

## AIR COOLED MINI CHILLER

MODEL:                   MAC060D4  
                              MAC090D4  
                              MAC120D4

COOLING CAPACITY: 16.2~33KW



For More Than a Century, McQuay has been Devoted to  
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Test center of McQuay Shenzhen Factory, China



Sound test room of McQuay Shenzhen Factory, China



## Main Features

### Engineered for Flexibility and Performance

McQuay delivers engineered, flexible solutions for commercial, industrial and institutional HVAC requirements with reliable products, knowledgeable applications expertise and responsive support.

The parts suppliers are worldwide reputation. The parts are accurate selected and tested, including fan, motor, compressor, pump, etc. All the performance is tested in national authorized laboratory under ARI standard. So all of these ensure a safe, high and reliable performance.

### Various Types of Terminal Equipments

There are various types of terminal equipment, which are quiet and reliable performance, for end user for different occasion application. They are fan coil units, air handling unit, etc.

### Flexible System Design and Installation

The chiller is standard with a hydraulic kit for an easy and convenience installation on site. There are water tank, expansion water tank, safety valve, etc safety devices in this kit. Chiller is charged in factory already. Service personnel only connect the water pipe and power cable, then unit can be started, without the pipe length and height limit. Chiller can be installed on the roof or terrace. No need for a special equipment room. Chiller can be installed on the roof or terrace. Installation and maintenance is very easy.



### Safety Running and GreenWay HVAC System Solutions

The chiller can run under a wide ambient range, R407c system design. We have fresh air terminal equipment to obtain a high IAQ.

The chiller has many self-protections for a reliable performance.

Pressure differential switch is installed to avoid lack of water flow.

From the feedback of the LWT, the chiller can be OFF accordingly to protect the BPHE against freezing.

### Convenience and Intelligent Control

The chiller is equipped with large PLC screen, realizing many functions control. Various types of FCU thermostats are available to accord with your indoor decoration culture. The chillers system also can be central controlled by MC302 controller. We offer Modbus protocol for BMS system.

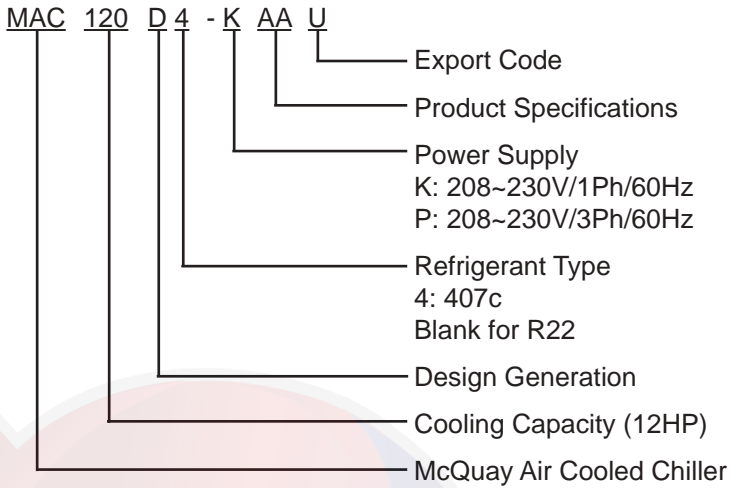
### Quiet Running

Both the air cooled chiller and terminal equipment runs under low noise. The chiller is a cabinet design. We select hermetic compressor and low noise fan to ensure a quiet performance.

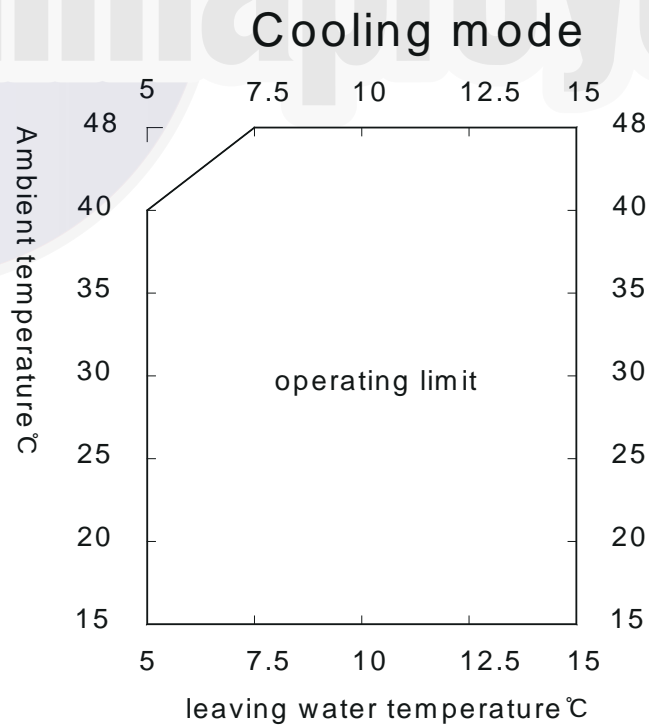
The fan coil units are equipped with quiet large wheels centrifugal fan, insulation material to eliminate the noise and vibration spreading.. The noise of FCUs is as low as 31dB(A).



## Nomenclature



## Operating Limit



## Intelligent control

The unit operation can be dynamically monitored so as to ensure the safe operation. The controller will rapidly and accurately display the error code in case of any fault and assist to eliminate the fault. The unit can control the signal output for the chilled water pump, and the automatic operation mode is available. Besides, the unit can be set to run automatically each day at an interval of one week to ensure normal unattended operation.



### Unit alarm and protection functions

- 13 protection and alarm functions
- Controller keypad lock function

### Intelligent signal output control function

- Chilled water pump output control function
- Chilled water output cut-off/control function
- Auxiliary heater output control function

### Parameter setting function

- Real-time time setting
- Weekly timer ON/OFF
- EWT setting
- LWT review
- Anti-freezing temperature

### Parameter display function

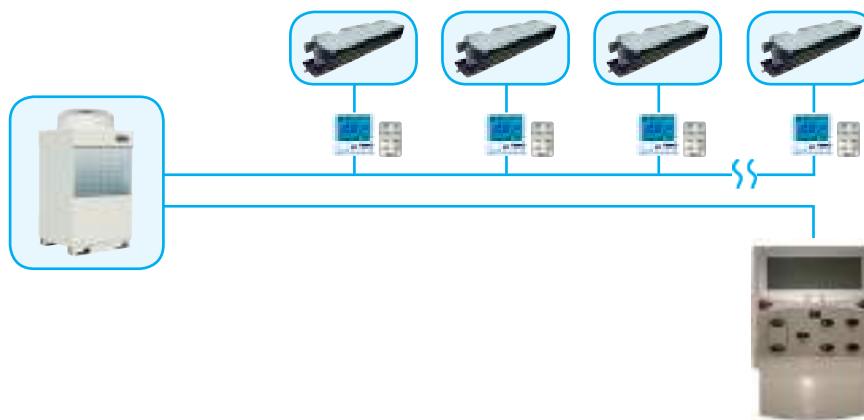
- Unit operation state display
- Inlet water temperature display
- Outlet water temperature display
- Unit timer setting; anti-freezing temperature in cooling mode

### Basic operation function

- Cooling mode

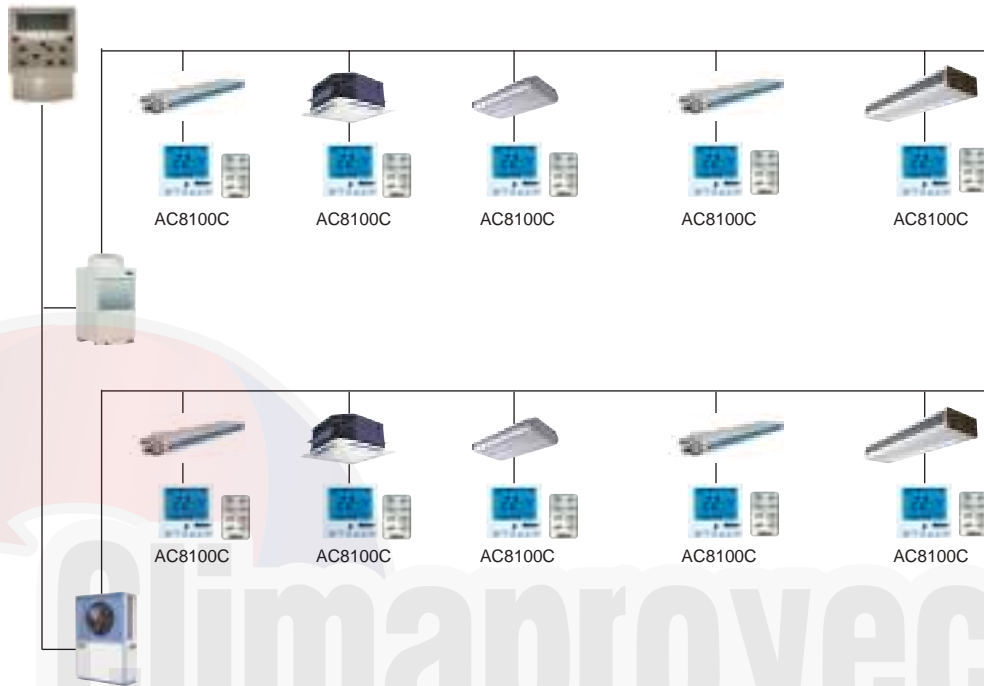
### Other functions

- Fault history inquiry function
- Compressor balance operation function
- Remote startup/shutdown function



## Central Control (Option)

MAC-D chillers can be central controlled by wired controller Max to 16pcs, realizing function setting, parameters review, group control, etc. Chillers and FCUs are inter-locked. If there is capacity inquiry, chiller will start up.



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## Specifications

Model		MAC060D	MAC090D	MAC120D	MAC060D	MAC120D	
Cooling Capacity	kW	17.5	28	33	16.2	31.5	
Cooling Power Input	kW	6.3	10	11.8	5.8	11	
Power Supply	V/Ph/Hz	208-230/3/60			208-230/1/60		
Refrigerant	Type	R407c					
	Control Type	EXV					
Evaporator	Type	BPHE					
	Water Flow	m <sup>3</sup> /h	2.71	4.34	5.12	2.51	4.88
		L/s	0.75	1.21	1.42	0.7	1.36
	Circuit	1				1	2
Connection	inch	Rc1	Rc1 1/2	Rc1 1/2	Rc1	Rc1 1/2	
Compressor	Type	Hermetic Scroll					
	Qty.	1			1	2	
Fan	Type	High Efficiency Propeller Type					
	Qty.	1					
	Air Flow	m <sup>3</sup> /h	8000	13000	13000	8000	13000
Motor	Type	Asynchronous Type					
	Qty.	1					
	Power		330	1000	1000	330	1000
Pump	Type	Horizontal Steps Centrifugal					
	Power Supply	V/Ph/Hz	208-230/1/60				
	Rated Power Input	W	1040	1040	1040	1170	1170
	Head	m	29.5	26.5	25.0	29.8	25.3
Dimensions (L*W*H)	Unit	mm	1212*502*1700	990*840*1840		1212*502*1700	990*840*1840
	c/w Package	mm	1340*650*1930	1030*890*2010		1340*650*1930	1030*890*2010
Weight	Net Weight	kg	220	290	330	220	330
	Components	40L stainless steel water storage tank, 8L water expansion chamber, safety valve, dirt drainage valve, auto air vent valve					
Hydraulic Kit	Model		MAC-S1	MAC-S4	MAC-S4	MAC-S1	MAC-S4
	Connection	inch	R1	R2	R2	R1	R2
	Dimensions	mm	816*400*500				
	Packing Dimensions	mm	923*505*574				

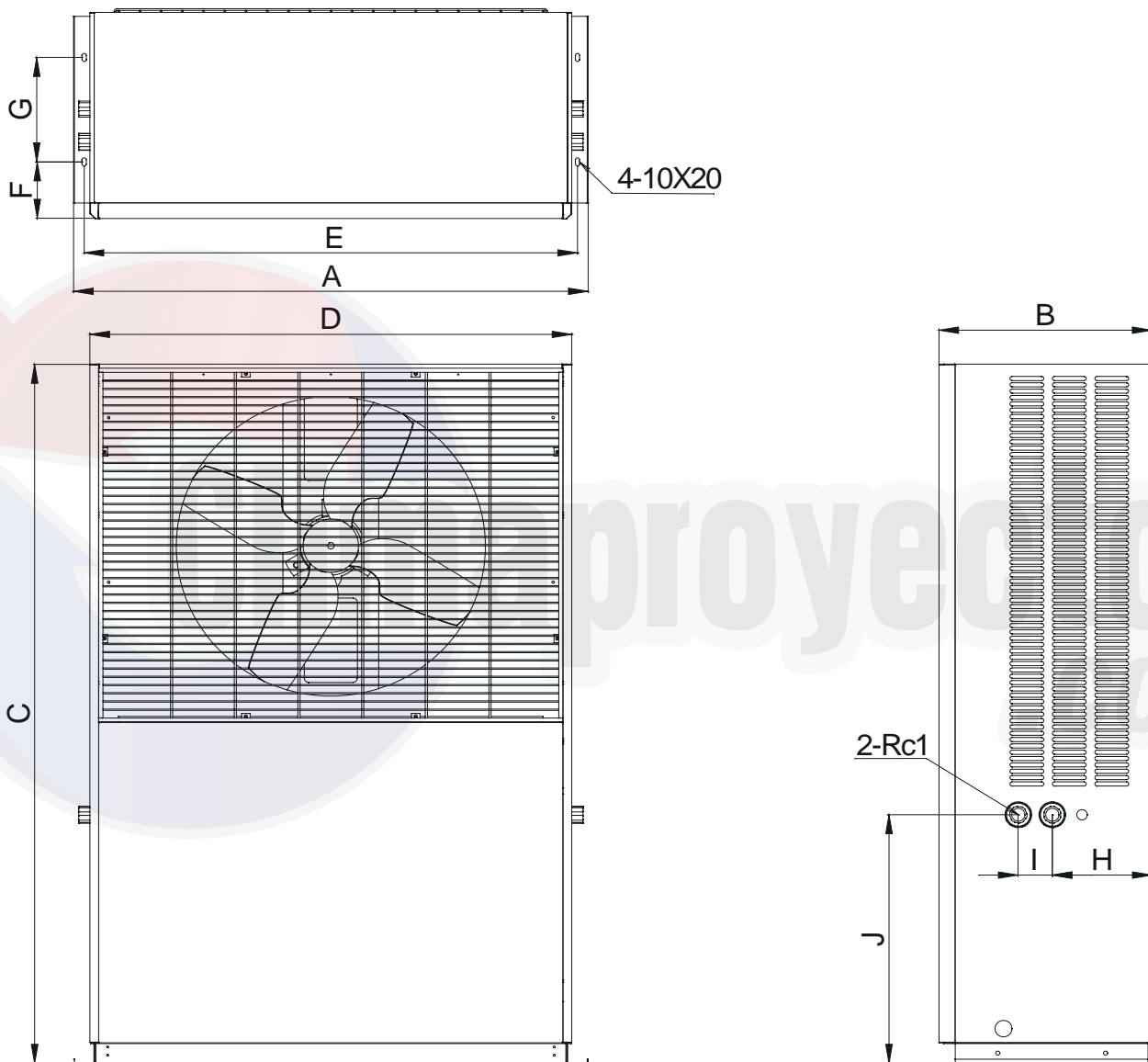
**Notes:**

1. All specifications are subjected to change by the manufacturer without prior notice.
2. The testing is under ARI Standard Condition;
3. Power Input is tested under 220V/1(3)Ph/60Hz

## Dimensions

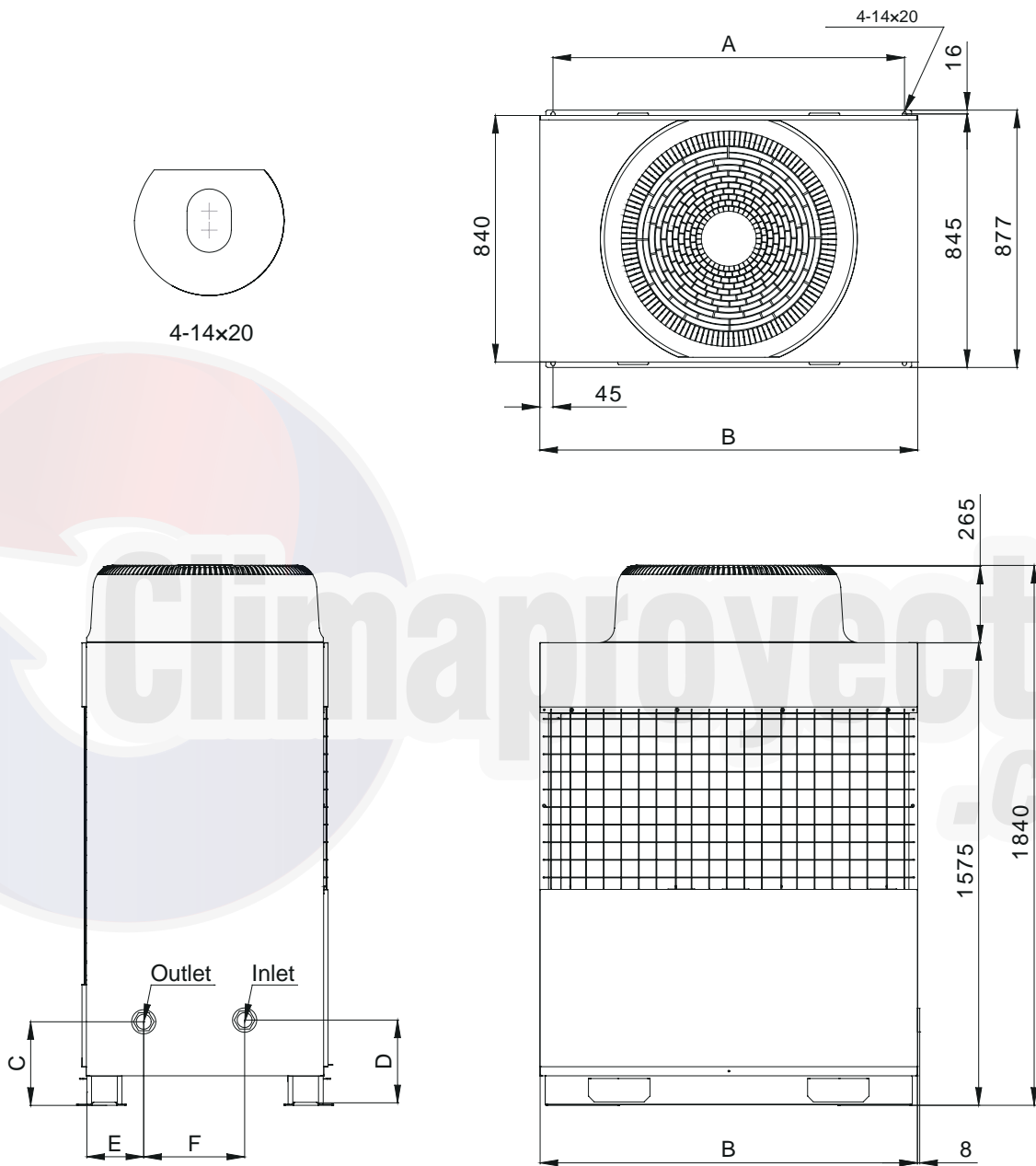
Unit: mm

MAC060D4



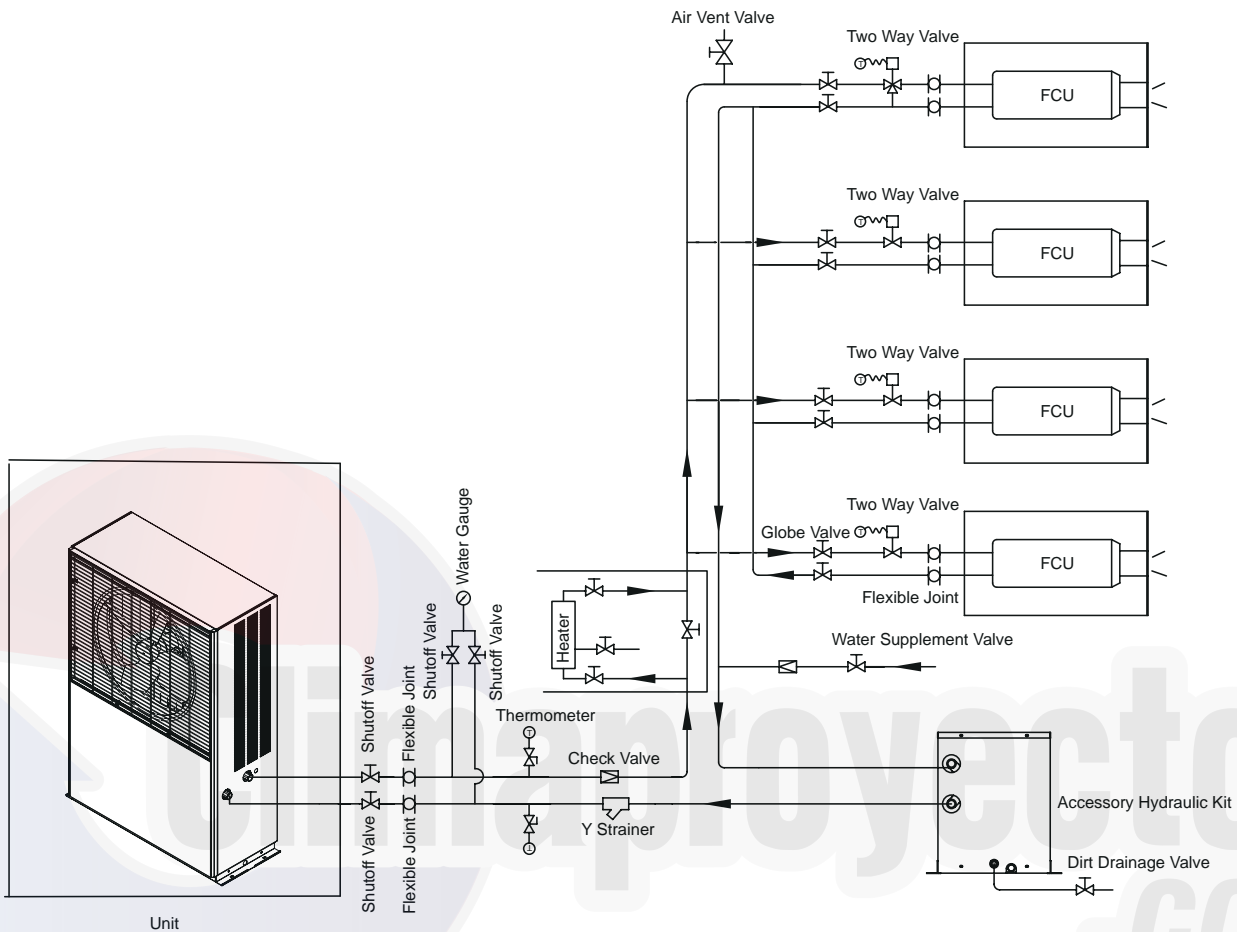
Model	A	B	C	D	E	F	G	H	I	J
MAC060D4	1212	502	1700	1135	1162	132	254	235	80	604.5

MAC090/120D4



Model	A	B	C	D	E	F	G	H
MAC090D4	900	990	173	206	270	270	Rc1-1/4	Rc1
MAC120D4	900	990	179	215	286	261	Rc1-1/2	Rc1-1/4

## Hydraulic Schematics



**Notes:**

If the watersystem is for the first operation, close the inlet/outlet valve, open the bypass. After the pump runs for a period, clean the strainer. Make sure the water is clean without dirt or blocks. Then open the valve, close the by-pass. The chiller can be put into operation.

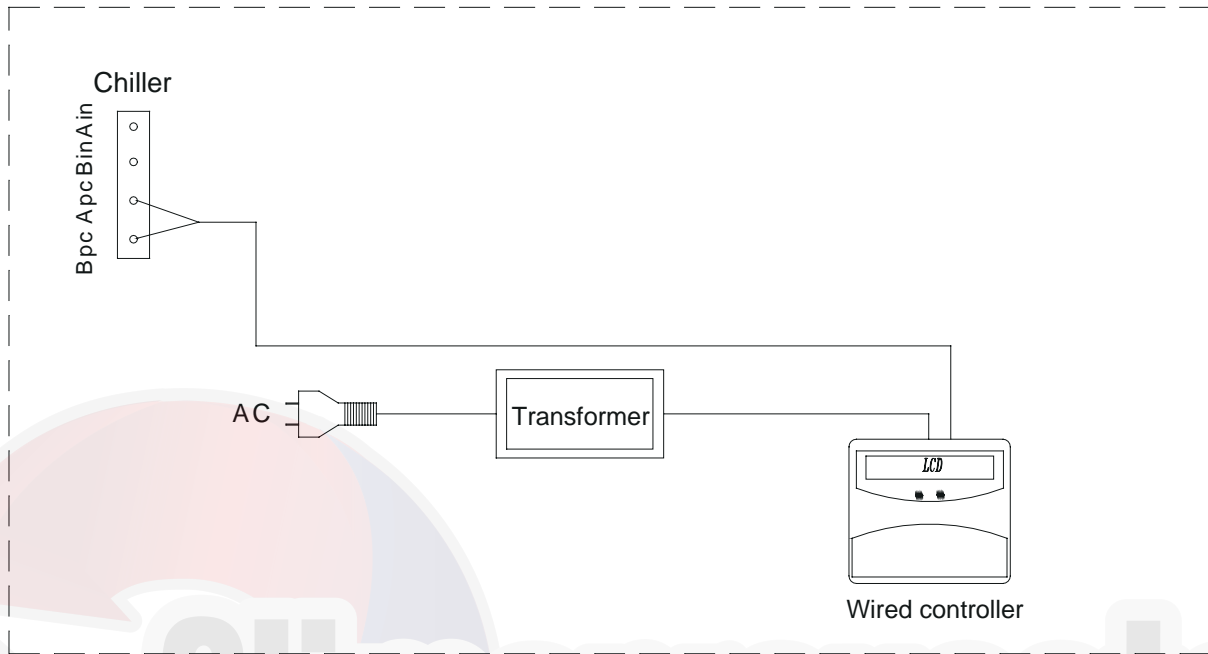
## Water quality requirements

- It is recommended to check the water system every half a month;
- The water supply safety valve should be equipped;
- The proper water drainage valve should be set up at the lowest point of the chilled water system;
- The circulating water should be softened water. See the water quality requirements in table below;
- By-pass unit should be set up for the water system of the unit; make sure the water system has been completely cleaned before infusing water and starting operation;
- After cleaning and debugging the unit, please replace or clean the filter valve of the Y-type filter;

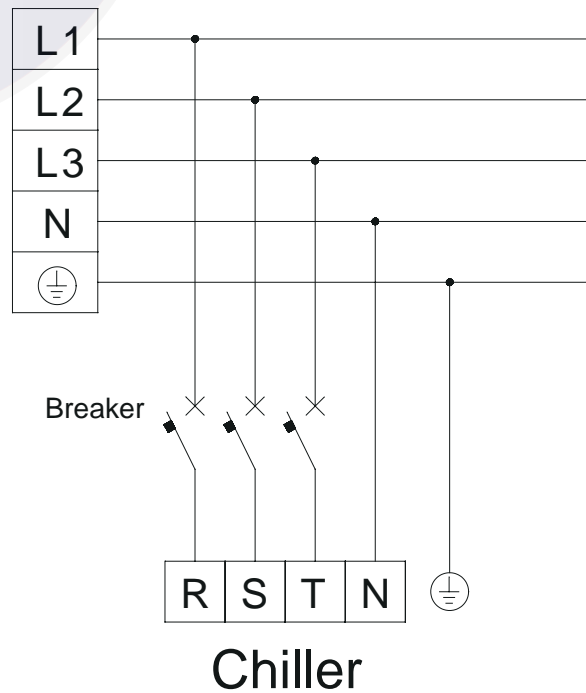
**Circulating water quality requirements**

Reference items	Item	Unit	Reference value	Reference items	Item	Unit	Reference value
		pH (25°C)			6.5~8.0		Fe
	Conductivity (25°C)	°S/cm	<800		S <sup>2-</sup>	mg(S <sup>2-</sup> )/L	Not detected
	Cl <sup>-</sup>	mg (Cl <sup>-</sup> )/L	<200		NH <sup>+</sup>	mg(NH <sup>+</sup> )/L	<1.0
	SO <sup>2-</sup>	mg (SO <sup>2-</sup> )/L	<200		SiO <sub>2</sub>	mg(SiO <sub>2</sub> )/L	<50
	Acid consumption (pH=4.8)	mg (CaCO <sub>3</sub> )/L	<100				
	Full hardness	mg (CaCO <sub>3</sub> )/L	<200				

## Communication Wiring Connection



## Power Wiring



## Accessories List

Accessories Kit	40L stainless steel water storage tank	Standard
	8L water expansion chamber	
	safety valve	
	dirt drainage valve	
	auto air vent valve	Standard
	Y-strainer	
	auto water supplement valve	Standard
	water pump	
pressure differential switch	Standard	

**Notes:**

Y-strainer and auto water supplement valve is in an accessory package, not installed in the unit nor hydraulic kit.

Water pump and pressure differential switch is installed in the chiller.

Please inspect the accessory package before you install the unit.



## Fan Coil Unit

Ceiling Concealed Unit

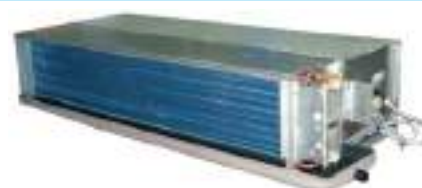
**MCW-C/F/H**



Model	MCW200-1200C/F/H
Air Flow	180 -2040m <sup>3</sup> /h
ESP	0,30,60,80Pa
Cooling Capacity	2130 -10700W

Ceiling Concealed Unit - High  $\Delta$ T Series

**MCW-DA**



Model	MCW200-1400DA
Air Flow	180-2040m <sup>3</sup> /h
ESP	75Pa
Cooling Capacity	2130 -10700W

Floor Standing Vertical Exposed Type

**MFU**



Model	MFU012-490C/H
Air Flow	432 -2550m <sup>3</sup> /h
ESP	0Pa
Cooling Capacity	1200 - 8000W


Floor Standing Vertical Concealed Type


**MFC**




Model	MFC012-490C/H
Air Flow	432 -2550m <sup>3</sup> /h
ESP	20Pa
Cooling Capacity	1200 - 8000W

## Air Handling Unit

Single Skin <b>MHW</b>		
	Model	MHW015A-MHW050A
	Air Flow	1500 - 5000m <sup>3</sup> /h
	ESP	70 - 150Pa
	Cooling Capacity	6000 - 87000W

Single Skin <b>MSW</b>		
	Model	MSW020H-MSW150H MSW040V-MSW250V
	Air Flow	2000 - 25000m <sup>3</sup> /h
	ESP	80 - 300Pa
	Cooling Capacity	12000 - 450000W

Double Skin <b>MDW</b>		
	Model	MDW020H-MSW250H MDW040V-MSW250V
	Air Flow	2000 - 25000m <sup>3</sup> /h
	ESP	80 - 300Pa
	Cooling Capacity	12000 - 450000W

Double Skin <b>MDM</b>		
	Model	MDM0304-MDM1826
	Air Flow	2000 - 100000m <sup>3</sup> /h
	ESP	80 - 1000Pa
	Cooling Capacity	14000 - 700000W



**Literature No.:** CA-MAC(D)-0904A  
**Supersedes:** N/A  
**Part No.:** M08039130013



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Details of specifications and equipment are also subject to change to suit local conditions and requirements and not all models are available in every market.