

**FW4A Chilled Water
FD4A District Cooling**
Fan Coil with remote control
50/60 Hz
1200 Thru 2000 CFM

Carrier

Product Data

Carrier's FW4A Chilled Water and FD4A District Cooling multiplies fan coils are designed to cover a wide range of air handling requirements. They are compact and ready to fit where needed - in the basement, crawlspace, attic, utility room, or closet.



Features/Benefits

- 5 sizes from 3 up to 6 ton cooling capacity.
- High static up to 0.7 inch water (175 Pa) for all sizes.
- External drain pan for connection valves.
- A-coil design for sizes 16 : 20, and sloped-coil for sizes 12&14.
- Efficient lanced sine-wave aluminum fins.
- High-impact thermal plastic condensate pan.
- Primary and secondary drain connection with brass inserts.
- Multipoise design for maximum versatility.
- Field installation heater packages.
- Solid state interlock control board with built-in fuse.
- Sweat type connection.
- Multiple electric entries.
- Inspection plate to facilitate cleaning the coil.
- 3-speed motors for all sizes, in field selection.
- Polyester powder painted steel cabinet to withstand harsh Middle Eastern climatic conditions.
- Permanent filter with aluminum frame 1 inch, flame retardant polyester fibers.
- 208/230 V 1phase 60 Hz and 220 V 1 phase 50 Hz models are available.

FW4A Chilled Water and FD4A District Cooling fan coil is are designed for medium and high static pressure, up to 0.7 inches water (175 Pa) with cooling capacity from 10.8 k watt (36.9 kbtuh) to 21.5 k watt (73.4 kbtuh).

**UV-C
READY**

FW4A and FD4A are available in five sizes with an airflow from 570 l/s (1200 CFM) to 920 l/s (2000 CFM). FW4A and FD4A can be installed vertical or horizontal. Coils are made of efficient lanced sine-wave aluminum fins mechanically bonded to copper tubes for superior heat transfer. 10-mm thick cabinet

insulation with density 32 kg/m³ minimize energy losses and increase unit efficiency FW4A and FD4A comes with polyester powder painted zinc coated galvanized steel casing. Super quite multi 3 speed motor for field selection & electric heaters are available option at field installation.

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Model Number Nomenclature

FW4A	S	N	F	12	000	E
FW4A Chilled Water FD4A District Cooling	SAMCO	Voltage N= 208/230v,1-60 Hz& S =220-240,1-50 Hz	F - Full single piece cabinet B - Modular cabinet	CFM/100 @ 0.2 external static pressure & high speed	Electric Heater (kw) 005: 5 kW, 008: 8kW, ...	E = Electronic Control



Physical Data

Model FW4A	Size				
	FW4A12	FW4A14	FWA16	FW4A18	FW4A20
CFM*	1210	1394	1622	1788	1967
Cooling Capacity (kw)*	10.8	12.5	14.2	16.7	21.5
Cooling Capacity (kbtuh)	36.9	42.7	48.5	57	73.4
SHR	0.75	0.75	0.76	0.74	0.71
Elec.Heater (Option) kw**	5 (Recommended)			8 (Recommended)	
Power Supply	220-240 1-50Hz or 220-240 1-60Hz				
Motor HP(Nominal)	1/3	1/3	1/2	3/4	3/4
Input Watts @ Med Speed & 25 Pa ESP	400	540	620	900	1000
Number of Motors					
Coil Material	Copper Tube / Aluminum Fins With Lanced Sine Wave				
Coil Face Area, m^2	0.28	0.32	0.41	0.51	0.69
Coil Connection Type	Sweat Type				
Coil Connection Size	5/8		7/8		
Number of Rows	3				
Fin Density/ Inch	15				
Drain Connections Size (inch)	3/4				
Blower type	Double inlet forward curve				
Blower Diameter / Width, mm	10.63/7.12	10.62/9.5		11.87/9.62	
Filter Type	Permanent type, Al frame 1 inch, Flame retardant polyester fibers				

* At 26.7/19 c approach, 6.7 c water inlet/ 12.7c water outlet, High Speed @ 50 Pa ESP.

** In field installation option.

Model FD4A	Size				
	FD4A12	FD4A14	FDA16	FD4A18	FD4A20
CFM*	1210	1394	1622	1788	1967
Cooling Capacity (kw)*	12.20	13.50	16.60	16.7	21.5
Cooling Capacity (kbtuh)	41626	46062	56639	56,980	73,358
SHR	0.75	0.75	0.76	0.74	0.71
Elec.Heater (Option) kw**	5 (Recommended)			8 (Recommended)	
Power Supply	220-240 1-50Hz or 220-240 1-60Hz				
Motor HP(Nominal)	1/3	1/3	1/2	3/4	3/4
Input Watts @ Med Speed & 25 Pa ESP	400	540	620	900	1000
Number of Motors					
Coil Material	Copper Tube / Aluminum Fins With Lanced Sine Wave				
Coil Face Area, m^2	0.28	0.32	0.41	0.51	0.69
Coil Connection Type	Sweat Type				
Coil Connection Size	5/8		7/8		
Number of Rows	3				
Fin Density/ Inch	15				
Drain Connections Size (inch)	3/4				
Blower type	Double inlet forward curve				
Blower Diameter / Width, mm	10.63/7.12	10.62/9.5		11.87/9.62	
Filter Type	Permanent type, Al frame 1 inch, Flame retardant polyester fibers				

Electrical Data

Model Series 60Hz	FW4A12 / FD4A12	FW4A14 / FD4A14	FW4A16 / FD4A16	FW4A18 / FD4A18	FW4A20 / FD4A20
Number of Motors	1	1	1	1	1
Motor FLA	2.7	2.9	4.3	5.4	5.4
MCA	3.4	3.6	5.4	6.8	6.8
MOCP	15	15	15	15	15

Model Series 50Hz	FW4A12 / FD4A12	FW4A14 / FD4A14	FW4A16 / FD4A16	FW4A18 / FD4A18	FW4A20 / FD4A20
Number of Motors	1	1	1	1	1
Motor FLA	1.9	1.9	2.7	3.6	3.6
MCA	2.4	2.4	3.4	4.5	4.5
MOCP	15	15	15	15	15

Performance Data – FW4A (50/60 HZ)

Rating: 50 Pa External Static Pressure	Fan Speed	FW4A12			FW4A14			FW4A16		
		High	Medium	Low	High	Medium	Low	High	Medium	Low
	Capacity (KW)	10.8	9.8	8.8	12.5	11.4	10.4	14.2	13.7	12.9
	Capacity (Btu/Hr)	36,850	33,438	30,026	42,650	38,897	35,485	48,450	46,744	44,015
	CFM	1210	1058	925	1394	1232	1046	1622	1535	1422
	L/sec Air	568	497	434	654	578	491	761	721	668
	SHR	0.769	0.760	0.754	0.767	0.760	0.742	0.774	0.766	0.765
	Air DB Ent	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7
	Air WB Ent	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4
	Air DB Lvng. C	14.6	14.1	13.6	14.6	14.1	13.6	14.7	14.6	14.3
	Air WB Lvng. C	14.0	13.7	13.3	14.0	13.7	13.2	14.1	14.0	13.3
	N Circuits	5	5	5	6	6	6	6	6	6
	Face Tubes	24	24	24	28	28	28	36	36	36
	Water In C	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
	Water Lvng. C	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
	Gal/Min.	6.82	6.18	5.55	7.88	7.18	6.56	8.96	8.64	8.13
	L/sec Water	0.430	0.390	0.350	0.497	0.453	0.414	0.565	0.545	0.513
	DP PSI	3.94	3.32	2.75	3.61	3.07	2.62	5.07	4.77	4.29
	DP K Pa	27.2	22.9	19.0	24.9	21.2	18.1	35.0	32.9	29.6

100 Pa. External Static Pressure	Fan Speed	High	Medium	Low	High	Medium	Low	High	Medium	Low
	Capacity (KW)	9.7	8.8	8	11.4	10.2	9.6	12.9	12.5	11.7
	Capacity (Btu/Hr)	33,096	30,026	27,296	38,897	34,802	32,755	44,015	42,650	39,920
	CFM	1030	916	808	1210	1050	930	1400	1330	1226
	L/sec Air	484	430	379	568	493	437	657	624	576
	SHR	0.756	0.750	0.746	0.753	0.750	0.732	0.760	0.753	0.751
	Air DB Ent	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7
	Air WB Ent	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4
	Air DB Lvng. C	14.0	13.6	13.2	14.1	13.6	13.2	14.2	14.1	13.8
	Air WB Lvng. C	13.6	13.3	12.9	13.6	13.2	12.9	13.7	13.6	13.4
	Water In C	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7	6.7
	Water Lvng. C	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7
	Gal/Min.	6.09	5.58	5.02	7.16	6.44	6.05	8.13	7.85	7.35
	L/sec Water	0.384	0.352	0.317	0.452	0.406	0.382	0.513	0.495	0.464
	DP PSI	3.25	2.78	2.32	3.06	2.54	2.28	4.28	4.03	3.59
	DP K Pa	22.4	19.2	16.0	21.1	17.5	15.7	29.5	27.8	24.8

150 Pa. External Static Pressure	Fan Speed	High	Medium	Low	High	Medium	Low	High	Medium	Low
	Capacity (KW)	8.1	6.8	–	8.9	7.5	–	11.3	9.7	–
	Capacity (Btu/Hr)	27,637	23,202	–	30,367	25,590	–	38,556	33,096	–
	CFM	800	640	–	850	680	–	1150	920	–
	L/sec Air	376	300	–	399	319	–	540	432	–
	SHR	0.740	0.727	–	0.730	0.717	–	0.744	0.728	–
	Air DB Ent	26.7	26.7	–	26.7	26.7	–	26.7	26.7	–
	Air WB Ent	19.4	19.4	–	19.4	19.4	–	19.4	19.4	–
	Air DB Lvng. C	13.2	12.4	–	12.9	12.2	–	13.6	12.8	–
	Air WB Lvng. C	12.9	12.3	–	12.6	12.1	–	13.2	12.6	–
	Water In C	6.7	6.7	–	6.7	6.7	–	6.7	6.7	–
	Water Lvng. C	12.7	12.7	–	12.7	12.7	–	12.7	12.7	–
	Gal/Min.	5.07	4.28	–	5.60	4.71	–	7.12	6.07	–
	L/sec Water	0.320	0.270	–	0.353	0.297	–	0.449	0.383	–
	DP PSI	2.36	1.75	–	1.99	1.48	–	3.39	2.58	–
	DP K Pa	16.3	12.1	–	13.7	10.2	–	23.4	17.8	–

* Should not Exceed 175 Pa External Static Pressure

Performance Data - FW4A (50/60 HZ) – Cont.

FW4A18			FW4A20			Fan Speed	Rating: 50 Pa External Static Pressure	Other Ent. Air Aprox. Adjust DB/WB	
High	Medium	Low	High	Medium	Low			24/18	22/17
16.7	15.8	14.1	21.5	19.2	17.5	Capacity (KW)		-14%	-28%
56,980	53,910	48,109	73,358	65,510	59,710	Capacity (Btu/Hr)		-14%	-28%
1788	1625	1372	1967	1672	1421	CFM		same	same
839	763	644	923	785	667	L/sec Air		same	same
0.754	0.764	0.730	0.716	0.703	0.685	SHR		same	same
26.7	26.7	26.7	26.7	26.7	26.7	Air DB Ent		24	22
19.4	19.4	19.4	19.4	19.4	19.4	Air WB Ent		18.0	17.0
14.1	13.8	13.2	12.7	12.2	11.8	Air DB Lvng. C		-0.7	-1.2
13.6	13.4	12.9	12.5	12.1	11.7	Air WB Lvng. C		-0.7	-1.2
8	8	8	10	10	10	N Circuits	100 Pa. External Static Pressure	same	same
48	48	48	60	60	60	Face Tubes		same	same
6.7	6.7	6.7	6.7	6.7	6.7	Water In C		same	same
12.7	12.7	12.7	12.7	12.7	12.7	Water Lvng. C		-0.8	-1.3
10.52	9.95	8.89	13.55	12.11	11.03	Gal/Min.		same	same
0.664	0.628	0.561	0.855	0.764	0.696	L/sec Water		same	same
4.06	3.70	3.03	4.93	4.04	3.43	DP PSI		same	same
28.0	25.5	20.9	34.0	27.9	23.7	DP K Pa		same	same
15.5	14.7	13.2	19.8	17.7	16.1	Capacity (KW)	150 Pa. External Static Pressure	-14%	-28%
52,886	50,156	45,038	67,558	60,392	54,933	Capacity (Btu/Hr)		-14%	-28%
1600	1462	1243	1760	1496	1272	CFM		same	same
751	686	583	826	702	597	L/sec Air		same	same
0.748	0.734	0.723	0.707	0.694	0.683	SHR		same	same
26.7	26.7	26.7	26.7	26.7	26.7	Air DB Ent		24	22
19.4	19.4	19.4	19.4	19.4	19.4	Air WB Ent		18.0	17.0
13.8	13.4	12.8	12.4	11.8	11.4	Air DB Lvng. C		-0.7	-1.2
13.4	13.1	12.6	12.2	11.7	11.3	Air WB Lvng. C		-0.7	-1.2
6.7	6.7	6.7	6.7	6.7	6.7	Water In C		same	same
12.7	12.7	12.7	12.7	12.7	12.7	Water Lvng. C		-0.8	-1.3
9.78	9.26	8.29	12.46	11.16	10.11	Gal/Min.		same	same
0.617	0.584	0.523	0.786	0.704	0.638	L/sec Water		same	same
3.57	3.25	2.68	4.26	3.51	2.96	DP PSI		same	same
24.6	22.4	18.5	29.4	24.2	20.4	DP K Pa		same	same
High	Medium	Low	High	Medium	Low	Fan Speed	150 Pa. External Static Pressure	24/18	22/17
14.5	12.2	–	17.9	15.2	–	Capacity (KW)		-14%	-28%
14	41,626	–	61,075	51,862	–	Capacity (Btu/Hr)		-14%	-28%
1400	1120	–	1540	1232	–	CFM		same	same
657	526	–	723	578	–	L/sec Air		same	same
0.730	0.718	–	0.703	0.690	–	SHR		same	same
26.7	26.7	–	26.7	26.7	–	Air DB Ent		24	22
19.4	19.4	–	19.4	19.4	–	Air WB Ent		18.0	17.0
13.3	12.5	–	12.0	11.4	–	Air DB Lvng. C		-0.7	-1.2
13.0	12.4	–	11.8	11.3	–	Air WB Lvng. C		-0.7	-1.2
6.7	6.7	–	6.7	6.7	–	Water In C		same	same
12.7	12.7	–	12.7	12.7	–	Water Lvng. C		-0.8	-1.3
8.89	7.66	–	11.29	9.62	–	Gal/Min.		same	same
0.561	0.483	–	0.712	0.607	–	L/sec Water		same	same
3.03	2.33	–	3.58	2.71	–	DP PSI		same	same
20.9	16.1	–	24.7	18.7	–	DP K Pa		same	same

Performance Data – FD4A (50/60 HZ)

Rating: 50 Pa External Static Pressure	Fan Speed	FD4A12			FD4A14			FD4A16		
		High	Med.	Low	High	Med.	Low	High	Med.	Low
	Capacity (KW)	12.20	11.20	10.20	13.50	12.40	11.10	16.60	16.00	15.10
	Capacity (Btu/Hr)	41626	38214	34802	46062	42309	37873	56639	54592	51521
	CFM	1204	1053	920	1386	1225	1040	1612	1528	1415
	L/sec Air	568	497	434	654	578	491	761	721	668
	SHR(Sensible/Total)	73%	72%	71%	74%	73%	72%	74%	74%	74%
	Air DB Ent	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7
	Air WB Ent	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4
	Air DB Lvng.	13.4	13.0	12.6	13.7	13.4	12.9	13.3	13.1	12.9
	Air WB Lvng.	13.0	12.7	12.3	13.3	13.0	12.6	12.9	12.8	12.6
	N Circuits	3	3	3	4	4	4	4	4	4
	Face Tubes	24	24	24	28	28	28	36	36	36
	Water In C	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	Water Lvng C	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	Gal/Min	5.15	4.71	4.28	5.66	5.21	4.66	6.97	6.72	6.37
	L/sec Water	0.33	0.30	0.27	0.36	0.33	0.29	0.44	0.42	0.40
	DP PSI	8.7	7.4	6.2	5.4	4.6	3.9	9.0	8.4	7.7
	DP K Pa	60.0	51.0	43.0	37.0	32.0	27.0	62.0	58.0	53.0

100 Pa. External Static Pressure	Fan Speed	High	Med.	Low	High	Med.	Low	High	Med.	Low
	Capacity (KW)	11.00	10.10	9.26	12.20	11.12	10.20	14.80	14.30	13.50
	Capacity (Btu/Hr)	37532	34461	31595	41626	37941	34802	50498	48792	46062
	CFM	1026	911	803	1204	1045	926	1392	1322	1009
	L/sec Air	484	430	379	568	493	437	657	624	476
	SHR	72%	71%	70%	74%	72%	70%	74%	73%	73%
	Air DB Ent	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7	26.7
	Air WB Ent	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4
	Air DB Lvng.	12.9	12.6	12.2	13.3	12.9	12.6	12.8	12.7	12.5
	Air WB Lvng.	12.6	12.3	12.0	13.0	12.7	12.4	12.6	12.5	12.3
	Water In C	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
	Water Lvng C	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5	14.5
	Gal/Min	4.61	4.25	3.90	5.15	4.68	4.30	6.28	6.05	5.74
	L/sec Water	0.29	0.27	0.25	0.33	0.30	0.27	0.40	0.38	0.36
	DP PSI	7.3	6.2	5.4	4.6	3.9	3.3	7.3	6.8	6.2
	DP K Pa	50.0	43.0	37.0	32.0	27.0	23.0	50.0	47.0	43.0

150 Pa. External Static Pressure	Fan Speed	High	Med.	Low	High	Med.	Low	High	Med.	Low
	Capacity (KW)	9.19	7.80	-	9.53	8.06	-	12.70	10.60	-
	Capacity (Btu/Hr)	31356	26614	-	32516	27501	-	43332	36167	-
	CFM	797	636	-	845	676	-	1144	915	-
	L/sec Air	376	300	-	399	319	-	540	432	-
	SHR	70%	69%	-	71%	70%	-	73%	72%	-
	Air DB Ent	26.7	26.7	-	26.7	26.7	-	26.7	26.7	-
	Air WB Ent	19.4	19.4	-	19.4	19.4	-	19.4	19.4	-
	Air DB Lvng.	12.2	11.5	-	12.3	11.8	-	12.3	11.7	-
	Air WB Lvng.	12.0	11.4	-	12.2	11.7	-	12.1	11.6	-
	Water In C	5.5	5.5	-	5.5	5.5	-	5.5	5.5	-
	Water Lvng C	14.5	14.5	-	14.5	14.5	-	14.5	14.5	-
	Gal/Min	3.87	3.28	-	4.03	3.41	-	5.45	4.63	-
	L/sec Water	0.24	0.21	-	0.25	0.22	-	0.34	0.29	-
	DP PSI	5.2	3.9	-	2.9	2.2	-	5.5	4.1	-
	DP K Pa	36.0	27.0	-	20.0	15.0	-	38.0	28.0	-

* Should not Exceed 62.5 Pa External Static Pressure

Performance Data - FD4A (50/60 HZ) – Cont.

FD4A18			FD4A20			Fan Speed	Rating: 50 Pa External Static Pressure
High	Med.	Low	High	Med.	Low	Capacity (KW)	
19.90	18.60	16.50	23.60	20.90	18.50	Capacity (Btu/Hr)	
67899	63463	56298	80523	71311	63122	CFM	
1778	1617	1365	1956	1663	1413	L/sec Air	
839	763	644	923	785	667	SHR	
73%	73%	72%	71%	70%	70%	Air DB Ent	
26.7	26.7	26.7	26.7	26.7	26.7	Air WB Ent	
19.4	19.4	19.4	19.4	19.4	19.4	Air DB Lvng.	
12.5	12.2	11.7	11.8	11.3	10.9	Air WB Lvng.	
12.3	12.0	11.6	11.6	11.2	10.8	N Circuits	
6	6	6	6	6	6	Face Tubes	
48	48	48	60	60	60	Water In C	
5.5	5.5	5.5	5.5	5.5	5.5	Water Lvng C	
14.5	14.5	14.5	14.5	14.5	14.5	Gal/Min	
8.37	7.83	6.94	9.92	8.78	7.77	L/sec Water	
0.53	0.49	0.44	0.63	0.55	0.49	DP PSI	
5.4	4.8	3.9	10.3	8.4	6.8	DP K Pa	
37.0	33.0	27.0	71.0	58.0	47.0		

High	Med.	Low	High	Med.	Low	Fan Speed	100 Pa. External Static Pressure
18.30	17.20	15.20	21.50	18.90	16.90	Capacity (KW)	
62440	58686	51862	73358	64487	57663	Capacity (Btu/Hr)	
1591	1454	1235	1750	1487	1265	CFM	
751	686	583	826	702	597	L/sec Air	
72%	72%	71%	70%	70%	69%	SHR	
26.7	26.7	26.7	26.7	26.7	26.7	Air DB Ent	
19.4	19.4	19.4	19.4	19.4	19.4	Air WB Ent	
12.2	11.9	11.5	11.5	11.0	10.7	Air DB Lvng.	
12.0	11.8	11.4	11.3	11.0	10.6	Air WB Lvng.	
5.5	5.5	5.5	5.5	5.5	5.5	Water In C	
14.5	14.5	14.5	14.5	14.5	14.5	Water Lvng C	
7.73	7.26	6.44	9.13	8.08	7.13	Gal/Min	
0.49	0.46	0.41	0.58	0.51	0.45	L/sec Water	
4.6	4.2	3.3	8.8	7.1	5.8	DP PSI	
32.0	29.0	23.0	61.0	49.0	40.0	DP K Pa	

High	Med.	Low	High	Med.	Low	Fan Speed	150 Pa. External Static Pressure
16.50	13.90	-	19.40	16.10	-	Capacity (KW)	
56298	47427	-	66193	54933	-	Capacity (Btu/Hr)	
1392	1115	-	1532	1225	-	CFM	
657	526	-	723	578	-	L/sec Air	
72%	70%	-	70%	69%	-	SHR	
26.7	26.7	-	26.7	26.7	-	Air DB Ent	
19.4	19.4	-	19.4	19.4	-	Air WB Ent	
11.8	11.2	-	11.1	10.6	-	Air DB Lvng.	
11.6	11.1	-	11.0	10.5	-	Air WB Lvng.	
5.5	5.5	-	5.5	5.5	-	Water In C	
14.5	14.5	-	14.5	14.5	-	Water Lvng C	
7.04	5.96	-	8.27	6.97	-	Gal/Min	
0.44	0.38	-	0.52	0.44	-	L/sec Water	
3.9	2.9	-	7.4	5.4	-	DP PSI	
27.0	20.0	-	51.0	37.0	-	DP K Pa	

Controller For Ducted Fan Coil Units

Features: The controller is used to control (DX/CW) cooled ducted split unit, supports the following functions:

- Modes: Cool, Dry, Fan, Heat
- Indoor fan speed: Auto, High, Medium, Low
- Sleep mode
- Compressor protections:
 - Comp 3 minutes restart protection
 - Indoor coil anti-freeze
 - Room sensor and indoor coil sensor failure monitoring
- Non volatile memory – keep system settings
- Programmable On/Off timer
- Random restart to minimize voltage dip during compressor first cut in cycle upon power up.

Hardware Setting: A 2 way DIP switch is used to configure:

DIP Switch	On	Off
SW1	Cool	Cool-Heat
SW2	Water System	DX System

Error Code: If multiple faults happen at the same time, the corresponding error code will be shown one after another

Fault	Error code
Room sensor fault	E1
Indoor coil sensor fault	E2
Comp fault	E4

Split System Description

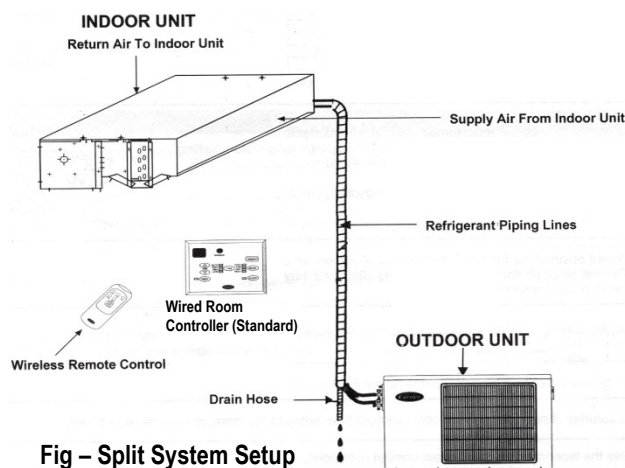


Fig – Split System Setup

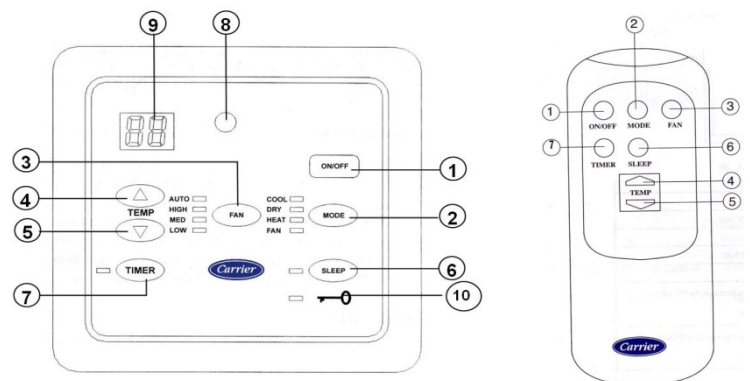


Fig - System Room Controllers

Notes: The wired room controller is mounted on the wall and can control all system functions without wireless remote control.

1) On/Off Key: If you press this key, the system will begin operation, Press the key again, and operation stops. (You can hear a receiving beep). If you press this key immediately after turning off the system, the compressor will not operate for 3 minutes to prevent overloading.

2) Operation Mode Selection Key: Toggles the operation mode: Cool, Dry, Heat, or Fan only

"COOL" Led	Lights on when selecting COOL mode.	"HEAT" Led	Lights on when selecting Heat mode.
"DRY" Led	Lights on when selecting DRY mode.	"FAN" Led	Lights on when selecting FAN mode.

3) Fan Speed Selection Key: Toggles the fan speed: Auto, High, Medium, or Low, Note: Fan key is invalid in Dry mode.

"AUTO" Led	Lights on when selecting Auto fan speed.	"MED" Led	Lights on when selecting Med fan speed.
"HIGH" Led	Lights on when selecting High fan speed.	"LOW" Led	Lights on when selecting Low fan speed.

4) Temperature Up Key: By pressing Temp Up  the setting temperature increases by 1°C with each press.

5) Temperature Down Key: By pressing Temp Down  the setting temperature decreases by 1°C with each press. If you set the desired room temperature, then system will maintain the room temperature as set. Upon setting the desired room temperature the system will maintain the room temperature

Cool Mode: If the room temperature is higher than the setting, the compressor will automatically turn on provide a cooling effect. On the hand, if the room temperature is lower than the setting, the compressor will automatically turn off to stop cooling operation. If indoor fan is programed to be turned off with compressor signal, it will turn off once compressor is cut off.

Heat Mode: If the room temperature is lower than the setting, the electric heater will automatically turn on to provide a heating effect. If the room temperature is higher than the setting, the heater will automatically turn off to stop heating operation. If indoor fan is programed to be turned off with heater signal, it will turn off once heater is cut off but subject to 30 sec dispersing remaining heat timing.

Dry Mode: The fan speed runs automatically at low speed and compressor stopping and running is controlled by the difference between room and setting temperatures and by continuous running time. If indoor fan is programed to be turned off with comp signal, it will turn off once comp is cut off, In Dry mode, the humidity is reduced in the space to be air-conditioned.

Fan Mode: There will be no cooling or heating effects; only the fans of indoor unit will run for ventilation at the selected speed (High, Med, and Low).

- In COOL or HEAT mode and if AUTO fan speed is selected; Fan speed is automatically selected by controller according to the difference between setting temperature and room temperature, fan will be continuously running at low speed after setting temperature is achieved.

Notes:

- Temperature setting range is 16°C to 30°C (60°F to 85°F). For ESMA regulated units the temperature setting range is from 20°C to 30°C (68°F to 85°F). **For optimum operation set the temperature between 21°C to 24°C (70 to 75°F)**
- Hold TEMP Down  at the same time for about 5 seconds, TEMP  down and fan  keys will toggle the temperature setting from degree C to degree F and vice versa.
- Press any temperature key will flash the current setting temperature for 4 seconds, with no further key press, it will revert to room temperature display. Temperature display range is 0°C to 50°C (32°F to 99°F).
- Temperature keys are invalid in Fan mode.

6) Sleep Key: Press SLEEP  key to set the timer turning the sleep led will light on, to cancel the timer press again.

- Sleep function for healthy sleep to control automatically the room temperature and stop automatically the operation of the air conditioner after certain set off time.
- Sleep mode is valid in cool or heat mode and invalid in Fan mode.

7) Timer Key: Upon count down of the set hours, the system will switch from OFF to ON or vice-versa.

- OFF Timer Function to stop automatically, the air conditioner after certain set OFF time.
 - ON Timer Function to start automatically, the air conditioner after certain set ON time.
 - * Timer setting is 1 Hour to 24 Hour. The timer led will light on when operating the Timer Function
- First key press will flash the digital display and Timer Led for 3 seconds.

Notes:

- The digital displays show the number of hours previously set, only the Timer Led flashes.
- Subsequent 3 seconds will show the number of hours previously set; only the timer led flashes.
- Should there be no further key press, it will revert to normal mode.
- Should Timer key is not released timer setting will increase automatically every 0.5-second.

8) Sensor: Receives the remote controller's signal

9) Display Screen: Displays the set temperature and displays also the TIMER settings when adjusting it.

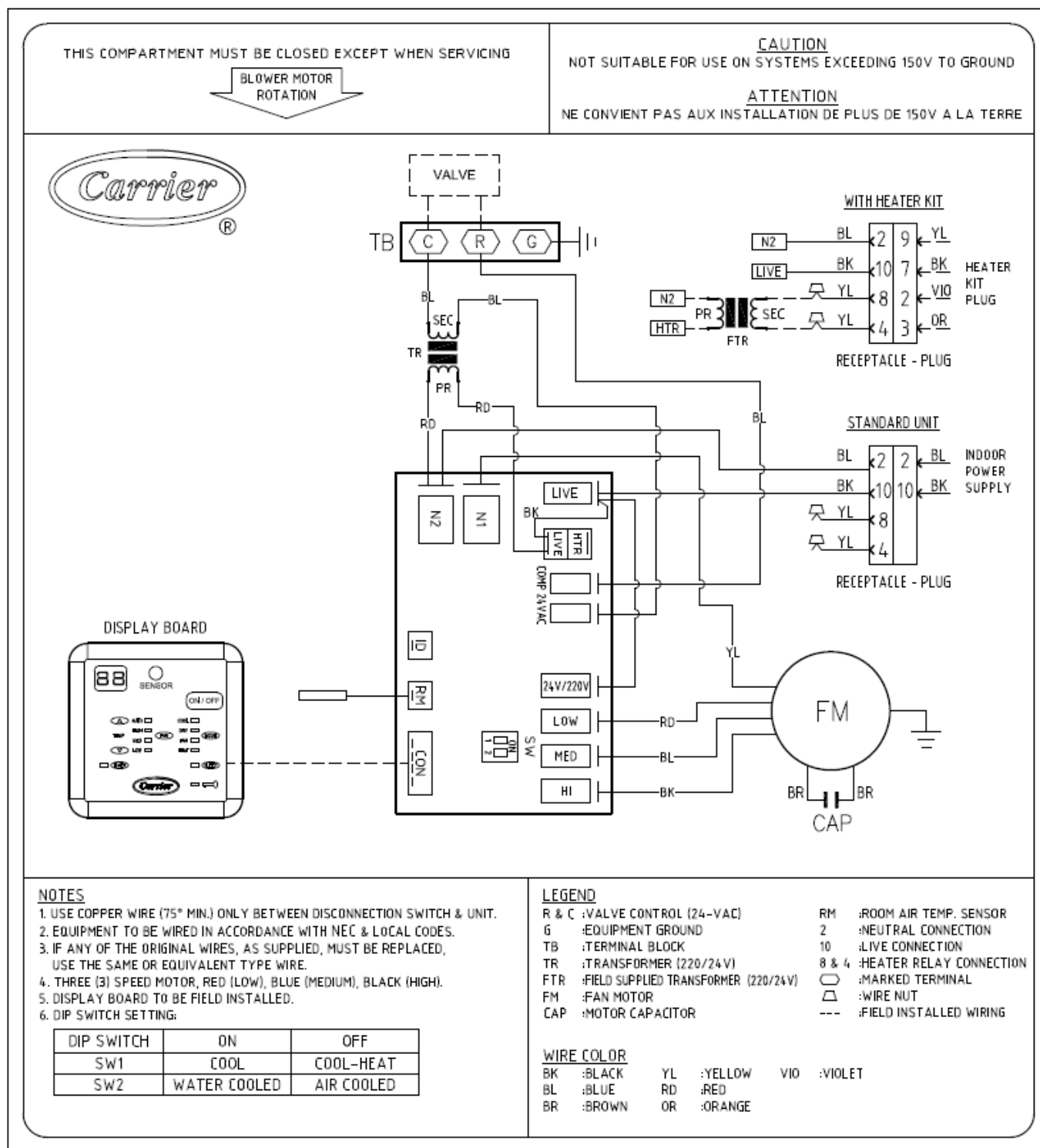
10) Key Lock Mode: In key lock mode, all keys are not valid except ON/OFF Key (1) to turn ON/OFF the system.

- Hold down TEMP Down  and MODE  keys together for 3 seconds to activate key lock mode – in that mode the light will come on for the KEY display .
- Hold down TEMP Down  and Fan  buttons together for 1 second to activate the system control parameter setting – AUTO (FAN) light will be flashing.
- Press TEMP key Up  or Down  to change the setting to 1 or 2

Parameter	Set range	Default value	Remarks
AUTO Fan led flashes	1 or 2	1	1 : Disable room temp display 2 : Enable room temp display

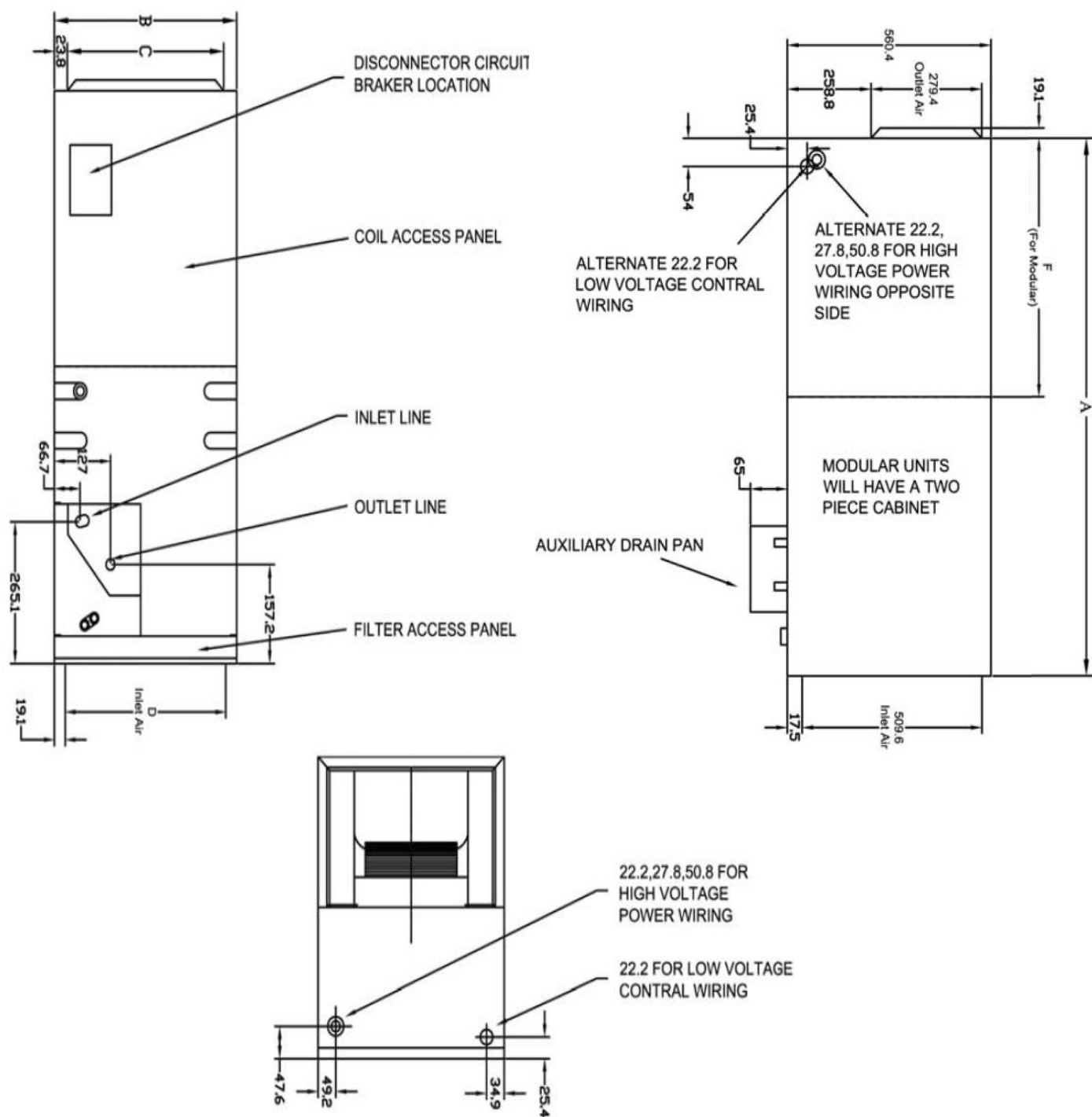
- Finally de-activate the lock mode by hold down TEMP Down  and MODE  keys buttons for 3seconds to de-activate key lock mode – in that mode the light will come off for the KEY display .

Typical Wiring Schematic (Continued)



FW4A-FD4A Cool And Electric Heater

Unit Dimensional Drawing – FW4A/FD4A Series



Unit Size	Weight	A	B	C	D	F
	kg	mm.	mm.	mm.	mm.	mm.
FW4A/FD4A – 12	54.4	1260.5	447.5	400.1	398.5	406.5
FW4A/FD4A – 14	57.6	1357.3	536.5	489.0	487.0	495.3
FW4A/FD4A – 16	71.6	1357.3	536.5	489.0	495.3	495.3
FW4A/FD4A – 18	79.4	1357.3	536.5	489.0	495.3	495.3
FW4A/FD4A – 20	89.0	1497.0	627.0	582.0	585.0	635.0

Performance Data

Fan Performance – (50/60 HZ) – ENGLISH

Static Pressure (In.water)		0	0.2	0.3	0.4	0.5	0.6	Noise
Model	Speed	Air Flow (CFM)						dBA
FW4A12 FD4A12	H	1421	1210	1120	1031	916	801	74
	M	1227	1059	987	916	779	641	70
	L	1065	924	866	807	–	–	66
FW4A14 FD4A14	H	1612	1393	1301	1210	1030	850	73
	M	1444	1231	1141	1050	865	679	69
	L	1189	1046	988	931	–	–	65
FW4A16 FD4A16	H	1885	1621	1510	1399	1275	1150	77
	M	1779	1534	1431	1329	1125	920	73
	L	1653	1423	1325	1227	–	–	69
FW4A18 FD4A18	H	2021	1787	1693	1600	1500	1399	74
	M	1828	1623	1542	1461	1291	1120	70
	L	1536	1372	1307	1242	–	–	66
FW4A20 FD4A20	H	2245	1977	1868	1759	1650	1540	76
	M	1889	1672	1584	1495	1363	1231	72
	L	1606	1421	1346	1272	–	–	68

H – At High Fan Speed.

M – At Medium Fan Speed.

L – At Low Fan Speed.

Fan Performance – (50/60 HZ) – SI

Static Pressure (Pa)		0	50	75	100	125	150	Noise
Model	Speed	Air Flow (l/s)						dBA
FW4A12 FD4A12	H	667	568	526	484	430	376	74
	M	576	497	464	430	365.5	301	70
	L	500	434	407	379	–	–	66
FW4A14 FD4A14	H	757	654	611	568	483.5	399	73
	M	678	578	536	493	406	319	69
	L	558	491	464	437	–	–	65
FW4A16 FD4A16	H	885	761	709	657	598.5	540	77
	M	835	720	672	624	528	432	73
	L	776	668	622	576	–	–	69
FW4A18 FD4A18	H	949	839	795	751	704	657	74
	M	858	762	724	686	606	526	70
	L	721	644	614	583	–	–	66
FW4A20 FD4A20	H	1054	928	877	826	774.5	723	76
	M	887	785	744	702	640	578	72
	L	754	667	632	597	–	–	68

H – At High Fan Speed.

M – At Medium Fan Speed.

L – At Low Fan Speed.

Application Data

Selection Procedure

Table in this publication are meant for quick selection (+/-10%).

Example Quick Selection

Customer requires fan coil having the following performance:

1. CFM = 1400 +/-5% @ 0.2 inch water external static pressure.
2. Cooling capacity =30 kbtu.
3. Entering air 22c DB,17c WB.
4. Water in 6.7c.

Step 1 :

From fan performance tables at 0.2 inch water external static pressure we find that FW4A 1400 will deliver 1394 CFM @ 0.2 inch water.

Step 2

From FW4A performance tables, at 26.7/19C

DB/WB, and on right hand side correction for 22/17c DB/WB.

	Performance @ 26.7/19	Correction	Performance @ 22/17
Capacity	42.65	-28%	30.7
CFM	1394	----	1394
SHR	0.76	----	0.76
Air In	26.7	----	22
Air Out	14.6	-1.3	13.3
Water In	6.7	----	6.7
Water out	12.7	-1.1	11.6
Gal/min	7.88	----	7.88
DP PSI	3.61	----	3.61

Note that tables yield performance within 5:10% of most requirements.

Selection Software

For specific conditions user can use selection software available from carrier dealers or refer to carrier sales engineers for technical support.

Guide Specification

**FW4A HIGH STATIC CHILLED WATER FAN COIL
NORMAL COOLING CAPACITY 3 TO 6 TON,
10.8:12.5 Kw
ELECTRIC HEATER OPTION (FIELD INSTALATION)
1200:2000 CFM
Carrier MODEL NUMBERS FW4A**

GENERAL

SYSTEM DESCRIPTION

The fan coil unit is designed for outdoor (or under ceiling) installation, electrically controlled cooling and heating (option). Unit shall be designed for vertical and horizontal installation. Standard unit shall include permanent filter with aluminum frame. Unit shall be designed for medium and high external static pressure up to 0.7 inch water.

QUALITY ASSURANCE

- Unit shall be rated in accordance with ARI standard # 410/91.
- Installation and adhesive shall meet NFPA90A requirements for flame spread and smoke generation.
- Unit casing shall be capable of withstanding 500 hour salt spray exposure per ASTM B117 (scribed specimen).
- Unit shall be manufactured in facility registered to ISO9001.

PRODUCTS

A. The unit shall be factory assembled single piece cooling unit, with optional electric heat (field installation). Unit cabinet shall be constructed of galvanized steel bonderized and powder painted enamel finish. The unit shall be insulated with closed cell polyolefin foam (Ethylene) with aluminum face insulation that is 10-mm thickness & 32 kg/m³ density.

B. Unit cabinet panels shall be single skin. Cabinet panels shall be easily removable for service.

C. Unit shall have a permanent type filter with 1 inch aluminum frame. Filter shall be flame retardant polyester fibers. Filters shall be accessible through an access panel.

D. Units shall have high impact thermal plastic sloped condensate pan. Unit shall have primary and secondary drain connection with brass inserts.

Unit shall have additional external drain pan for the coil connection condensate water.

E. The unit fan wheel shall be directly connected to the motor. The fan wheel shall be made from steel with a corrosion resistance finish, it shall be a dynamically balanced and double inlet forward curved blades. Unit fan wheel chamber shall be made from galvanized steel.

F. Unit coil shall have aluminum fins mechanically bonded to seamless smooth copper tubes with all joints brazed. Unit coil shall be accessible through an access panel for cleaning. The coil connection shall be sweat type.

G. The unit fan motor shall have permanently lubricated sleeve bearing. The motor shall have overload protection and B class insulation. Unit shall have multiple electric entries for more flexibility.

I. Unit control board shall be 24 VAC and UL listed.

NOTES

