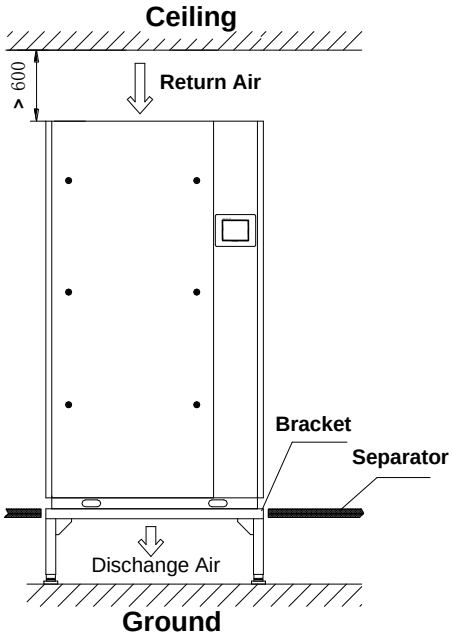


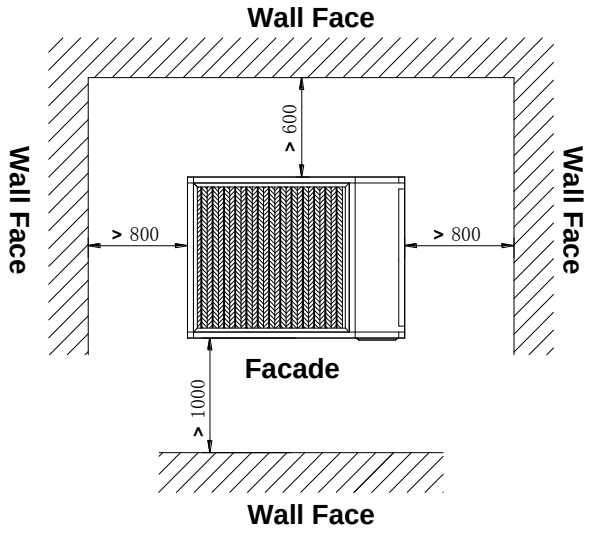
Model	A	B	C	D
JKFD5DQS/Na-E (I)、JKFD7DQS/Na-E(I)、JKFD7QS/Na-M (I)	241	317	286	286
JKFD13QS/Na-M (I)	255	368	368	147
JKFD19QS/Na-M (I)	348	461	405	115
JKFD25QS2/Na-M (I)	384	459	403	117



JKFD40QS2/Na-M(I)、JKFD40QS/Na-M(I)

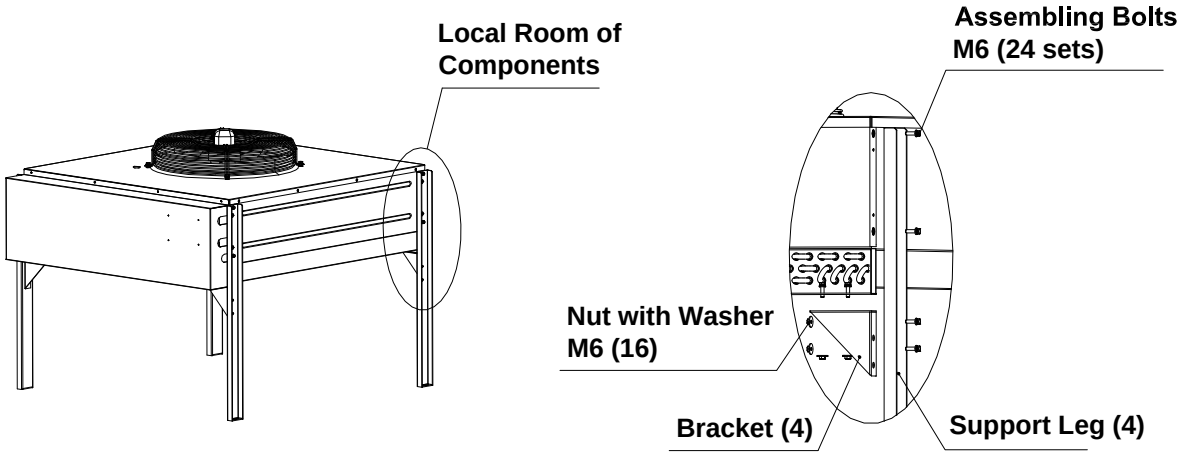
◆Top Air Intake and Bottom Air Discharge



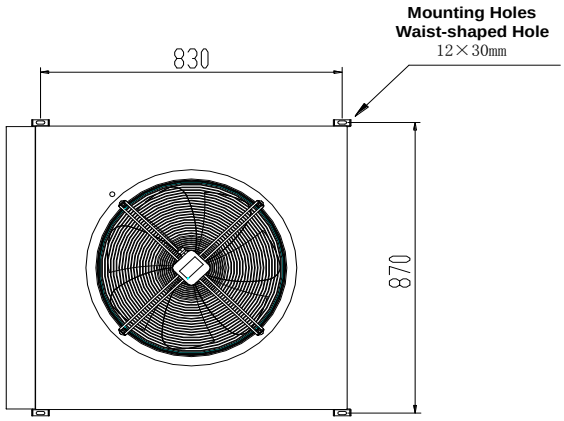


6.3.2 Installation of Outdoor Unit

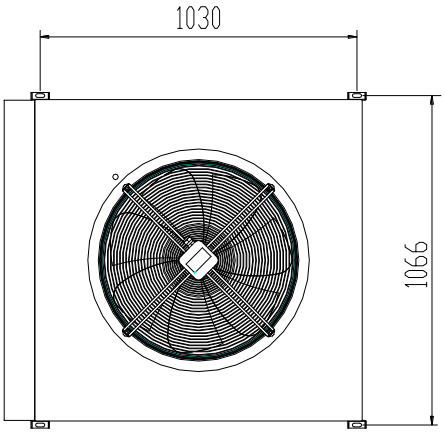
◆ Disassembly of Outdoor Unit



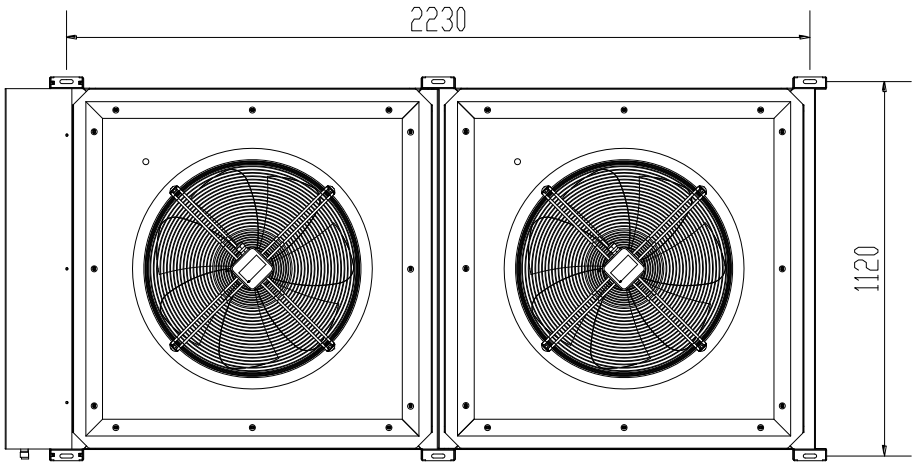
◆ Mounting Hole on Base



JKFD5/Na-E(O)、JKFD7/Na-E(O)

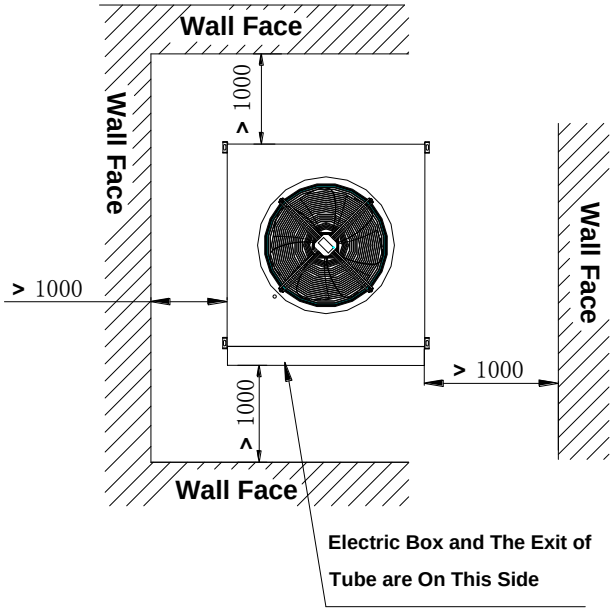


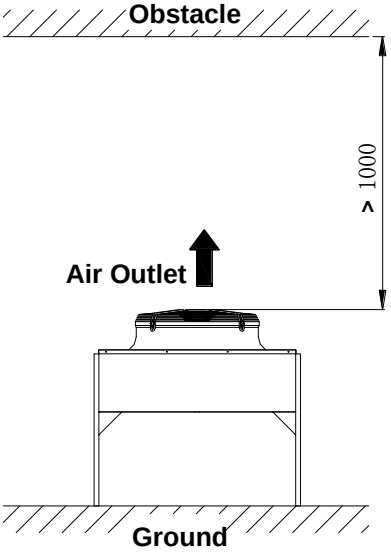
JKFD13/Na-M(O)、JKFD13/NaA-M(O)、JKFD19/Na-M(O)、JKFD19/NaA-M(O)



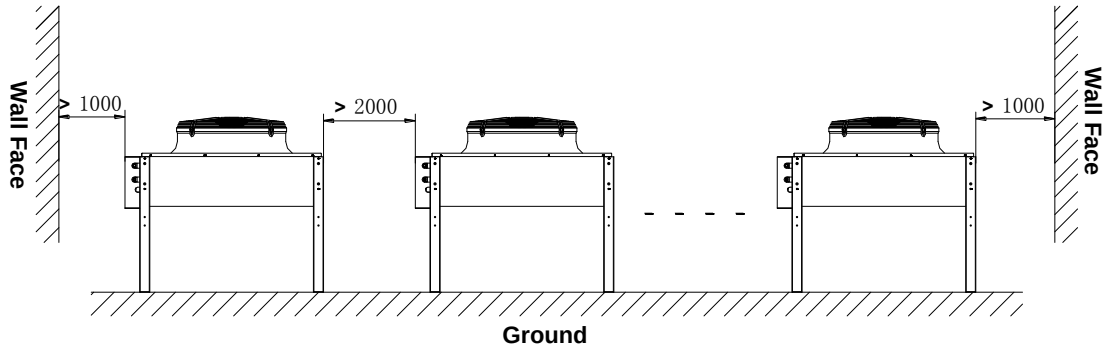
JKFD40/Na-M(O)

◆ Installation of Single Unit





◆ Parallel Installation of Multi-units



Caution!

1. Intense magnetic field, high saline and alkaline land, the sites of high acid or extreme voltage instability are not suitable for the unit.

2. Make sure that the way of moving in is correct in case any damage to the unit or any danger occurred.

3. Confirm whether the installation base is secure and when the unit is installed on the metal part of a building, electric insulation and complying with relative technology standard have to be confirmed.

4. Confirm the site of installation is far away from the flammable, explosive Substance in case any explosion or fire hazard caused by the leak of them.

6.4 Requirements of Installation

Produced in the strict quality management system of our company, tested strictly, and installed, debugged, operated as well as maintained according to this manual, the unit can work in proper state whose working life can also lengthen. In order to ensure the normal running and prevent the malfunction of the unit, the installation must be executed by experienced technicians with the knowledge of air-conditioner. And also, this part of the manual must be read carefully before installation.

For good running of the unit, the installation has to comply with the following rules

6.4.1 Requirements of Installation for Indoor Unit

(1) The refrigerants have been filled in indoor units before outgoing. Move and installation shall becautious and the inclination pitch cannot be greater than 45°, let alone invertion.

(2) Installation of the unit shall completely meet the requirements of heat exchange and space for repairing, and also shall take the convenient pipes connection between indoor and outdoor units into account.

(3) Don’t install the unit in the place with corrosive gas, intensive dust, salt mist, oily fume and the extreme wet site.

(4) Don’t install the unit in places that store the flammable, explosive Substance or leak the flammable, explosive gas.

(5) The location of the unit has a great of influence on the ambient temp. and humidity of the machinery room. On the permission of the project, it shall be close to the spot of the maximum loading as much as possible and shall make sure that the return air can be unobstructed and the supply air can be even distributed.

(6) The unit shall be installed on the flat concrete foundation with the steel flatbase on which the rubber sheet of 15mm thickness is paved.

(7) Make sure that the ground is horizontal and the inclination pitch cannot be greater than 1°.

(8) Make sure that the drainage of condenser water and humidifier are smooth. Due to the possibility of high temperature (maximum temp. could be 100℃) of humidifier's drain water, shall pay attention to the security of the drainage.

(9) When the unit is installed on the bracket whose height is adjustable (the type of lower supply air outlet), the unit and the bracket shall be fixed by bolts and the joint face shall be paved with the rubber shock absorption mat.

6.4.2 Requirements of Installation for Outdoor Unit

(1) The refrigerants have been filled in outdoor unit before outging. The move and installation shall be cautious.

(2) Installation of the unit shall completely meet the requirements of heat exchange and space for repairing, and also shall take the convenience of pipes connection between indoor and outdoor units into account.

(3) The outdoor unit shall be installed and securely fixed in the stable and firm supporting surface outside the building

(4) The outdoor unit and the indoor unit should be close to each other as much as possible in order to reduce the length of cooling pipes and the quantity of elbows.

(5) Don't install the outdoor unit under the window or between close buildings in order to prevent the normal running noise from interior.

(6) Choose the airy place to install the unit and the distribution of air outlet and air inlet can be unobstructed so that the unit can inhale and exhale enough non cyclical air.

(7) Don't install the unit in the place with flammable and explosive Substance, as well as polluted air, including intensive dust, salt mist, etc.

(8) Make sure that the ground is horizontal and the inclination pitch cannot be greater than 1°.

6.4.3 Requirements of Connection between Indoor units and Outdoor Units

(1) The standard length of pipes connected outdoor units and indoor units is 10m. When the length of the pipe is less than or equal to 10m, there is no need for extra refrigerants. However, if it is over than 10m (Subject to the liquid pipe), the refrigerants and lubricant should be added. The specific charge is as follows:

Item / Model	Charge volume(kg) of refrigerants for every 1 m longer of connecting pipe	Charge volume (kg)of lubricants for every 10 m longer of connecting pipe	Notes
JKFD5DXXX	0.054	0.1	Use R410A refrigerant and POE lubricant
JKFD7DXXX JKFD7XXX			
JKFD13XXX	0.11	0.2	
JKFD19XXX	0.17	0.2	
JKFD25XXX	0.11×2	0.2×2	
JKFD40XXX	0.17×2	0.2×2	
JKFD40XXX (single circuit）	0.25	0.45	

（2）When the location of the outdoor unit is higher than that of the indoor unit, the altitude intercept shall less than 30m while the location of the outdoor unit is lower than that of the indoor unit, the altitude intercept shall less than 10m (try best to avoid such situation which easily affects the cooling capacity of the unit). Total length of pipes cannot exceed 30m. When the length of vertical gas pipes between indoor units and outdoor units is greater than 10m, set a oil loop every 10m whose bending radius should be small as much as possible but cannot less than 1.5 times of diameter of the pipe. If the installation length exceeds the above requirements, please consult the manufacturer. Long connecting pipe accessory are needed.

（3）The connecting pipe is copper pipe and its specification is Subject to the performance form. Before connection, the copper pipe must be cleaned and dried.

（4）After welding of connecting pipes, then the stain removal (blowing down welding slag and impurities), it can be welded with the indoor unit and outdoor unit.

（5）After connection of the pipe, it shall be filled with nitrogen to detect the leakage or resort to vacuum pump and pressurization to detect leakage.

（6）When the pipe connection of outdoor units and indoor units has been finished, the pipe should be in the process of thermal insulation.

6.4.4 Installation of Humidifier

(1) Water supply pressure should be within 0.1MPa～1MPa. If the pressure exceeds 1MPa, the decompressor is required while it’s less than 0.1MPa, water pump shall be pressurized.

(2) Tap water can be the resource of humidifying.

(3) Though Y-strainers have been with humidifiers, water treatment equipment should be applied to purify the water with very poor quality (contained too much sand and impurities).

(4) Do not use the soft water due to its bad electric conductivity.

(5) Do not use the completely de-mineralized water (like purified water). Because the working principle of humidifier is according to the ionization theory but the de-mineralized water

has bad electric conductivity.

(6) Do not use hot water, which will produce encrustation and cause blockage to nozzle of the water inlet valve.

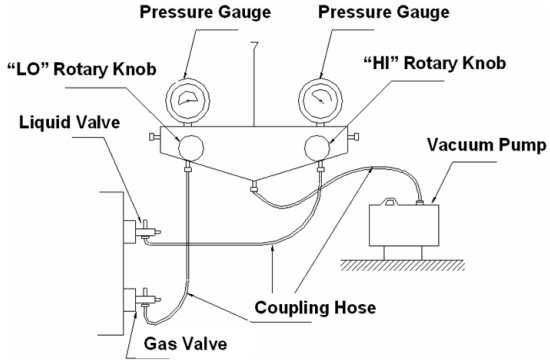
(7) For the normal running and lengthening life span of humidifier, the water with high electric conductivity (above 700MΩ) has to be preprocessed.

6.4.5 Vacuumization and Refrigerant Filling

(1) Refrigerants have been charged in the outdoor and indoor units before outgoing. Whether extended pipes for installation should be charged with refrigerants and how much refrigerants are needed, which are decided by the length of refrigerant pipes.

(2) Make sure that the liquid valve and air valve are shut down.

(3) Pump the air inside of connecting pipes from the air valve and the liquid valve of indoor units, which is as shown in the following figure.



(4) Make sure that there is no leakage. When the compressor has stopped, the required amount of R22 refrigerants should be added into the valves of the indoor. If refrigerants cannot be added into required amount quickly due to the increased pressure in the pipe, keep the unit ON, and charge refrigerants into the fluorine-feeding nozzle in the inhalation tube of the indoor unit.

6.4.6 Installation of Drain Pipe

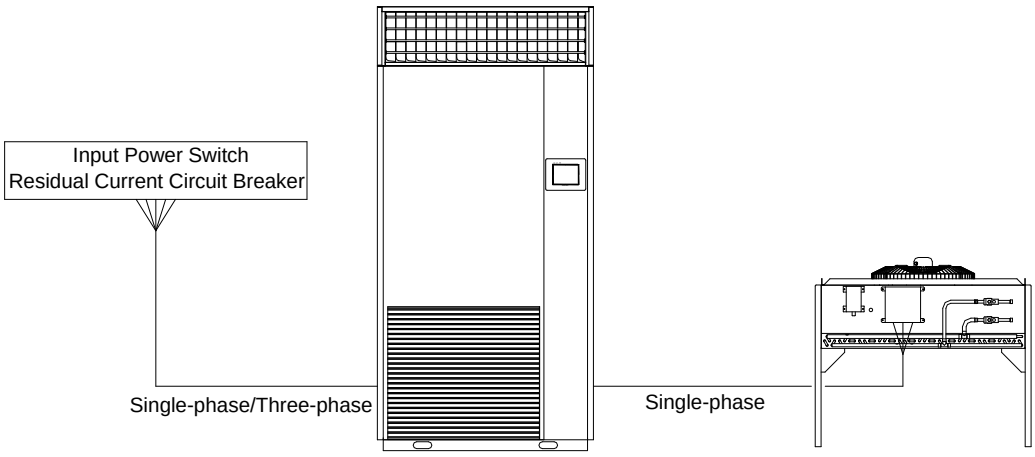
In order to drain easily, the outlet of drain pipes should be lower than the base surface of the unit at least 200mm.

The water drained out from the humidifier is non-poisonous and non-corrosive, which can be drained out directly. In order to prevent leakage of electricity, the beginning connection of drain pipe should be rubber or other non-conducting plastic pipes provided by our company. Only preparing metal pipes or plastic tubes for hot water would be enough for installation.

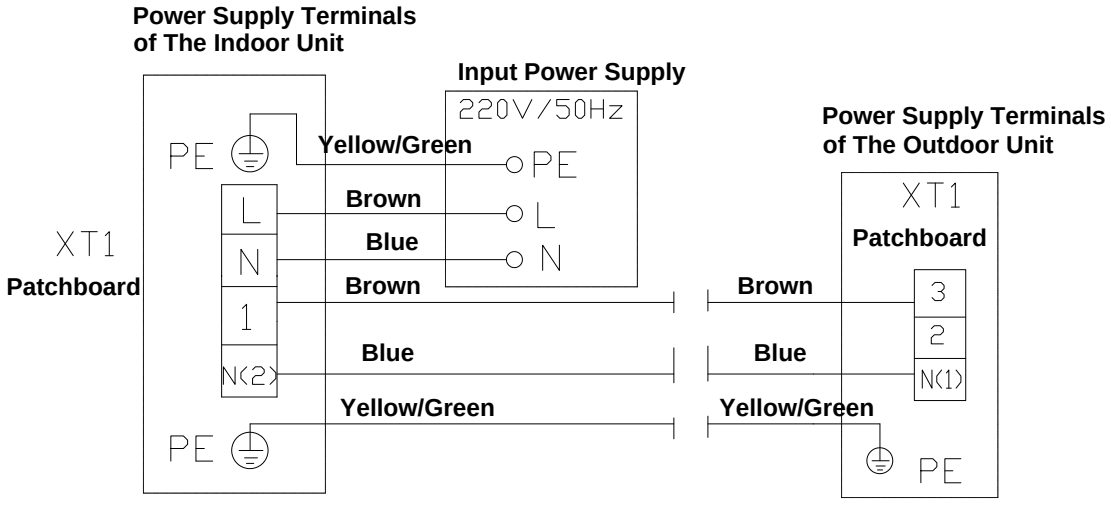
7. Electric installation

7.1 Electrical Installation

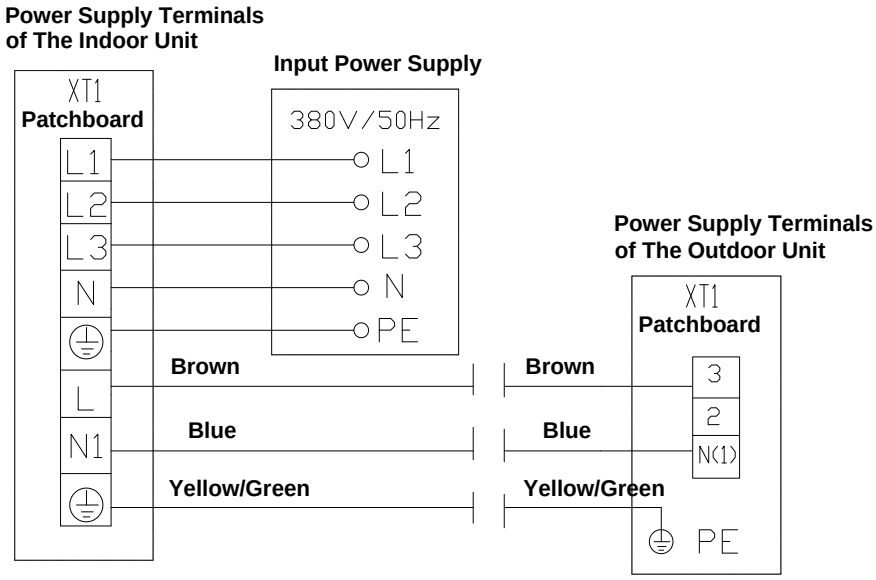
7.1.1 General Connection Diagram



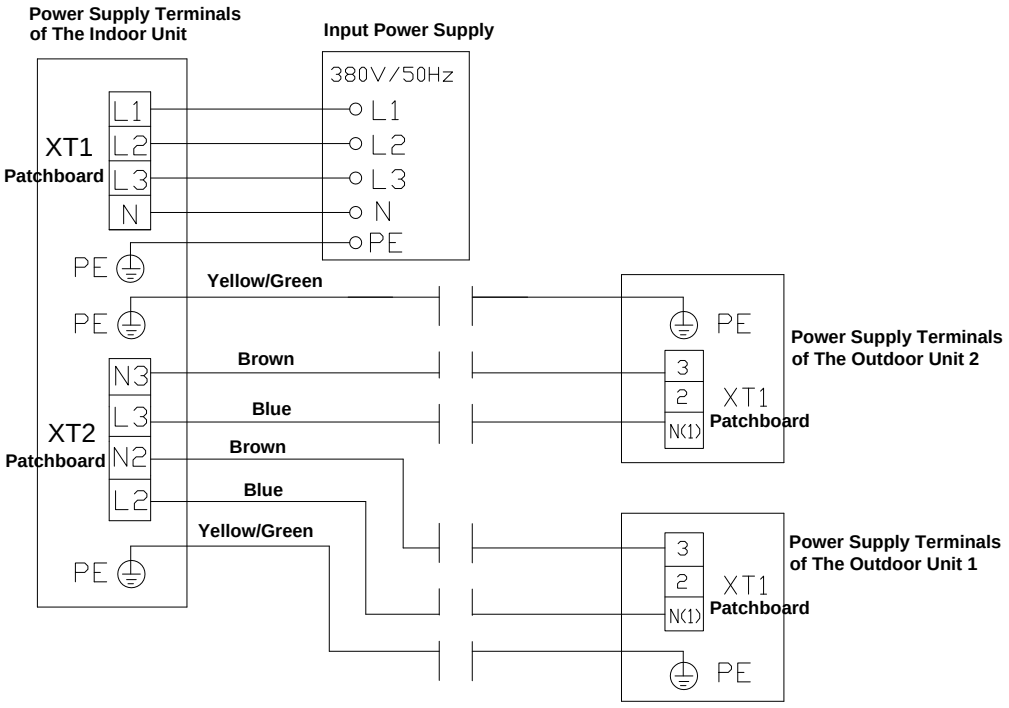
7.1.2 External Wiring Diagram



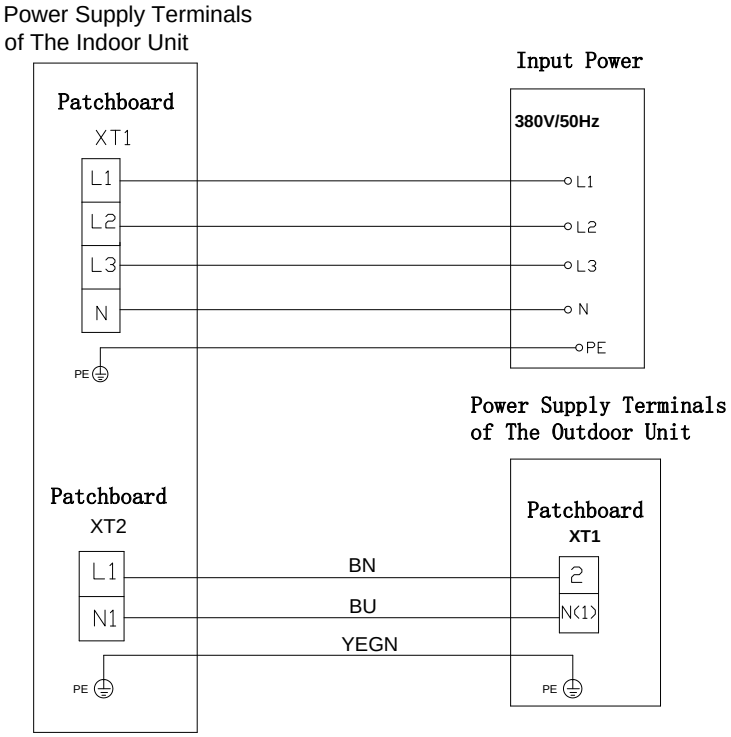
JKFD5DXXX、JKFD7DXXX



JKFD7XXX JKFD13XXX JKFD19XXX

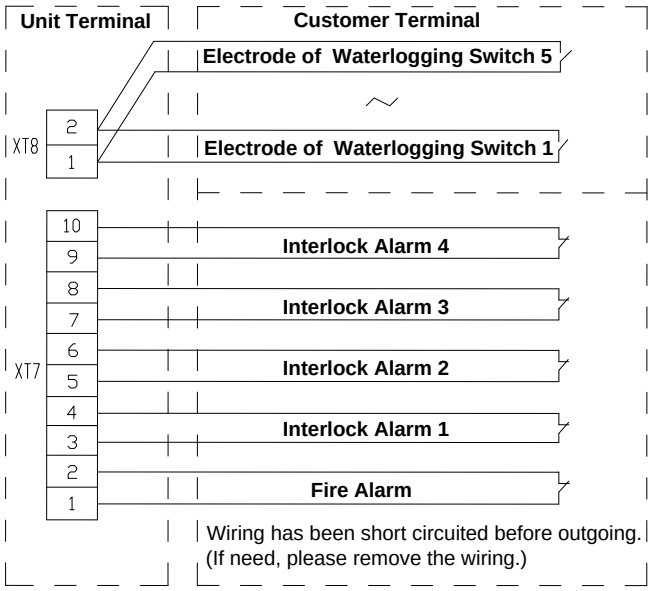


JKFD25XXX、JKFD40XXX(Dual circuit)



JKFD40QS/Na-M (380V 3N～ 50Hz)

All Kinds of Warning Wiring Diagram



Caution: All electric installations have to be conducted by professional personnel in accordance with the local law, regulations and this manual.

7.1.3 Wiring Requirements

◆ Layout of Electric Wires

（1）The layout should comply with relating regulations published and executed by government.

（2）Rated Voltage and dedicated power supply of the unit are required to apply.

（3）Power cord shall be fixed to avoid the stress on supply terminals.Do not drag or pull the cable with force.

（4）Line width shall comply with requirements of this manual (referring to the performance form). Dedicated cables must replace the damaged power cord and connecting wire in time.

（5）All the electrical installation should be carried out by professional personnel and comply with local relating regulation, also the installation should follow the instructions in this manual.

（6）The unit must be earthed properly.

（7）A mater air switch and leakage switch for the whole system have to be installed. The air switch should have the function of stopping the system from short circuit and overload.

（8）Refer to the wiring diagram which pasted on the unit as guidance for wiring.

◆Requirements of Connecting Electric Appliances

（1）All operations for wiring must strictly comply with the wiring diagram of the unit.

（2）Power supply of the unit must be equipped with air switch for general supply by customers and conductor cross-section is selected according to requirements of electric wiring diagram of the unit.

（3）Range of Power supply voltage of the unit with three-phase source is 360～400V and asymmetric degree of three-phase system cannot exceed 3%.

（4）The unit applied three phase source has equipped with reverse phase protection device. If phases are reversely connected, it cannot work.

（5）The outdoor unit adopt single phase source and its wiring shall also comply with wiring diagram.

Caution: the unit requires the reliable protective earthing. (There is earthing symbol in the electric cabinet of the unit ）

◆Earthing Requirements

(1) Since air conditioner is type I appliance, please do conduct reliable earth treatment. The yellow-green wire inside unit is earth wire, which can not be used for other purpose and further not be cut off. Don’t fix it with tapping screw to avoid electric shock.

（2）Earthing resistance should match requirements of National Standard GB17790 which is published by China government.

(3) Users’ power must offer reliable earth terminal. Please don’t connect earth wire to

following places:

① Water pipe; ② Gas pipe; ③ Blowing pipe;

④Other places that professional personnel consider unreliable.

7.2 Matching Form of Power Cord and Air Switch

Model	Power Supply	Air Switch Capacity（A）	Minimum Sectional Area（mm^2）	
			Earthed Cable	Power Cord
JKFD5DXXX(I)	220V ～ 50Hz	40	10	10
JKFD5/Na-E(O)	220V ～ 50Hz	-	1	1
JKFD7DXXX(I)	220V ～ 50Hz	63	16	16
JKFD7XXX(I)	380V 3N～ 50Hz	32	4	4
JKFD7/Na-E (O)	220V ～ 50Hz	-	1	1
JKFD13XXX(I)	380V 3N～ 50Hz	32	6	6
JKFD13/Na-M(O)	220V ～ 50Hz	-	1.5	1.5
JKFD19XXX(I)	380V 3N～ 50Hz	40	10	10
JKFD19/Na-M (O)	220V ～ 50Hz	-	1.5	1.5
JKFD25XXX(I)	380V 3N～ 50Hz	63	16	16
JKFD13//NaA-M (O)	220V ～ 50Hz	-	1.5	1.5
JKFD40XXX(I)	380V 3N～ 50Hz	100	25	25
JKFD19//NaA-M (O)	220V ～ 50Hz	-	1.5	1.5
JKFD40/Na-M(O)	380V 3N～ 50Hz	-	2.5	2.5

Note:

(1) Power cord of the unit must the cable with copper conductor and its working temperature cannot exceed the designated value.

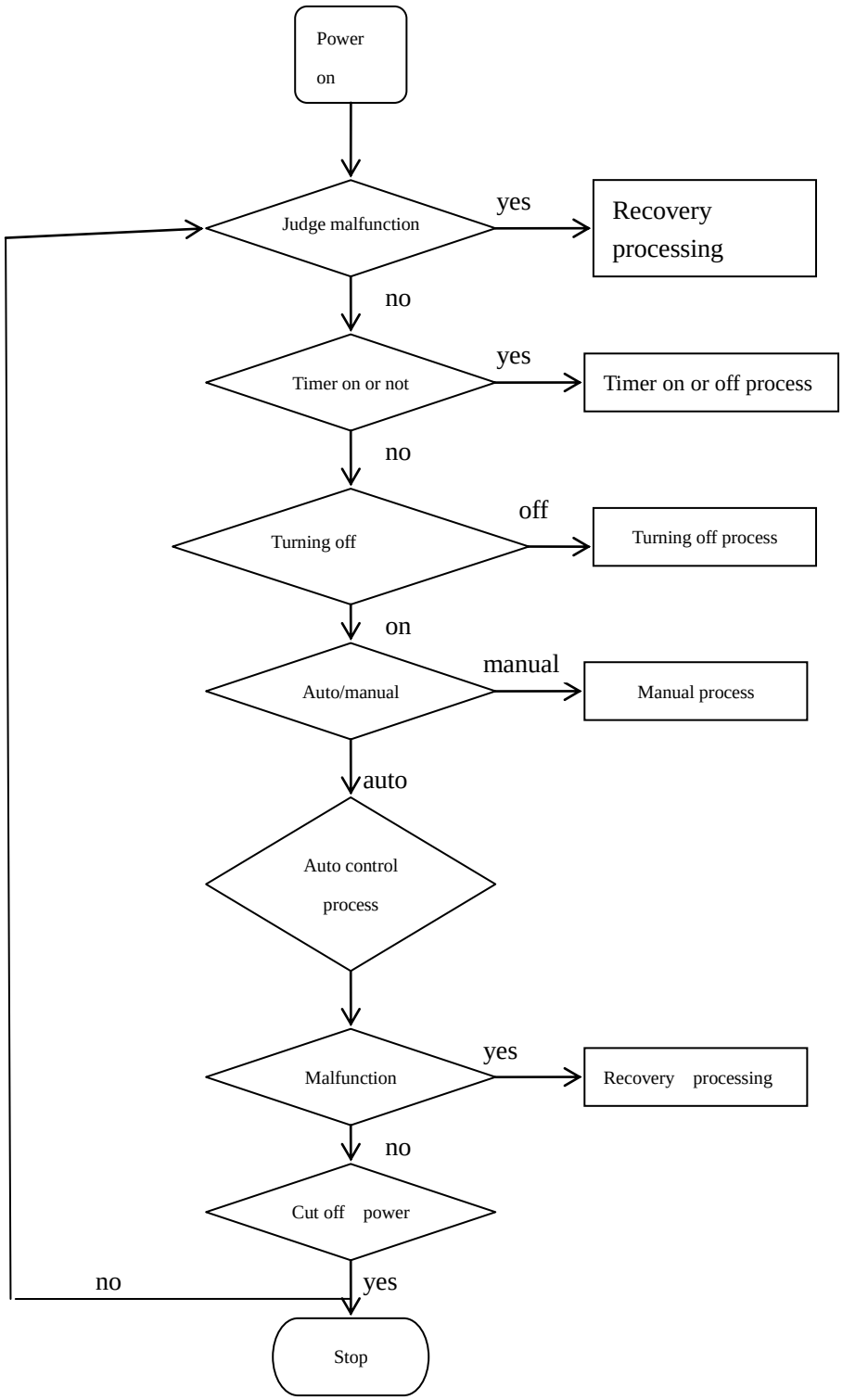
(2) If the power cord is longer than 15m, the cross sectional area shall be expanded accordingly in case any accident caused by overloading.

Ⅱ Control

1 Control of the Unit

1.1 General Control

When the unit is energized, the system starts to detect each part. If there is malfunction, malfunction code will be displayed and relevant procedure will be entered. If there is not malfunciton, the unit will operate according to command from display panel. When the unit is started up, the unit will judge if there is auto operation command or manual debugging command from the display panel. If there is manual debugging command, the unit will operate at manul debugging mode. If there is malfunction during operation, the relevant procedure will be entered. If there is turning off command, the unit will enter turning off procedure.



1.2 Introduction to Key Control Logic of the Unit

（1）Control of Indoor Fan

When pressing ON button or timer on is reached, the fan will operate in set time. When the unit is turned off or timer off is reached, indoor fan will be turned off in 3 minutes. Indoor fan shall operate earlier than other loads. If the indoor fan has malfunction, the complete unit will stop.

（2）Control of Compressor

When the unit operates, if ambient temperature is higher than set temperature or ambient humidity is higher than set value, the startup of the compressor will delay. If ambient temperature is lower than set value of the system, the compressor will stop operation. Startup and stop of the compressor shall conform to min operation time and min stop time. Control system will compare the accumulated operation time of two compressors. The compressor with less accumulated operation time will start first and the one with longer time will stop first.

（3）Control of Auxiliary Electric Heater

When the unit operates, if ambient temperature is lower than set valve or fluctuation of temperature or humidity reaches the specified conditions for startup, electric heater will operate. When ambient temperature is higher than set value or fluctuation of temperature or humidity reaches the specified conditions for stop, electric heater will stop operation. Control system will compare the accumulated operation time of two electric heaters. The heater with less accumulated operation time will start first and the one with longer time will stop first.

（4）Control of Humidifier

When the unit operates, if ambient temperature is within the control range, and the humidity is lower than set value of the control of the system, the humidifier will be started. When ambient humidity is higher than set value, humidifier will be turned off. Control system will compare running current of humidifying and set current. When current of humidifying is lower than set value, feed valve will be turned on. When current of humidifying is higher than set value, feed valve will be turned off. Based on calculation of the continous operation time and stop time of humidifier, control system will clean or discharge the humidifier.

2. Controller

This touch screen adopts high-performance processor and window-operation system. The running state of the system is described by text, diagram or curve. All kinds of running parameters can be flexibly set by the unit to optimum state and make the man-machine conversion come true.

2.1 Welcome Page of Touch Screen

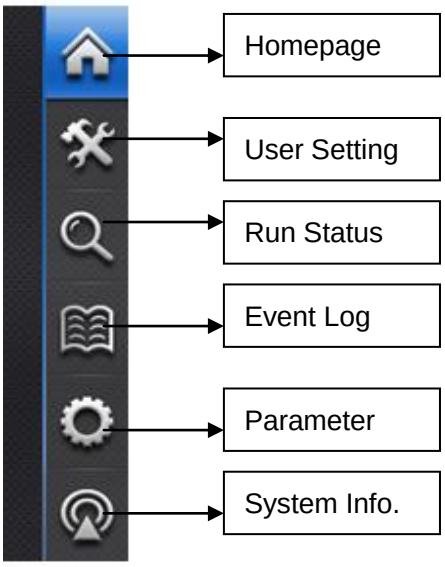
When the touch screen is started, it will display a welcome page. After that, it will switch to the homepage. Below is the welcome page:

2.2 Homepage

In any circumstances, the screen will switch to the homepage as below once “Home” button is touched on the screen.

“Home” is working as the main control interface, which displays the current ambient temp. and humidity, ON/OFF, malfunctions, long distance monitoring，quick testing，faults，and shield touch screen etc.

There is a Function Menu on the right of the screen, which is displayed all the time. It consists of a group of touch buttons to realize the quick access to and control on the air conditioning system.



Function of each button is as follows:

"**Home**"： It is touched to enter the Homepage

"**User Setting**": It can be touched to enter the interface for the setting of system temperature and humidity, status of each module, clock and timer.

"**Run Status**": It is touched to enter the interface of running status which displays the running parameter of each module, status of each operating organization as well as temperature and humidity curve.

"**Event Log**"：It is touched to enter the interface of event log which provides the information of current error, current event and historical events。

"**Parameter**": It is touched to enter the interface of parameter setting which requires codes to enter its 4 sub-function interfaces, including system parameter setting, sub module setting, service time and manual debugging.

"**System Info.**": It is touched to enter the interface of system info., including system info. inquiry、maintenance notice and password reset。

Button-shaped area is touchable control area (text on the screen are the definition of functions), which can be touched by finger to execute specified command. The function of each touch button and the meaning of hint information are as follow:

"**Return air Temp. & Humidity**": That is Average temperature and humidity detected by running modules which keep normal connecting with the main module. (If the entire modules are running, the average temperature is that of all running module units; if not, the average temperature is that of all independent running module units.)

On initial energization, temperature and humidity of each module disconnected communication links are display as 0.

"**ON/OFF**": As it is touched, the system will issue a command to change the ON/OFF state. The hint information on the button will accordingly change to the current controlled running state of entire module. If the "ON/OFF" button shows that the current state is OFF and it is touched afterwards, the hint information on the button will change to "ON" meanwhile the start-up command will be issued by the system which is valid to the entire unit combined with modules. If needed to start each module unit, ON/OFF should be set in "User Setting→module setting".

"**Remote Monitoring**": When main module, communication module and monitoring computer are connected with each other correctly and software for remote monitoring is executed, "Remote Monitoring" will emerge. When the software is closed or the communication paused, the "Remote Monitoring" will disappear.

"**Error**": It means there is malfunction. Related error information can be consulted on "Event Log"→ "Current Error"

"**Shield Touch Screen**": It means the touch screen has been shielded and all parameters cannot be set up unless by the "shielding/cancel shielding" operation of remote monitoring.

"**Quick Test**"**:** It means the touch screen enters into a quick testing status. This is only used for tests in the factory.

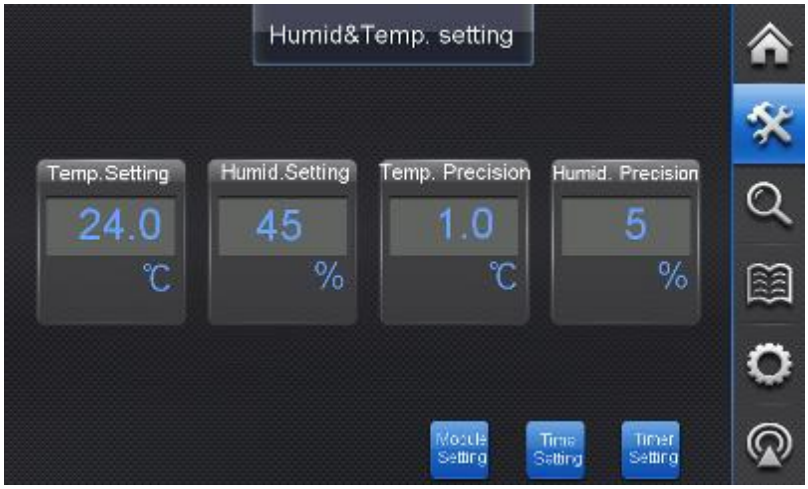
The above-mentioned "Remote Monitoring", "Error", "Shield Touch Screen" and "Quick Test" are not command buttons, but indications of events that occur to the touch screen.

Note: Touch screen takes 1 minute to save the set data, which means the set data or change of command will be saved to FLASH inside the touch screen after 1 minute. If power is off right after the setting, then the set data won't be saved because there is not enough time for saving, in which case, touch screen will still operate and display according to the previous parameters when it is re-energized.

2.3 User Setting Interface

（1）Humid&Temp. Setting Interface

This interface provides the customer with the setting for the unit temp., the unit humidity and their precision. The setting parameters are effective to the entire unit with combined modules.



"**Module Mode Setting**"、"Time Setting"、"Timer Setting."：Slightly press these buttons to enter the corresponding setting page.

"**Numeric Value Input**": The numeric value with box represents what can be revised. By touching the number in the box, the keyboard interface is popped up and the number in the touched box displays the blinking cursor which means the number in the input state.

Touch the number in the keyboard. Input the revised number, and finally touch the "ENT" button in the keyboard to confirm the input. The keyboard will disappear subsequently, which means the finishing of the input.

Introduction to the buttons on keyboard:

"**Number Key**": Number 0~9.

".": Decimal point, which for its input.

"**ES**": By touching to cancel the input and the keyboard will disappear.

"**CR**": By touching to erase the number inputted previously to input afresh.

"**ENT**": By touching to confirm the input and the keyboard will disappear which means finishing of the input.

There are "max" value and "min" value on the top of the keyboard that are corresponding to the input range in the numeric box. If the numeric value exceeded the range is inputted, this input is invalid.

When the touch screen is shielded, “**Shield Touch Screen! Invalid Setting!**” will be shown on the right side of the interface. In that case, each setting interface is read-only and its parameter setting cannot be revised.

（2）Module Mode Setting

Slightly press the button “Module Setting” to enter the interface of “Module Mode Setting”

Only when unit is set off on the homepage can the mode setting of each module be effective on this interface.

“**Link/Break**”: When the connection is set, the module is connecting with and controlled by the main module; When the disconnection is set, the communication breaks and the module is out of control. At that time, related units are auto turned off which will be turned on by setting connection and the data of the unit on the touch screen shows 0.

“**ON/OFF**”: It means the unit of the module in the ON/OFF state.

“**Entire/ Alone**”: When the entire running is set, the module will be running together with the other entire modules, including alternate running, standby running; When the Alone running is set, the module will be running alone. Temp. and humidity is Subject to the unit itself without functions of alternation and standby.

“**Auto/Manual**”: When “manual” is displayed, the module is in the manual operation state. By touching it, the state will switch to auto running. But the reverse setting should be set in the “**Parameter Setting → Manual Debugging**.” In addition, if “entire” is set, manual mode is shielded.(Default to auto)

“**Duty Time**”: It means the alternately continuous running time of the entire running state of modules and the setting time range is 1~720 hours. Default time range is 96 hours. When the accumulated running time of the module has been reached the preset time for alternate running, the module will stop and the other standby module will start in order to make each module run in turn.

“**Standby Units**”: It means the standby units of modules stopped. Only the modules which are set to states of Link, ON, Entire running would be set to standby. When the Qty is 0, there are no functions of alternation and standby; when the standby units are bigger or equal to the

Qty of entire running module units, all units that are qualified to be standby units will stop to be standby and there is no alternative running unit.

（3）Time & Date Setting Interface

Slightly press the button “Time Setting” to enter the interface of “Time & Date Setting”.

It can be revised by touching the corresponding numeric box.

（4）Timer ON/OFF Setting

Slightly press the button “Timer Setting” to enter the interface of “Timer On/Off Setting”. This function won’t be effective if module is in entire control or manual state, but will be valid when module is in independent auto mode.

2.4 Running Status Interface

（1）Output Status View

This interface displays the running information of each module (e.g. Connected /Disconnected, On/Off, Entire control/ Independent operation, Auto operation / Manual operation, Normal / Error, Emergency).