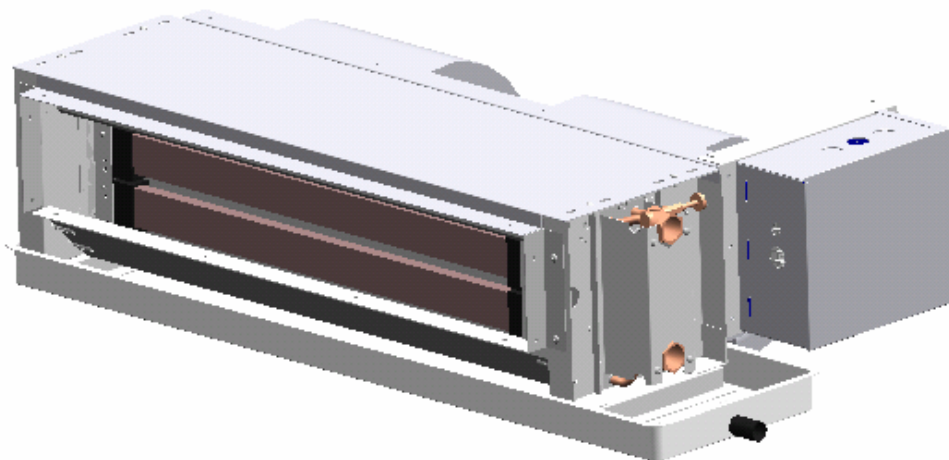


CEILING CONCEALED FAN COIL UNIT

Model: MCW200CD~MCW1200CD



This manual provides the procedures of installation to ensure a safe and good standard of operation for the fan coil unit.

Before using your fan coil unit please read this instruction manual carefully and keep it for future reference.

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SAFETY PRECAUTIONS

Before installing the fan coil unit, please read the following safety precautions carefully.



Warning

Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.

- All field wiring must be installed in accordance with the national wiring regulation.
- Ensure that the rated voltage of the unit corresponds to that of the nameplate before commencing wiring work according to the wiring diagram.
- Means for disconnection from the supply having a contact separation of at least 3 mm in all poles shall be incorporated in the fixed wiring according to wiring rules.
- The unit must be GROUNDED to prevent possible hazard due to insulation failure.
- Confirm that the unit has been switched OFF before installing or servicing the unit.

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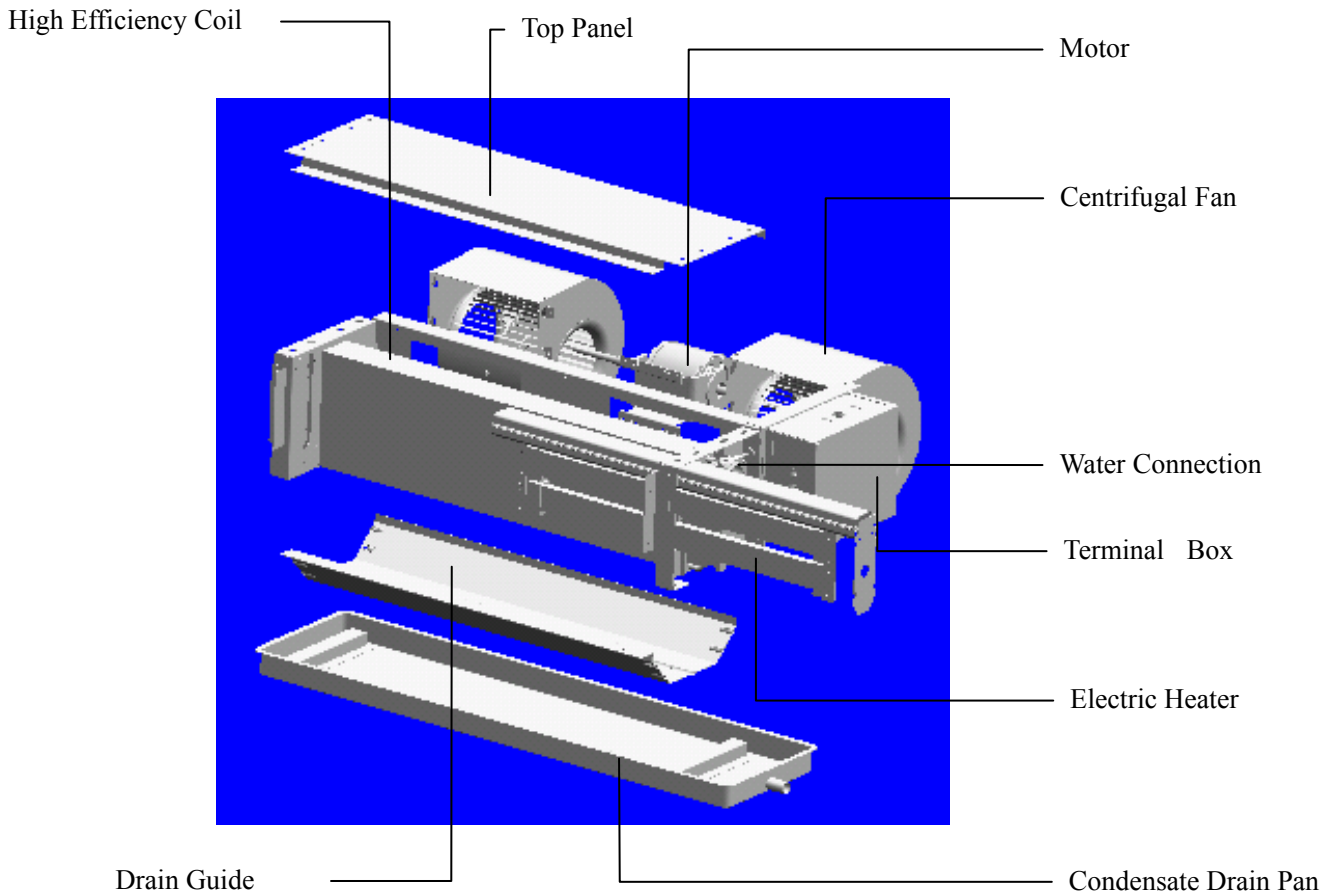
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GENERAL INFORMATION

- This manual has been prepared as guidance for installing and maintaining the McQuay fan coil unit. McQuay has produced a quality product that will effectively meet your application. However, proper installation and maintenance procedures must be followed to realize the full capability and life of the unit.

Parts Description



FEATURES

- **Extra Low Noise Design**

Enlarged fan wheels design allows lower fan RPM selection for the same ext. static pressure and airflow requirement. Thereby, noise level is significantly reduced.

- **Flexibility**

Water connection side can be changed easily in the field by changing positions of the fan-motor assembly or the supply air flange assembly. Fan -motor assembly is not cased allowing back return or bottom return installations.

- **High Efficiency Heat Exchanger**

A boundary layer film of air adhering to the fin surface will insulate the fin surface and severely reduces the heat exchange efficiency. McQuay slit fin design eliminates this boundary layer of air and creates continuous turbulence for best heat exchange efficiency.

- **Compact Design**

This series of fan coil units are designed to suit most ceiling concealed installations. Unit height is only 251 mm across the entire model range. The feature also maximizes provisions for drain fall requirements.

- **Auxiliary Electric Heater**

The heating source of MCQUAY fan coil unit MCW200CD-1200CD is PTC (Positive Temperature Coefficient) heater.

1.Safety

A fuse(153°C 15A) is connected in each PTC main wiring circuit. A thermostat(50°C 10A) is connected in the control wiring circuit. If the fan of the unit is not running, the thermostat or fuse will cut off the power of the unit .In addition, the surface of the PTC heater is without electric power. So the fan coil unit is safe enough.

2.Save energy

Quick heating spread, strong heating capacity, steady performance and save energy are characters of PTC heater.

3.Easy to install and maintain

Need not remove the air duct when maintain the electric components of the units. Please refer to Figure1 for installation and maintenance.

● **Caution**

1. The temperature of the surface of PTC heater may be over 200°C if the power of unit is on but the fan of the unit is not running. Don't touch the unit at this time!
2. The starting current of the unit is more than its working current. It should be considered both the working current and starting current while choosing the fuse.
3. When the MCW200CD~MCW1200CD fan coil unit with PTC heater is running, ENSURE there is no obstructions to air flow into or out of the unit.

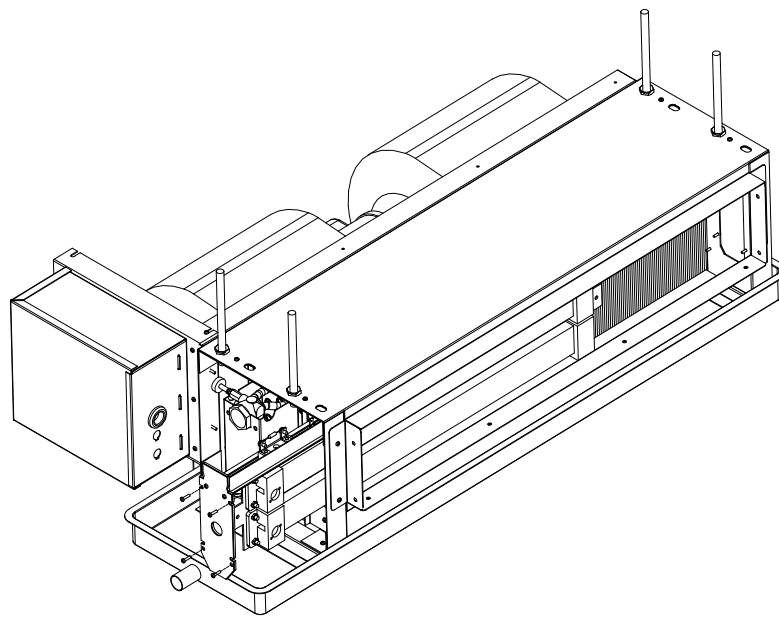
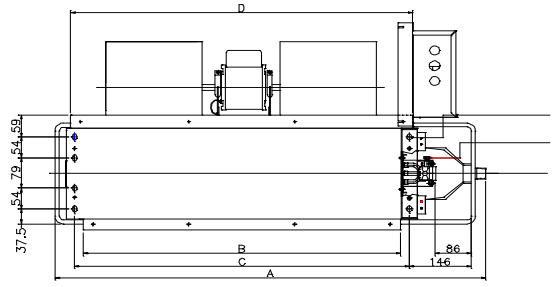


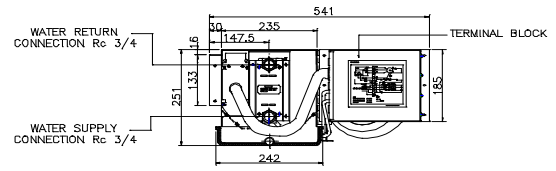
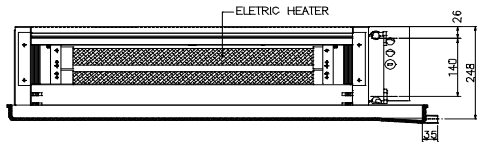
Figure 1

OUTLINES AND DIMENS

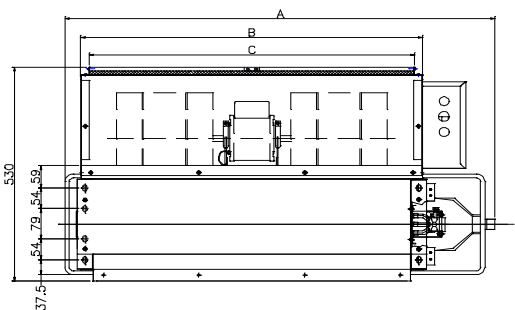
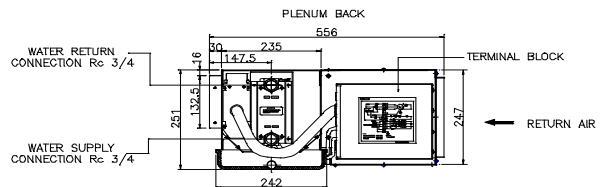
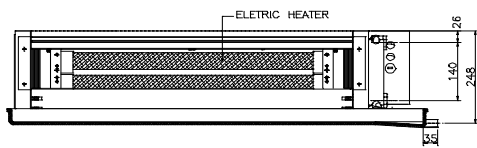
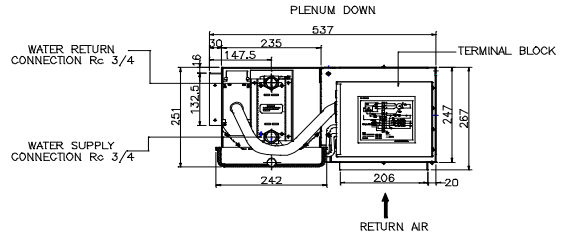
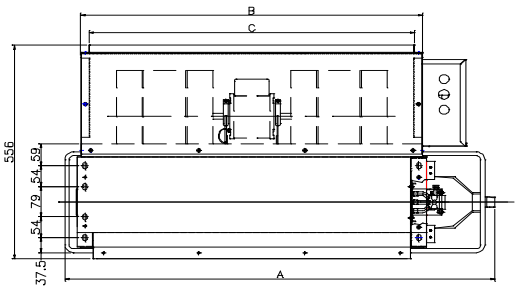


MOUNTING HOLE
4-10*16
AIR VENT
CONDENSATE DRAIN
R 3/4

UNIT SIZE	A		B	C	D	Number of Fans
	Standard Drain pan	Long Drain pan				
MCW200CD	714	824	448	487	505	1
MCW300CD	884	984	618	657	675	1
MCW400CD	1014	1114	748	787	805	2
MCW600CD	1214	1314	948	987	1005	2
MCW800CD	1464	1564	1198	1237	1255	3
MCW1000CD	1564	1664	1298	1337	1355	3
MCW1200CD	1615	1715	1558	1597	1615	4



UNIT SIZE	A		B	C
	Standard Drain pan	Long Drain pan		
MCW200CD	714	814	507	467
MCW300CD	884	984	677	637
MCW400CD	1014	1114	807	767
MCW600CD	1214	1314	1007	967
MCW800CD	1464	1564	1257	1217
MCW1000CD	1564	1664	1357	1317
MCW1200CD	1824	1924	1617	1577



UNIT SIZE	A		B	C
	Standard Drain pan	Long Drain pan		
MCW200CD	714	814	507	467
MCW300CD	884	984	677	637
MCW400CD	1014	1114	807	767
MCW600CD	1214	1314	1007	967
MCW800CD	1464	1564	1257	1217
MCW1000CD	1564	1664	1357	1317
MCW1200CD	1824	1924	1617	1577

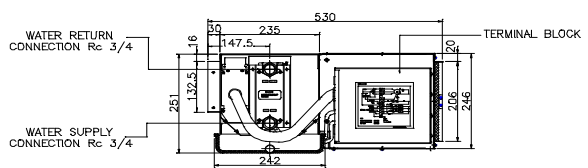
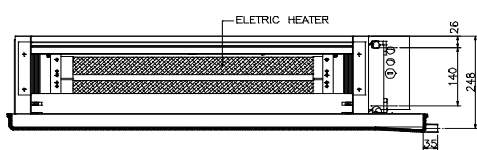


Figure 2

Dimension in: mm

INSTALLATION

● RECEIVING

All units leaving the McQuay plant have been inspected to ensure the shipment of quality products. All reasonable means are utilized to properly packing the fan coil unit.

Carefully inspect all shipments immediately upon delivery. When damage is visible, note this fact on the carrier's freight bill and request that the carrier send a representative to inspect the damage. This may be done by telephone or in person, but should always be confirmed in writing.

The shipment should be unpacked in the presence of the agent so that the extent of the damage or loss can be determined. The carrier's agent will make a inspection report and a copy will be given to the consignee for forwarding to the carrier with a formal claim.

● CAUTION

Before installation and running the unit, please check the followings:

1. There must be enough space for the unit installation and maintenance. Please refer to Figure 1 for the unit's outlines and dimensions and Figure 2 for the minimum distance between the unit and the obstacle.
2. Please ensure enough space for piping connection and electrical wiring.
3. Means for disconnection from the supply having a contact separation of at least 3 mm in all poles shall be incorporated in the fixed wiring according to wiring rules.
4. Check whether the hanging rods can support weight of the unit (see table of specification in page 4).
5. The unit must be installed horizontally to ensure proper operation and condensate draining.
6. The ext. static pressure of the ducting must be within the design static pressure range.
7. The installation agent must supply service valves and insulation for water piping in accordance with the local code and regulation.
8. Confirm that the unit has been switched OFF before installing or servicing the unit.

● Unit Installation

The unit is designed to be installed concealed ceiling and the like. Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.

There are holes on the top of the unit for hanging concealed ceiling. Please refer to Figure 1、Figure 2、Figure 3 and Figure 4.

CAUTION:

Make sure the top level of the unit horizontal while installation. The drain pan is designed with a little gradient to facilitate drain.

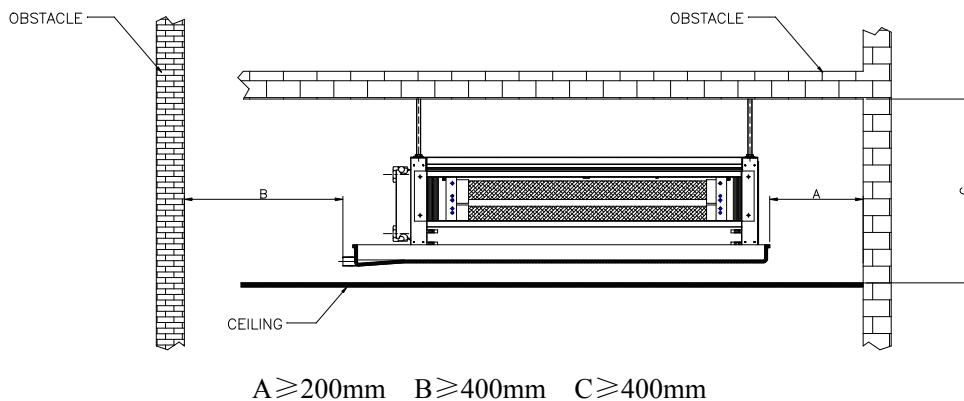


Figure 3

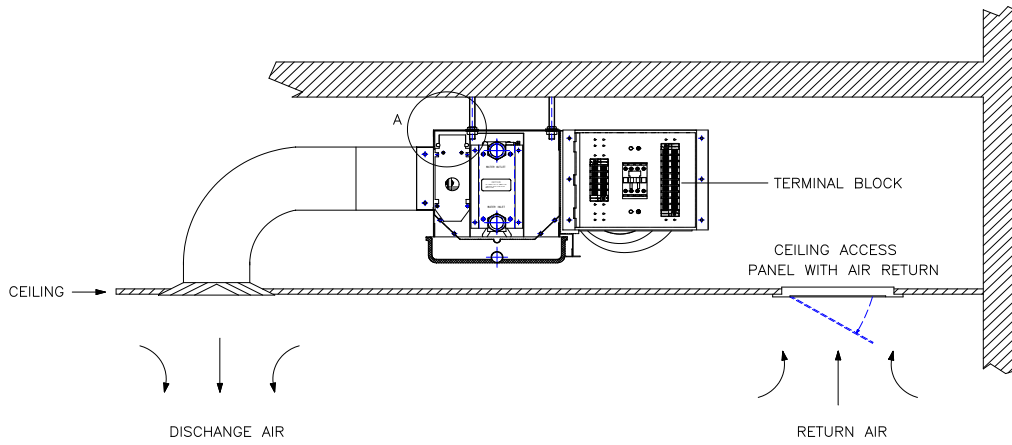


Figure 4

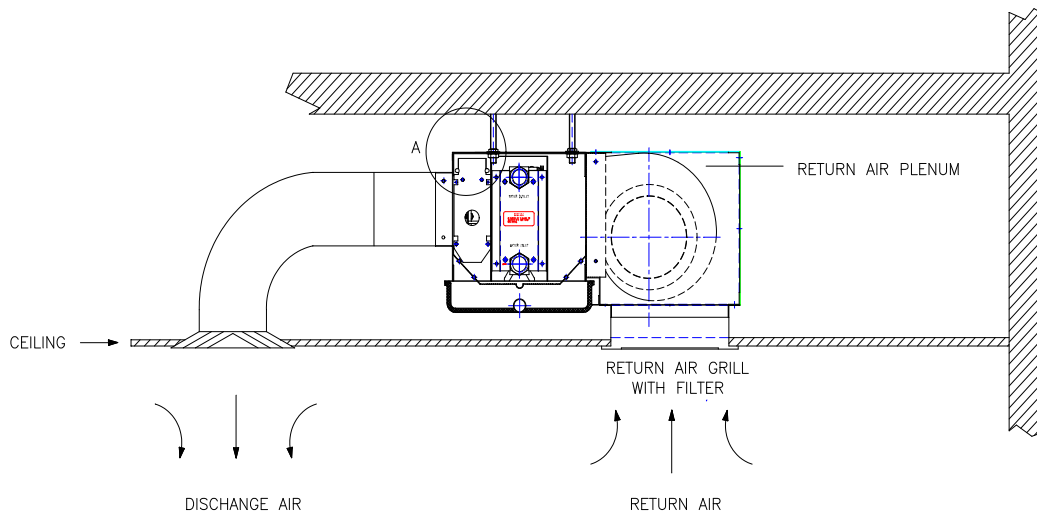
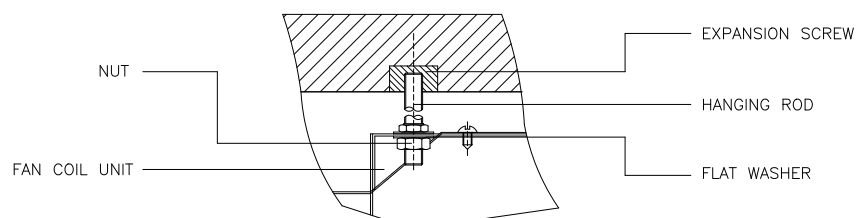


Figure 5



Detail A

● **Air duct connection**

Air duct which is made of galvanized steel can be connected to the flange of the unit. Refer to Figure 1 for the unit dimensions. Insert the duct into the flange and fix with screws. If dimensions of the duct and flange are different, connect with a connector between them.

Air duct connection must be installed in accordance with the national code for fire protection and construction of ventilation and air conditioning works.

- **Pipe connection**

Chilled water pipe connection

Connect size Rc3/4 chilled water pipes to the unit. Water inlet is on the bottom and water outlet is on top.

Drain pipe connection

Drain pipe can be either PVC or steel. Connect R3/4 connector to drain pipe of the unit. The connection must be concealed with rubberized fabric to avoid water leak. The suggested fall of the drain pipe is at least 1:50.

Refer to Figure 6 for typical engineering piping installation.

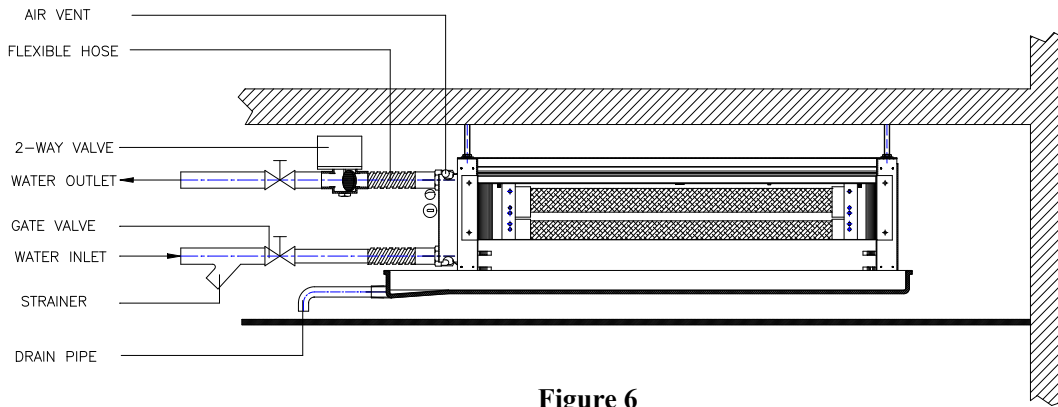


Figure 6

- **Electrical wiring**

Electrical wiring connection must be done according to the wiring diagram on the unit.

The unit must be **GROUND**ED to the earth system of the building.

All field wiring must be installed in accordance with the national wiring regulation and Fire Department regulation.

Electric Heating Power (kW)

Unit Size	Power Supply	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW	kW
MCW200CD	220-240V~/50Hz	1.0	1.5	2.0	2.5	-	-	-	-	-	-	-	-	-
MCW300CD	220-240V~/50Hz	1.0	1.5	2.0	2.5	3.0	3.5		-	-	-	-	-	-
MCW400CD	220-240V~/50Hz	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	-	-	-	-	-
MCW600CD	380-415V/3N~/50Hz	-	-	2.0	2.5	3.0	3.5	4.0	4.5	-	-	-	-	-
MCW800CD	380-415V/3N~/50Hz	-	-	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	-	-	-
MCW1000CD	380-415V/3N~/50Hz	-	-	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	-	-	-
MCW1200CD	380-415V/3N~/50Hz	-	-	-	-	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.0	8.0

WARNING:

Switch shall be connected to the supply terminals and shall have a contact separation of at least 3 mm in each pole.

Confirm that the unit has been switched OFF before installing or servicing the unit.

● **OPTIONAL PARTS**

● **Electric valve package kits**

The electric valve package kits are furnished completely soldered and leak tested at the factory. Four(4) solder connections are required to complete the installation of the valve package into the system (two at the coil supply and return connections and two at the supply and return run outs).

Installation

1. Clean all connections before assembly with fine sandpaper. A good grade solder flux will help ensure a proper bond. **A general purpose 50/50 solder is recommended. Do not silver solder or braze the valves or copper fittings in this kit.** A chill block, or equivalent, must be used to prevent leaks in the factory connection or overheating the valve.
2. Position the valve package on the unit by moving the kit piping slightly. **Do not try to move the coil connections.**
3. The 2" × 4" indentation in the back of the secondary drain pan on the units is provided for the supply and return run outs if they are brought up from below the pan. We recommend removing or covering the secondary drain pan on these units before soldering the coil connections as hot solder or the torch flame could damage the pan. Be careful not to burn wire insulation during soldering.
4. **Caution: The electric valve and gate valves are to be in the open position, ball valves in the closed position while soldering. Do not move the valve handles until the tubing has cooled for three (3) minutes.**
5. A hydrostatic test on all piping is recommended after all connections are complete.
6. All piping not over the secondary drain pan must be well insulated to prevent sweating. There is an 0.840 O.D. condensate drain connection on the unit drain pan suitable for a 1/2" plastic pipe fitting (by others).
7. Field wiring must be in accordance with local codes and/or the National Electrical Code. Wiring should be routed in such a manner to prevent the possibility of condensate dripping from the valve package piping onto the electrical conduit.

Caution

To prevent electrical shock, disconnect electric power to system at main fuse or circuit breaker box until installation

Valve Actuator installation

Latch the manual operating lever in the engaged position (N.C. only). Depress the release button (See Figure 7). Align the body with the actuator to ensure the stem is inserted into the large mating hole on the bottom side of the actuator. Engage the actuator on the body and release the button. Actuator AG2 is used or normally open operation. Actuator AG1 is used for normally closed operation.

Mounting

The PopTop™ valve can be mounted vertically or horizontally. If mounted horizontally, the valve should be mounted within 90° of upright position (See Figure 8). If mounted vertically, care should be taken to ensure moisture does not drip onto motor. The valve actuator should not be mounted upside down.

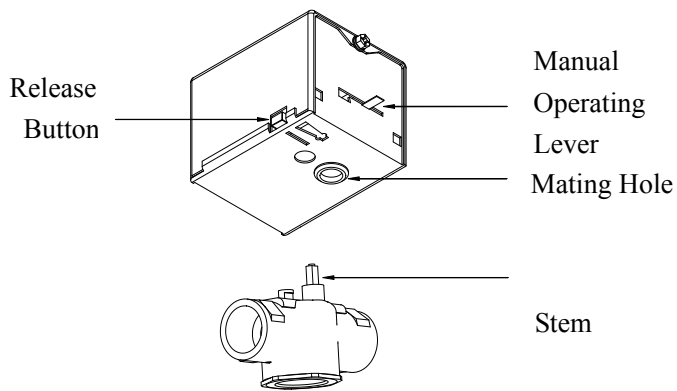


Figure 7

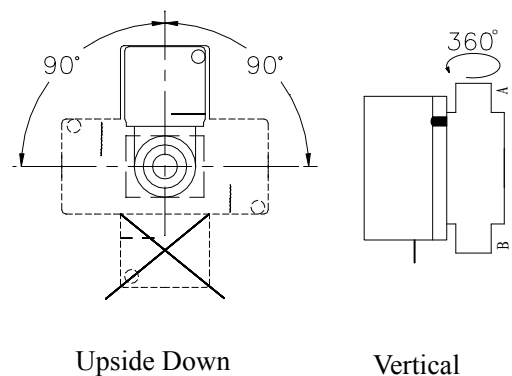


Figure 8

● **Room Thermostats**

The RAB10... room thermostat is used in heating or cooling systems to maintain the selected room temperature.

Functions

Heating If the room temperature falls below the selected setpoint, the heating contact will close.



Cooling If the room temperature exceeds the selected setpoint, the cooling contact will close.

Fanspeed There are two possibilities to control the fan speed:

a) Manually by means of the three-speed fan switch on the thermostat for continuous operation.

b) Automatically by switching to the selected fan speed via the thermostat for controlled operation. In that case - prior to commissioning - the thermostat function must be changed.

There are two choices available:

-  Selected fan speed as continuous operation
-  Auto Fan is switched at the same time as the valve

Ventilation

When the ventilation function is selected (RAB10.1), the heating and cooling contacts are always open and the fan operates at the selected speed.

Changeover

Heating or cooling is selected with a switch located on the front of the thermostat.

Adjustments

The required temperature can be selected by a setpoint adjuster on the front of the thermostat.

The setpoint setting range can be mechanically limited by means of tappets under the unit over.

Mounting, installation and commissioning

The thermostat should be located where the air temperature can be sensed as accurately as possible, without getting adversely affected by direct solar radiation or other heat or refrigeration sources.

Mounting height is about 1.5 m above the floor.

The unit can be fitted to most commercially available recessed conduit boxes or directly on the wall.

Only authorized personnel may open the unit to perform service .

The unit must be isolated from the main supply before opening.

When installing the unit, fix the base plate first, then hook on the thermostat body and make the electrical connections. Then fit the cover and secure it (also refer to separate mounting instructions).

The thermostat must be mounted on a flat wall.

The local electrical regulations must be complied with.

If there are thermostatic radiator valves in the reference room, set them to their fully open position.

Maintenance

The room thermostat is maintenance-free.

Technical data

Power supply	Operating voltage	AC 250 V
	Frequency	50 or 60 Hz
Operational data	Switching differential SD	≤ 1 K
	Set point setting range	8~30°C
	Amperage at AC 250 V	0.2~6 (2) A
Environmental conditions	Operation	to IEC 721-3-3
	Climatic conditions	class 3K5
	Temperature	0~+50°C
	Humidity	<95% r.h.
	Pollution degree	normal, to EN 60730
Norms and standards	CE conformity to	
	Low voltage directive	73/23/EEC and 93/68/EEC
	Product standard	EN 60730
	Safety standard	EN 60730
	Degree of protection	IP30 to EN 60529
	Screw terminals for	2× 1.5 mm ² or 1× 2.5 mm ² , min. (0.5 mm ²)
	Weight	0.14 kg
	Color	white, NCS S 0502-G (RAL 9003)

Connection diagram

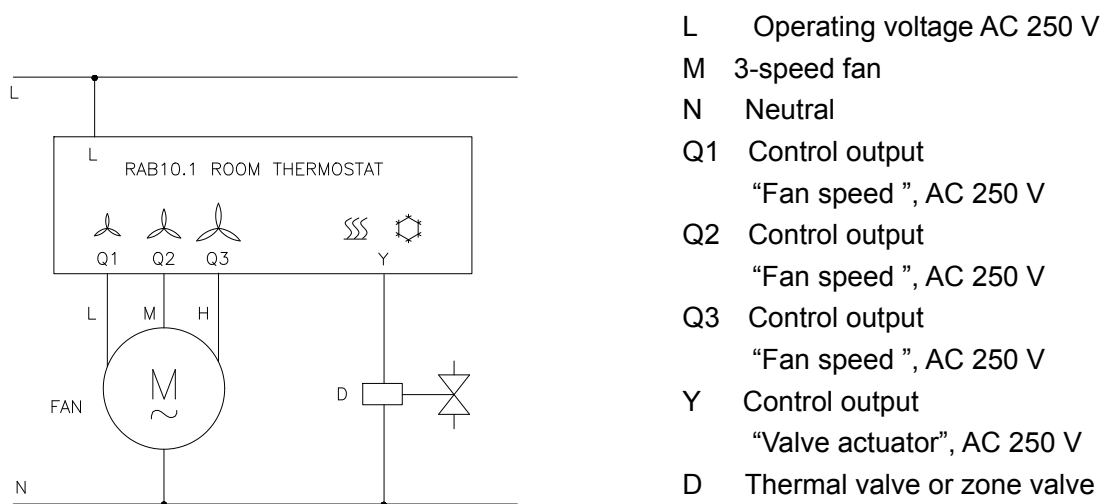


Figure 9

The electric valve package kits and room thermostat are optional parts. If they are required by customers, the electric valve

package kits can be installed in factory (refer to Figure 10) and the room thermostat will be with the unit as accessory

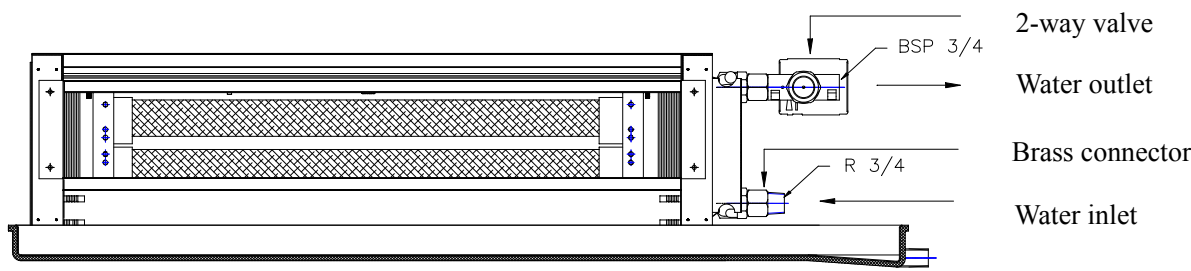


Figure 10

MAINTENANCE

- General

Installation and maintenance should be performed by qualified persons who are familiar with local code and regulation, and experienced with this type of appliance.

Confirm that the unit has been switched OFF before installing or servicing the unit.

A good general maintenance plan will avoid loses and unexpected shutting down of the equipment.

- Dirty filters reduce air flow as well as unit performance. Thus changing or cleaning the filters is very important. Check the cleanliness of filter and replace or clean as required monthly.
- Coils shall be cleaned from dust, dirt or lint with compressed air, water. They can be brushed with a soft brush and vacuum cleaner.
- Water coil not used during winter season shall be drained, or anti-freezing solution shall be added to the water circuit to avoid freezing.

- Month intervals

- 1 Inspect and clean condensate drain pan to avoiding clogging of drainage by dirt, dust, etc. Inspect drainage piping to ensure the proper condensate flow.
- 2 Check and clean the coil. Clean the coils with low pressure water jet or low pressure air.
- 3 Clean and tighten all the wiring connections.
- 4 Drain out the system water and check for build up of mineral deposits.



While utmost care is taken in ensuring that all details in the publication are correct at the time of going to press, we are constantly striving for improvement and therefore reserve the right to alter model specifications and equipment without notice. 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.