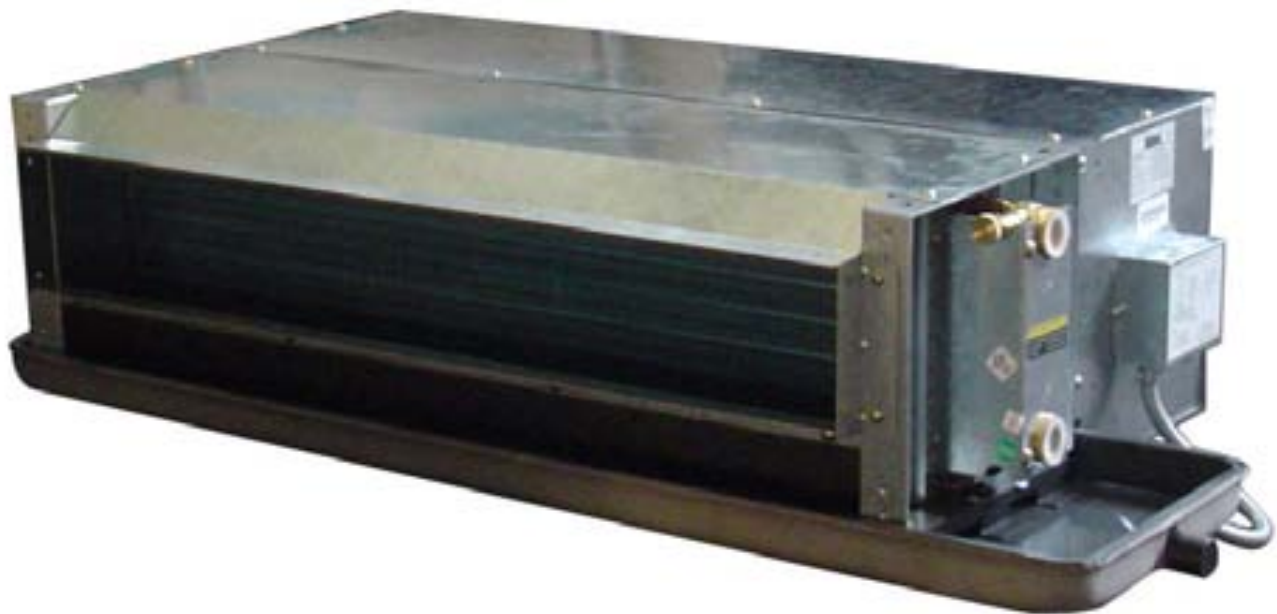


Chilled Water Fan Coils

CEILING CONCEALED

Models: MCW - C
MCW - H



INDEX

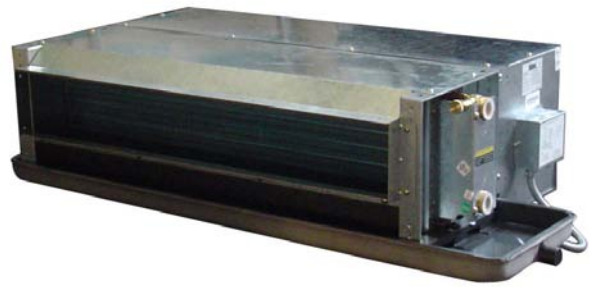
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GENERAL FEATURES AND TECHNICAL DATA

With available external static pressure values up to 60 Pa, MCW models are suitable both for ducted and free discharge installations.

Their quiet operation, compact dimensions and particularly low height, make units ideal for false ceiling installation even in vintage buildings with narrow ceiling spaces. Units are standard supplied with **soundproofed suction plenum**, air filter and extra-long drain pan for application with valve. Centrifugal fans, with forwards curved blades, are statically and dynamically balanced and moved by single-phase motor with three speeds (standard) plus one (optional).

The availability of 2&4 pipe version, the possibility to change connection side on field and accessories like mechanical and electronic thermostat and water on/off valves, provides the maximum flexibility and ease of installation.



MODELS MCW (2- PIPES)		200C	300C	400C	600C	800C	1000C	1200C
Nominal Air Flow (Super.H/High/Medium/Low)	m ³ /h	327/307/ 269/246	572/456 380/290	710/541 475/445	1000/785 630/510	1264/1018 863/717	1436/1234 1115/805	1785/1500 1298/1106
Available External Static Pressure	Pa	30	30	30	30	30	30	30
Total Cooling Capacity ¹	kW	2,2	3,4	4,2	6,1	7,1	8,2	9,8
Total Sensible Capacity ¹	kW	1,5	2,5	3,3	4,7	5,6	6,5	7,7
Heating Capacity ²	kW	2,4	4,1	5,4	7,3	8,8	10,2	12,2
Water Flow Rate	l/s	0,106	0,162	0,201	0,288	0,337	0,388	0,464
Water Pressure Drop - Cool.	kPa	13	13	19	34	15	15	26
Lp (Sound Pressure Level) ³	dB(A)	38/36/ 32/31/	42/40/ 37/35	41/37 /33/32	43/40/ 38/36	43/40/ 38/36	46/43/ 41/39	46/44/ 41/39
Power Supply	V/f/Hz	220-40/1/50						
Diameter Condensate Drain	inches	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Water Connections	inches	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Total volume	litres	0,75	1,03	1,21	1,51	1,89	2,04	2,44
Weight (With Plenum)	kg	20	23	28	33	44	48	50

NOTES

- At the following nominal conditions: 7/12°C inlet/outlet water temperature; 27°C dB/19.5°C wB inlet air temperature; S.High speed
- At the following nominal conditions: 50°C inlet water temperature; 20°C inlet air temperature; same water flow as for cooling; S.High speed
- At S.High/High/Medium/Low speed; nominal air flow; with plenum and filter

MODELS MCW (4- PIPES)		200H	300H	400H	600H	800H	1000H	1200H
Nominal Air Flow (Super.H/High/Medium/Low)	m ³ /h	314/290 257/241	529/422 338/298	671/536 494/460	1004/811 725/653	1194/963 856/700	1346/1154 1039/743	1674/1406 1200/1069
Available External Static Pressure	Pa	30	30	30	30	30	30	30
Total Cooling Capacity ¹	kW	2,2	3,2	4,1	6,1	6,8	7,8	9,4
Total Sensible Capacity ¹	kW	1,4	2,4	3,1	4,7	5,4	6,1	7,3
Heating Capacity ²	kW	2,7	4,1	5,3	7,7	8,5	9,5	11,7
Water Flow Rate	l/s	0,102	0,153	0,194	0,289	0,324	0,373	0,446
Water Pressure Drop – Cool.	kPa	12	11	18	34	14	14	24
Lp (Sound Pressure Level) ³	dB(A)	38/35/ 33/31	42/40/ 37/35	41/38/ 34/33	43/40/ 38/36	44/40/ 38/36	46/43/ 41/39	47/44/ 42/40
Power Supply	V/f/Hz	220-40/1/50						
Diameter Condensate Drain	inches	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Water Connections	inches	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Total volume	litres	1,00	1,37	1,60	2,01	2,52	2,72	3,25
Weight (With Plenum)	kg	22	27	31	36	48	52	56

NOTES

- At the following nominal conditions: 7/12°C inlet/outlet water temperature; 27°C db / 19°C wb inlet air temperature; S.High speed
- At the following nominal conditions: 70/60 °C inlet/outlet water temperature; 20°C inlet air temperature; S.High speed
- At S.High/High/Medium/Low; nominal air flow; with plenum and filter

SOUND LEVEL

SOUND POWER LEVEL [Lw]

Model	Speed	Octave Band Frequency (dB)								Total [dB(A)]
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW200C	Super-high	48,6	51,3	50,9	50,6	42,9	44,9	38,8	32,9	51,5
	High	48,2	45,3	46,6	47,4	40,0	38,7	33,9	23,5	47,5
	Medium	45,0	38,4	41,4	43,6	35,0	30,5	28,9	22,6	43,0
	Low	41,5	37,4	38,4	41,5	34,9	26,9	23,9	20,6	41,0
MCW300C	Super-high	47,4	51,8	54,8	54,6	47,4	46,3	38,4	27,9	55,0
	High	46,3	47,8	49,2	52,1	45,4	43,4	35,7	23,1	52,0
	Medium	42,5	45,4	45,8	47,0	42,6	36,2	29,6	22,0	48,0
	Low	40,7	42,0	42,9	42,6	43,1	31,9	24,9	20,7	45,5
MCW400C	Super-high	47,2	50,7	51,6	51,2	45,1	50,3	41,9	32,4	54,5
	High	44,4	44,7	45,1	45,9	42,7	44,5	35,8	25,3	49,0
	Medium	38,8	39,3	39,9	41,5	37,4	38,1	29,6	22,7	43,5
	Low	37,4	39,3	37,6	40,6	37,0	36,1	25,5	22,4	42,5
MCW600C	Super-high	54,9	54,9	56,1	54,0	50,5	48,2	41,7	32,9	56,0
	High	50,7	50,7	52,1	50,5	46,4	43,6	35,6	26,8	52,0
	Medium	47,7	47,7	48,5	47,6	42,9	39,3	30,1	23,7	48,5
	Low	45,8	45,8	46,2	45,3	39,9	35,4	25,6	23,2	46,0
MCW800C	Super-high	56,3	57,1	55,5	52,8	51,6	48,9	41,3	33,4	56,0
	High	53,9	53,1	53,1	49,9	46,9	43,1	34,8	25,5	52,0
	Medium	51,2	51,0	50,6	46,3	42,9	39,7	31,9	24,8	48,5
	Low	50,9	49,1	46,5	45,0	40,7	33,8	28,0	22,6	46,0
MCW1000C	Super-high	56,2	56,2	58,0	56,1	54,0	50,8	43,8	34,1	58,5
	High	53,1	53,1	54,0	52,7	50,5	46,8	38,6	28,5	55,0
	Medium	50,3	50,3	50,8	49,7	47,1	42,8	33,5	24,5	51,5
	Low	47,3	47,0	47,9	47,1	44,3	39,7	29,8	22,8	48,5
MCW1200C	Super-high	57,5	61,1	59,8	55,3	55,3	51,7	43,4	36,0	59,5
	High	52,6	57,1	56,7	51,0	50,5	49,2	39,7	29,7	55,5
	Medium	51,6	56,7	53,7	48,1	46,5	40,8	31,3	24,3	51,5
	Low	51,6	56,0	51,6	46,7	42,9	40,2	30,4	24,8	49,5

Power Supply: 240V/1PH/50Hz

SOUND POWER LEVEL [Lw]

Model	Speed	Octave Band Frequency (dB)								Total [dB(A)]
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	
MCW200H	Super-high	48,6	51,3	50,9	50,6	42,9	44,9	38,8	32,9	51,5
	High	47,8	44,9	45,6	47,0	39,6	38,3	33,5	23,1	47,0
	Medium	46,1	39,5	42,5	44,7	36,1	31,6	30,0	23,7	44,0
	Low	41,6	37,5	38,5	41,6	35,5	27,0	24,0	20,7	41,0
MCW300H	Super-high	47,4	51,8	54,8	54,6	47,4	46,3	38,4	27,9	55,0
	High	46,3	47,8	49,2	52,1	45,1	43,4	35,7	23,1	52,0
	Medium	42,5	45,4	45,8	47,0	42,4	36,2	29,6	22,0	48,0
	Low	40,7	42,0	42,9	42,6	43,1	31,9	24,9	20,7	45,5
MCW400H	Super-high	47,2	50,7	51,6	51,2	45,1	50,3	41,9	32,4	54,5
	High	45,2	45,5	45,9	46,7	43,5	45,3	36,6	26,1	50,0
	Medium	39,3	39,3	39,9	41,5	37,8	38,1	29,6	23,3	44,5
	Low	37,9	39,8	38,1	41,1	37,5	36,6	26,0	22,9	43,0
MCW600H	Super-high	54,9	54,9	56,1	54,0	50,5	48,2	41,7	32,9	56,0
	High	50,7	50,7	52,1	50,5	46,4	43,6	35,6	26,8	52,0
	Medium	47,7	47,7	48,5	47,6	42,9	39,3	30,1	23,7	48,5
	Low	45,8	45,8	46,2	45,3	40,4	35,4	25,6	23,2	46,0
MCW800H	Super-high	56,6	57,4	55,8	53,1	51,8	49,2	41,6	33,7	56,5
	High	53,5	52,7	52,7	49,5	46,3	42,7	34,4	25,1	51,5
	Medium	51,2	51,0	50,6	46,1	42,7	39,7	31,9	24,8	48,5
	Low	43,8	44,1	46,2	44,6	40,2	33,6	27,5	22,4	46,0
MCW1000H	Super-high	56,2	56,2	58,0	56,1	54,0	50,8	43,8	34,1	58,5
	High	53,1	53,1	54,0	52,7	50,5	46,8	38,6	28,5	55,0
	Medium	50,3	50,3	50,8	49,7	47,1	42,8	33,5	24,5	51,5
	Low	47,3	47,0	47,9	47,1	44,3	39,7	29,8	22,8	49,0
MCW1200H	Super-high	57,9	61,5	60,2	55,7	55,7	52,1	43,8	36,4	60,0
	High	52,6	57,1	56,7	51,4	50,5	49,3	39,7	29,7	56,0
	Medium	53,2	58,3	55,3	48,1	46,5	40,8	32,9	25,9	52,0
	Low	45,7	52,2	52,5	47,5	43,6	41,2	31,1	25,8	50,0

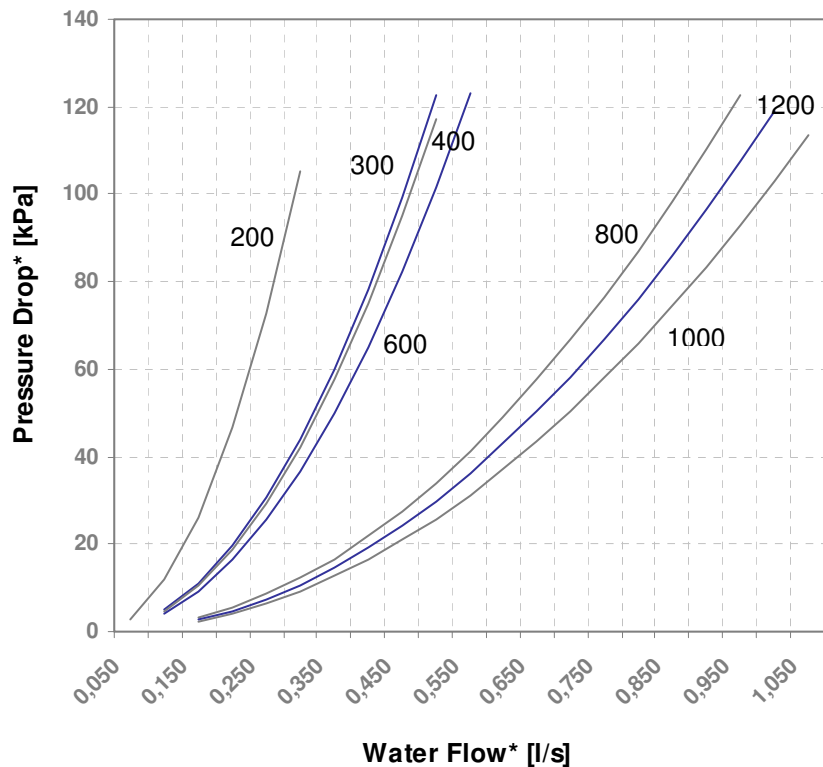
Power Supply: 240V/1PH/50Hz

OPERATING LIMITS AND PRESSURE DROPS

OPERATING LIMITS	MCW C/H
Water Circuit Maximum water-side pressure Minimum entering water temperature Maximum entering water temperature	16.4 kg/cm ² 3°C (cooling) 70°C (heating)
Room air Minimum temperature Maximum temperature	16°C (cooling), 10°C (heating) 36°C (cooling), 30°C (heating)
Power supply Nominal single-phase voltage Operating voltage limits	230 V / 50 Hz ± 10% Volt / ± 2 Hz

PRESSURE DROPS

MCW - C 2 - PIPES



*The pressure drop is for the coil only and excludes water connections and valves.

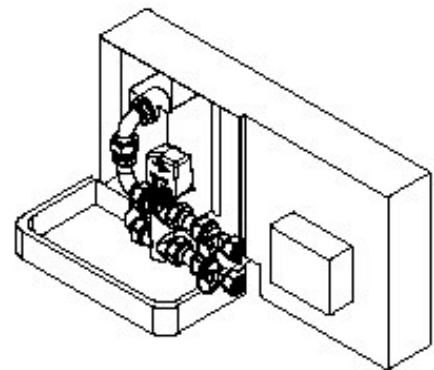
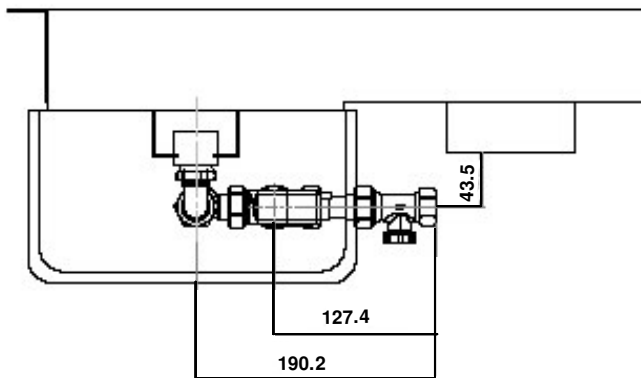
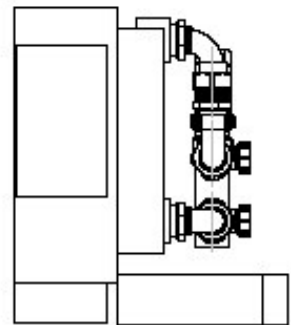
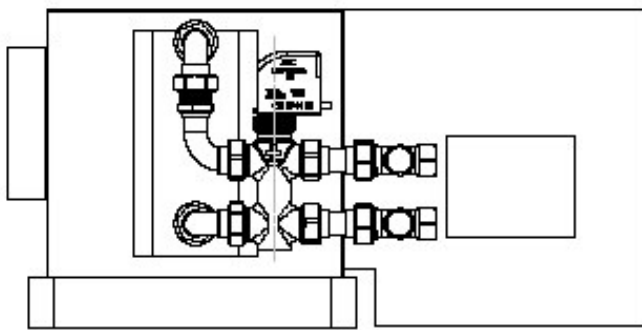
ACCESSORIES

VALVE KITS

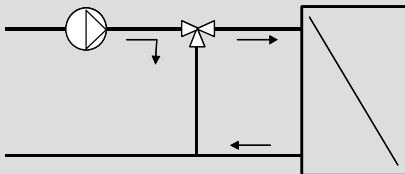
MCW – C [2 – PIPES]

The kit includes:

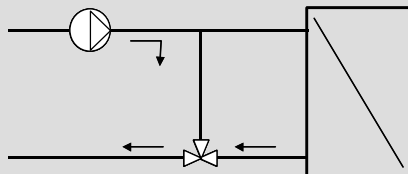
- 3-way/4-port regulating valve; diameter 3/4"
- thermoelectric actuator 230 vca
- copper pipes Ø 18 with welded connections 3/4" NTP, Nipples type
- fittings



DIVERTING



MIXING



Example of installations of a 3-way/4-port valve

Thanks to the special configuration of the plug controlling the by-pass flow, the 3-way with 4 ports valves can be used equally as well as diverting and mixing valves.

MCW – H [4 – PIPES]

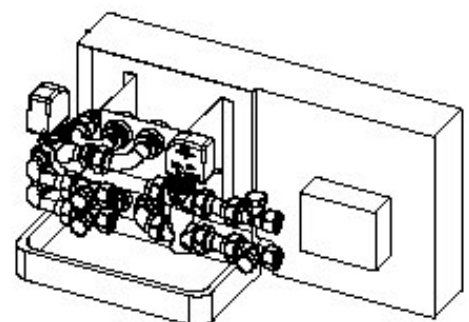
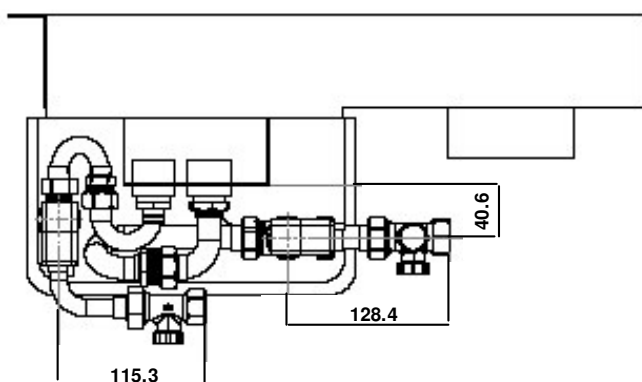
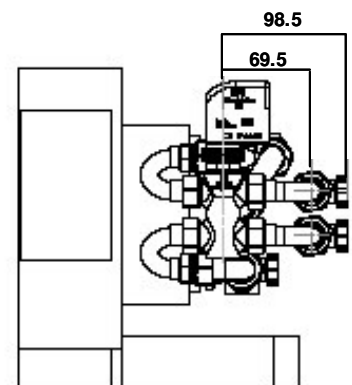
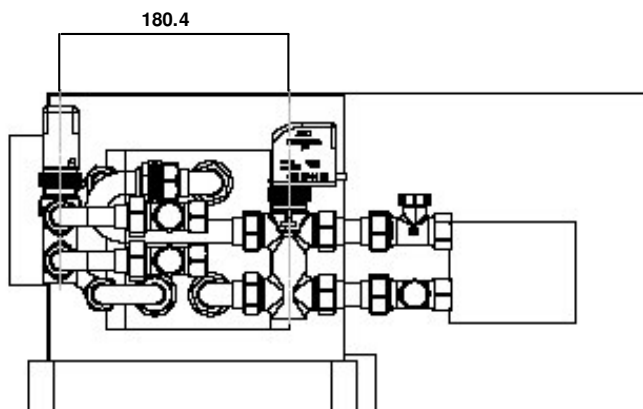
The kit includes:

1. Primary circuit

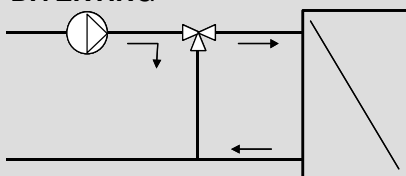
- 3-way/4-port regulating valve; diameter $\frac{3}{4}$ "
- thermoelectric actuator 230 vca
- copper pipes \varnothing 18 with welded connections $\frac{3}{4}$ " NTP, Nipples type
- fittings

2. Auxiliary circuit

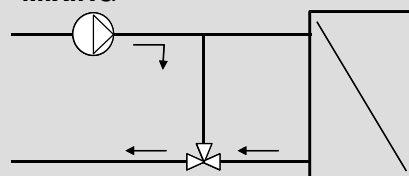
- 3-way/4-port regulating valve; diameter $\frac{1}{2}$ "
- thermoelectric actuator 230 vca
- copper pipes \varnothing 14 with welded connections $\frac{3}{4}$ " NTP, Nipples type
- fittings



DIVERTING



MIXING



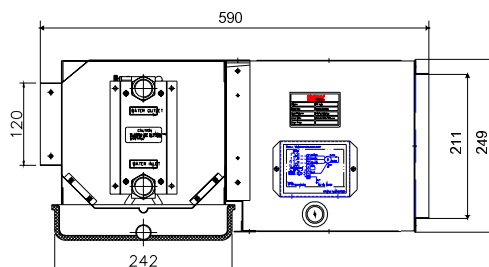
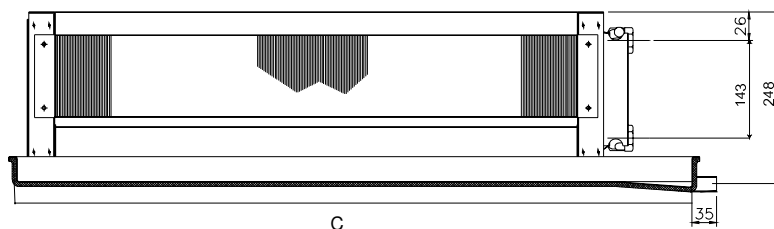
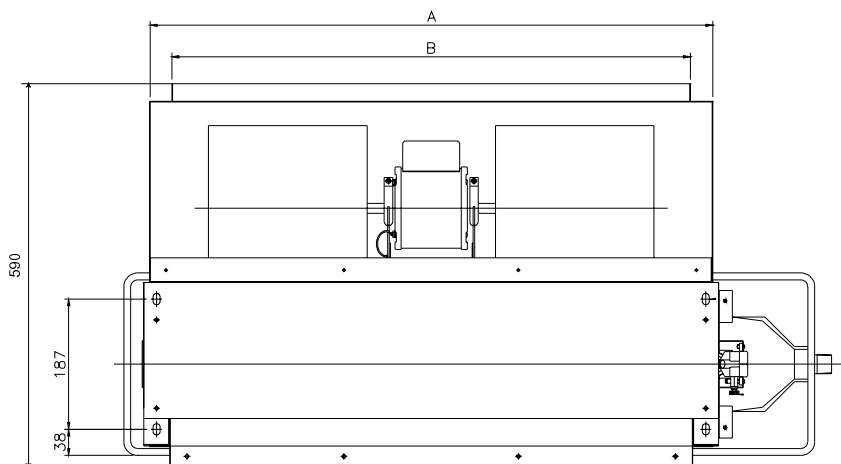
Example of installations of a 3-way/4-port valve

Thanks to the special configuration of the plug controlling the by-pass flow, the 3-way with 4 ports valves can be used equally as well as diverting and mixing valves.

OUTLINES AND DIMENSIONS

STANDARD VERSION: WITH PLENUM

MODEL MCW (with Plenum)		200 C/H	300 C/H	400 C/H	600 C/H	800 C/H	1000 C/H	1200 C/H
A	mm	505	675	805	1005	1255	1355	1615
B	mm	467	637	767	967	1217	1317	1577
C	mm	814	984	1114	1314	1564	1664	1924

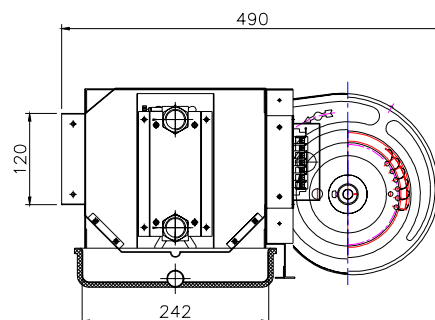
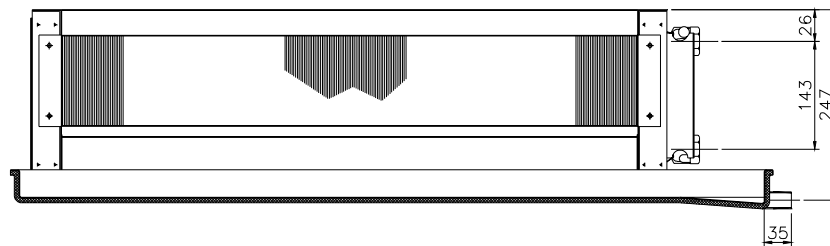
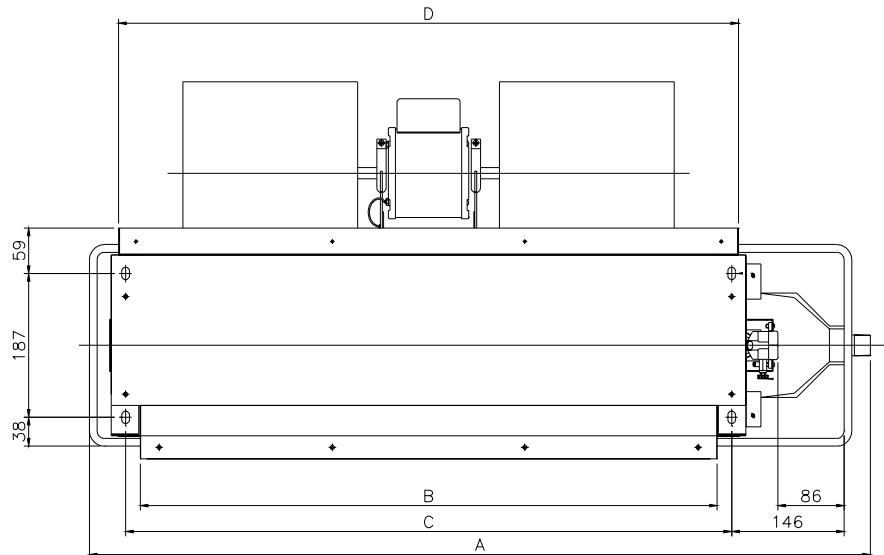


OUTLINES AND DIMENSIONS

OPTIONAL VERSION: WITHOUT PLENUM


MODELS MCW		200 C/H	300 C/H	400 C/H	600 C/H	800 C/H	1000 C/H	1200 C/H
A	mm	714	884	1014	1214	1464	1564	1824
A (condensate drain pan*)	mm	814	984	1114	1314	1564	1664	1924
B	mm	448	618	748	948	1198	1298	1558
C	mm	487	657	787	967	1237	1337	1597
D	mm	505	675	805	1005	1255	1355	1615

*standard



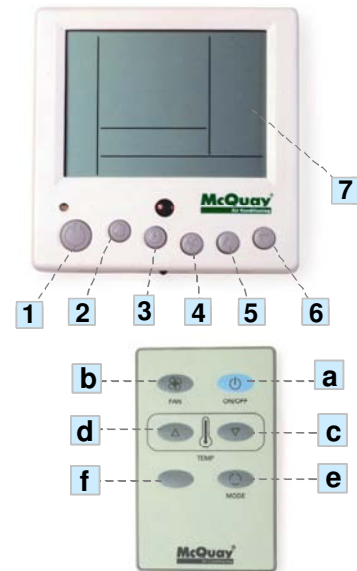
CONTROLS FEATURES

ELECTRONIC THERMOSTAT AC8000 + REMOTE CONTROL AC5300

Location	Wall Mounted	
Models	All models; all versions	
Parameters	On/Off	
	Temperature	
	Fan Speed	
	Auto Fan Speed selection	
	Date / Time setting	
Mode		
Main Functions	Selectable Temperature Operation range: 10-30°C or 16-30°C Automatic re-start with memory settings Heating/Cooling change-over based on system control input Auto-diagnosis Timer with 2 daily setting (14 weekly) Warm and cold draft protection Antifreeze protection Air sensor control Valves 2 or 3 ways with ON/OFF control Remote control – max. distance: 2.5 metres	
Integration into FCU Network	Direct connection [with NIM integration on AC8000]	
Integration with Smart Managar	Direct connection [with NIM integration on AC8000]	

- 1 On/Off key
- 2 Heating/Cooling mode key
- 3 Clock/Timer setting
- 4 Fan Speed selection key (HIGH/MEDIUM/LOW)
- 5 Temperature up key
- 6 Temperature down key
- 7 Back-light LCD Display

- a On/Off key
- b Fan Speed selection key (HIGH/MEDIUM/LOW)
- c Temperature up key
- d Temperature down key
- e Heating/Cooling mode key
- f Clock/Timer setting



AUTO-DIAGNOSIS

- E1:** Ambient temperature sensor incorrect operation
- E2:** Water temperature sensor incorrect operation
- E3:** Potentiometer incorrect operation or on board control/wall mounted thermostat conflicting mode selection
- E4:** Fan Coil / Chiller conflicting mode selection

INSTRUCTIONS

Display Room Temperature.

Press setting – key continually once and LCD display indoor room temperature. After 5 seconds LCD will display setting temperature.

Setting Time. (Week)

Press setting – key continually three times and access to modify week mode .Press UP/DOWN key to set week. **(Clock)** Following press setting – key to modify clock. Press UP/DPWN key to set clock (24 h). Press other key to exit



Timer.


Press setting – key continually five times and access to set timer. Press UP/DOWN key to modify setting opening and closing time. There are 14 settings times a week. Press other key to exit.

Set disable or enable on time.

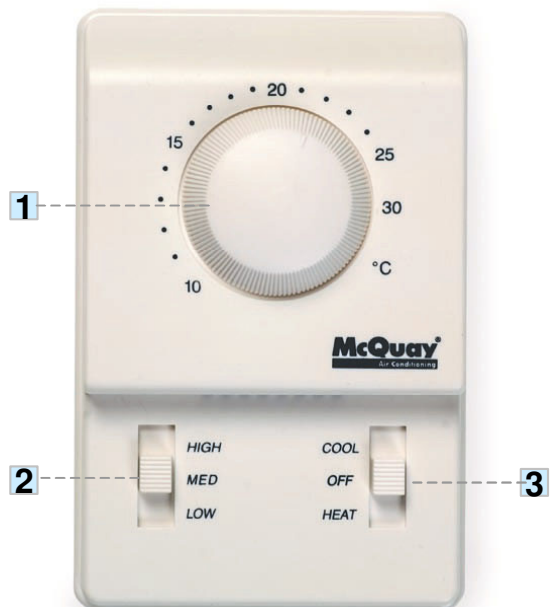
Press setting – key continually till display “SET CLOCK, SET TIMER” and access to set disable or enable on time mode. Press UP/DOWN key to select disable or enable. Press other key to exit.

CONTROLS FEATURES

MECHANICAL THERMOSTAT AC512/AC513

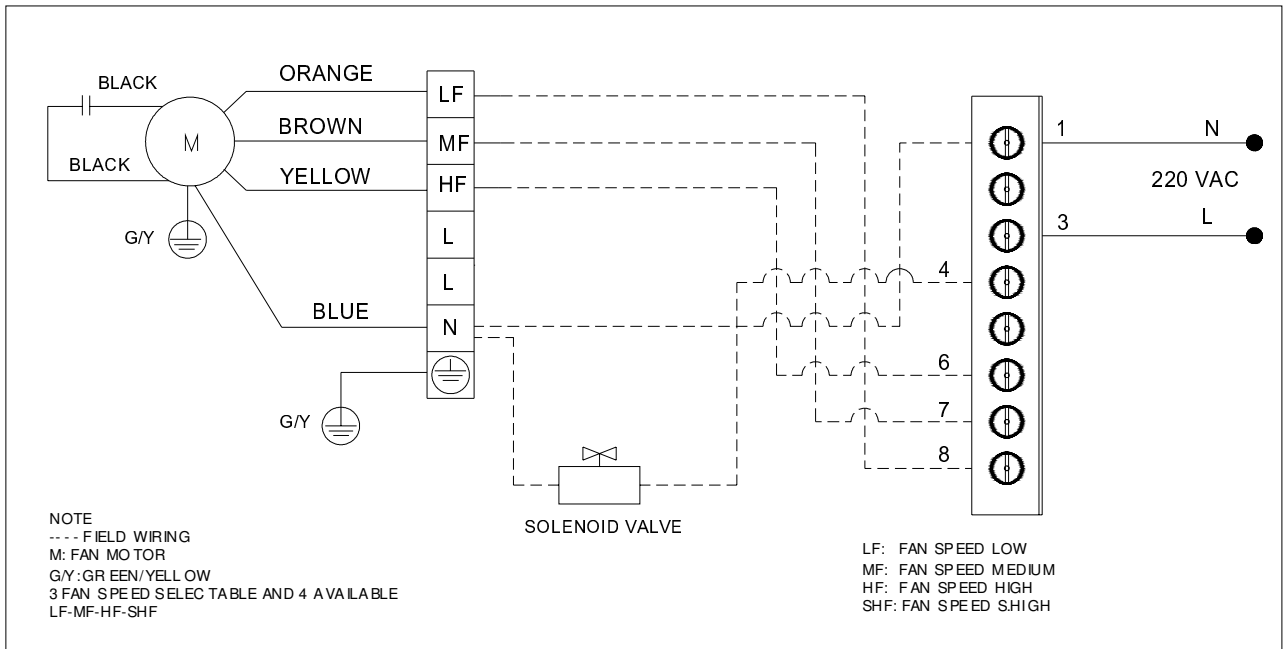
Location	Wall Mounted	
Models	All models	
	AC512: 2 Pipes version	
	AC513: 4 Pipes version	
Parameters	On/Off	
	Temperature	
	Fan Speed	
Main Functions	Selection Temperature operation range: 10-30°C	
	Valves 2 or 3 ways with ON/OFF control	

- 1 Potentiometer for temperature regulation
- 2 Fan speed keys (HIGH/MEDIUM/LOW)
- 3 Heating/Cooling mode buttons

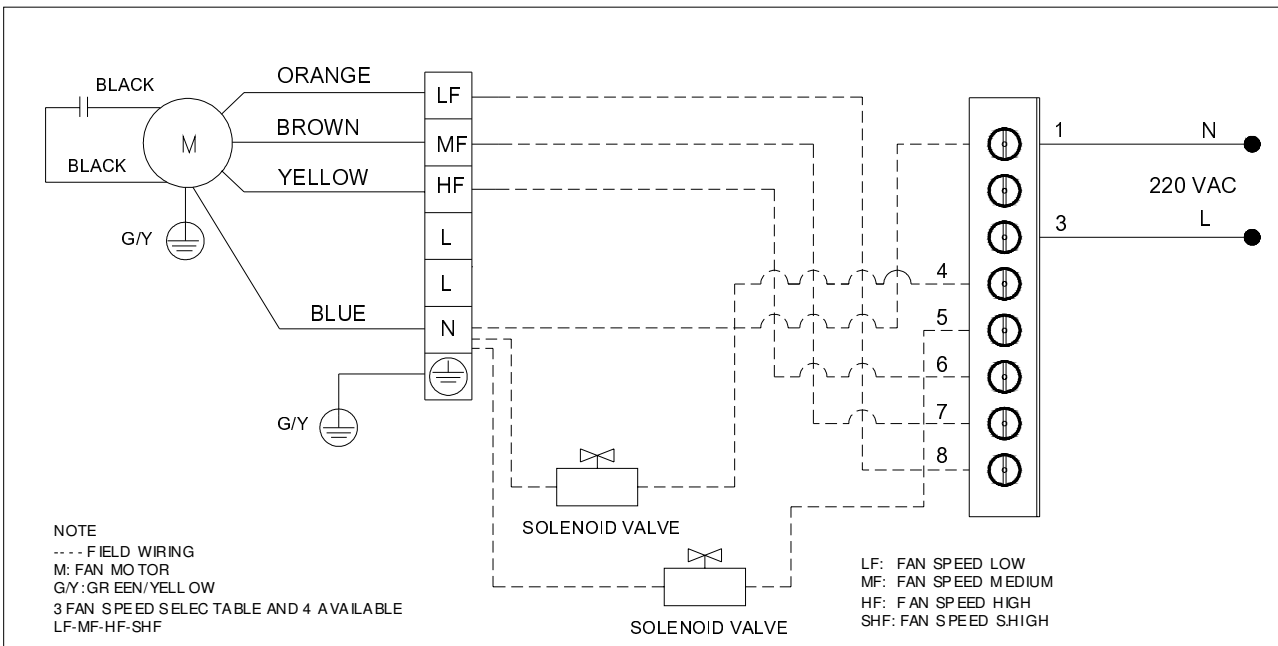


WIRING DIAGRAMS

MODELS	MCW 200 / 600 - C
	2 PIPES



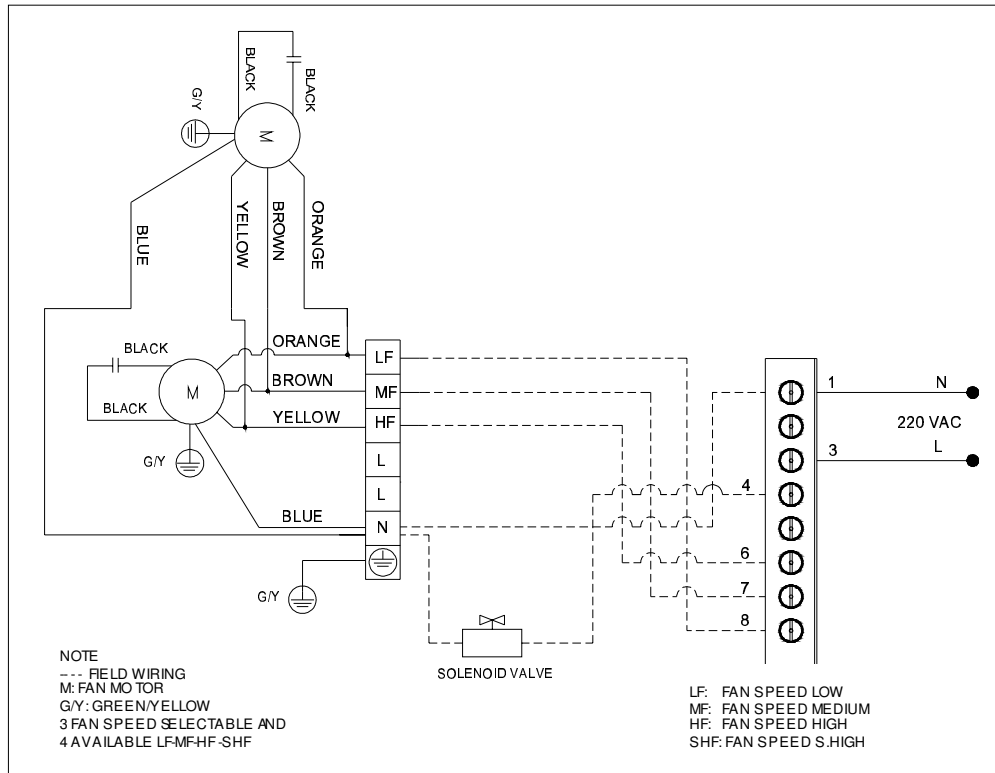
MODELS	MCW 800 / 1200 - C
	2 PIPES



MODELS

MCW 200 / 600 - C

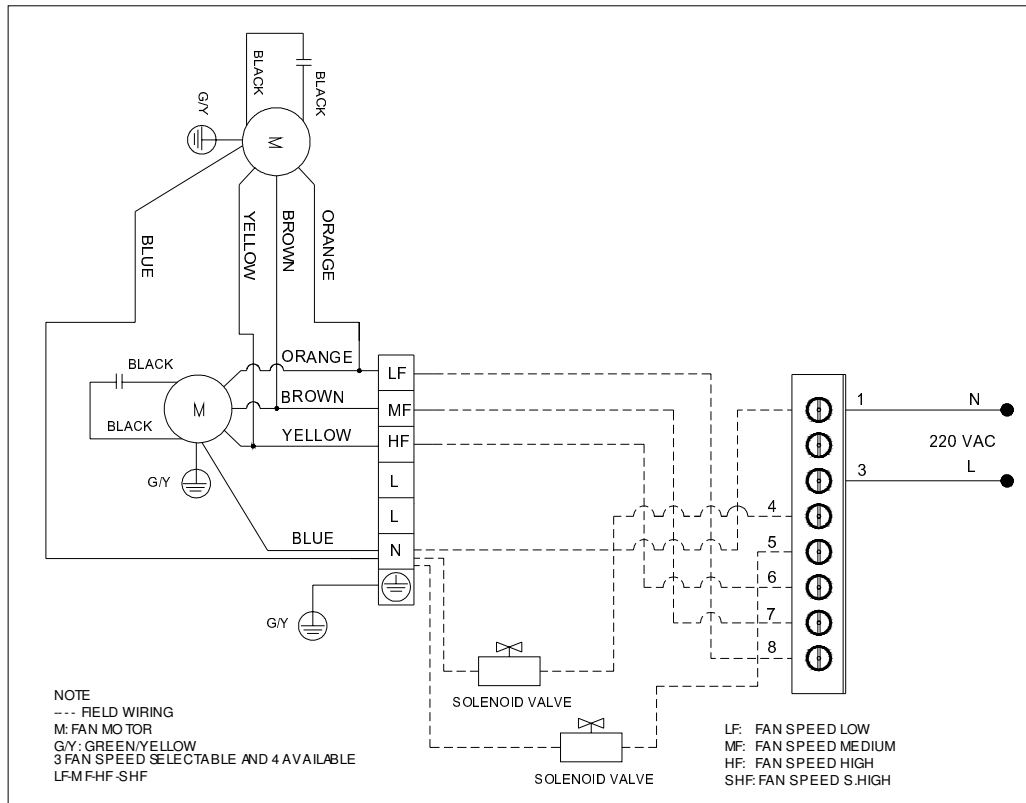
4 PIPES



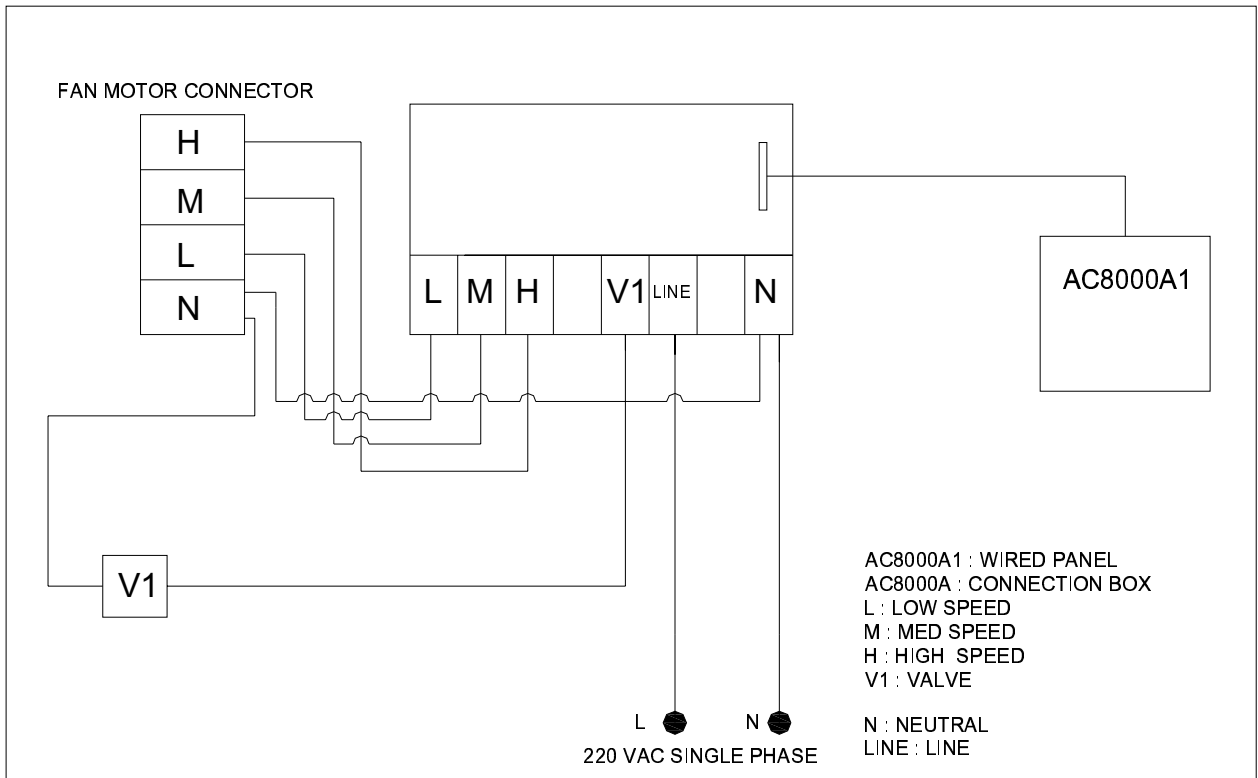
MODELS

MCW 800 / 1200 - C

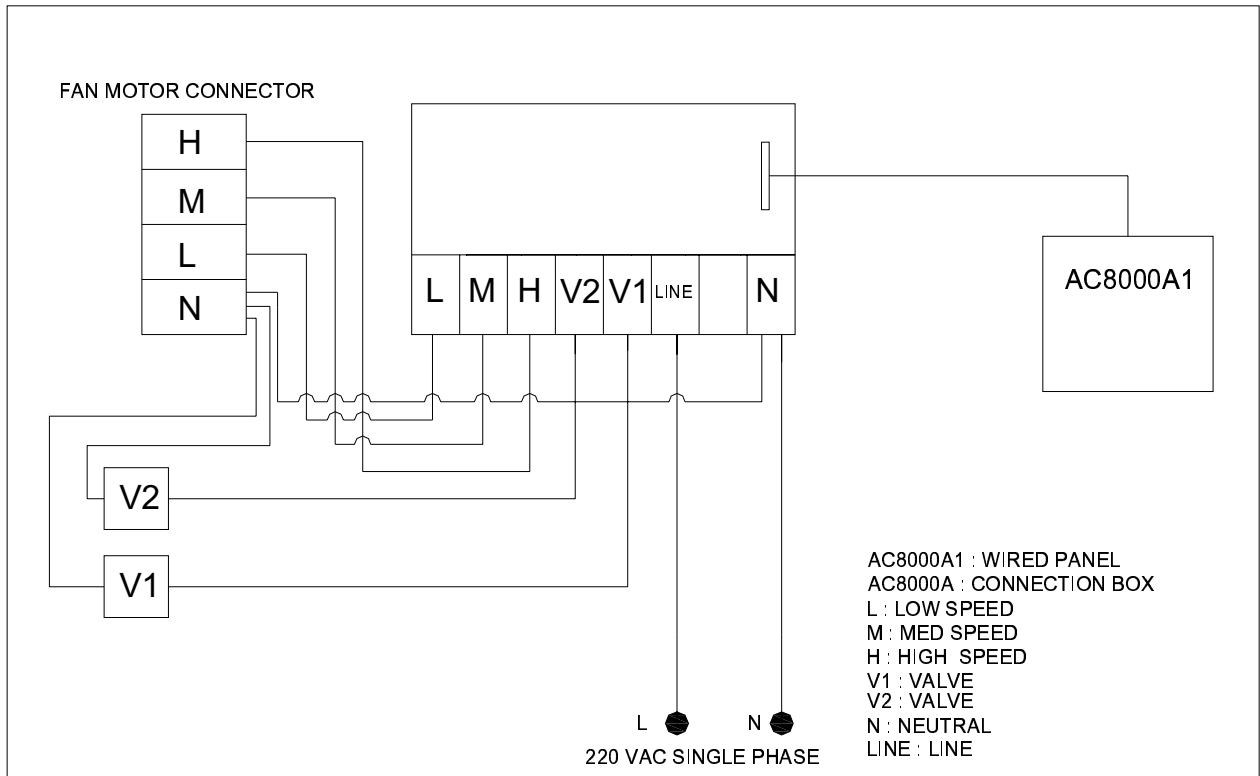
4 PIPES



MODELS	MCW 200 / 1200 – C [2 pipes]
	AC8000



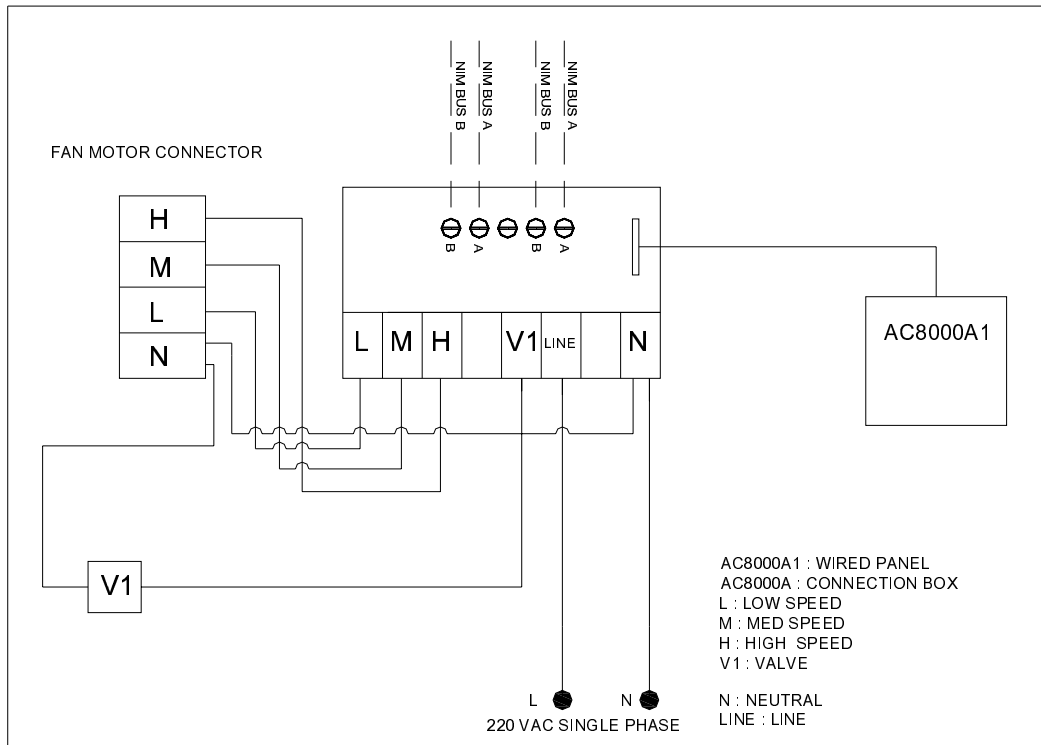
MODELS	MCW 200 / 1200 – H [4 pipes]
	AC8000



MODELS

MCW 200 / 1200 – C [2 pipes]

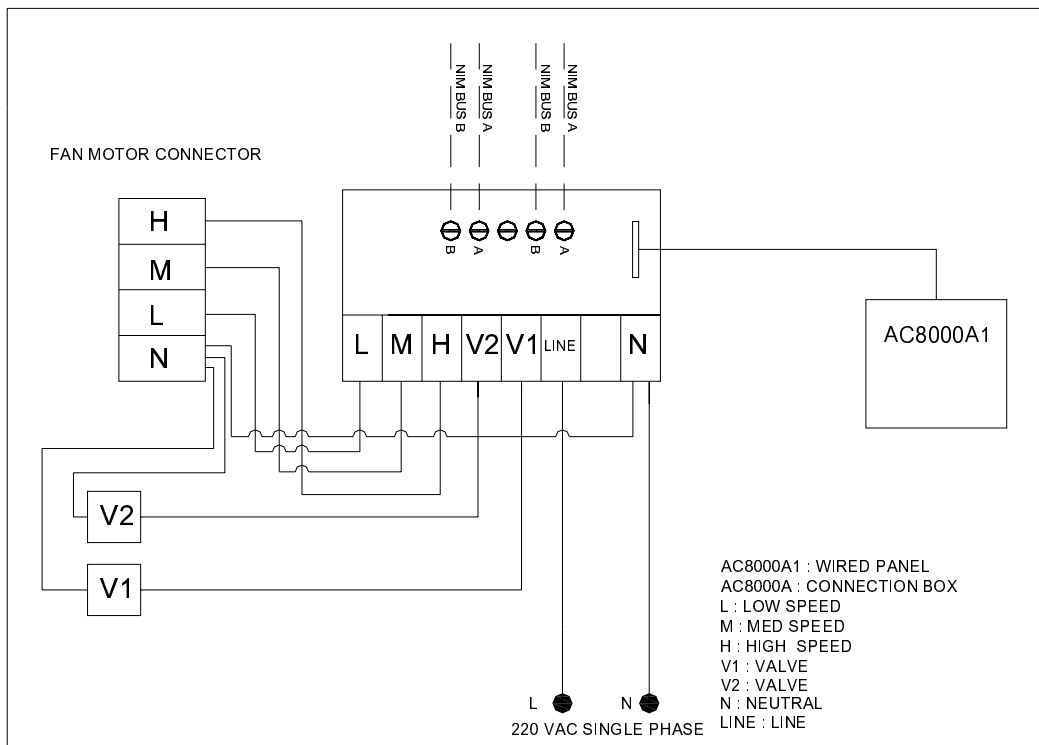
AC8000 with NIM integrated



MODELS

MCW 200 / 1200 – H [4 pipes]

AC8000 with NIM integrated



INSTALLATION

RECEIVING

All units leaving the McQuay plant have been inspected to ensure the shipment of high quality products and reasonable means are utilized to properly pack the fan coil units to protect them in transit.

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 damage or loss can be determined. The carrier's agent will make an inspection report and a copy will be given to the consignee for forwarding to the carrier with a formal claim.

LOCATION

Before installation, please check the following:

1. There must be enough space for unit installation and maintenance. Please refer to the unit's drawings and dimensions and fig.1 for the minimum distance between the unit and obstacle.
2. Please ensure enough space for piping connection and electrical wiring.
3. Please make sure that the hanging rods can support weight of the unit.

INSTALLATION

1. The unit is designed for concealed ceiling installation.
2. There are holes on the top of the unit for hanging. Please refer to Fig.1. Fig.2 and Fig.3.
3. Make sure that the top of the unit is level.

INSULATION

1. Use proper insulation material only.
2. Chilled water pipes and all parts on the pipes should be insulated.
3. It is also necessary to insulated air ducted.
4. Adhesive for insulation should work under 0°F (-18°C) and 200°F (93.3°C).

Fig. 1

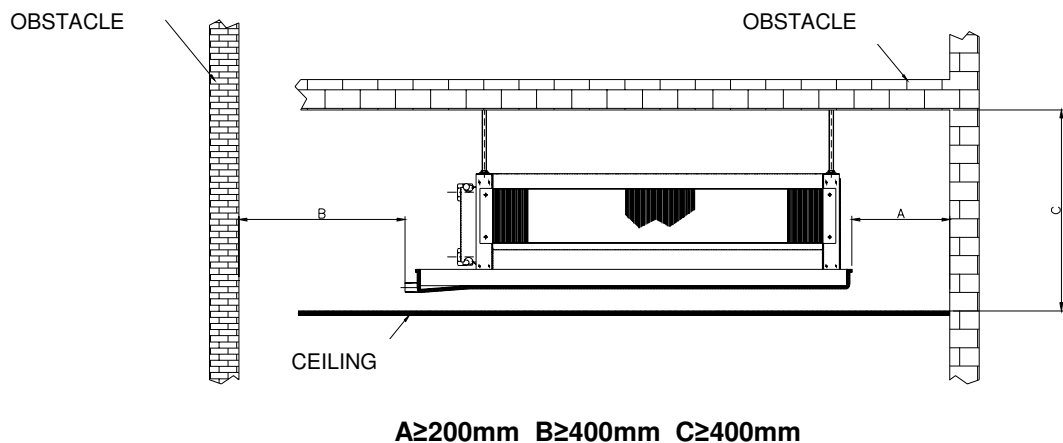


Fig. 2

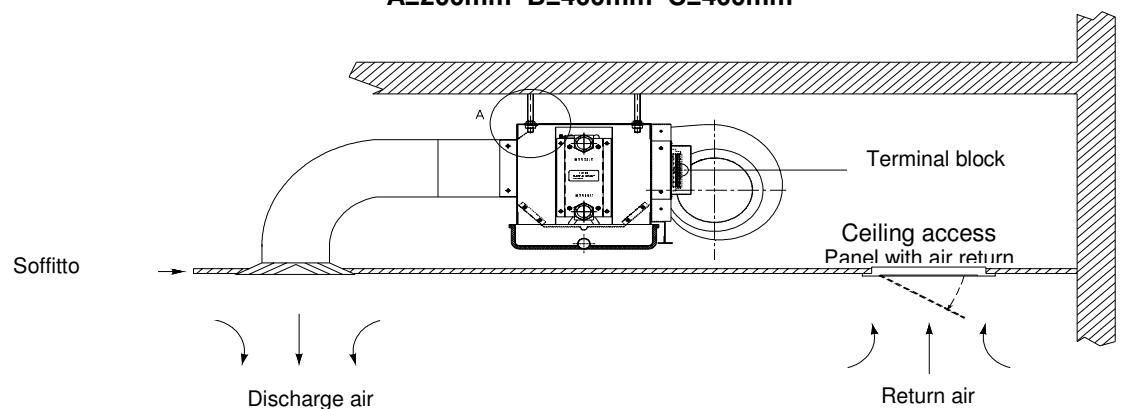
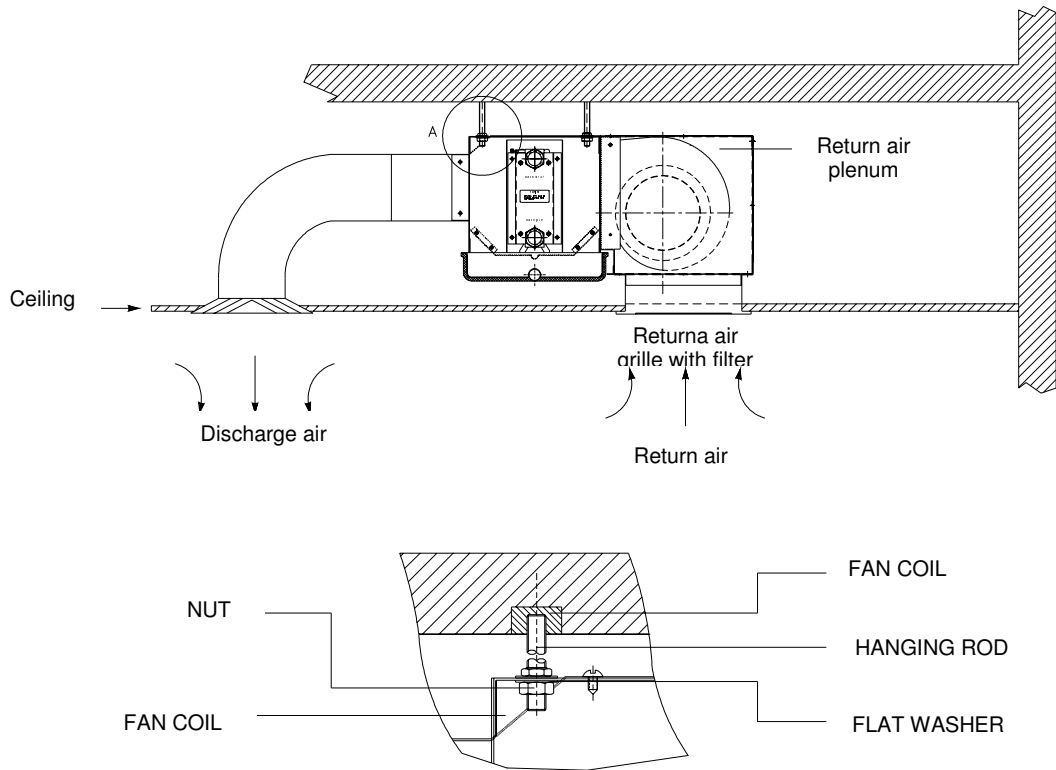


Fig.3



AIR DUCT CONNECTION

1. Circulatory air pressure drop should be within External Static Pressure
2. Galvanized steel air ducts are suitable .
3. Make sure there is no leak of air.
4. Air duct should be fire-proof, refer to concerned country national and local regulations.

PIPE CONNECTION

1. Using suitable fittings as water pipe connections. Refer to the specification.
2. The water inlet is on the bottom while outlet on top.
3. the connection must be concealed with rubberized fabric to avoid leakage.
4. Drain pipe can be PVC or steel.
5. the suggested slope of the drain pipe is at least 1:50.

WIRING

1. Wiring connection must be done according to the wiring diagram on the unit.
2. the unit must be GROUNDED well.
3. An appropriate strain relief device must be used to attach the power wires to the terminal box.
4. An 7/8" knockout hole is designed on the terminal box for field installation of the strain relief device.
5. Field wiring must be complied with the national security regulations.



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