



CHILLED WATER FAN COIL UNIT

MCW-VC SERIES

www.mcquay.com.hk



All the above information is for reference only. Due to product improvements, the models, specifications and performance are subject to change without prior notice. Please contact us directly for update parameters.

Engineered for flexibility and performance.™



MCQUAY INTERNATIONAL

A history of leadership.

Since 1872, as a pioneer in the manufacture of the steam engine, McQuay International has been providing quality equipment. We have been transformed to be at the forefront of changes in the HVAC industry, while leading the industry in environmental issues.

Nowadays, McQuay, as part of Daikin Industries, a Fortune 1000 company, becomes one of the largest air conditioning, heating, ventilating and refrigeration companies in the world. We have earned a worldwide reputation for providing a full line of quality products and expertise to meet the demands of our customers. Our representatives work with you to design HVAC systems that can save your money while providing optimal overall system performance and occupant comfort. The engineered flexibility of our products allows you to fine tune your HVAC system to meet the specific requirements of your application. With the support of ISO 9001 accredited manufacturing plants, you benefit from lower installed and operating costs, high energy efficiency, quiet operation, superior indoor air quality (IAQ) and low cost maintenance and service.



In 1917, McQuay provided the air ventilation units for classrooms.



In 1952, McQuay published an advertisement for water cooling coils in a magazine.



MCQUAY CHINA

Leading the way with innovative solutions.

McQuay China comprises of the most important air conditioning equipment manufacturing facilities in Asia. Founded as part of our ongoing effort to expand our capabilities and capitalise on new opportunities.

Two manufacturing plants were established in Shenzhen and Wuhan in 1994 and 1996 respectively, and a third factory was opened in the city of Suzhou in 2002. McQuay China operates more than 50 sales and service offices in addition to our 26 branches covering more than 100 cities throughout China.



Shenzhen



Suzhou

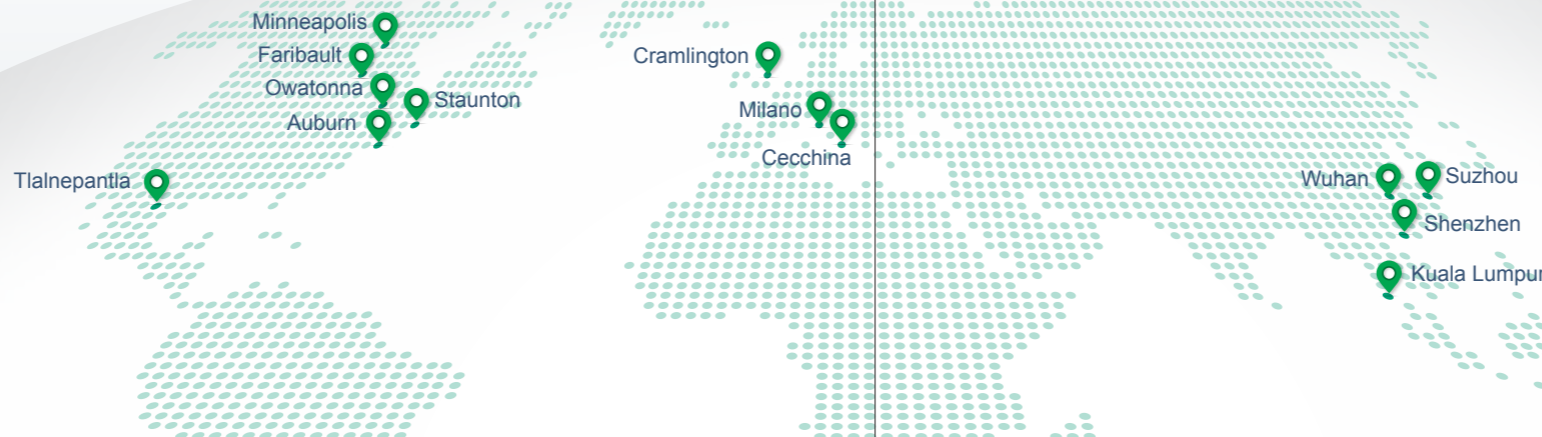


Wuhan

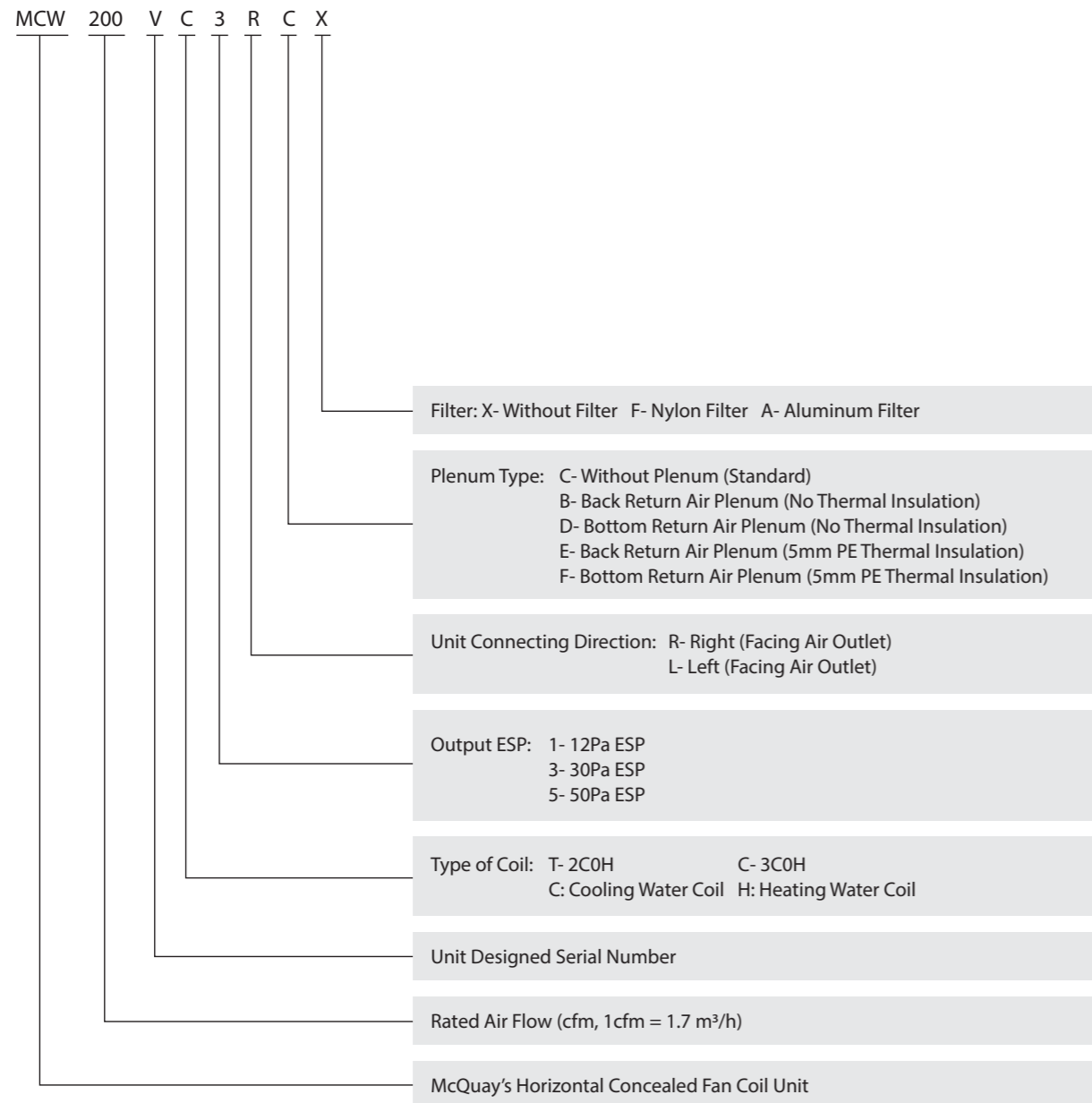
EASTERN	SOUTHERN	WESTERN	NORTHERN	CENTRAL	
Changsha	Dongguan	Chengdu	Beijing	Hefei	Hong Kong
Hangzhou	Fuzhou	Chongqing	Shenyang	Jinan	
Nanchang	Guangzhou	Wuhan	Shijiazhuang	Nanjing	
Ningbo	Nanning	Xian	Taiyuan	Suzhou	
Shanghai	Shenzhen	Xinjiang	Tianjin	Zhengzhou	

During the years, in collaboration with local HVAC engineers and our engineering representatives, we have provided not only a comprehensive range of air conditioning products but also environmentally friendly solutions to meet continual market demand for energy saving and environmentally sound technologies.

Our renowned brands:



MODEL NUMBER Nomenclature



SUPERIOR TECHNOLOGY; COMPREHENSIVE FEATURES

Standard Type

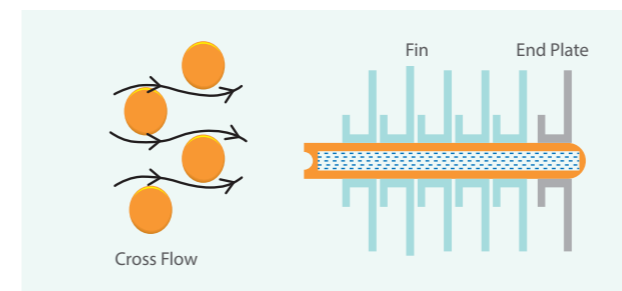
Applications: It is suitable to be used in all type of public, commercial or civil buildings.

McQuay's fan coil unit: MCW-VC series employs the high efficient heat exchange design. Coupled with the advanced motor controlling technology, it constantly ensures the precise operation of the unit. All parts are not only produced with raw materials of high quality, they are inspected in a stringent manner as well. At the same time, it is also compatible with a set of smart control products and integrated control solutions.



Lightweight; Slim size

The body is both lightweight and aesthetically designed. Being ultra-thin and compact, it can be installed within narrow ceilings and reduces the required installation space. With its concealment design as well as all kinds of decorations, it perfectly integrates into the architectural style.



High efficiency heat exchange; Superior features

The unit is made of high-quality hydrophilic slit fins and mechanical expanded copper tubes. Combined with the countercurrent design, it ensures that the unit possesses superior heat transfer function. Its broad and huge fan blade design minimizes the noise produced by the unit.



Perfectly localized; Flexible installation

Having many options for its static pressure, it appropriately satisfies the needs of air circulation in vary distances. The bottom return air plenum and back return air plenum are interchangeable on site. As the left-sided unit and right-sided unit are also interchangeable at the site, the installation becomes flexible and convenient.



Abundant accessories; Safe and reliable

The unit can be fitted with several accessories such as a drain pump, PTC electric heater, air filtration module, etc. Simultaneously, its smart controls induce flexibility and safety.

CASING

- Constructed of galvanized steel

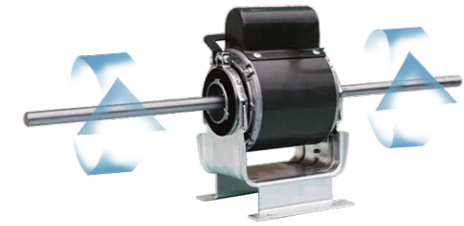
FAN

- Double Inlet Double Width(DIDW) direct driven forward curved centrifugal type
- Constructed of galvanized steel
- Low fan speed with low noise level



MOTOR

- 3-speed, 220V-240V single phase, 50Hz
- Permanent split capacitor type with lifetime lubricated ball bearings
- Capacitor concealed in metal casing
- High efficiency, stable and quiet
- Brushless DC motor (option)



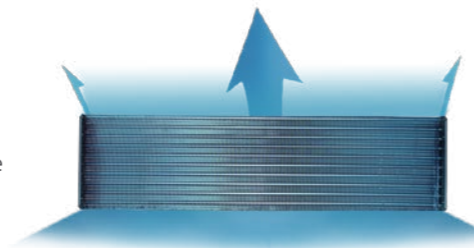
RELIABILITY

- Rated in accordance with AHRI Standard 440 and GB/T 19232



COIL

- Rated in accordance with AHRI 410
- Copper tube, aluminum fin with hydrophilic coating
- Constructed with air vent cock and drain valve
- 2-pipe system with 3-row coil;
- 4-pipe system with 3+1-row coil



DRAIN PAN

- 1 piece stamped
- Epoxy coated galvanized steel or stainless steel
- Insulated with standard 6mm (with 12mm option) class "0" fire retardant — closed cell elastomeric thermal insulation



WIRING

- Concealed with metal conduit



ACCESSORIES

Temperature Controller



AC2980 Series

- 4-speed: High/Medium/Low/Quiet
- One-key energy-saving, anti-freezing protection, last state memory, key lock, etc.



AC2982 Series

- Modulating speed control for DC motor
- One-key energy-saving, anti-freezing protection, key lock, etc.
- Modbus interface



AC8800 Series

- Fully covered touch screen with modern design
- Capable to link with A+ Mini Chiller (simply controlled by App)
- Innovative intelligent sensor detects the approach of human within the operating area and activates the screen
- Anti-freezing protection, last state memory, key lock, etc.

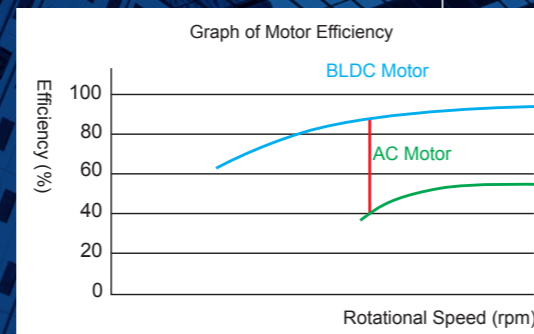
Remarks: 4-pipe system with 3+1-row model is also available. Please contact our engineers for consultation.

BRUSHLESS DC MOTOR VS AC MOTOR

The efficiency of the fan coil unit with brushless DC motor is much higher than that of AC motor. Besides saving more energy, the variable speed control is more stable and the noise level is lower. Additionally, it responds rapidly to the changes in the indoor heat load. As an energy-saving, environmentally friendly, quiet and comfortable product, it is widely used in public places such as villas, apartments, luxury hotels, hospitals and office buildings, etc.

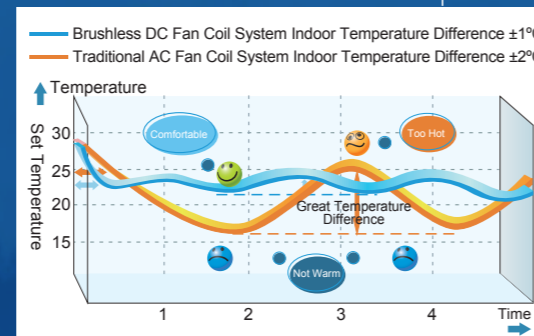
High efficiency and energy-saving

To compare the fan coil unit with brushless DC motor and that with the traditional AC motor, the efficiency of the former is nearly twice of the latter and the average power consumption of the former is merely between 50% and 70% of that of the latter. It can be controlled by the 3-speed temperature controller that is commonly found in the market, though McQuay's 7-speed temperature controller is dedicated and recommended. Due to the broad range of speed adjustment, it responds better to the changes in heat load, resulting in more energy saved as well as a comfortable living environment. The motor has a better dustproof and waterproof feature which ensures the unit with high efficiency, reliability and low noise levels for long-term operation.



Low noise levels and comfort

By employing the PWM control, the motors operate in a stable manner, minimizing vibration and noise levels. It also supports a lower rotational speed, resulting in a lower noise level while operating in part load. On top of the option to adjust 7-speed, the temperature control is as precise as $\pm 1^\circ\text{C}$. This is beyond the traditional air-conditioner that ventilates the air without running hot and cold effect in order to create a comfortable and quiet room environment. The combinations of adjustable multi-rotational speeds with ultra-high-end quiet mode achieve a rapid cooling effect, quiet, low noise levels and other features, delivering a more comfortable experience for you.



Smart control

It is optional to pair with a temperature controller with RS485 communication interface which supports the standard Modbus communication protocol. In addition, it can be compatible with the Building Automation System to remote automatic controls in order to achieve centralized operation and supervision. Furthermore, it has a whole spectrum of functions such as one-key energy-saving, auto mode, key lock, last state memory, anti-freezing protection, auxiliary electric heating controls (optional), etc. The optional touch screen LCD display achieves variable speed control with elegant appearance blending perfectly into the architectural construction.



MCW-VC SPECIFICATIONS

(2 Pipes 3 Rows, Alternative: Brushless DC Motor)

Model			MCW200VC	MCW300VC	MCW400VC	MCW500VC	MCW600VC	MCW700VC	MCW800VC	MCW1000VC	MCW1200VC	MCW1400VC		
Nominal Air Flow (ESP: 12Pa, 30Pa, 50Pa)	H	m³/h	340	510	680	850	1020	1170	1360	1700	2040	2380		
	M	m³/h	279	418	558	697	836	959	1115	1394	1673	1952		
	L	m³/h	170	255	340	425	510	585	680	850	1020	1190		
Nominal Cooling Capacity	Total	H kW	2.22	3.30	4.26	5.05	5.82	6.60	8.20	9.30	11.19	13.00		
	Sensible	H kW	1.38	2.22	2.77	3.40	4.00	4.55	5.50	6.50	7.70	9.20		
Nominal Heating Capacity	H kW	3.50	5.33	6.80	8.40	9.60	11.10	13.50	15.80	18.30	21.50			
Rated Input Power (AC)	12Pa ESP	H	W	32	43	56	73	93	113	133	152	188	228	
		M	W	29	37	49	64	81	100	116	147	159	209	
		L	W	22	28	37	46	66	80	92	118	127	173	
	30Pa ESP	H	W	39	53	72	83	107	122	142	174	217	250	
		M	W	36	45	58	73	93	108	132	167	204	226	
		L	W	27	34	46	55	75	88	105	141	164	193	
	50Pa ESP	H	W	46	62	80	95	112	131	168	200	237	295	
		M	W	39	52	75	86	107	111	146	191	216	280	
		L	W	29	43	68	70	91	99	118	171	195	256	
	Rated Input Power (DC)	12Pa ESP	H	W	17	22	33	45	60	77	66	106	118	151
			M	W	15	17	24	32	37	48	47	66	80	100
			L	W	9	12	12	14	16	18	27	26	38	39
30Pa ESP		H	W	23	29	41	56	73	90	83	124	143	183	
		M	W	19	21	29	36	44	55	57	76	90	117	
		L	W	10	13	14	15	19	20	30	29	41	45	
50Pa ESP		H	W	29	37	50	69	90	105	103	145	174	220	
		M	W	24	26	36	46	54	63	70	91	108	131	
		L	W	11	15	15	17	21	22	32	33	46	50	
Water Flow			m³/h	0.37	0.58	0.72	0.88	1.02	1.14	1.41	1.67	1.95	2.29	
Water Pressure Drop		Cooling	kPa	25	21	30	30	32	35	32	40	35	50	
		Heating	kPa	15	18	26	26	22	28	26	35	31	42	
Coil	Type	Quality Heat Exchanger With Hydrophilic Slit Fin And Mechanical Expanded Copper Tube												
	Work Pressure	MPa	1.6											
Water Header Pipe Size	Rc 3/4													
Condensate Drain Pipe Size	R 3/4													
Fan	Type	Centrifugal (Blade: Forward)												
	Quantity		1	2	2	2	2	2	3	3	4	4		
Motor	Type	Single Phase Capacitor Running												
	Quantity		1	1	1	1	1	1	2	2	2	2		
	Power Supply	V/Hz	220~240/50											
Dimension of Standard Drain Pan	Without Plenum	mm	625	815	865	945	1045	1095	1425	1475	1675	1825		
Net Weight (AC)	Without Plenum	kg	10.3	12.4	12.8	15.1	16.7	17.6	25.2	28.6	31.0	33.5		
	With Plenum	kg	13.2	16.0	16.7	19.3	21.2	22.4	31.3	34.8	38.0	41.5		
Net Weight (DC)	Without Plenum	kg	12.1	14.2	14.6	16.9	18.5	19.4	28.2	31.6	34.0	36.5		
	With Plenum	kg	15.0	17.8	18.4	21.0	23.1	24.2	34.2	37.8	41.1	44.5		

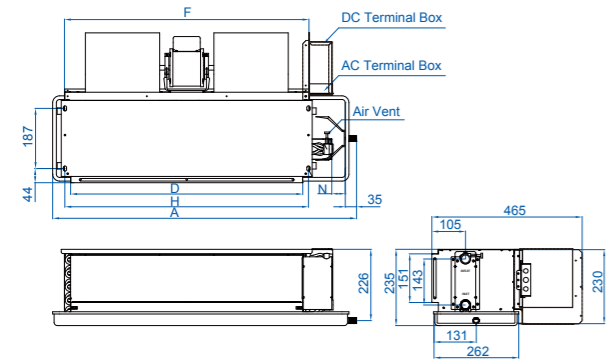
Notes:

- Cooling condition: 27°C DB/19.5°C WB indoor temperature and water inlet 7°C outlet 12°C;
- Heating condition: 21°C DB indoor temperature and water inlet 60°C, water flow: same as cooling condition;
- H, M, L: High, medium and low fan speed;
- AC indicates AC motor, DC indicates brushless DC motor;

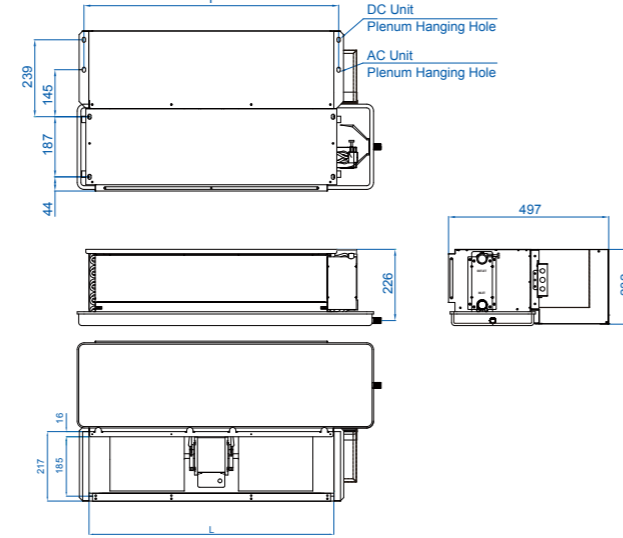
MCW-VC

Outlines and Dimensions

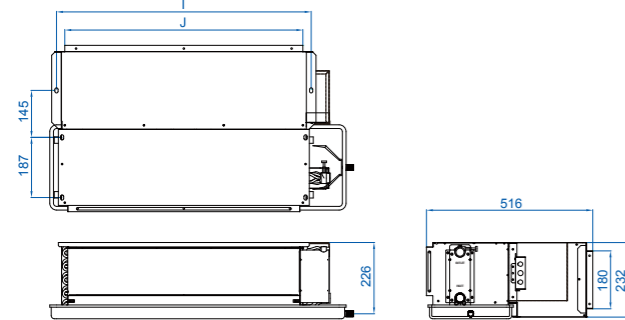
Without Plenum:



With Bottom Return Air Plenum:



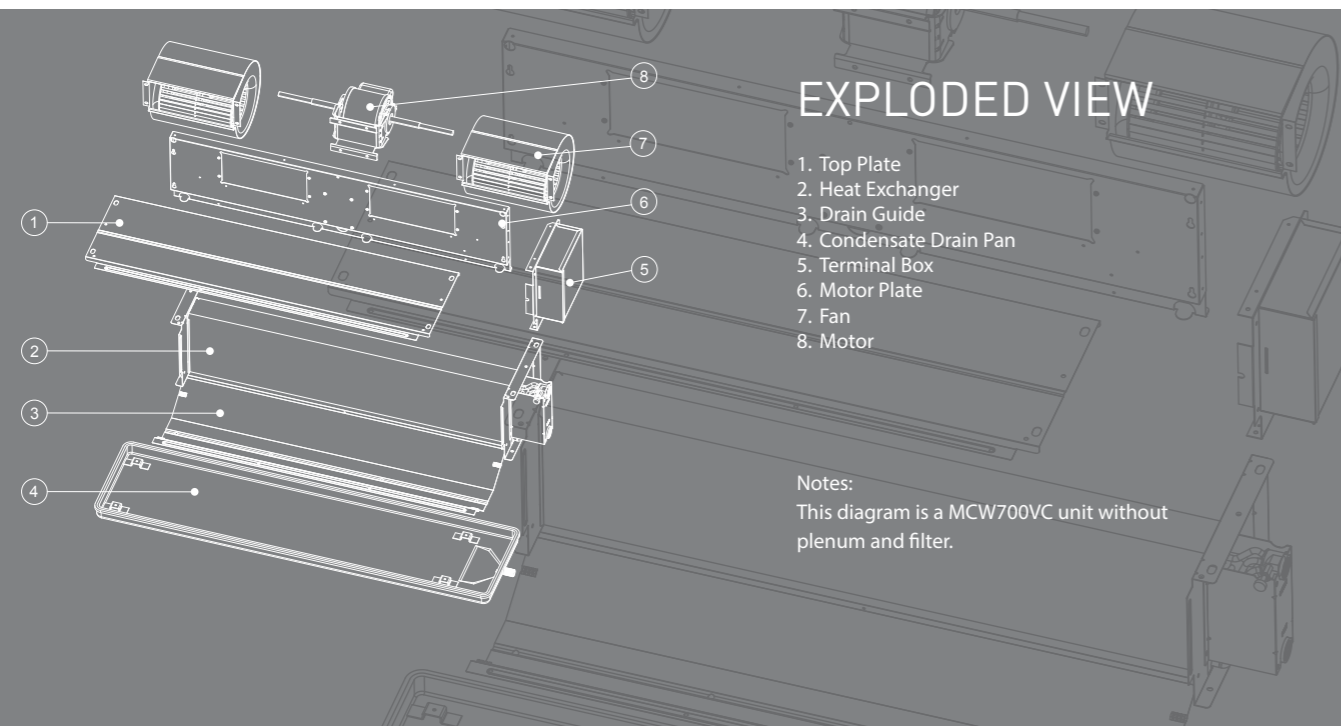
With Back Return Air Plenum:



Unit: mm

Model	Dimension A		D	F	H	I	J	L	N	
	Standard Drain Pan	Extended Drain Pan							Standard Drain Pan	Extended Drain Pan
MCW200VC	625	925	402	440	437	472	420	441	40	340
MCW300VC	815	1115	592	630	627	662	610	631	40	340
MCW400VC	865	1165	642	680	677	712	660	681	40	340
MCW500VC	945	1245	722	760	757	792	740	761	40	340
MCW600VC	1045	1345	822	860	857	892	840	861	40	340
MCW700VC	1095	1395	872	910	907	942	890	911	40	340
MCW800VC	1425	1725	1202	1240	1237	1272	1220	1241	40	340
MCW1000VC	1475	1775	1252	1290	1287	1322	1270	1291	40	340
MCW1200VC	1675	1975	1452	1490	1487	1522	1470	1491	40	340
MCW1400VC	1825	2125	1602	1640	1637	1672	1620	1641	40	340

Notes: ■ "A-Extended Drain Pan" is the standard condensate drain pan added with 300mm;
 ■ The specification of hanging hole is 10 x 16;



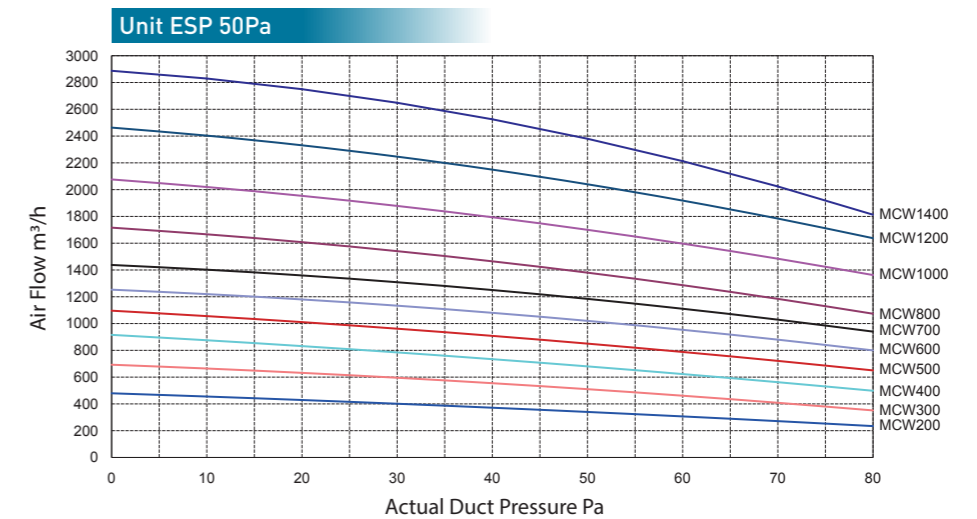
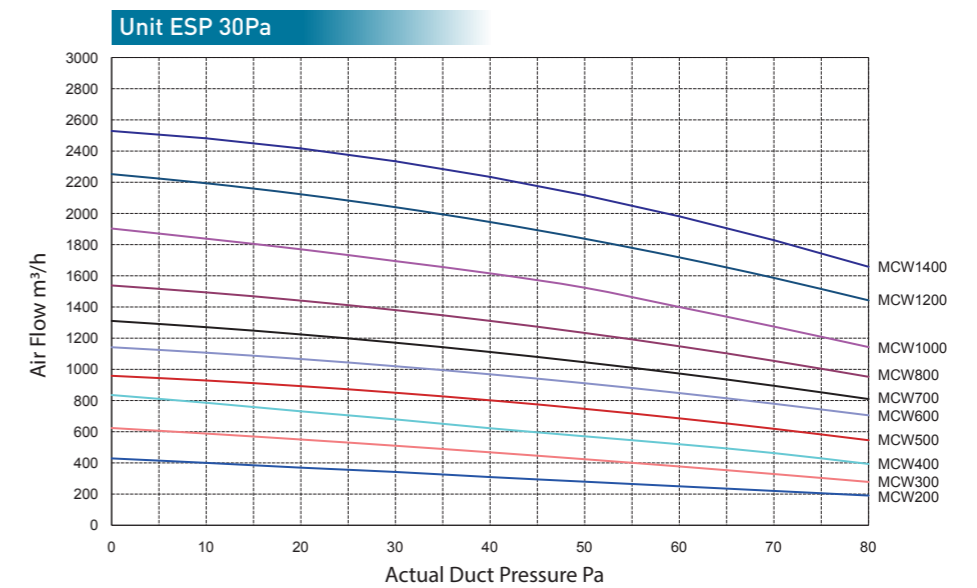
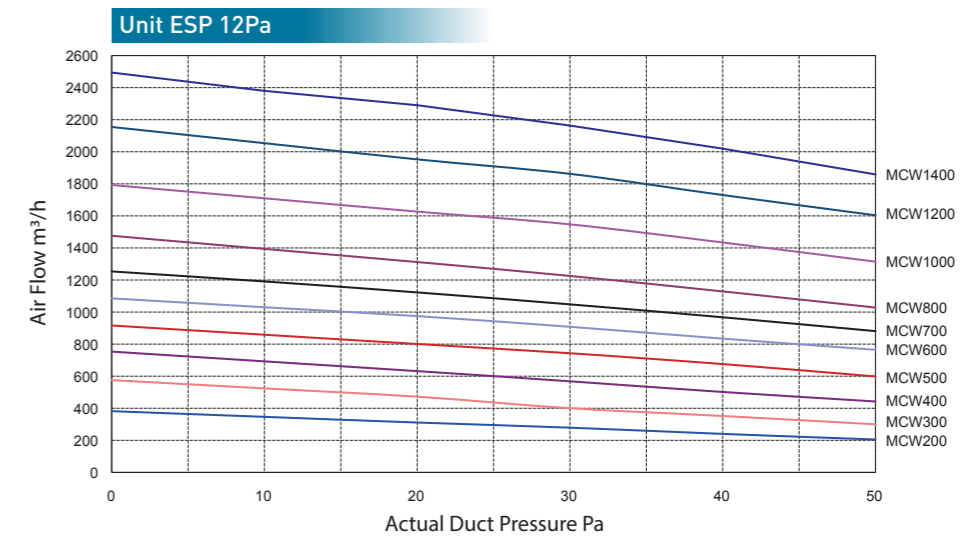
EXPLODED VIEW

1. Top Plate
2. Heat Exchanger
3. Drain Guide
4. Condensate Drain Pan
5. Terminal Box
6. Motor Plate
7. Fan
8. Motor

Notes:
 This diagram is a MCW700VC unit without plenum and filter.

AIR FLOW VS ESP CURVE

(Applied to MCW-VC Series)



MCW-VC (AC MOTOR)

Operating Noise Data

ESP 12Pa

Model	MCW200VC			MCW300VC			MCW400VC			MCW500VC			MCW600VC			MCW700VC			MCW800VC			MCW1000VC			MCW1200VC			MCW1400VC					
	Fan Speed	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M
Octave Band Frequency	63Hz	6	4	0	10	4	6	8	7	1	9	7	2	14	9	2	12	10	1	17	13	4	20	15	7	17	14	6	19	14	7		
	125Hz	19	15	4	19	15	7	22	19	14	25	23	19	29	24	19	28	25	17	29	26	14	33	31	21	32	29	23	35	29	20		
	250Hz	25	21	12	26	22	15	28	24	17	30	22	17	35	30	21	35	32	20	36	32	20	39	36	25	38	37	25	40	36	25		
	500Hz	29	25	12	30	26	18	33	29	17	34	31	20	38	33	25	37	33	22	37	33	23	42	38	28	41	39	29	43	39	31		
	1000Hz	29	25	12	32	27	17	34	30	12	37	32	18	41	34	25	41	36	22	40	34	20	44	39	27	45	40	28	47	43	30		
	2000Hz	26	21	11	28	23	14	32	27	12	33	27	14	37	30	21	39	33	18	36	30	16	41	35	22	40	36	22	46	41	28		
	4000Hz	16	14	12	18	14	12	21	16	12	23	18	12	31	22	13	35	27	14	27	20	13	33	26	13	33	28	15	38	33	17		
	8000Hz	13	13	13	13	12	12	14	12	12	17	13	12	23	15	11	26	19	13	19	15	13	24	16	12	26	21	13	30	22	13		
Overall dB(A)	35	28	20	36	31	23	40	34	23	41	36	25	45	39	29	45	40	27	44	38	27	48	43	32	49	44	33	51	46	35			

ESP 30Pa

Model	MCW200VC			MCW300VC			MCW400VC			MCW500VC			MCW600VC			MCW700VC			MCW800VC			MCW1000VC			MCW1200VC			MCW1400VC					
	Fan Speed	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M
Octave Band Frequency	63Hz	8	6	0	13	8	2	14	7	6	14	14	1	17	13	3	13	14	2	15	12	6	16	14	10	19	18	10	22	15	11		
	125Hz	20	17	10	24	19	13	24	17	13	27	25	17	31	26	15	28	25	18	32	28	20	31	36	27	35	32	25	36	33	25		
	250Hz	27	23	14	28	26	19	30	24	17	33	29	18	36	33	19	38	33	22	37	34	23	40	36	28	41	37	26	42	37	30		
	500Hz	32	28	16	33	30	20	36	30	22	38	34	23	40	35	23	39	34	24	39	35	26	42	38	31	46	40	30	45	41	34		
	1000Hz	34	29	15	34	30	19	39	31	20	41	36	22	43	37	22	42	38	24	43	37	25	45	41	31	47	42	30	48	44	34		
	2000Hz	31	26	12	31	26	15	35	27	16	37	31	16	39	33	16	40	35	21	38	33	20	43	38	28	43	38	24	44	40	30		
	4000Hz	20	15	12	21	16	13	25	17	14	29	23	12	32	25	12	35	29	15	30	24	14	37	32	20	36	29	14	36	31	18		
	8000Hz	14	12	12	15	14	13	18	5	14	22	15	11	24	17	11	26	20	13	23	17	13	29	23	17	27	20	11	27	21	12		
Overall dB(A)	38	30	19	39	35	25	42	35	26	44	39	27	47	41	27	47	41	29	47	41	30	49	44	36	51	45	34	51	47	38			

ESP 50Pa

Model	MCW200VC			MCW300VC			MCW400VC			MCW500VC			MCW600VC			MCW700VC			MCW800VC			MCW1000VC			MCW1200VC			MCW1400VC					
	Fan Speed	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M
Octave Band Frequency	63Hz	12	9	5	16	12	7	17	12	7	16	13	4	17	16	8	16	13	14	20	17	7	18	15	9	22	20	14	24	19	14		
	125Hz	26	24	19	28	23	18	26	23	18	31	27	18	33	29	24	31	26	23	33	30	22	32	31	25	37	33	30	38	34	28		
	250Hz	31	27	18	33	29	22	34	29	22	37	33	23	38	34	25	39	35	30	39	36	24	41	37	30	42	37	33	44	39	31		
	500Hz	33	29	20	36	35	28	39	35	28	40	37	27	42	38	29	40	35	30	43	38	28	43	39	31	46	42	37	47	43	36		
	1000Hz	35	31	19	39	36	26	41	36	26	43	39	26	43	40	29	44	40	33	44	39	25	46	42	33	48	43	37	49	45	37		
	2000Hz	32	28	14	35	32	22	37	32	22	38	35	21	40	36	25	42	37	30	40	35	21	44	40	30	44	39	32	46	41	32		
	4000Hz	22	16	11	25	22	14	28	22	14	32	28	14	33	29	16	37	31	22	34	29	14	39	35	22	37	31	23	39	33	22		
	8000Hz	15	12	11	17	15	14	19	15	14	24	19	12	24	20	14	27	21	15	22	22	13	32	26	15	28	21	14	31	23	15		
Overall dB(A)	42	35	25	43	38	31	44	40	31	47	42	31	49	43	33	48	43	37	49	43	31	51	46	37	52	47	41	53	49	41			

MCW-VC (BRUSHLESS DC MOTOR)

Operating Noise Data

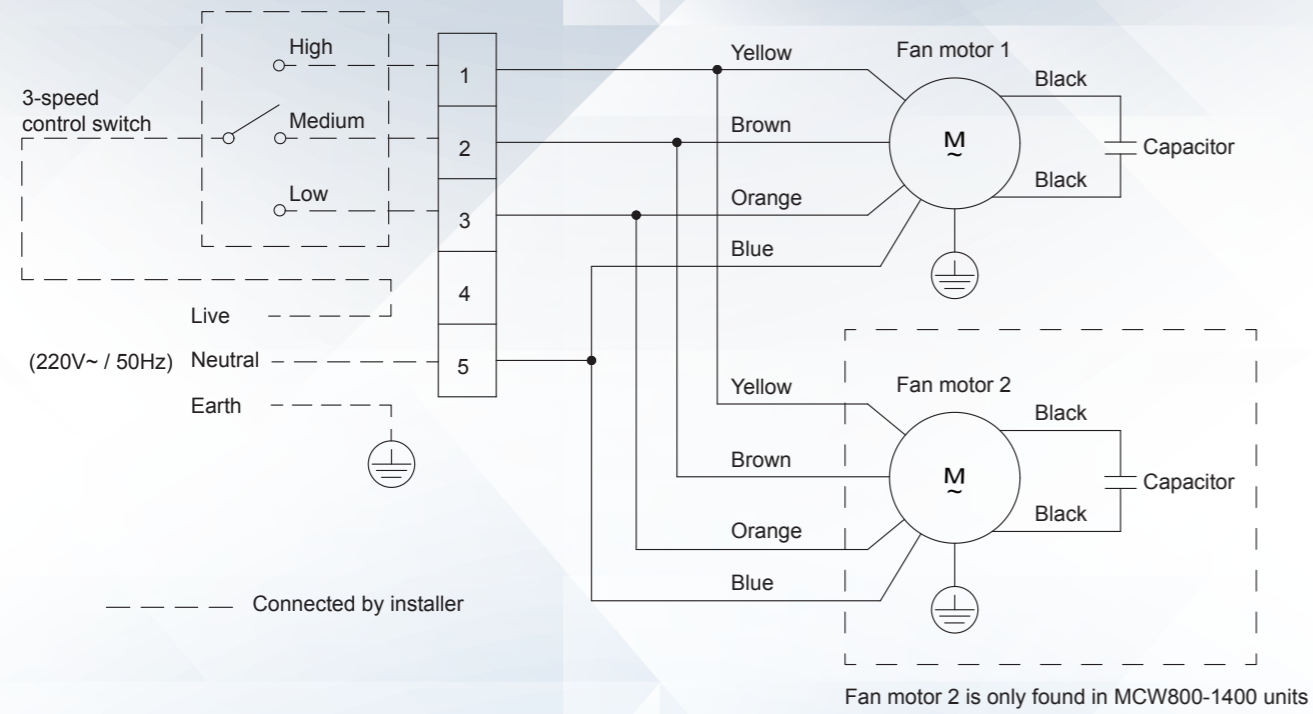
ESP 12Pa

Model	MCW200VC			MCW300VC			MCW400VC			MCW500VC			MCW600VC			MCW700VC			MCW800VC			MCW1000VC			MCW1200VC			MCW1400VC					
	Fan Speed	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M
Octave Band Frequency	63Hz	5	2	1	6	2	1	6	5	1	9	6	1	15	11	6	11	8	3	11	8	1	13	10	1	15	12	2	15	14	6		
	125Hz	17	14	4	20	15	5	24	19	8	26	22	10	31	27	16	28	26	15	27	23	13	29	25	14	31	28	16	34	29	18		
	250Hz	23	19	10	25	21	13	29	25	16	29	26	17	35	31	21	35	32	22	32	29	19	37	33	22	38	34	23	40	35	24		
	500Hz	28	24	13	30	25	15	33	29	19	35	32	24	38	35	26	37	33	24	36	32	22	40	35	24	41	37	28	42	37	30		
	1000Hz	29	24	12	30	25	14	34	29	17	37	33	20	40	34	24	39	35	24	35	29	20	41	34	25	45	40	27	45	40	27		
	2000Hz	25	20	12	28	22	16	31	26	14	34	30	18	35	31	21	38	33	21	32	28	17	39	32	22	41	36	22	43	38	24		
	4000Hz	15	13	12	17	13	12	21	16	14	24	20	15	29	23	14	33	27	16	27	20	15	34	28	17	32	26	15	37	29	16		
	8000Hz	11	11	11	12	11	11	16	14	13	18	16	15	21	16	14	25	19	15	19	16	15	27	23	19	25	18	12	27	20	12		
Overall dB(A)	33	28	19	34	30	21	38	34	23	40	37	27	43	39	29	44	39	29	40	36	27	45	40	30	48	43	32	49	44	33			

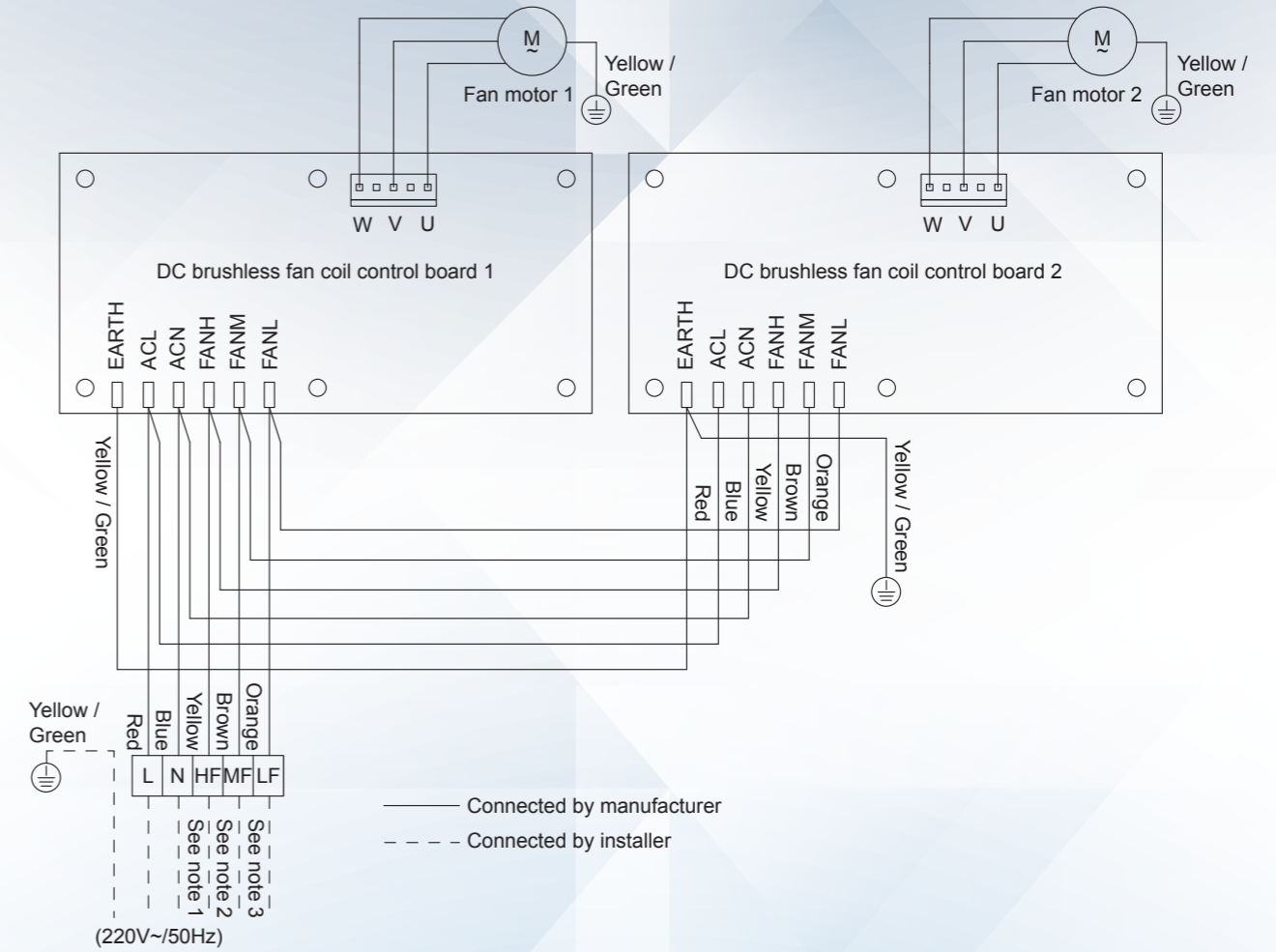
ESP 30Pa

Model	MCW200VC			MCW300VC			MCW400VC			MCW500VC			MCW600VC			MCW700VC			MCW800VC			MCW1000VC			MCW1200VC			MCW1400VC					
	Fan Speed	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M
Octave Band Frequency	63Hz	10	3	1	8	5	1	8	6	4	14	8	7	19	14	6	13	9	3	14	10	1	14	11	5	18	14	4	18	13	5		
	125Hz	22	18	8	24	20	8	25	21	10	27	25	13	33	28	17	30	26	16	31	25	15	30	27	15	34	30	17	35	31	19		
	250Hz	27	24	14	30	25	16	32	28	18	33	29	18	37	33	23	36	33	21	35	30	21	37	34	23	40	35	24	41	36	25		
	500Hz	31	27	16	33	29	19	35	32	21	38	34	24	41	36	27	38	34	25	38	34	24	41	36	26	43	40	29	44	39	29		
	1000Hz	33	28	16	34	30	17	37	32	20	40	36	23	40	36	26	42	36	26	38	34	23	41	35	26	47	42	29	47	42	29		
	2000Hz	29	24	13	31	27	17	34	28	16	38	33	20	38	32	22	39	34	23	36	30	19	39	34	24	43	38	24	46	40	26		
	4000Hz	21	15	12	21	16	12	24	18	14	29	22	15	32	26	15	35	29	16	30	23	15	35	30	17	35	29	16	39	32	16		
	8000Hz	13	11	11	13	11	11	17	14	13																							

WIRING DIAGRAM OF MCW-VC WITH AC MOTOR



WIRING DIAGRAM OF MCW-VC WITH BRUSHLESS DC MOTOR



Notes:

1. Connect to high fan speed output of temperature controller
2. Connect to medium fan speed output of temperature controller
3. Connect to low fan speed output of temperature controller

Precautions

- Wiring connection must be done according to the wiring diagram of the unit. Otherwise, the motor may be broken.
- In the electrical circuit, a parallel connection with the fan coil unit is strictly prohibited.
- The installer must be a qualified electrical technician with adequate experiences.

- The voltage, frequency and phase of the power supply must be consistent with the requirements of the unit. The difference in the voltage of the power supply shall not exceed 10% of the rated voltage.

- During repair and maintenance, the power supply must be shut down to prevent electric shock.