



MCFCW-16-4HS-1 (4-Pipe) High Static Chilled/Hot Water Ceiling Concealed Cased Fan Coil 208/230V

4-Pipe Heating & Cooling Fan Coil 48,000 BTUH

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HVAC Guide Specifications

Chilled and Hot Water Fan Coil High Static
 4-Pipe
 Nominal Size:
48,000 BTUH

MultiAqua Model Number:
MCFCW-16-4HS-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" WG and a maximum external static pressure of 0.5" 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-16-4HS-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-16-4HS-1	14.25	55.00	29.5	166	4-14	1-14	3/8	3/4	3/4	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-16-4HS-1	1600	208/230-1-50/60	1	5.62	7.03	15

MCFCW-16-4HS-1 Chilled Water Performance Data

MCFCW-16-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2052	42	0.30	8.0	TC	57087
				SC	41480
				WPD FT	8.0
			9.0	TC	60397
				SC	43066
				WPD FT	9.9
			10.0	TC	63333
				SC	44443
				WPD FT	12.1

MCFCW-16-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1807	42	0.40	8.0	TC	54557
				SC	38626
				WPD FT	8.0
			9.0	TC	57570
				SC	40038
				WPD FT	9.9
			10.0	TC	60264
				SC	41277
				WPD FT	12.1

MCFCW-16-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1532	42	0.50	8.0	TC	51179
				SC	35085
				WPD FT	8.0
			9.0	TC	53835
				SC	36300
				WPD FT	10.0
			10.0	TC	56154
				SC	37354
				WPD FT	12.1

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(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2052	45	0.30	8.0	TC	51212
				SC	39133
				WPD FT	7.9
			9.0	TC	54048
				SC	40493
				WPD FT	9.9
			10.0	TC	56565
				SC	41698
				WPD FT	12.0

MCFCW-16-4HS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1807	45	0.40	8.0	TC	48798
				SC	36273
				WPD FT	7.9
			9.0	TC	51421
				SC	37528
				WPD FT	9.9
			10.0	TC	53733
				SC	38599
				WPD FT	12.1

MCFCW-16-4HS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1532	45	0.50	8.0	TC	45673
				SC	32823
				WPD FT	7.9
			9.0	TC	47964
				SC	33873
				WPD FT	9.9
			10.0	TC	50020
				SC	34786
				WPD FT	12.1

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MCFCW-16-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2052	42	0.30	8.0	TC	21265
				SC	161245
				WPD FT	9.4
			9.0	TC	22384
				SC	16584
				WPD FT	11.8
			10.0	TC	23311
				SC	16967
				WPD FT	14.4

MCFCW-16-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1807	42	0.40	8.0	TC	20657
				SC	15208
				WPD FT	9.4
			9.0	TC	21710
				SC	15610
				WPD FT	11.8
			10.0	TC	22576
				SC	15997
				WPD FT	14.4

MCFCW-16-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1532	42	0.50	8.0	TC	19867
				SC	14108
				WPD FT	9.4
			9.0	TC	20833
				SC	14504
				WPD FT	11.8
			10.0	TC	21623
				SC	14828
				WPD FT	14.4

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MCFCW-16-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2052	45	0.30	8.0	TC	18210
				SC	15092
				WPD FT	9.4
			9.0	TC	19079
				SC	15485
				WPD FT	11.7
			10.0	TC	20109
				SC	15825
				WPD FT	14.3

MCFCW-16-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1807	45	0.40	8.0	TC	17632
				SC	14201
				WPD FT	9.4
			9.0	TC	18713
				SC	14568
				WPD FT	11.7
			10.0	TC	19487
				SC	14885
				WPD FT	14.3

MCFCW-16-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1532	45	0.50	8.0	TC	17160
				SC	13136
				WPD FT	9.4
			9.0	TC	17977
				SC	13470
				WPD FT	11.7
			10.0	TC	18682
				SC	13757
				WPD FT	14.3

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MCFCW-16-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2052	42	0.30	8.0	TC	63734
				SC	45119
				WPD FT	5.8
			9.0	TC	67326
				SC	46872
				WPD FT	7.3
			10.0	TC	70490
				SC	48392
				WPD FT	8.9

MCFCW-16-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1807	42	0.40	8.0	TC	60658
				SC	41940
				WPD FT	5.9
			9.0	TC	63902
				SC	43477
				WPD FT	7.3
			10.0	TC	66800
				SC	44836
				WPD FT	8.9

MCFCW-16-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1532	42	0.50	8.0	TC	56570
				SC	37956
				WPD FT	5.9
			9.0	TC	59413
				SC	39276
				WPD FT	7.3
			10.0	TC	61889
				SC	40421
				WPD FT	8.9

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MCFCW-16-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2052	45	0.30	8.0	TC	57372
				SC	42568
				WPD FT	5.8
			9.0	TC	60429
				SC	44057
				WPD FT	7.3
			10.0	TC	63135
				SC	45378
				WPD FT	8.9

MCFCW-16-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1807	45	0.40	8.0	TC	54443
				SC	39391
				WPD FT	5.8
			9.0	TC	57221
				SC	40722
				WPD FT	7.3
			10.0	TC	59703
				SC	41876
				WPD FT	8.9

MCFCW-16-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1532	45	0.50	8.0	TC	50619
				SC	35481
				WPD FT	5.8
			9.0	TC	53049
				SC	36593
				WPD FT	7.3
			10.0	TC	55225
				SC	37588
				WPD FT	8.9

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MCFCW-16-4HS-1 Hot Water Performance Data

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

MCFCW-16-4HS-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	2052	0.30	8.0	7.3	48458	63436	78503	93645	108848	124101	139394
			9.0	9.1	49747	65149	80638	96199	111820	127489	143198
			10.0	11.1	50805	66553	82385	98286	114246	130252	146296
			11.0	13.3	51688	67722	83838	100021	116259	132542	148862

MCFCW-16-4HS-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	1807	0.40	8.0	7.3	45496	59494	73570	87712	101906	116145	130418
			9.0	9.1	46571	60919	75344	89830	104368	118948	133562
			10.0	11.1	47445	62078	76783	91547	106361	121215	136102
			11.0	13.3	48170	63036	77971	92964	108003	123081	138190

MCFCW-16-4HS-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	1532	0.50	8.0	7.3	41616	54344	67138	79984	92875	105801	118757
			9.0	9.1	42442	55438	68495	81603	94753	107936	121147
			10.0	11.1	43108	56317	69585	82900	96255	109642	123055
			11.0	13.3	43653	57037	70476	83960	97481	111033	124609

MCFCW-16-4HS-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	2052	0.30	8.0	8.7	23309	29812	36373	42980	49626	56305	63012
			9.0	10.9	23708	30338	37022	43750	50516	57312	64135
			10.0	13.3	24043	30778	37564	44393	51257	58151	65069
			11.0	15.9	24327	31152	38025	44938	51885	58860	65859

MCFCW-16-4HS-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	1807	0.40	8.0	8.7	22280	28463	34698	40974	47286	53628	59994
			9.0	10.9	22640	28937	35282	41668	48086	54533	61003
			10.0	13.3	22941	29333	35770	42245	48752	55286	61841
			11.0	15.9	23197	29668	36183	42734	49315	55922	62549

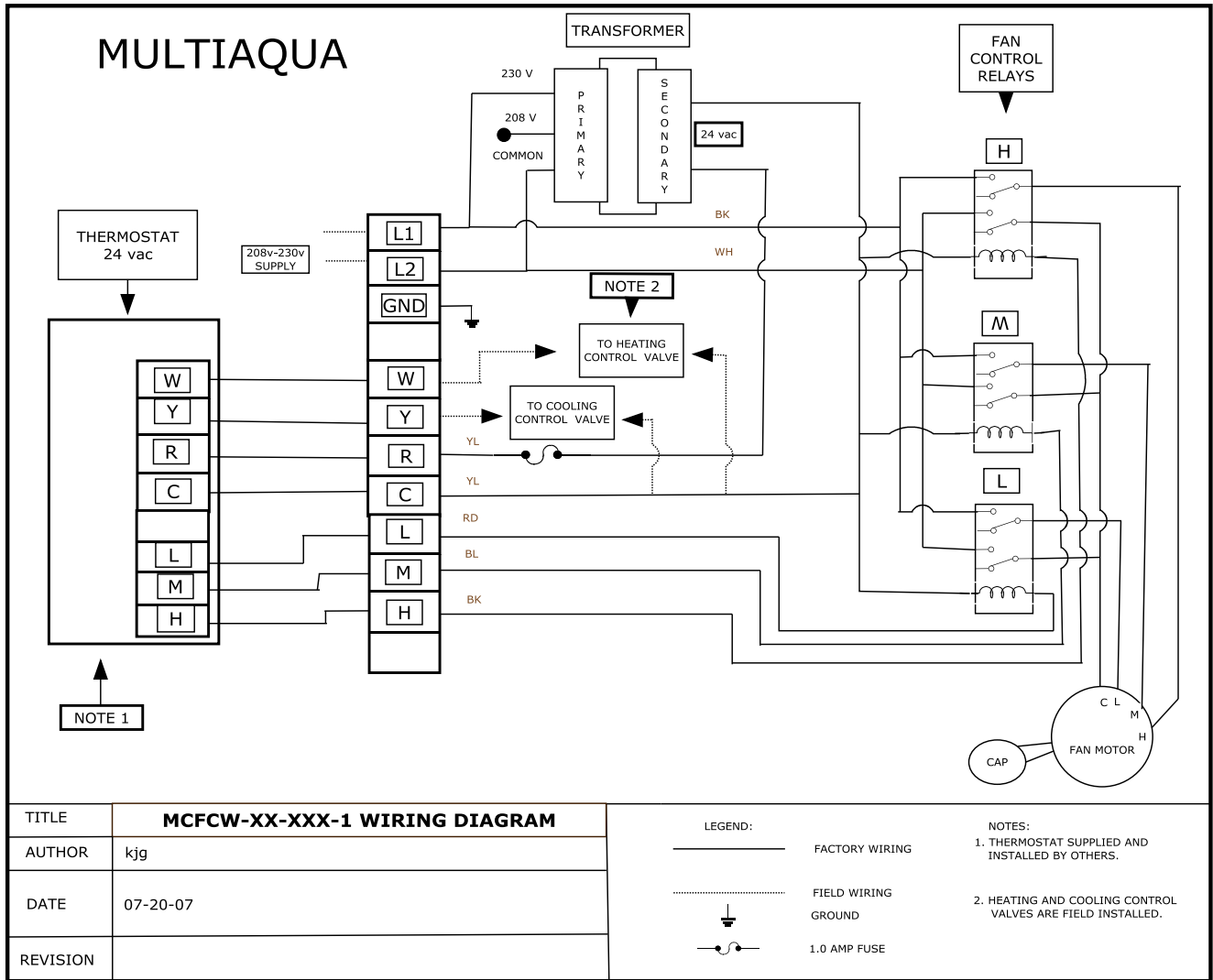
MCFCW-16-4HS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	1532	0.50	8.0	8.7	20917	26691	32508	38363	44248	50159	56091
			9.0	10.9	21230	27102	33015	38964	44941	50943	56964
			10.0	13.3	21491	27445	33437	39463	45517	51593	57687
			11.0	15.9	21713	27735	33794	39885	46002	52141	58297

MCFCW-16-4HS-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	2052	0.30	8.0	5.4	52825	69300	85880	102549	119290	136092	152943
			9.0	6.7	54259	71205	88253	105387	122592	139856	157166
			10.0	8.2	55420	72743	90166	107671	125244	142874	160549
			11.0	9.8	56374	74006	91732	109538	127409	145334	163304

MCFCW-16-4HS-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	1807	0.40	8.0	5.4	49475	64834	80285	95813	111405	127050	142737
			9.0	6.7	50638	66375	82200	98099	114059	130069	146120
			10.0	8.2	51567	67604	83724	99915	116164	132460	148795
			11.0	9.8	52323	68601	84959	101383	117863	134388	150950

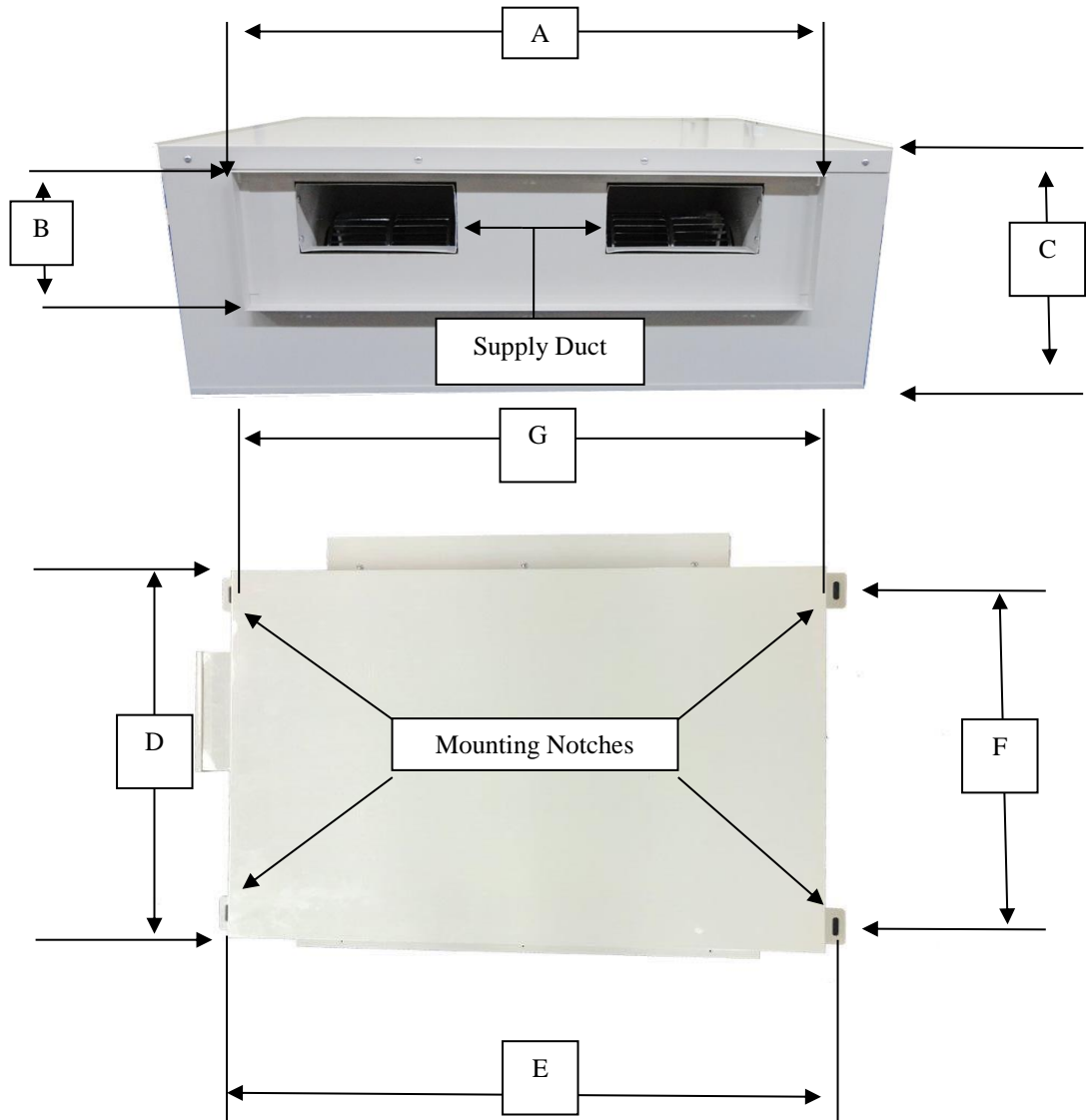
MCFCW-16-4HS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	1532	0.50	8.0	5.4	45064	58969	72948	86991	101085	115221	129393
			9.0	6.7	45917	60096	74345	88652	103008	117404	131833
			10.0	8.2	46588	60979	75436	89948	104506	119100	133726
			11.0	9.8	47125	61685	76307	90980	105696	120446	135226

MCFCW-16-4HS-1 Wiring Diagram



MCFCW-16-4HS-1 Dimensional Drawing

FAN COIL DIMENSIONS (in.)									
Fan Coil Model Number	A	B	C	D	E	F	G	H	I
MCFCW-16-4HS-01	32.75	11.5	14.25	29.5	56.5	26.5	55.00	48.5	12.25



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