



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

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

HVAC Guide Specifications

Chilled and Hot Water Fan Coil Low Static

4-Pipe

Nominal Size:

60,000 BTUH

MultiAqua Model Number:

MCFCW-20-4LS-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 max external static pressure of .3" WG.

F. Water Coil:

- 1. Manufactured with water coils containing 3/8 copper tubing mechanically bonded to aluminum fins.
- 2. Contain both a manual water/ air bleed port per coil.
- 3. Coils shall be factory tested to 350 psig.
- 4. Coils have a max operating pressure of 200 PSI.
- 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-20-4LS-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-20-4LS-1	17.87	67	29.75	166	4-14	1-14	1-1/2	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-20-4LS-1	2000	208/230-1-50/60	3/4	4.92	6.15	15

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

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2730	42	0.00	8.75	TC	65317
				SC	50747
				WPD FT	11.0
			9.75	TC	69302
				SC	52762
				WPD FT	13.6
			10.8	TC	72802
				SC	54467
				WPD FT	16.4
MCFCW-20-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2235	42	0.10	8.75	TC	61302
				SC	45749
				WPD FT	11.0
			9.75	TC	64738
				SC	47738
				WPD FT	13.6
			10.8	TC	67960
				SC	48924
				WPD FT	16.4
MCFCW-20-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2174	42	0.20	8.75	TC	60933
				SC	45264
				WPD FT	11.0
			9.75	TC	64354
				SC	46354
				WPD FT	13.6
			10.8	TC	67527
				SC	48386
				WPD FT	16.4

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MCFCW-20-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1911	42	0.30	8.75	TC	58223
				SC	42200
				WPD FT	11.0
			9.75	TC	61444
				SC	43706
				WPD FT	13.6
			10.8	TC	64326
				SC	44982
				WPD FT	16.4

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2730	45	0.00	8.75	TC	59342
				SC	48333
				WPD FT	11.0
			9.75	TC	62700
				SC	50127
				WPD FT	13.5
			10.8	TC	65775
				SC	51704
				WPD FT	16.4

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2235	45	0.10	8.75	TC	55401
				SC	43417
				WPD FT	11.0
			9.75	TC	58402
				SC	44851
				WPD FT	13.6
			10.8	TC	61126
				SC	46145
				WPD FT	16.4

MCFCW-20-4LS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2174	45	0.20	8.75	TC	55053
				SC	42947
				WPD FT	11.0
			9.75	TC	58036
				SC	44385
				WPD FT	13.6
			10.8	TC	60720
				SC	45648
				WPD FT	16.4

MCFCW-20-4LS-1 COOLING CAPACITIES					
(Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1911	45	0.30	8.75	TC	52518
				SC	39907
				WPD FT	11.0
			9.75	TC	55253
				SC	41164
				WPD FT	13.6
			10.8	TC	57684
				SC	42303
				WPD FT	16.4

MCFCW-20-4LS-1 COOLING CAPACITIES					
(Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2730	42	0.00	8.75	TC	28323
				SC	22066
				WPD FT	12.2
			9.75	TC	29609
				SC	22609
				WPD FT	15.0
			10.8	TC	30739
				SC	23083
				WPD FT	18.0

MCFCW-20-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2235	42	0.10	8.75	TC	27217
				SC	20340
				WPD FT	12.2
			9.75	TC	28380
				SC	20828
				WPD FT	15.0
			10.8	TC	29400
				SC	21253
				WPD FT	18.0

MCFCW-20-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2174	42	0.20	8.75	TC	27295
				SC	20347
				WPD FT	12.2
			9.75	TC	28441
				SC	20827
				WPD FT	15.0
			10.8	TC	29446
				SC	21246
				WPD FT	18.0

MCFCW-20-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1911	42	0.30	8.75	TC	26558
				SC	19326
				WPD FT	12.2
			9.75	TC	27627
				SC	19772
				WPD FT	15.0
			10.8	TC	28560
				SC	20161
				WPD FT	18.0

MCFCW-20-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2730	45	0.00	8.75	TC	24482
				SC	20739
				WPD FT	12.2
			9.75	TC	25529
				SC	21223
				WPD FT	14.9
			10.8	TC	26448
				SC	21646
				WPD FT	17.9

MCFCW-20-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2235	45	0.10	8.75	TC	23424
				SC	19061
				WPD FT	12.2
			9.75	TC	24659
				SC	19496
				WPD FT	14.9
			10.8	TC	25569
				SC	19874
				WPD FT	17.9

MCFCW-20-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2174	45	0.20	8.75	TC	23511
				SC	19075
				WPD FT	12.2
			9.75	TC	24748
				SC	19503
				WPD FT	14.9
			10.8	TC	25645
				SC	19875
				WPD FT	17.9

MCFCW-20-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1911	45	0.30	8.75	TC	23115
				SC	18088
				WPD FT	12.2
			9.75	TC	24070
				SC	18484
				WPD FT	14.9
			10.8	TC	24905
				SC	18829
				WPD FT	18.0

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2730	42	0.00	8.75	TC	69948
				SC	54344
				WPD FT	3.9
			9.75	TC	74267
				SC	56453
				WPD FT	4.8
			10.8	TC	78157
				SC	58346
				WPD FT	5.8

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2235	42	0.10	8.75	TC	65285
				SC	48629
				WPD FT	3.9
			9.75	TC	69132
				SC	50451
				WPD FT	4.8
			10.8	TC	72634
				SC	52062
				WPD FT	5.8

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2174	42	0.20	8.75	TC	64897
				SC	48120
				WPD FT	3.9
			9.75	TC	68665
				SC	49864
				WPD FT	4.8
			10.8	TC	72050
				SC	51422
				WPD FT	5.8

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1911	42	0.30	8.75	TC	61877
				SC	44656
				WPD FT	3.9
			9.75	TC	65300
				SC	46216
				WPD FT	4.8
			10.8	TC	68421
				SC	47638
				WPD FT	5.8

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2730	45	0.00	8.75	TC	63601
				SC	51661
				WPD FT	4.0
			9.75	TC	67355
				SC	53702
				WPD FT	4.8
			10.8	TC	70813
				SC	55413
				WPD FT	5.8

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2235	45	0.10	8.75	TC	59198
				SC	46196
				WPD FT	3.9
			9.75	TC	62462
				SC	47754
				WPD FT	4.8
			10.8	TC	65467
				SC	49190
				WPD FT	5.8

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2174	45	0.20	8.75	TC	58812
				SC	45660
				WPD FT	3.9
			9.75	TC	61985
				SC	47193
				WPD FT	4.8
			10.8	TC	64971
				SC	48583
				WPD FT	5.8

MCFCW-20-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1911	45	0.30	8.75	TC	55855
				SC	42242
				WPD FT	3.9
			9.75	TC	58835
				SC	43617
				WPD FT	4.8
			10.8	TC	61550
				SC	44814
				WPD FT	5.8

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

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

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2730	0.00	8.75	4.6	57967	76354	94879	113519	132255	151070	169949
			9.75	5.6	59756	78737	97856	117089	136417	155824	175294
			10.8	6.8	61269	80750	100366	120095	139918	159818	179780
			11.8	8.0	62563	82469	102507	122656	142897	163213	183590

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2235	0.10	8.75	4.6	52754	69435	86231	103124	120097	137135	154227
			9.75	5.6	54136	71272	88520	105862	123283	140767	158303
			10.8	6.8	55290	72803	90425	108138	125927	143778	161679
			11.8	8.0	56266	74096	92032	110055	128152	146308	164514

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2174	0.20	8.75	4.6	51787	68230	84785	101434	118160	134950	151792
			9.75	5.6	53117	69997	86985	104065	121220	138438	155706
			10.8	6.8	54225	71466	88813	106248	123756	141324	158941
			11.8	8.0	55161	72705	90352	108084	125886	143746	161653

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	1911	0.30	8.75	4.6	48350	63680	79107	94616	110191	125823	141499
			9.75	5.6	49448	65136	80917	96776	112701	128678	144699
			10.8	6.8	50356	66336	82407	98553	114761	131020	147321
			11.8	8.0	51116	67341	83652	100036	116478	132969	149501

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MCFCW-20-4LS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2730	0.00	8.75	11.2	28199	36476	44819	53218	61664	70149	78666
			9.75	13.8	28695	37130	45629	54181	62778	71413	80077
			10.8	16.6	29117	37686	46315	54997	63721	72480	81269
			11.8	19.6	29479	38163	46905	55697	64529	73395	82290

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2235	0.10	8.75	11.2	26127	33779	41489	49246	57044	64874	72732
			9.75	13.8	26549	34336	42177	50694	57989	65945	73927
			10.8	16.6	26907	34806	42759	50754	58786	66847	74934
			11.8	19.6	27214	35210	43257	51345	59468	67619	75794

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2174	0.20	8.75	11.2	25604	33171	40794	48464	56172	63913	71681
			9.75	13.8	26017	33715	41466	49262	57095	64959	72848
			10.8	16.6	26366	34175	42034	49936	57874	65840	73831
			11.8	19.6	26666	345569	42521	50513	58539	66593	74670

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	1911	0.30	8.75	11.2	24253	31425	29647	45912	53211	60539	67891
			9.75	13.8	24623	31912	39249	46626	54036	61473	68933
			10.8	16.6	24935	32323	37756	47227	54730	62259	69809
			11.8	19.6	25203	32675	40190	47742	55323	62930	70556

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2730	0.0	8.75	3.7	62096	81886	101825	121889	142056	162308	182628
			9.75	4.5	64138	84610	105231	125975	146823	167757	188758
			10.8	5.5	65860	86903	108092	129405	150819	172317	193884
			11.8	6.5	67327	88853	110523	132313	154204	176177	198217

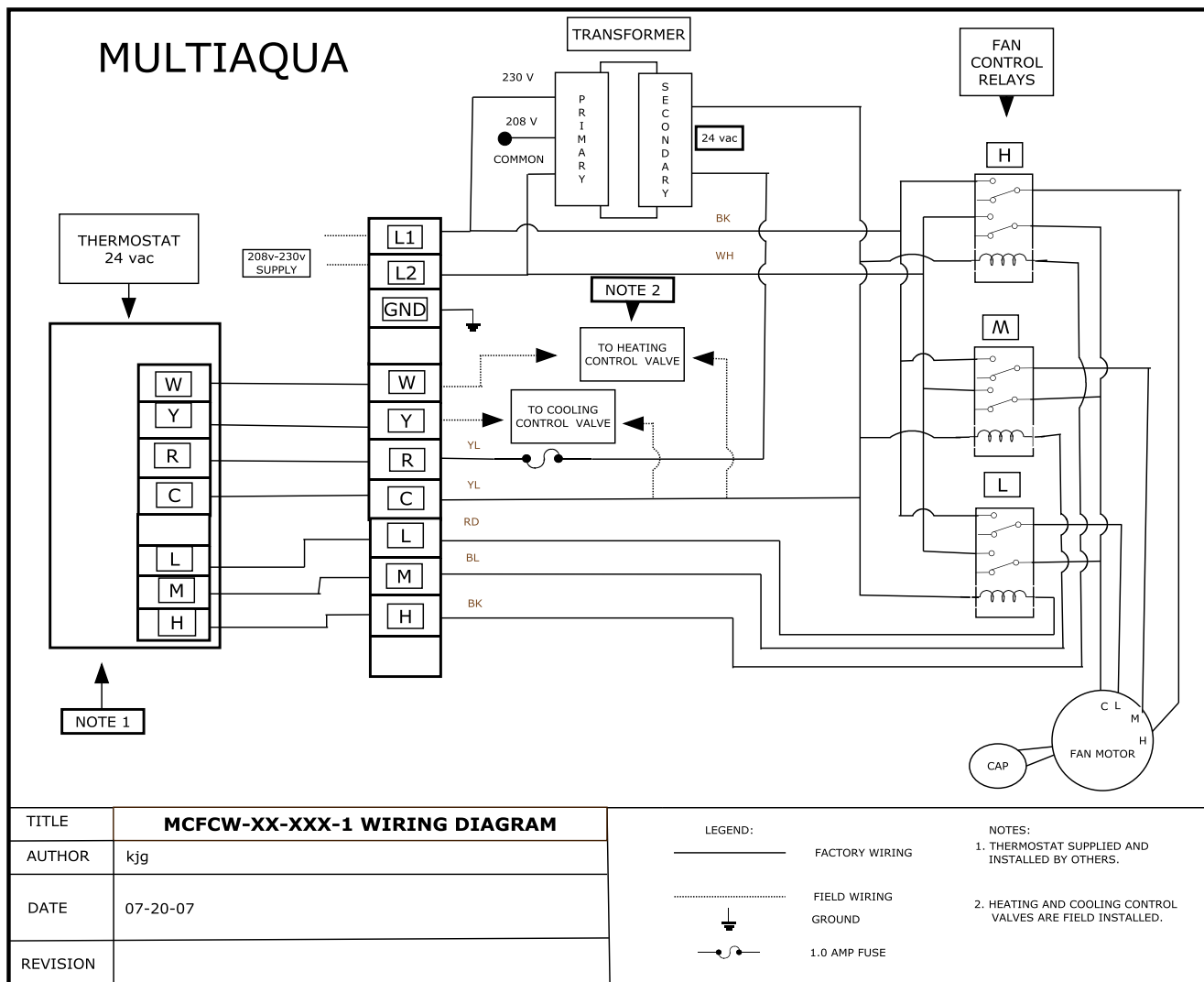
MCFCW-20-4LS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2235	0.10	8.75	3.7	56351	74253	92279	110408	128624	146909	165252
			9.75	4.5	57896	76308	94841	113474	132192	150978	169821
			10.8	5.5	59179	78018	96958	116004	135132	154327	173576
			11.8	6.5	60256	79436	98730	118119	137586	157118	176703

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2174	0.20	8.75	3.7	55307	72944	90702	108559	126500	144510	162575
			9.75	4.5	56788	74913	93155	111494	129915	148403	166945
			10.8	5.5	58015	76539	95178	113911	132722	151598	170527
			11.8	6.5	59042	77900	96867	115926	135060	154256	173503

MCFCW-20-4LS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	1911	0.30	8.75	3.7	51500	67896	84396	100982	117640	134357	151122
			9.75	4.5	52701	69488	86375	103345	120384	137479	154621
			10.8	5.5	53683	70787	87987	105267	122612	140012	157455
			11.8	6.5	54498	71864	89321	106853	124449	142096	159785

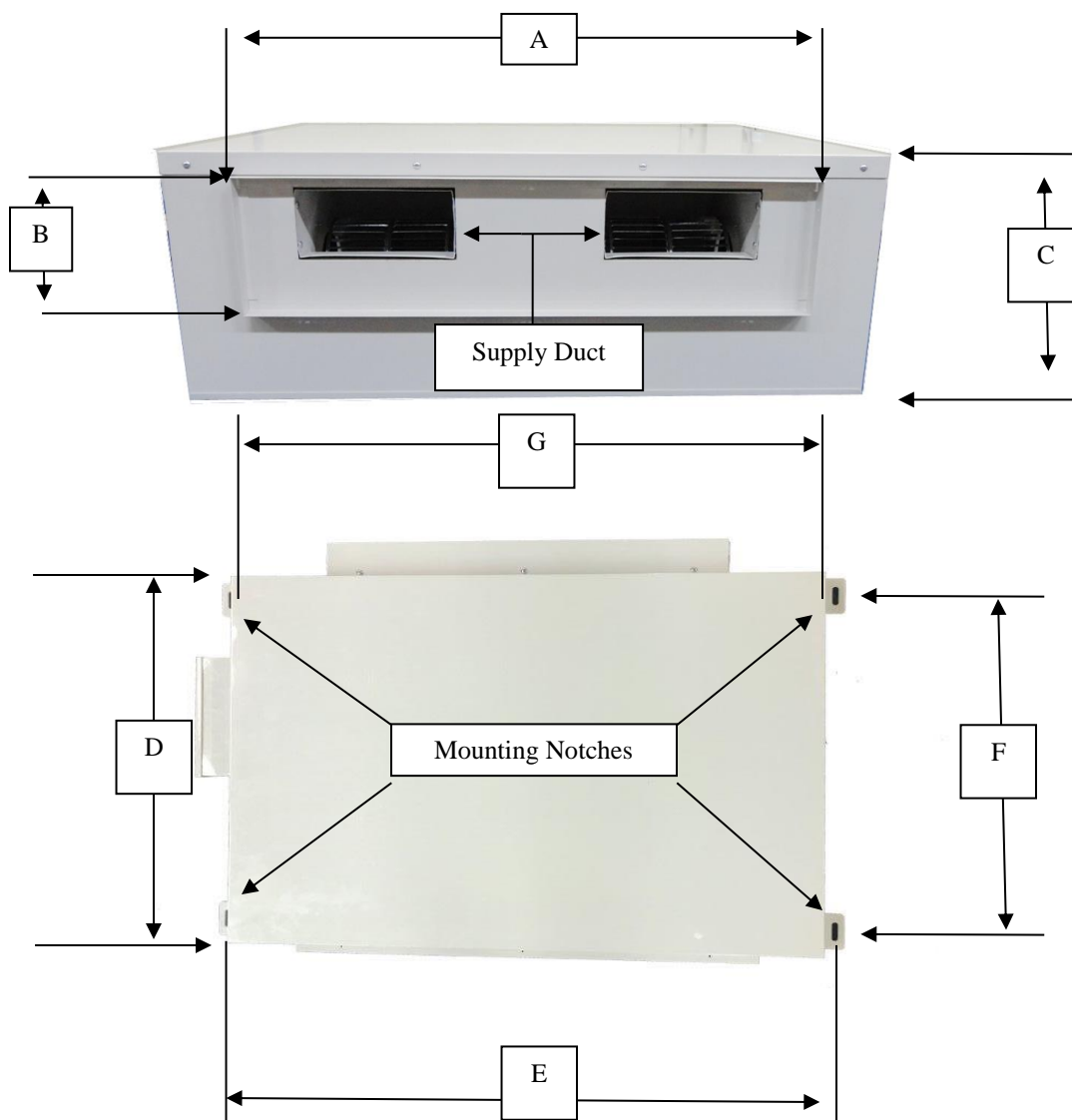
MCFCW-20-4LS-1

Wiring Diagram



MCFCW-20-4LS-1 Dimensional Drawing

FAN COIL DIMENSIONS (in.)									
Fan Coil Model Number	A	B	C	D	E	F	G	H	I
MCFCW-20-4LS-01	32.63	11.5	17.88	29.75	69	26.75	67	60.5	15.75



These specifications are subject to change without notice.
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