



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

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

*These specifications are subject to change without notice.
Check www.multiaqua.com for the latest information.*

HVAC Guide Specifications

Chilled and Hot Water Fan Coil Low Static

4-Pipe

Nominal Size:

48,000 BTUH

MultiAqua Model Number:

MCFCW-16-4LS-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-16-4LS-1 Product Specifications

Physical Data										
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs.)	Primary Rows FPI	Secondary Rows FPI	Copper Diameter (in) HW/CW	Water Inlet O.D(in)	Water Outlet O.D(in)	Drain (in)
MCFCW-16-4LS-1	14.25	55.00	31.57	166	4-14	1-14	3/4-1/2	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-16-4LS-1	1600	208/230-1-50/60	3/4	3.81	4.77	10

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

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2580	42	0.00	8.0	TC	62923
				SC	48218
				WPD FT	8.0
			9.0	TC	66687
				SC	50111
				WPD FT	9.9
			10.0	TC	70007
				SC	51764
				WPD FT	12.1
MCFCW-16-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2120	42	0.10	8.0	TC	59034
				SC	43510
				WPD FT	8.0
			9.0	TC	62395
				SC	45154
				WPD FT	9.9
			10.0	TC	65404
				SC	46557
				WPD FT	12.1
MCFCW-16-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1971	42	0.20	8.0	TC	57599
				SC	41886
				WPD FT	8.0
			9.0	TC	60820
				SC	43416
				WPD FT	9.9
			10.0	TC	66224
				SC	45921
				WPD FT	12.1

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MCFCW-16-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1829	42	0.30	8.0	TC	56148
				SC	40239
				WPD FT	8.0
			9.0	TC	59190
				SC	41666
				WPD FT	9.9
			10.0	TC	61909
				SC	42919
				WPD FT	12.1

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2580	45	0.00	8.0	TC	56911
				SC	45741
				WPD FT	7.9
			9.0	TC	60109
				SC	47448
				WPD FT	9.9
			10.0	TC	62988
				SC	48969
				WPD FT	12.0

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2120	45	0.10	8.0	TC	53122
				SC	41147
				WPD FT	7.9
			9.0	TC	56010
				SC	42552
				WPD FT	9.9
			10.0	TC	58580
				SC	43793
				WPD FT	12.0

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1971	45	0.20	8.0	TC	51769
				SC	39558
				WPD FT	7.9
			9.0	TC	54517
				SC	40843
				WPD FT	9.9
			10.0	TC	57015
				SC	42034
				WPD FT	12.0

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1829	45	0.30	8.0	TC	50378
				SC	52995
				WPD FT	7.9
			9.0	TC	55355
				SC	40235
				WPD FT	9.9
			10.0	TC	55355
				SC	40235
				WPD FT	12.0

MCFCW-16-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2580	42	0.00	8.0	TC	23441
				SC	19214
				WPD FT	9.4
			9.0	TC	24878
				SC	19729
				WPD FT	11.8
			10.0	TC	25913
				SC	2159
				WPD FT	14.4

MCFCW-16-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2120	42	0.10	8.0	TC	22700
				SC	17648
				WPD FT	9.4
			9.0	TC	23836
				SC	18118
				WPD FT	11.8
			10.0	TC	24778
				SC	18505
				WPD FT	14.4

MCFCW-16-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1971	42	0.20	8.0	TC	22393
				SC	17147
				WPD FT	9.4
			9.0	TC	23491
				SC	17599
				WPD FT	11.8
			10.0	TC	24398
				SC	17973
				WPD FT	14.4

MCFCW-16-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1829	42	0.30	8.0	TC	22061
				SC	16639
				WPD FT	9.4
			9.0	TC	23120
				SC	17073
				WPD FT	11.8
			10.0	TC	23992
				SC	17432
				WPD FT	14.4

MCFCW-16-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2580	45	0.00	8.0	TC	20386
				SC	18144
				WPD FT	9.4
			9.0	TC	21524
				SC	18584
				WPD FT	11.7
			10.0	TC	22369
				SC	18967
				WPD FT	14.3

MCFCW-16-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2120	45	0.10	8.0	TC	19639
				SC	16610
				WPD FT	9.4
			9.0	TC	20522
				SC	17010
				WPD FT	11.7
			10.0	TC	21548
				SC	17356
				WPD FT	14.3

MCFCW-16-4LS-1 COOLING CAPACITIES (Secondary Coil Only)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1971	45	0.20	8.0	TC	19346
				SC	16123
				WPD FT	9.4
			9.0	TC	20422
				SC	16508
				WPD FT	11.7
			10.0	TC	21232
				SC	16840
				WPD FT	14.3

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CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1829	45	0.30	8.0	TC	19033
				SC	15629
				WPD FT	9.4
			9.0	TC	20113
				SC	15999
				WPD FT	11.7
			10.0	TC	20892
				SC	16317
				WPD FT	14.3

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2580	42	0.00	8.0	TC	70424
				SC	52339
				WPD FT	5.8
			9.0	TC	74575
				SC	54524
				WPD FT	7.3
			10.0	TC	78284
				SC	56420
				WPD FT	8.9

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2120	42	0.10	8.0	TC	65795
				SC	47229
				WPD FT	5.8
			9.0	TC	69454
				SC	49045
				WPD FT	7.3
			10.0	TC	72735
				SC	50615
				WPD FT	8.9

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MCFCW-16-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1971	42	0.20	8.0	TC	64072
				SC	45417
				WPD FT	5.8
			9.0	TC	67578
				SC	47103
				WPD FT	7.3
			10.0	TC	70640
				SC	48571
				WPD FT	8.9

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1829	42	0.30	8.0	TC	62296
				SC	43582
				WPD FT	5.8
			9.0	TC	65580
				SC	45141
				WPD FT	7.3
			10.0	TC	68501
				SC	46522
				WPD FT	8.9

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2580	45	0.00	8.0	TC	63865
				SC	49717
				WPD FT	5.8
			9.0	TC	67420
				SC	51661
				WPD FT	7.3
			10.0	TC	70618
				SC	53358
				WPD FT	8.8

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MCFCW-16-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
2120	45	0.10	8.0	TC	59396
				SC	44665
				WPD FT	5.8
			9.0	TC	62518
				SC	46213
				WPD FT	7.3
			10.0	TC	65303
				SC	47578
				WPD FT	8.9

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1971	45	0.20	8.0	TC	57759
				SC	42871
				WPD FT	5.8
			9.0	TC	60737
				SC	44308
				WPD FT	7.3
			10.0	TC	63371
				SC	45577
				WPD FT	8.9

MCFCW-16-4LS-1 COOLING CAPACITIES (Primary and Secondary Coil)					
CFM	EWT (°F)	ESP IN WC	GPM	ENTERING AIR TEMPERATURE (F)	
					80° D.B. / 67° W.B.
1829	45	0.30	8.0	TC	56067
				SC	41030
				WPD FT	5.8
			9.0	TC	58868
				SC	42377
				WPD FT	7.3
			10.0	TC	61379
				SC	43553
				WPD FT	8.9

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

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

MCFCW-16-4LS-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	2580	0.00	8.0	7.3	52380	69106	85942	102869	119871	136934	154047
			9.0	9.1	54102	71401	88808	106306	123878	141512	159194
			10.0	11.1	55536	73309	91188	109156	127198	145299	163449
			11.0	13.3	56747	74917	93192	111554	129987	148478	167017

MCFCW-16-4LS-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	2120	0.10	8.0	7.3	47931	63160	78481	93879	109340	124853	140407
			9.0	9.1	49278	64951	80714	96551	112450	128400	144390
			10.0	11.1	50387	66422	82545	98740	114995	131298	147641
			11.0	13.3	51313	67649	84070	100561	117110	133705	150339

MCFCW-16-4LS-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	1971	0.20	8.0	7.3	46204	60872	75625	90450	105334	120266	135236
			9.0	9.1	47422	62490	77642	92862	108139	123463	138824
			10.0	11.1	48421	63814	79287	94828	110423	126062	141738
			11.0	13.3	49251	64914	80653	96457	112313	128213	144147

MCFCW-16-4LS-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	1829	0.30	8.0	7.3	44433	58525	72695	86932	101222	115557	129928
			9.0	9.1	45527	59976	74501	89090	103731	118414	133132
			10.0	11.1	46419	61157	75968	90841	105763	120726	135722
			11.0	13.3	47157	62134	77181	92286	107438	122630	137853

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MCFCW-16-4LS-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	2580	0.00	8.0	8.7	23824	30913	38069	45281	52540	59838	67169
			9.0	10.9	24300	31541	38845	46203	53606	61046	68517
			10.0	13.3	24700	32068	39496	46976	54497	62055	69641
			11.0	15.9	25042	32517	40050	47632	55255	62911	70595

MCFCW-16-4LS-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	2120	0.10	8.0	8.7	22290	28876	35521	42213	48946	55713	62507
			9.0	10.9	22700	29416	36187	43004	49860	56747	63660
			10.0	13.3	23043	29868	36744	43665	50621	57608	64620
			11.0	15.9	23335	30252	37217	44225	51267	58338	65432

MCFCW-16-4LS-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	1971	0.20	8.0	8.7	21665	28067	34523	41025	47565	54137	60735
			9.0	10.9	22052	28576	35152	41771	48426	55111	61821
			10.0	13.3	22375	29001	35676	42393	49143	55922	62724
			11.0	15.9	22651	29363	36121	42919	49750	56607	63487

MCFCW-16-4LS-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	1829	0.30	8.0	8.7	21033	277246	33511	39819	46163	52537	58935
			9.0	10.9	21396	27725	34102	40520	46971	53451	59954
			10.0	13.3	21701	28125	3459*5	41103	47644	54212	60801
			11.0	15.9	21959	28464	35012	41598	48213	54854	61516

MCFCW-16-4LS-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	2580	0.0	8.0	5.4	57375	75816	94386	113063	131831	150671	169571
			9.0	6.8	59363	78466	97697	11736	136464	155965	175526
			10.0	8.2	61004	80649	100421	120298	140264	160301	180397
			11.0	9.8	62376	82472	102692	123014	143423	163902	184438

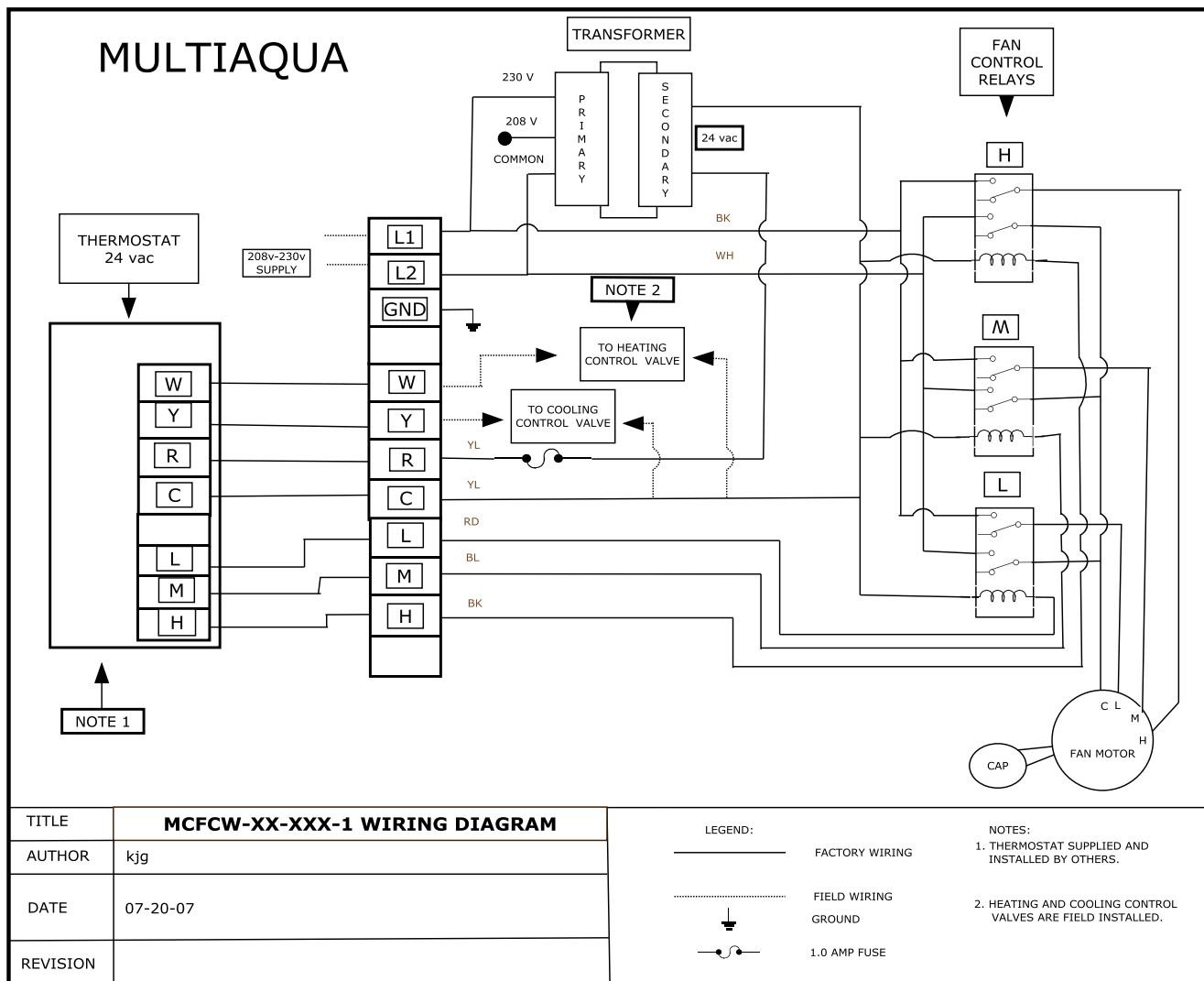
MCFCW-16-4LS-1 HOT WATER CAPACITIES (Primary and Secondary)											
ENTERING AIR (°F)	NOMINAL CFM	ESP "WC	GPM	WPD	ENTERING AIR TEMPERATURE (F)						
					100°	110°	120°	130°	140°	150°	160°
70	2120	0.10	8.0	5.4	52394	69153	86020	102979	120014	137111	154257
			9.0	6.8	53902	71158	88519	105969	123493	141078	158711
			10.0	8.2	55126	72781	90539	108382	126296	144269	162289
			11.0	9.8	56135	74117	92197	110360	128591	146878	165212

MCFCW-16-4LS-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	1971	0.20	8.0	5.4	50450	66573	82797	99105	115484	131920	148403
			9.0	6.8	51796	68359	85020	101762	118573	135439	152351
			10.0	8.2	52880	69795	86804	103892	121044	138250	155500
			11.0	9.8	53768	70969	88261	105627	123055	140534	158055

MCFCW-16-4LS-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	1829	0.30	8.0	5.4	48450	63916	79475	95112	110813	126568	142366
			9.0	6.8	49637	65489	81431	97448	113526	129655	145826
			10.0	8.2	50587	66746	82990	99305	115580	132102	148565
			11.0	9.8	51361	67767	84255	100810	117420	134077	150772

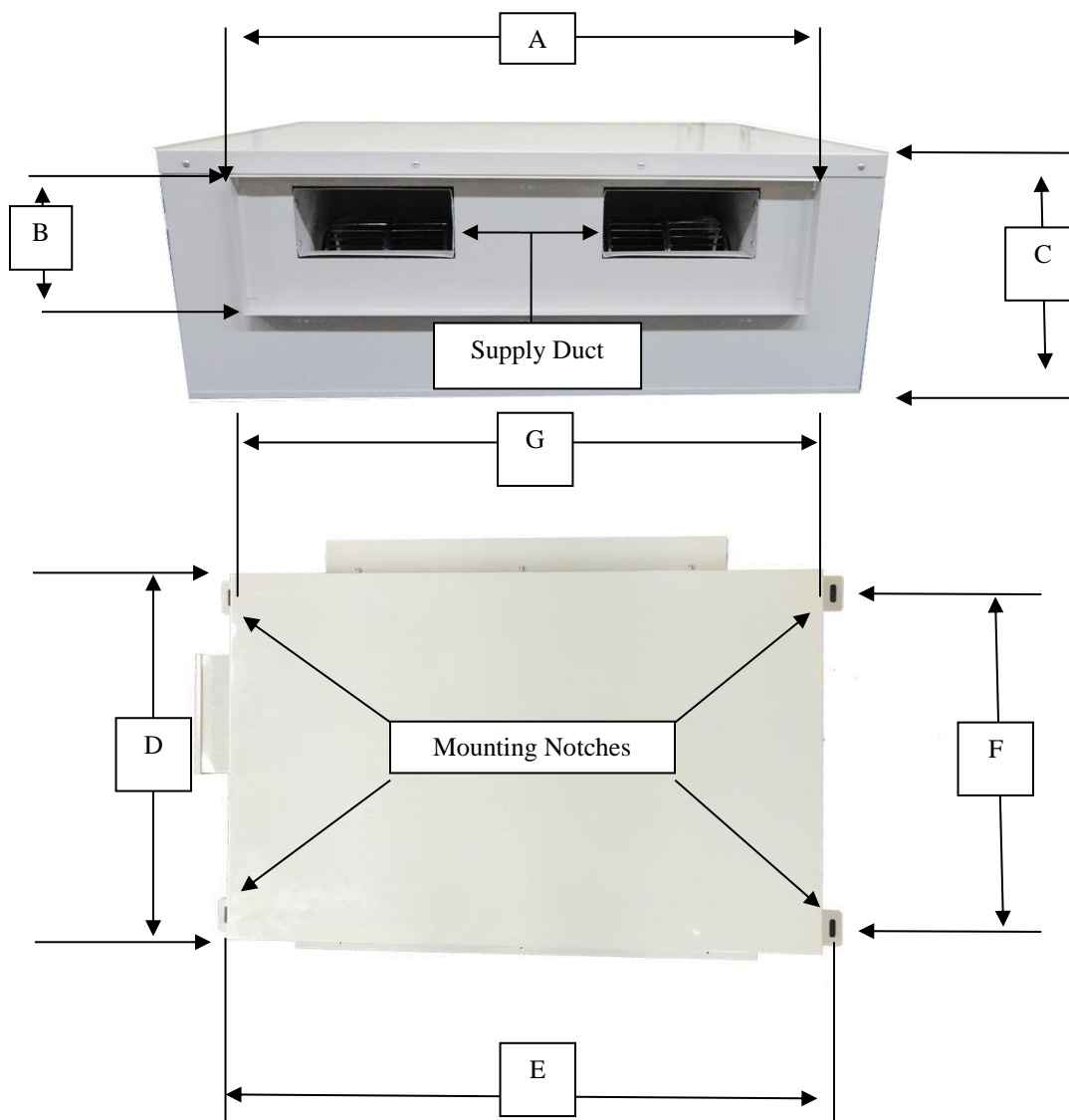
MCFCW-16-4LS-1

Wiring Diagram



MCFCW-16-4LS-1 Dimensional Drawing

FAN COIL DIMENSIONS (in.)									
Fan Coil Model Number	A	B	C	D	E	F	G	H	I
MCFCW-16-4LS-01	33.00	12.00	14.17	31.58	54.92	24.25	57.00	49.00	12.00



*These specifications are subject to change without notice.
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