



MCFCW-04-4HS-1 (4-Pipe) High Static Chilled/Hot Water Ceiling Concealed Cased Fan Coil 208/230V

4-Pipe Heating & Cooling Fan Coil 12,000 BTUH

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HVAC Guide Specifications

Chilled and Hot Water Fan Coil High Static
4-Pipe
Nominal Size:
12,000 BTUH

MultiAqua Model Number:
MCFCW-04-4HS-1

Part 1-General

1.01 System Description

MultiAqua Chilled Water Fan Coils are manufactured with heavy gauge galvanized steel to resist corrosion.

1.02 Quality Assurance

- A. Certified in accordance with U.L. Standard 95, latest version (U.S.A.)
- B. Manufactured in a facility registered to ISO 9002, Manufacturing Quality Standard.
- C. Fully load tested at the factory.
- D. Damage resistant packaging.

1.03 Delivery, Storage and Handling

- A. Packaged and readied for shipment from the factory.
- B. Controls shall be capable of withstanding 150°F storage temperatures in the control compartment.
- C. Stored and handled per manufacturer's recommendations.

Part 2-Product

2.01 Equipment

A. General:

- 1. Unit shall be a factory assembled and tested chilled and hot water fan coil.
- 2. Shall be assembled with heavy gauge galvanized steel.
 - 3. Contained with the unit shall be all factory wiring, piping, associated controls and special accessories required prior to start up. Filters are not included with the fan coil.
 - 4. A filter rack is built into the return of each fan coil.

B. Unit Cabinet:

- 1. Composed of heavy gauge galvanized steel casing with a baked polyester powder.
- 2. Shall be internally insulated to ensure quiet operation.

C. Fan Motors:

- 1. Shall be available in 208/230-1-50/60 VAC.
- 2. Fan motors shall be three speed, direct drive, and PSC type.
- 3. Totally enclosed.
- 4. Internal overload protected.

D. Blower Wheels:

- 1. Blower wheels are forward curved and dynamically balanced.

E. External Static Pressure

- 1. Unit shall be rated for a minimum external static pressure of 0.3" WGmax external static pressure of .5" WG.

F. Water Coil:

- 2. Manufactured with water coils containing 3/8 copper tubing mechanically bonded to aluminum fins.
- 3. Contain both a manual water/ air bleed port per coil.
- 4. Coils have a max operating pressure of 150 psig
- 5. Maximum liquid solution temperature is 180 degrees F.

G. Drain Pan:

1. All drain pans shall be coated on both the interior and exterior with baked polyester powder to resist corrosion.
2. The exterior of all drain pans shall be insulated with closed cell insulation to prevent condensation.
3. Pans shall contain sloped drain connection as well as a sloped secondary drain connection.
4. Field supplied and installed P-Traps are required.

Part 3-Controls and Safeties**3.01 Controls**

- A. Fan coils shall be completely factory wired and tested.
- B. All components shall be wired to an internal terminal block to allow for a field installed 24 vac thermostat and or fan speed control.
- C. Controls shall include the following components.
 1. 24vac transformer.
 2. Three fan relays.
 3. Optional thermostats.

3.02 Safeties:

- A. Fan coil shall contain a non-reusable fuse on the secondary voltage side of the transformer.

Part 4-Operating Characteristics:**4.01 Electrical Requirements**

- A. Primary electrical power supply shall enter the unit at a single location.
- B. Electrical power supply shall be rated to withstand 120°F operating ambient temperatures.
- C. Control and high voltage points shall be accessed through terminal block.

Part 6- Definitions:**6.01 Abbreviations**

- A. CFM = Cubic Feet per Minute
- B. DB = Dry Bulb Temperature
- C. EWT = Entering Water Temperature
- D. GPM = US Gallons Per Minute
- E. MBH = BTU X 1000
- F. SC = Sensible Cooling
- G. TC = Total Cooling = Sensible + Latent
- H. WB = Wet Bulb Temperature
- I. WPD = Water Pressure Drop in feet of head
- J. dB = Decibel Level
- K. M = Meter
- L. In = Inches
- M. FPI = Fins per Inch
- N. OD = Outside Diameter
- O. ID = Inside Diameter
- P. MCA = Minimum Circuit Amps
- Q. MOP = Maximum Over current Protection
- R. LBS = Pounds U.S.

6.02 Measurements

- A. All measurements with regard to length, width, and height shall be in inches.

MCFCW-04-4HS-1 Product Specifications

Physical Data										
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs.)	Primary Rows - FPI	Secondary Rows FPI	Copper Diameter (in)	Water Inlet O.D (in)	Water Outlet O.D (in)	Drain (in)
MCFCW-04-4HS-1	12.25	37.25	29.25	95	2-14	1-14	3/8	5/8	5/8	3/4

Electrical Data						
Model Number	Nominal CFM	Volts/ Phase/ Hertz	Fan Motor HP	Full Load Ampacity	Fuse or HACR Circuit Breaker Per Circuit	
					MCA	MOP
MCFCW-04-4HS-1	400	208/230-1-50/60	1/8	1.06	1.33	5

MCFCW-04-4HS-1 Chilled Water Performance Data

MCFCW-04-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
601	42	0.30	1.50	TC	11685
				SC	9652
				WPD FT	4.7
			2.50	TC	15209
				SC	11231
				WPD FT	12
			3.00	TC	16458
				SC	11762
				WPD FT	16.8

MCFCW-04-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
432	42	0.40	1.50	TC	10591
				SC	8115
				WPD FT	4.7
			2.50	TC	13474
				SC	9341
				WPD FT	12
			3.00	TC	14474
				SC	9762
				WPD FT	16.8

MCFCW-04-4HS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
424	42	0.50	1.50	TC	10531
				SC	8037
				WPD FT	4.7
			2.50	TC	13377
				SC	9245
				WPD FT	12
			3.00	TC	14385
				SC	9664
				WPD FT	16.8

MCFCW-04-4HS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
601	45	0.30	1.50	TC	10540
				SC	9132
				WPD FT	4.6
			2.50	TC	13535
				SC	10575
				WPD FT	11.9
			3.00	TC	14608
				SC	11024
				WPD FT	16.6

MCFCW-04-4HS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
432	45	0.40	1.50	TC	9452
				SC	7650
				WPD FT	4.6
			2.50	TC	11965
				SC	8743
				WPD FT	11.9
			3.00	TC	12820
				SC	9088
				WPD FT	16.6

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CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
424	45	0.50	1.50	TC	9394
				SC	7574
				WPD FT	4.6
			2.50	TC	11876
				SC	8650
				WPD FT	11.9
			3.00	TC	12720
				SC	8990
				WPD FT	16.6

MCFCW-04-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
601	42	0.30	1.50	TC	6726
				SC	5624
				WPD FT	2.7
			2.50	TC	8941
				SC	6454
				WPD FT	7.1
			3.00	TC	9665
				SC	6736
				WPD FT	10

MCFCW-04-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
432	42	0.40	1.50	TC	6303
				SC	4834
				WPD FT	2.7
			2.50	TC	8103
				SC	5533
				WPD FT	7.1
			3.00	TC	8686
				SC	5764
				WPD FT	10

MCFCW-04-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
424	42	0.50	1.50	TC	6279
				SC	4796
				WPD FT	2.7
			2.50	TC	8058
				SC	5488
				WPD FT	7.1
			3.00	TC	8633
				SC	5716
				WPD FT	10

MCFCW-04-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
601	45	0.30	1.50	TC	5969
				SC	5343
				WPD FT	2.7
			2.50	TC	7871
				SC	6065
				WPD FT	7.1
			3.00	TC	8518
				SC	6313
				WPD FT	10

MCFCW-04-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
432	45	0.40	1.50	TC	5513
				SC	4557
				WPD FT	2.7
			2.50	TC	7137
				SC	5173
				WPD FT	7.1
			3.00	TC	7659
				SC	5375
				WPD FT	10

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MCFCW-04-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
424	45	0.50	1.50	TC	5488
				SC	4520
				WPD FT	2.7
			2.50	TC	7098
				SC	5130
				WPD FT	7.1
			3.00	TC	7614
				SC	5330
				WPD FT	10

MCFCW-04-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
601	42	0.30	1.50	TC	12795
				SC	10643
				WPD FT	1.1
			2.50	TC	16869
				SC	12720
				WPD FT	3.2
			3.00	TC	18447
				SC	13440
				WPD FT	4.5

MCFCW-04-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
432	42	0.40	1.50	TC	11550
				SC	8949
				WPD FT	1.1
			2.50	TC	14940
				SC	10518
				WPD FT	3.2
			3.00	TC	16162
				SC	11059
				WPD FT	4.5

MCFCW-04-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
424	42	0.50	1.50	TC	11480
				SC	8861
				WPD FT	1.1
			2.50	TC	14827
				SC	10403
				WPD FT	3.2
			3.00	TC	16030
				SC	10936
				WPD FT	4.5

MCFCW-04-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
601	45	0.30	1.50	TC	11655
				SC	10096
				WPD FT	1.1
			2.50	TC	15184
				SC	12032
				WPD FT	3.2
			3.00	TC	16503
				SC	12647
				WPD FT	4.5

MCFCW-04-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
432	45	0.40	1.50	TC	10432
				SC	8474
				WPD FT	1.1
			2.50	TC	13362
				SC	9866
				WPD FT	3.2
			3.00	TC	14435
				SC	10338
				WPD FT	4.5

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MCFCW-04-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
424	45	0.50	1.50	TC	10367
				SC	8389
				WPD FT	1.1
			2.50	TC	13262
				SC	9756
				WPD FT	3.2
			3.00	TC	14317
				SC	10219
				WPD FT	4.5

MCFCW-04-4HS-1 Hot Water Performance Data

This heating performance data is at dry bulb temperature indicated / wet bulb temperature is 56 degrees F.

MCFCW-04-4HS-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	601	0.30	1.5	4.3	10328	13586	16862	20153	23457	26771	30092
			2.5	10.8	11828	15585	19360	23149	26951	30762	34582
			3.0	15.2	12258	16156	20071	23999	27940	31889	35846
			3.75	22.9	12714	16760	20821	24895	28980	33073	37172

MCFCW-04-4HS-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	432	0.40	1.5	4.3	8965	11768	14584	17413	20250	23095	25945
			2.5	10.8	9985	13124	16274	19435	22605	25781	28962
			3.0	15.2	10267	13496	16737	19988	23146	26510	29779
			3.75	22.9	10561	13885	17220	20563	23913	27268	30627

MCFCW-04-4HS-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	424	0.50	1.5	4.3	8883	11659	14450	17252	20063	22881	25704
			2.5	10.8	9878	12983	16099	19225	22360	25501	28647
			3.0	15.2	10153	13346	16550	19763	22984	26211	29442
			3.75	22.9	10439	13725	17020	20323	23633	26949	30268

MCFCW-04-4HS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	601	0.30	1.5	2.5	6701	8747	10812	129893	14986	17091	19204
			2.5	6.5	7401	9675	11964	14266	16580	18902	21232
			3.0	9.2	7606	9944	12298	14663	17038	19422	21812
			3.75	13.9	7826	10234	12655	15087	17528	19976	22430

MCFCW-04-4HS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	432	0.40	1.5	2.5	5932	7723	9528	11345	13172	15008	16850
			2.5	6.5	6457	8416	10387	12368	14356	16352	18352
			3.0	9.2	6607	8614	10631	12658	14691	16731	18775
			3.75	13.9	6767	8824	10891	12965	15046	17132	19222

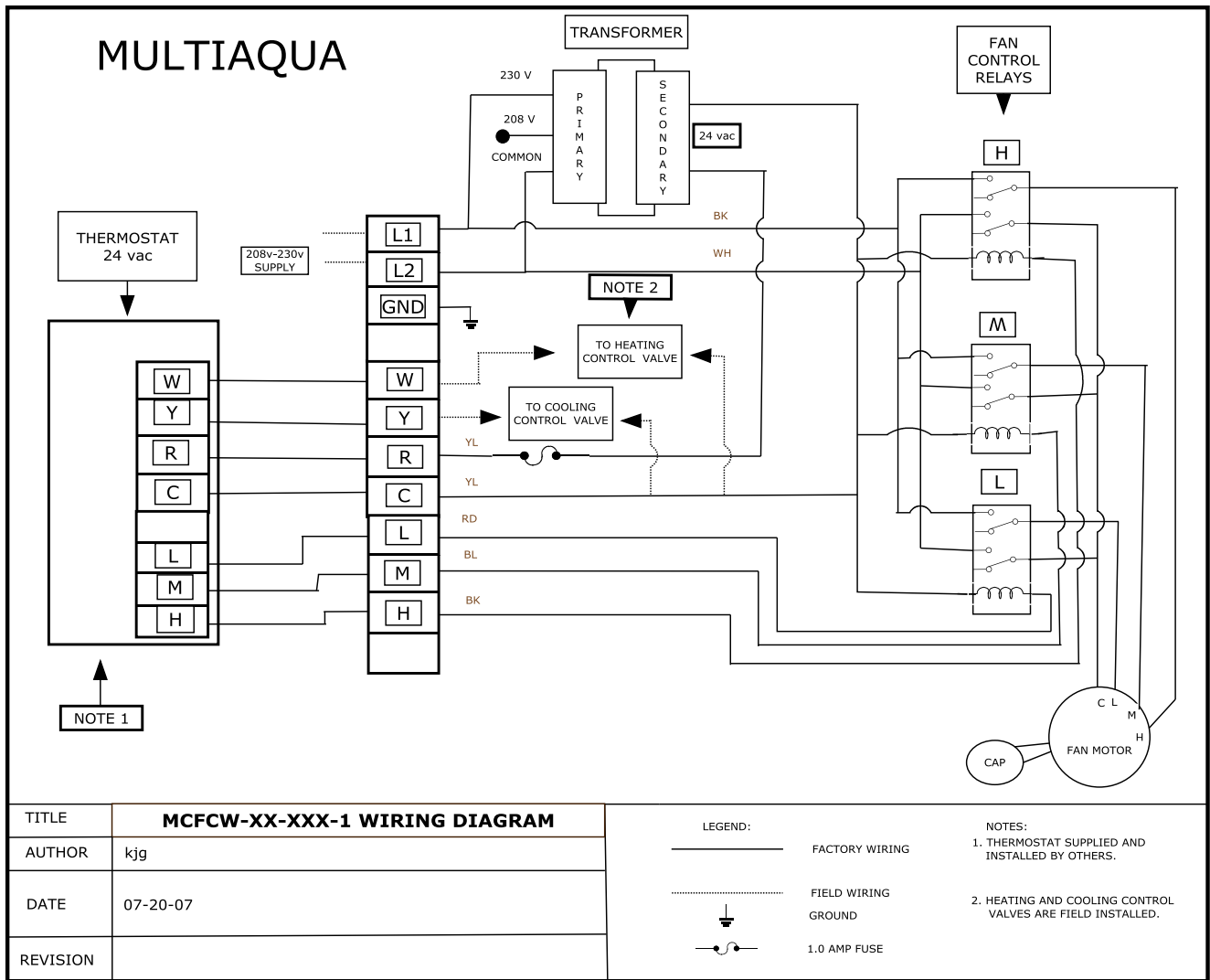
MCFCW-04-4HS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	424	0.50	1.5	2.5	5884	7661	9452	11254	13066	14886	16713
			2.5	6.5	6400	8342	10295	12258	14229	16207	18189
			3.0	9.2	6547	2536	10535	12543	14558	16579	18604
			3.75	13.9	6705	8743	10790	12845	14906	16972	19042

MCFCW-04-4HS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	601	0.30	1.5	1.1	11488	15275	19048	22847	26629	30426	34234
			2.5	3.0	13639	18025	22439	26875	31331	35803	40287
			3.0	4.2	14221	18798	23401	28026	32670	37328	41999
			3.75	6.3	14835	19611	24411	29232	34069	38920	43781

MCFCW-04-4HS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	432	0.40	1.5	1.1	9989	13243	16491	19722	22967	26224	29490
			2.5	3.0	11396	15021	18664	22323	25995	29678	33368
			3.0	4.2	11478	15486	19242	23012	26793	30584	34382
			3.75	6.3	12102	15952	19818	2696	27584	31481	35384

MCFCW-04-4HS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	424	0.50	1.5	1.1	9897	13120	16335	19535	22750	25975	29209
			2.5	3.0	11266	14849	18449	22065	25694	29332	32979
			3.0	4.2	11606	15299	19007	22730	26464	30207	33958
			3.75	6.3	11948	15749	19564	23392	27229	31074	34925

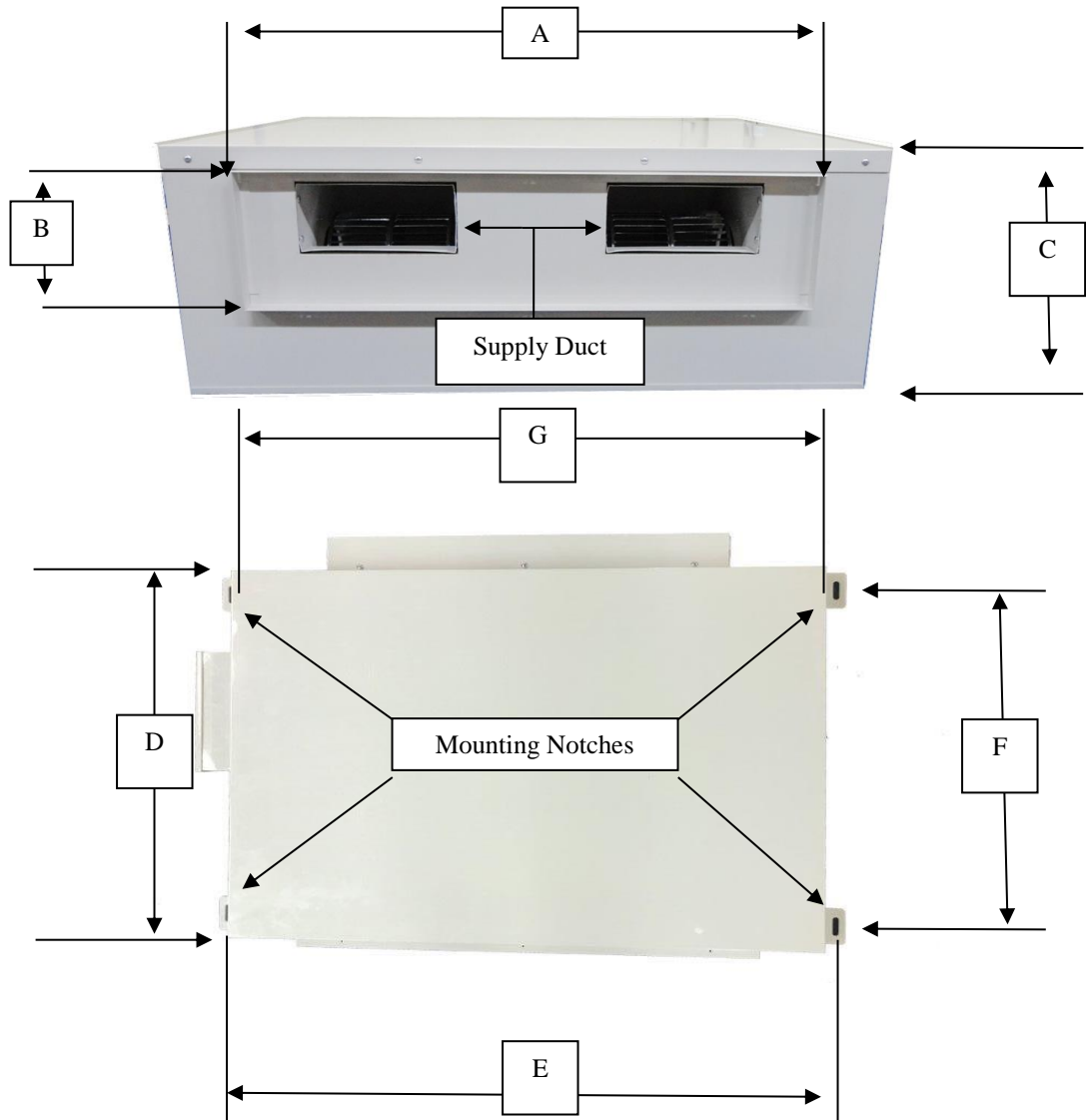
MCFCW-04-4HS-1 Wiring Diagram



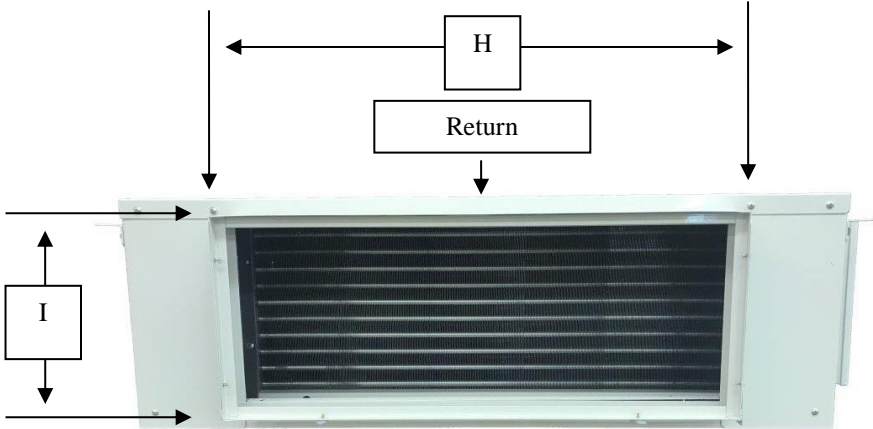
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MCFCW-04-4HS-1 Dimensional Drawing

FAN COIL DIMENSIONS (in.)									
Fan Coil Model Number	A	B	C	D	E	F	G	H	I
MCFCW-04-4HS-01	29.25	7.00	12.25	29.21	37.2	24.25	39.25	26.00	10.50



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