



MCFCW-08-4HS-1 (4-Pipe) High Static Chilled/Hot Water Ceiling Concealed Cased Fan Coil 208/230V

4-Pipe Heating & Cooling Fan Coil 24,000 BTUH

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HVAC Guide Specifications

Chilled and Hot Water Fan Coil High Static
4-Pipe
Nominal Size:
24,000 BTUH

MultiAqua Model Number:
MCFCW-08-4HS-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 pressure of 0.3" WG and a maximum 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-08-4HS-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-08-4HS-1	12.25	46	27.25	111	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-08-4HS-1	800	208/230-1-50/60	1/2	2.67	3.34	7

MCFCW-08-4HS-1 Chilled Water Performance Data

MCFCW-08-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1336	42	0.30	3.50	TC	28034
				SC	22651
				WPD FT	6.7
			4.00	TC	30071
				SC	23731
				WPD FT	8.6
			5.00	TC	33543
				SC	25437
				WPD FT	13.0

MCFCW-08-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1225	42	0.40	3.50	TC	27417
				SC	21777
				WPD FT	6.7
			4.00	TC	29377
				SC	22768
				WPD FT	8.6
			5.00	TC	32692
				SC	24369
				WPD FT	13.0

MCFCW-08-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1032	42	0.50	3.50	TC	26102
				SC	20041
				WPD FT	6.7
			4.00	TC	27884
				SC	20911
				WPD FT	8.6
			5.00	TC	30648
				SC	22329
				WPD FT	13.0

MCFCW-08-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1336	45	0.30	3.50	TC	25390
				SC	21485
				WPD FT	6.6
			4.00	TC	27115
				SC	22454
				WPD FT	8.5
			5.00	TC	30089
				SC	24027
				WPD FT	13.00

MCFCW-08-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1225	45	0.40	3.50	TC	24764
				SC	20646
				WPD FT	6.7
			4.00	TC	26452
				SC	21538
				WPD FT	8.5
			5.00	TC	29307
				SC	22997
				WPD FT	13.0

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(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1032	45	0.50	3.50	TC	23504
				SC	18949
				WPD FT	6.7
			4.00	TC	25045
				SC	19756
				WPD FT	8.5
			5.00	TC	27623
				SC	20975
				WPD FT	13.0

MCFCW-08-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1336	42	0.30	3.50	TC	11246
				SC	10243
				WPD FT	3.7
			4.00	TC	12056
				SC	10664
				WPD FT	4.8
			5.00	TC	13980
				SC	11364
				WPD FT	7.4

MCFCW-08-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1225	42	0.40	3.50	TC	11070
				SC	9962
				WPD FT	3.7
			4.00	TC	12069
				SC	10342
				WPD FT	4.8
			5.00	TC	13812
				SC	11018
				WPD FT	7.4

MCFCW-08-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1032	42	0.50	3.50	TC	10851
				SC	9313
				WPD FT	3.7
			4.00	TC	11721
				SC	9692
				WPD FT	4.8
			5.00	TC	13405
				SC	10314
				WPD FT	7.4

MCFCW-08-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1336	45	0.30	3.50	TC	10108
				SC	9813
				WPD FT	3.7
			4.00	TC	10887
				SC	10128
				WPD FT	4.8
			5.00	TC	12059
				SC	10765
				WPD FT	7.4

MCFCW-08-4HS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1225	45	0.40	3.50	TC	9892
				SC	9878
				WPD FT	3.7
			4.00	TC	10698
				SC	9836
				WPD FT	4.8
			5.00	TC	12053
				SC	10424
				WPD FT	7.4

MCFCW-08-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1032	45	0.50	3.50	TC	9633
				SC	8855
				WPD FT	3.7
			4.00	TC	10268
				SC	9188
				WPD FT	4.8
			5.00	TC	11645
				SC	9737
				WPD FT	7.4

MCFCW-08-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1336	42	0.30	3.50	TC	31007
				SC	24551
				WPD FT	3.7
			4.00	TC	33354
				SC	25845
				WPD FT	4.7
			5.00	TC	37272
				SC	27875
				WPD FT	7.2

MCFCW-08-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1225	42	0.40	3.50	TC	30312
				SC	23612
				WPD FT	3.7
			4.00	TC	32511
				SC	24808
				WPD FT	4.7
			5.00	TC	36311
				SC	26702
				WPD FT	7.2

MCFCW-08-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1032	42	0.50	3.50	TC	28773
				SC	21734
				WPD FT	3.7
			4.00	TC	30767
				SC	22714
				WPD FT	4.7
			5.00	TC	34181
				SC	24347
				WPD FT	7.2

MCFCW-08-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1336	45	0.30	3.50	TC	28242
				SC	23347
				WPD FT	3.7
			4.00	TC	30241
				SC	24538
				WPD FT	4.7
			5.00	TC	33664
				SC	26404
				WPD FT	7.2

MCFCW-08-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1225	45	0.40	3.50	TC	27542
				SC	22445
				WPD FT	3.7
			4.00	TC	29459
				SC	23531
				WPD FT	4.7
			5.00	TC	32679
				SC	25212
				WPD FT	7.2

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MCFCW-08-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1032	45	0.50	3.50	TC	26066
				SC	20591
				WPD FT	3.7
			4.00	TC	27769
				SC	21495
				WPD FT	4.7
			5.00	TC	30717
				SC	22916
				WPD FT	7.2

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MCFCW-08-4HS-1 Hot Water Performance Data

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

MCFCW-08-4HS-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	1336	0.30	3.50	6.2	24490	32225	40009	47833	55690	63573	71477
			4.00	7.9	25507	33582	41706	49872	58070	66295	74542
			5.00	12.0	27049	35636	44272	52948	61656	70391	79147
			6.00	16.8	28160	27113	46112	55149	64218	73311	82425

MCFCW-08-4HS-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	1225	0.40	3.50	6.2	23558	31010	38507	46042	53607	61198	68807
			4.00	7.9	24486	32247	40054	47898	55774	63674	71594
			5.00	12.0	25883	34107	42375	50680	59014	67373	75751
			6.00	16.8	26882	35433	44026	52654	61311	69990	78688

MCFCW-08-4HS-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	1032	0.50	3.50	6.2	21742	28626	35549	42504	49486	56489	63509
			4.00	7.9	22504	29640	36815	44023	51256	58511	65782
			5.00	12.0	23635	31144	38689	46264	53864	61485	69121
			6.00	16.8	24432	32199	40001	47832	55685	63557	71445

MCFCW-08-4HS-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	1336	0.30	3.50	3.5	13011	16911	20859	24847	28869	32920	36995
			4.00	4.5	13394	17419	21489	25598	29740	33909	38101
			5.00	7.0	13984	18198	22454	26746	31068	35415	39783
			6.00	9.9	14418	18770	23160	27584	32036	36511	41005

MCFCW-08-4HS-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	1225	0.40	3.50	3.5	12570	16351	20178	24042	27938	31861	35806
			4.00	4.5	12929	16827	20768	24745	28753	32787	36841
			5.00	7.0	13481	17556	21670	25818	29993	34192	38411
			6.00	9.9	13886	18089	22329	26599	30895	35212	39547

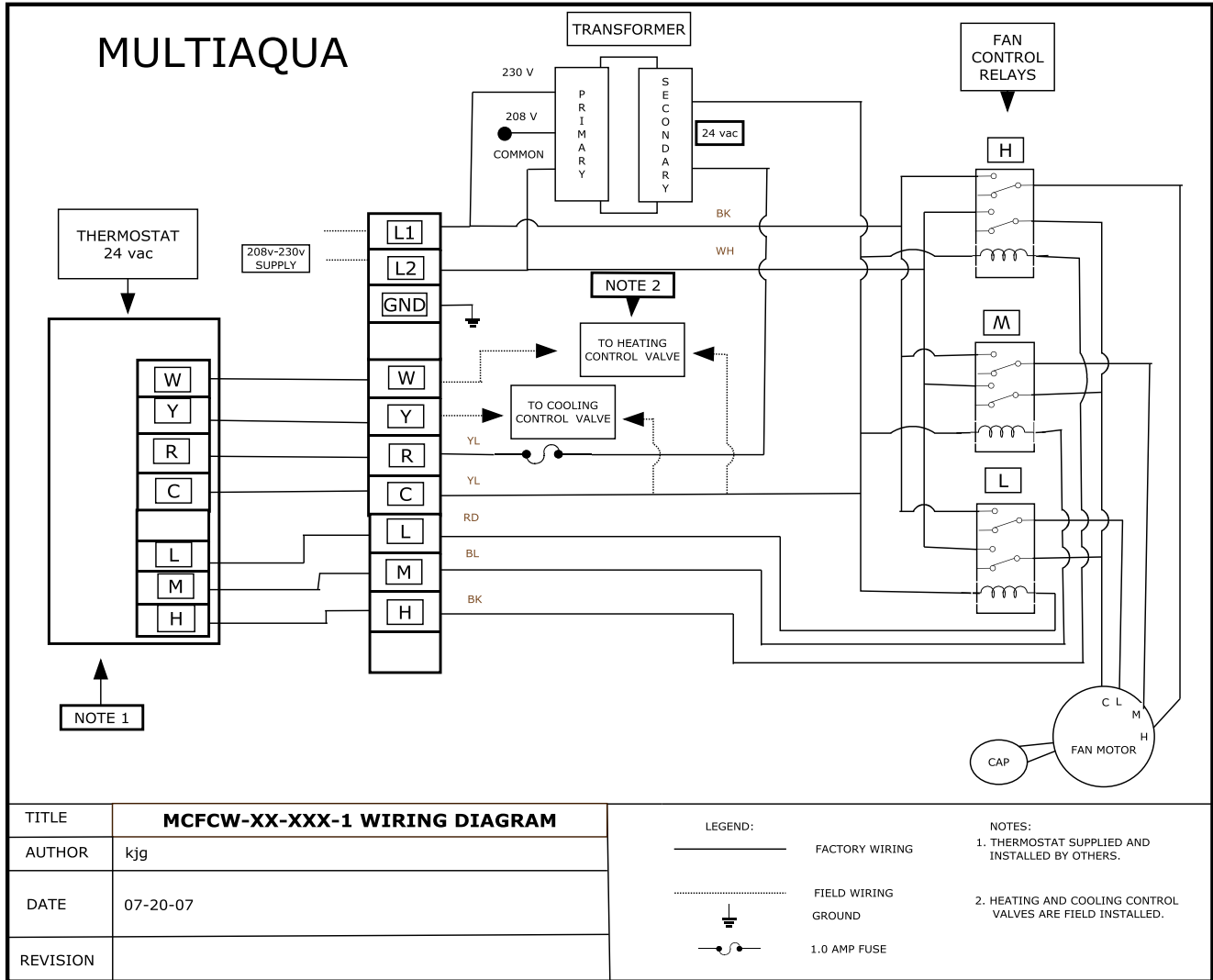
MCFCW-08-4HS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	1032	0.50	3.50	3.5	11746	15294	18881	22501	26146	29820	33511
			4.00	4.5	12061	15710	19397	23115	26860	30627	34413
			5.00	7.0	12543	16345	20182	24047	27937	31847	35774
			6.00	9.9	12894	16807	20751	24722	28716	32727	36754

MCFCW-08-4HS-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	1336	0.30	3.50	3.4	27014	35626	44300	53026	61794	70598	79429
			4.00	4.4	28260	37290	46384	55531	64722	73949	83204
			5.00	6.7	30141	39799	49519	59292	69109	78962	88843
			6.00	9.5	31485	41584	51744	61955	72208	82495	92810

MCFCW-08-4HS-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	1225	0.40	3.50	3.4	25995	34293	42649	51054	59500	67978	76482
			4.00	4.4	27122	35798	44532	53316	62141	70999	79884
			5.00	6.7	28809	38043	47336	56677	66057	75471	84911
			6.00	9.5	29999	39623	49303	59028	68792	78586	88406

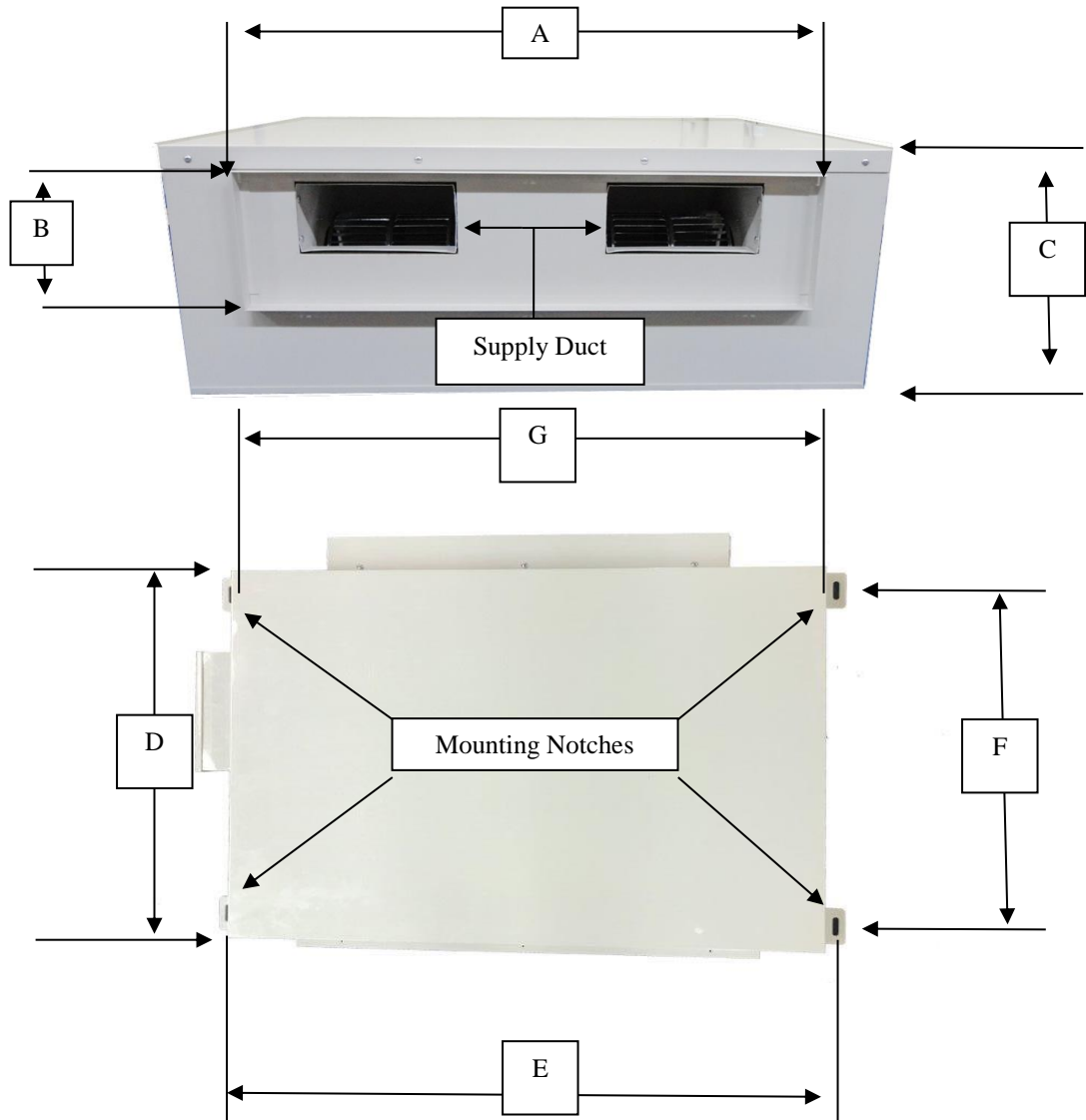
MCFCW-08-4HS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	1032	0.50	3.50	3.4	23982	31641	39352	47105	54894	62711	70551
			4.00	4.4	24888	32849	40860	48914	57002	65119	73259
			5.00	6.7	26216	34613	43058	51543	60060	68605	77171
			6.00	9.5	27132	35826	44564	53339	62145	70976	79827

MCFCW-08-4HS-1 Wiring Diagram



MCFCW-08-4HS-1 Dimensional Drawing

FAN COIL DIMENSIONS (in.)									
Fan Coil Model Number	A	B	C	D	E	F	G	H	I
MCFCW-08-4HS-01	29.75	6.75	12.25	27.25	47.5	24.25	46	34.5	10.25



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