



MCFCW-20-4HS-1 (4-Pipe) High Static Chilled/Hot Water Ceiling Concealed Cased Fan Coil 208/230V

4-Pipe Heating & Cooling Fan Coil 60,000 BTUH

*These specifications are subject to change without notice.
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HVAC Guide Specifications

Chilled and Hot Water Fan Coil High Static
4-Pipe
Nominal Size:
60,000 BTUH

MultiAqua Model Number:
MCFCW-20-4HS-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-20-4HS-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-20-4HS-1	14.75	67	29.75	176	4-14	1-14	3/8	7/8	7/8	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-20-4HS-1	2000	208/230-1-50/60	1	6.33	7.92	15

MCFCW-20-4HS-1 Chilled Water Performance Data

MCFCW-20-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2493	42	0.30	8.75	TC	58525
				SC	45666
				WPD FT	4.9
			9.75	TC	62803
				SC	47753
				WPD FT	6.0
			10.8	TC	66215
				SC	49451
				WPD FT	7.2

MCFCW-20-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2290	42	0.40	8.75	TC	56889
				SC	43586
				WPD FT	4.9
			9.75	TC	60963
				SC	45540
				WPD FT	6.0
			10.8	TC	64289
				SC	47154
				WPD FT	7.2

MCFCW-20-4HS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2005	42	0.50	8.75	TC	54765
				SC	40558
				WPD FT	4.9
			9.75	TC	58097
				SC	42214
				WPD FT	6.0
			10.8	TC	62375
				SC	43867
				WPD FT	7.2

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MCFCW-20-4HS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2493	45	0.30	8.75	TC	52184
				SC	43692
				WPD FT	4.9
			9.75	TC	55743
				SC	44798
				WPD FT	6.0
			10.8	TC	59059
				SC	46438
				WPD FT	7.2

MCFCW-20-4HS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2290	45	0.40	8.75	TC	50662
				SC	41614
				WPD FT	4.9
			9.75	TC	54365
				SC	42765
				WPD FT	6.0
			10.8	TC	57668
				SC	44381
				WPD FT	7.2

MCFCW-20-4HS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2005	45	0.50	8.75	TC	48744
				SC	38034
				WPD FT	4.9
			9.75	TC	52079
				SC	39645
				WPD FT	6.0
			10.8	TC	54681
				SC	40884
				WPD FT	7.2

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MCFCW-20-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2493	42	0.30	8.75	TC	26772
				SC	20352
				WPD FT	12.2
			9.75	TC	27989
				SC	20972
				WPD FT	12.2
			10.8	TC	29058
				SC	21509
				WPD FT	18.0

MCFCW-20-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2290	42	0.40	8.75	TC	26257
				SC	19643
				WPD FT	12.2
			9.75	TC	27423
				SC	20230
				WPD FT	15.0
			10.8	TC	28444
				SC	20737
				WPD FT	18.0

MCFCW-20-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2005	42	0.50	8.75	TC	25376
				SC	18510
				WPD FT	12.2
			9.75	TC	26461
				SC	19047
				WPD FT	15.0
			10.8	TC	27409
				SC	19512
				WPD FT	18.0

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MCFCW-20-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2493	45	0.30	8.75	TC	22915
				SC	18902
				WPD FT	12.2
			9.75	TC	23904
				SC	19429
				WPD FT	14.9
			10.8	TC	25099
				SC	20006
				WPD FT	17.9

MCFCW-20-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2290	45	0.40	8.75	TC	22424
				SC	18195
				WPD FT	12.2
			9.75	TC	23667
				SC	18803
				WPD FT	14.9
			10.8	TC	24579
				SC	19262
				WPD FT	17.9

MCFCW-20-4HS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2005	45	0.50	8.75	TC	21877
				SC	17177
				WPD FT	12.2
			9.75	TC	22847
				SC	17663
				WPD FT	14.9
			10.8	TC	23694
				SC	18081
				WPD FT	18.0

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MCFCW-20-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2493	42	0.30	8.75	TC	61393
				SC	48611
				WPD FT	3.9
			9.75	TC	66008
				SC	50357
				WPD FT	4.8
			10.8	TC	59829
				SC	52209
				WPD FT	5.8

MCFCW-20-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2290	42	0.40	8.75	TC	59557
				SC	46245
				WPD FT	3.9
			9.75	TC	64048
				SC	47928
				WPD FT	4.8
			10.8	TC	68163
				SC	49828
				WPD FT	5.8

MCFCW-20-4HS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2005	42	0.50	8.75	TC	57259
				SC	42495
				WPD FT	3.9
			9.75	TC	61370
				SC	44439
				WPD FT	4.8
			10.8	TC	65267
				SC	46213
				WPD FT	5.8

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MCFCW-20-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2493	45	0.30	8.75	TC	54792
				SC	46160
				WPD FT	3.9
			9.75	TC	58838
				SC	48082
				WPD FT	4.8
			10.8	TC	62412
				SC	49566
				WPD FT	5.8

MCFCW-20-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2290	45	0.40	8.75	TC	53179
				SC	43878
				WPD FT	3.9
			9.75	TC	57256
				SC	45502
				WPD FT	4.8
			10.8	TC	60416
				SC	47023
				WPD FT	5.8

MCFCW-20-4HS-1 COOLING CAPACITIES					
(Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2005	45	0.50	8.75	TC	51121
				SC	40279
				WPD FT	3.9
			9.75	TC	54335
				SC	41796
				WPD FT	4.8
			10.8	TC	58010
				SC	43135
				WPD FT	5.8

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MCFCW-20-4HS-1 Hot Water Performance Data

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

MCFCW-20-4HS-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	2493	0.30	8.75	4.6	56964	74626	92407	110288	128250	146279	164360
			9.75	5.6	58551	76739	95046	113450	131935	150486	169089
			10.8	6.8	59884	78512	97256	116096	135015	153998	173033
			11.8	8.0	61019	80018	99130	118337	137620	156967	176363

MCFCW-20-4HS-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	2290	0.40	8.75	4.6	54755	71686	88729	105863	123072	140342	157662
			9.75	5.6	56173	73572	91080	108678	126350	144083	161863
			10.8	6.8	57357	75145	93039	111021	129075	147187	165347
			11.8	8.0	58360	76475	94693	112996	131369	149799	168275

MCFCW-20-4HS-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	2005	0.50	8.75	4.6	51316	67096	82973	98930	114953	131029	147148
			9.75	5.6	52486	68650	84908	101243	117642	134093	150586
			10.8	6.8	53456	69935	86505	103150	119856	136612	153409
			11.8	8.0	54271	71013	87843	104745	121706	138715	155763

MCFCW-20-4HS-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	2493	0.30	8.75	11.2	28446	36442	44499	52605	60753	68935	77146
			9.75	13.8	28905	37048	45249	53497	61785	70106	78453
			10.8	16.6	29295	37562	45884	54252	62657	71094	79556
			11.8	19.6	29630	38003	46429	54898	63404	71940	80500

MCFCW-20-4HS-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	2290	0.40	8.75	11.2	27595	35327	43115	50949	58823	66728	74660
			9.75	13.8	28023	35892	43814	51781	59785	67819	75878
			10.8	16.6	28387	36370	44406	52483	60596	68738	76904
			11.8	19.6	28699	36781	44913	53085	61291	69525	77781

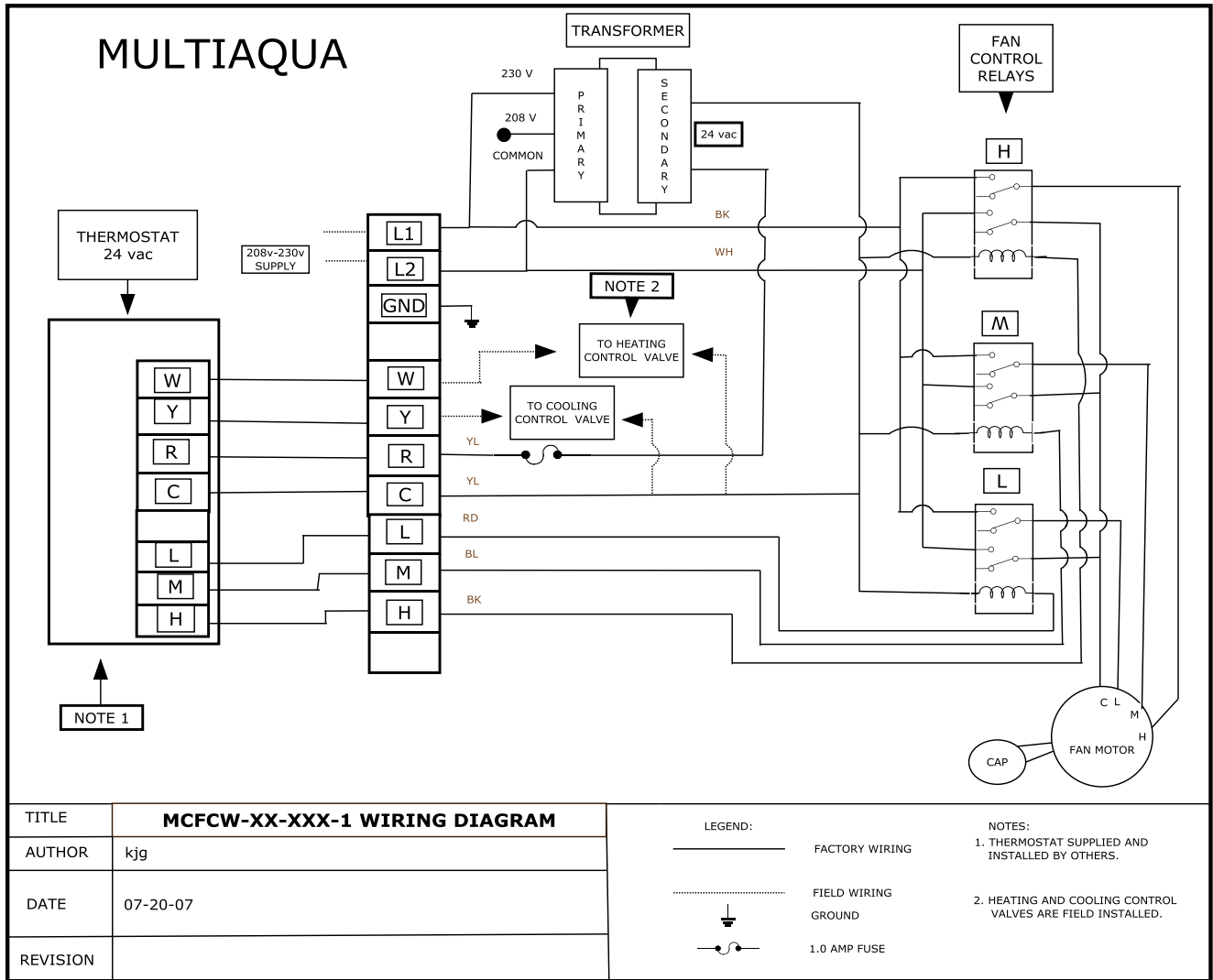
MCFCW-20-4HS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2005	0.50	8.75	11.2	26316	33638	41011	48425	55874	63352	70853
			9.75	13.8	26699	34143	41635	49167	56732	64324	71938
			10.8	16.6	27023	34570	42162	49793	57455	65142	72851
			11.8	19.6	27301	34936	42614	50328	58073	65841	73630

MCFCW-20-4HS-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	2493	0.30	8.75	3.7	60877	79866	98983	118207	137518	156900	176337
			9.75	4.5	62673	82259	101973	121793	141699	161676	181710
			10.8	5.5	64175	84258	104466	124778	145175	165642	186165
			11.8	6.5	65446	85946	106568	127292	148299	168975	189905

MCFCW-20-4HS-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	2290	0.40	8.75	3.7	58434	76613	94910	113305	131781	150322	168916
			9.75	4.5	60023	78728	97549	116467	135464	154526	173639
			10.8	5.5	61343	80481	99733	119079	138503	157990	177527
			11.8	6.5	62453	81953	101563	121265	141043	160882	180770

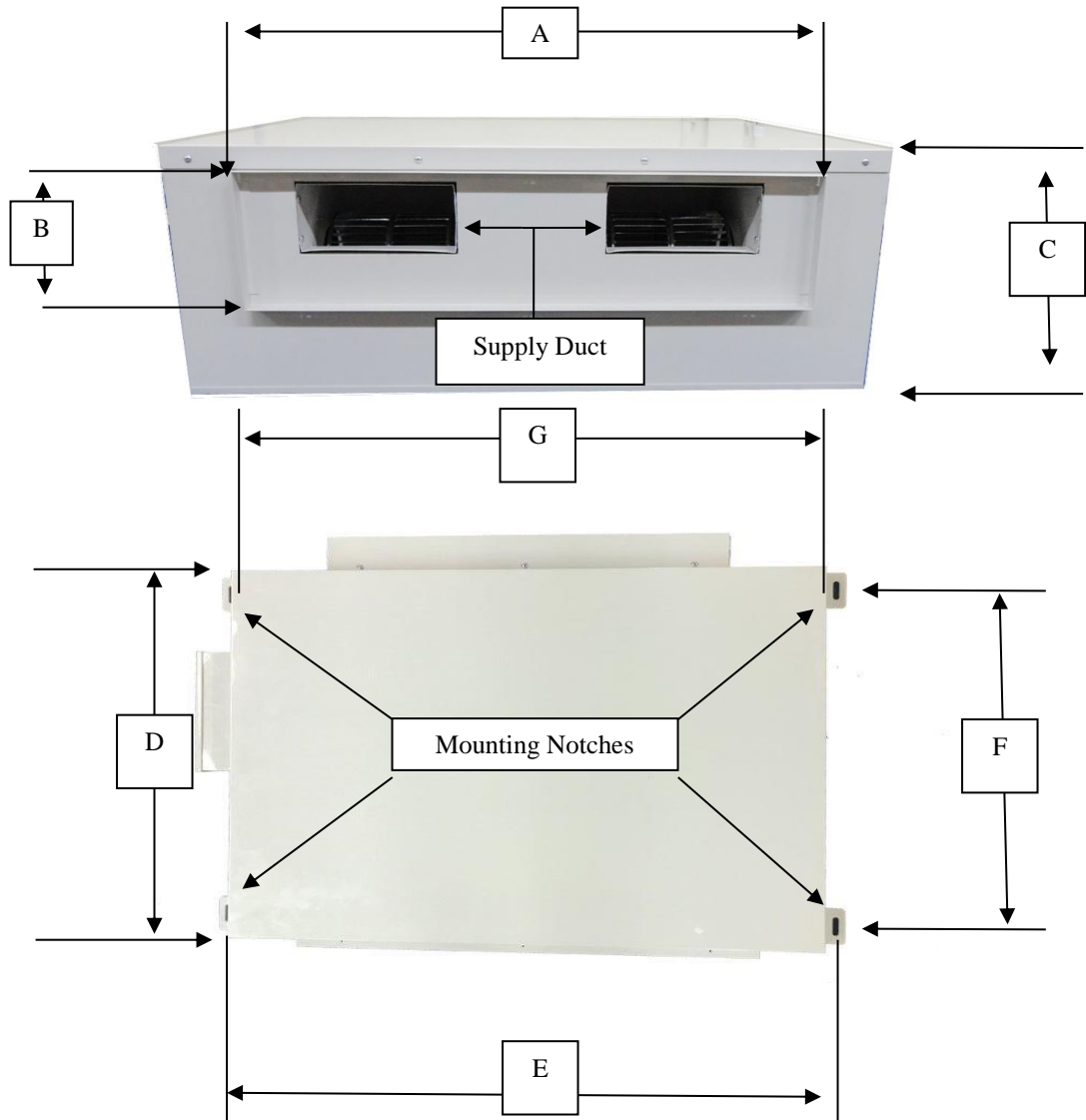
MCFCW-20-4HS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING WATER TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2005	0.50	8.75	3.7	54614	71510	88509	105593	122748	139959	157216
			9.75	4.5	55903	73221	90639	108141	125710	143335	161004
			10.8	5.5	56921	74623	92382	110221	128126	146084	164085
			11.8	6.5	57842	75788	93828	111944	130123	148354	166626

MCFCW-20-4HS-1 Wiring Diagram



MCFCW-20-4HS-1 Dimensional Drawing

FAN COIL DIMENSIONS (in.)									
Fan Coil Model Number	A	B	C	D	E	F	G	H	I
MCFCW-20-4HS-01	32.63	11.5	14.75	29.75	69	26.75	67	60.5	12



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