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

Carrier
United Technologies
turn to the experts

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

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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/m^3 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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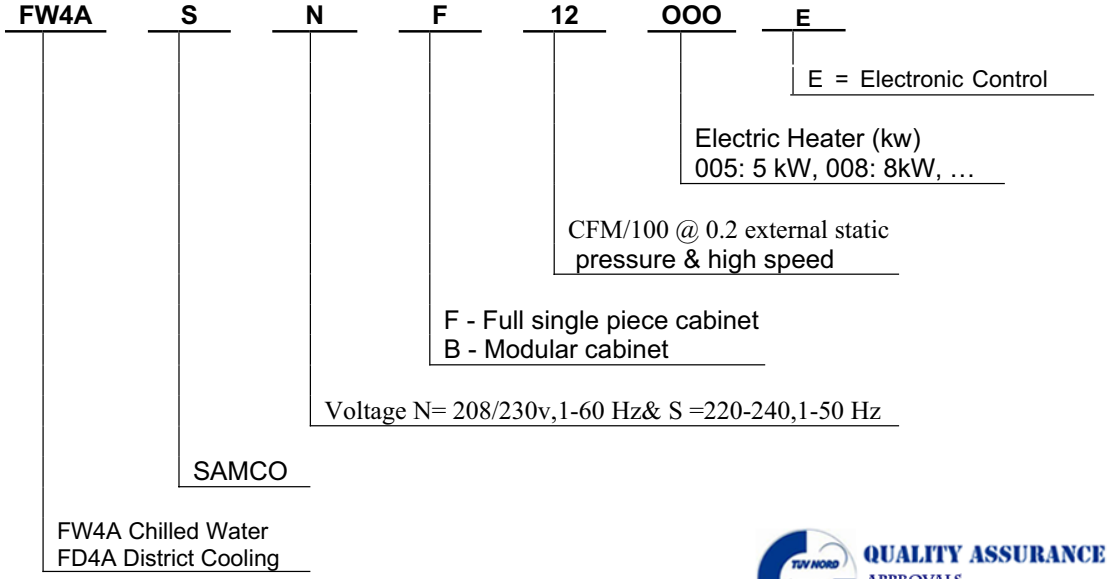
Model Number Nomenclature



QUALITY ASSURANCE
APPROVALS
ISO 9001:2008
EN ISO 9001:2008
ANSI/ASQC Q9001:2008

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		FW4A12			FW4A14			FW4A16		
	Fan Speed	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					Other Ent. Air Aprox. Adjust DB/WB	
High	Medium	Low	High	Medium	Low	Fan Speed		24/18	22/17
16.7	15.8	14.1	21.5	19.2	17.5	Capacity (KW)	Rating: 50 Pa External Static Pressure	-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		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

High	Medium	Low	High	Medium	Low	Fan Speed		24/18	22/17
15.5	14.7	13.2	19.8	17.7	16.1	Capacity (KW)	100 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		24/18	22/17
14.5	12.2	–	17.9	15.2	–	Capacity (KW)	150 Pa. External Static Pressure	-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		FD4A12			FD4A14			FD4A16		
	Fan Speed	**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				
High	Med.	Low	High	Med.	Low	Fan Speed	Rating: 50 Pa External Static Pressure
19.90	18.60	16.50	23.60	20.90	18.50	Capacity (KW)	
67899	63463	56298	80523	71311	63122	Capacity (Btu/Hr)	
1778	1617	1365	1956	1663	1413	CFM	
839	763	644	923	785	667	L/sec Air	
73%	73%	72%	71%	70%	70%	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	
12.5	12.2	11.7	11.8	11.3	10.9	Air DB Lvng.	
12.3	12.0	11.6	11.6	11.2	10.8	Air WB Lvng.	
6	6	6	6	6	6	N Circuits	
48	48	48	60	60	60	Face Tubes	
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	
8.37	7.83	6.94	9.92	8.78	7.77	Gal/Min	
0.53	0.49	0.44	0.63	0.55	0.49	L/sec Water	
5.4	4.8	3.9	10.3	8.4	6.8	DP PSI	
37.0	33.0	27.0	71.0	58.0	47.0	DP K Pa	

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	

CONTROL BOARD & REMOTE CONTROL SPECIFICATIONS

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

Mode：Cool, Dry, Fan, Heat, Auto Cool-Heat

Indoor fan speed：Auto, High, Medium, Low

Sleep mode

Compressor protections:- (Not Applied for CW units)

- 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

Note: In water cooled model, the following functions are not available:-

- 3 min compressor protection
- Indoor coil sensor
- Indoor anti freeze

- **Error code**

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

- If multiple faults happen at the same time, the corresponding error code will be shown one after another.

Control Board **Remote Control Handset**

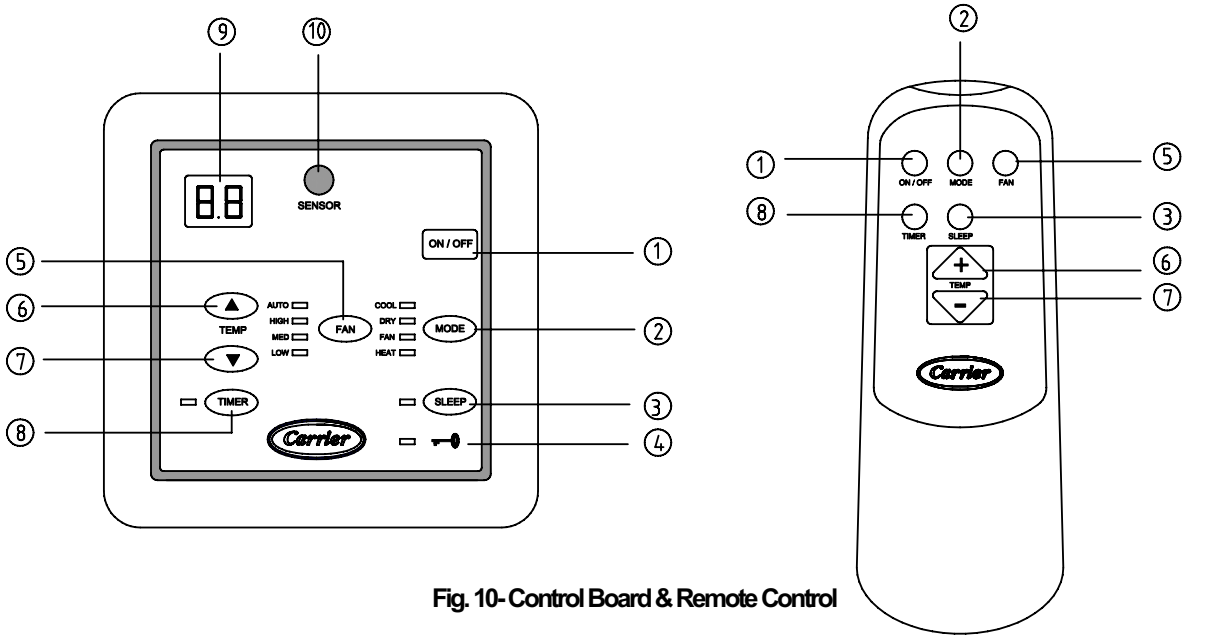


Fig. 10- Control Board & Remote Control

CONTROL BOARD & REMOTE CONTROL FUNCTIONS

(1) ON/OFF KEY

If you press this key, the systm 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 SELECTING KEY

Toggles the operation mode: Cool, Dry, Heat, or Fan only

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

(3) SLEEP KEY

Press this key to set the SLEEP timer and then the sleep led will light on.
To cancel the sleep timer press this key 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.

(4) KEY LOCK MODE

To activate key lock mode, hold down for 3 seconds, temp. Down Key (5) and Mode Key (2).
In key lock mode, all keys are not valid except ON/OFF Key (1) to turn ON/OFF the system

Notes:
Hold down Temp Down and Sleep button for one second to enter into coil temperature display mode. Press Temp Up key to display indoor coil temperature, High Fan LED flashes. With the same sequence to exit coil temperature display mode. Temperature display range is -9C to 78 ºC.

(5) FAN SPEED SELECTING KEY

Toggles the fan speed: Auto, High, Medium, or Low

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

Note: Fan key is invalid in Dry mode.

(6) TEMPREATURE UP KEY

By pressing Temperature Up Key, the setting temperature increases by 1ºC with each press. For optimum operation set the temperature between 20-24^0 C (68-75F).

(7) TEMPREATURE DOWN KEY

By pressing temperature down key, the setting temperature decreases by 1ºC with each press.

(8) TIMER KEY

Upon count down of the number of set hours, the system will switch from OFF to ON or ON to OFF.
- 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 I HR to 24 HR. 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.

- If you set the desired room temperature, then system will maintain the room temperature as set. In COOL mode, if the room temperature is higher than the setting, the compressor will automatically turn on provide a cooling effect. If the room temperature is lower than the setting, the compressor will automatically turn off to stop cooling operation. In HEAT mode, if the room temperature is lower than the setting, the compressor for heat pump system will automatically turn on to provide a heating effect. If the room temperature is higher than the setting, the compressor for heat pump system will automatically turn off to stop heating operation.

- In 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.

- In Dry mode, the humidity reduced in the space to be air-conditioned.

- In Fan mode, there will be no cooling or heating effects; only the fans of indoor unit will run for ventilation.

Notes:
(A) Temperature setting range is 16ºC to 30ºC or 60ºF to 85ºF. For optimum operation set the temperature between 20-24^0 C (68-75F).

(B) Hold 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.

(C) Press any temperature key will flash the current setting temperature for 4 seconds.
Should there be no further key press, it will revert to room temperature display mode.
Room temperature display range is 0C to 50C or 32F to 99F.

(D) Temp keys are invalid in Fan mode.

Notes :
(A) The digital display show the number of hours previously set, only the Timer Led flashes.

(B)Should there be no further key press, it will revert to normal mode.

(C)Should Timer key is not released timer setting will increase automatically every 0.5-second.

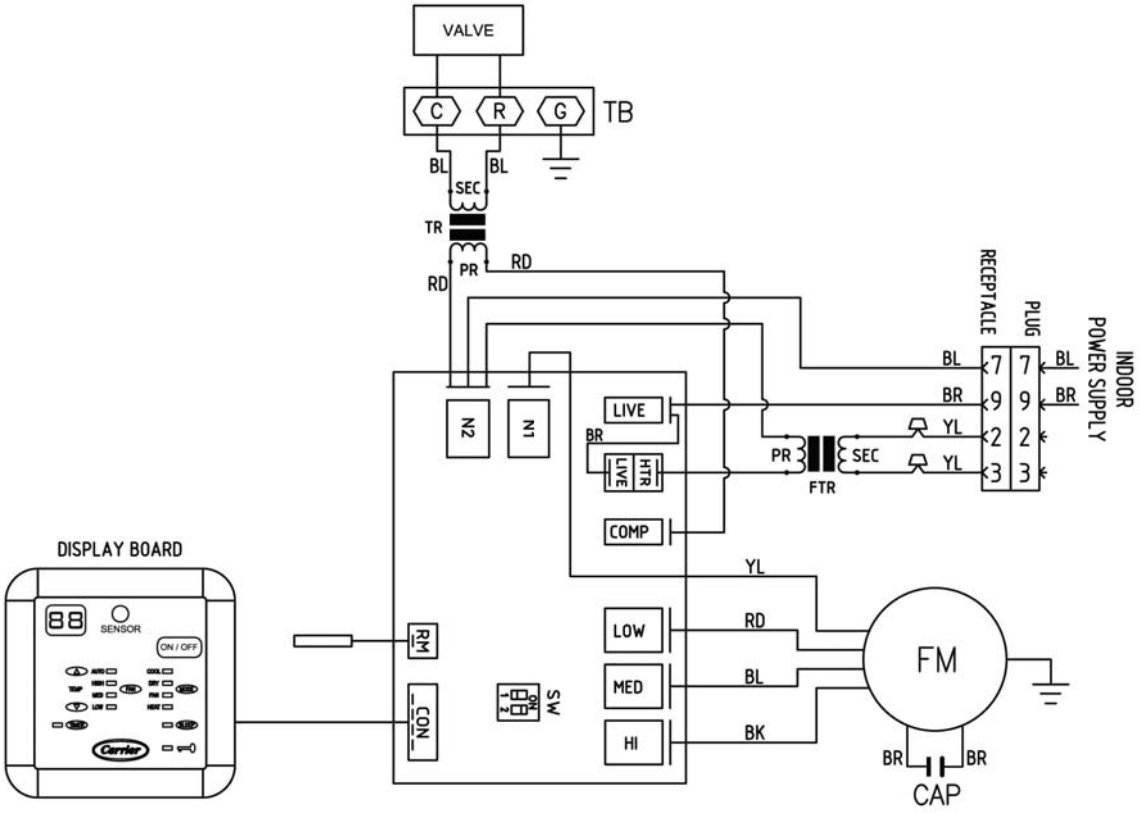
(9) DISPLAY SCREEN

Displays the set temperature and displays also the TIMER settings when adjusting it.

(10) SENSOR

Receives the remote controller's signal.

Wiring DiagramFCU FW4A-FD4A
Cool and electric heater



LEGEND

R & C	:VALVE CONTROL (24-VAC)	RM	:ROOM AIR TEMP. SENSOR
G	:EQUIPMENT GROUND	7	:NEUTRAL CONNECTION
TB	:TERMINAL BLOCK	9	:LIVE CONNECTION
TR	:TRANSFORMER (220/24V)	2 & 3	:HEATER RELAY CONNECTION (220/4V)
FTR	:FIELD SUPPLIED TRANSFORMER	⬭	:MARKED TERMINAL
FM	:FAN MOTOR	⏢	:WIRE NUT
CAP	:MOTOR CAPACITOR	---	:FIELD INSTALLED WIRING

WIRE COLOR

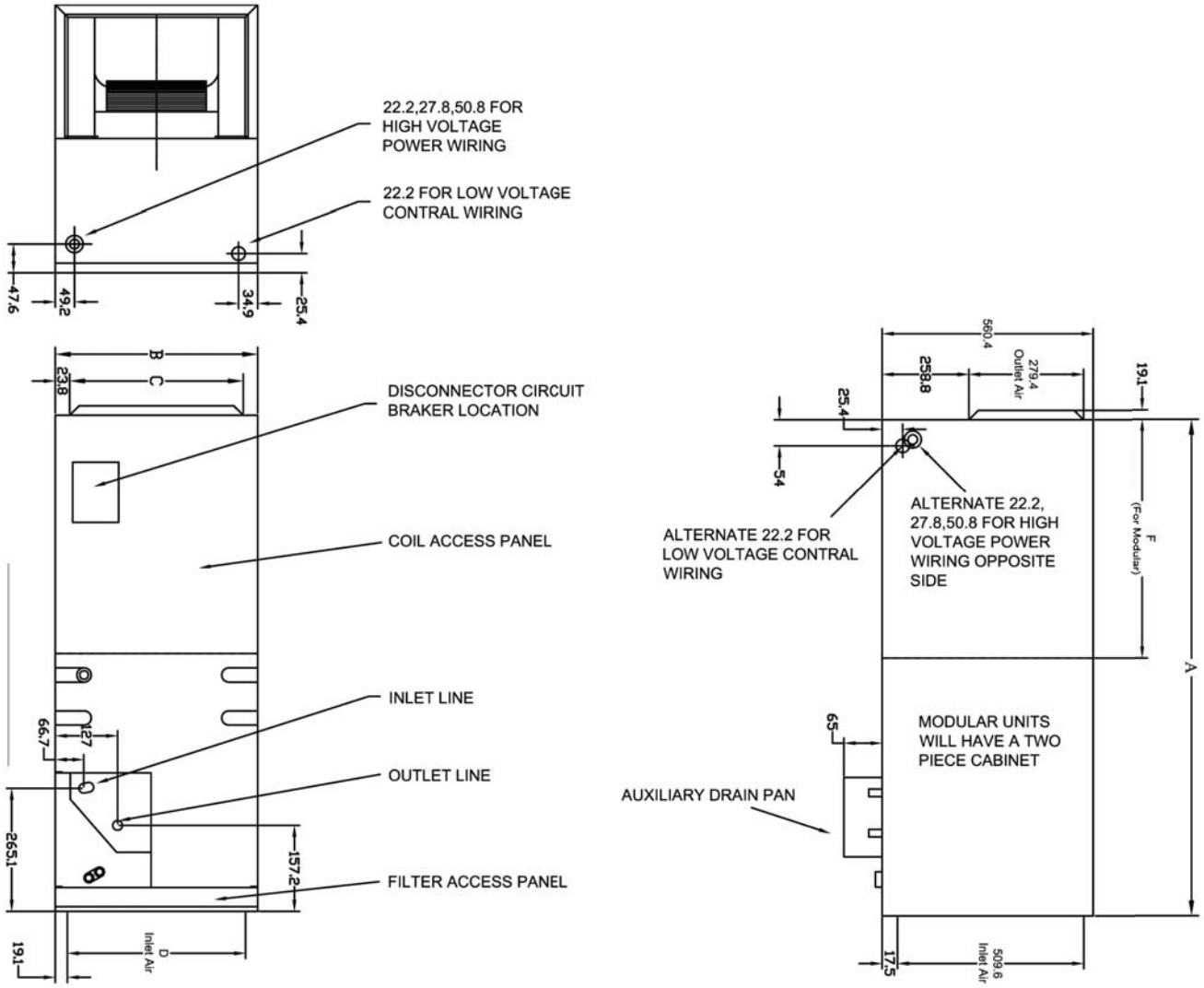
BR	:BROWN	YL	:YELLOW
BL	:BLUE	RD	:RED
BK	:BLACK		

NOTES

1. USE COPPER WIRE (75° MIN.) ONLY BETWEEN DISCONNECTION SWITCH & UNIT.
2. EQUIPMENT TO BE WIRED IN ACCORDANCE WITH NEC & LOCAL CODES.
3. IF ANY OF THE ORIGINAL WIRES, AS SUPPLIED, MUST BE REPLACED, USE THE SAME OR EQUIVALENT TYPE WIRE.
4. THREE (3) SPEED MOTOR, RED (LOW), BLUE (MEDIUM), BLACK (HIGH).
5. DISPLAY BOARD TO BE FIELD INSTALLED.
6. DIP SWITCH SETTING:

DIP SWITCH	ON	OFF
SW1	COOL	COOL-HEAT
SW2	WATER COOLED	AIR COOLED

Base Unit Dimensions



FW4A SIZE	A mm	B mm	C mm
FW4A/FD4A12	1260.5	447.5	400.1
FW4A/FD4A14	1357.3	536.5	489
FW4A/FD4A16	1357.3	536.5	489
FW4A/FD4A18	1357.3	536.5	489
FW4A/FD4A20	1498	627	582

FW4A SIZE	D mm	F mm
FW4A/FD4A12	398.5	406.5
FW4A/FD4A14	487	495.3
FW4A/FD4A16	495.3	495.3
FW4A/FD4A18	495.3	495.3
FW4A/FD4A20	585	635

FW4A SIZE	Weight (kg)
FW4A/FD4A12	54.4
FW4A/FD4A14	57.6
FW4A/FD4A16	71.6
FW4A/FD4A18	79.4
FW4A/FD4A20	89.0

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 ASTMB117 (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/m^3 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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