FB4C
Base Series Fan Coil
Sizes 018 thru 060

Carr

turn to the

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 05/01/14

Product Data

A10082

AIR HANDLER TECHNOLOGY AT ITS FINEST

The FB4C fan coil has the proven technology of Carrier fan coil units with Puron® refrigerant as well as vertical and horizontal applications. The design features contoured condensate pans with rugged drain connections, ensuring that little water is left in the unit at the end of the cooling duty cycle. The lack of standing condensate and corrosion free pans improves IAQ and product life, features homeowners appreciate.

Standard features include grooved tubing and louvered fins. Coil circuiting has also been updated to make the most of all Carrier heat pumps and air conditioners. Units come with solid state fan controls, 1-inch (25mm) thick insulation with R-value of 4.2, multi-speed motors, and fully-wettable coils. Units can accommodate factory- and/or field-installed heaters from 3 to 30 kW.

It also should be noted that the unique cabinet design of these fan coils meet stringent regulations for cabinet air leakage - a requirement of 2% cabinet leakage rate when tested at 1.0 inches of static pressure.

The FB4C fan coil design is loaded with popular features. These fan coils utilize the latest in electronic commutation motor (ECM) technology through the use of high efficiency, multi-tap ECM motors allowing reliable air delivery with increased static pressure. It comes in a pre-painted (taupe metallic) galvanized steel casing and a factory-supplied power plug for ease of installation. The FB4C unit is shipped with a factory-installed Teflon-ring piston FB4CNF(018-048) or a Puron refrigerant TXV FB4CNF060, FB4CNP(018-060).

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STANDARD FEATURES

- Multi-tap ECM (electronic commutating motor) motors - all sizes
- Integrated motor controls, with 90-sec off TDR function, have replaced integrated circuit board
- Five available speed tags to meet a wide range of applications
- Large, grooved tube, louvered fin coils
- Efficient, quiet, time-tested blower housings and diffusers
- Sturdy, drainable condensate pans
- Cabinet construction features innovations designed to prevent cabinet sweating
- Tested for condensate disposal in much tougher conditions than Air Conditioning and Refrigeration Institute re
- Super-thick R-4.2 insulation with vapor barrier
- Pre-painted galvanized steel cabinet (taupe metallic)
- Cabinet design meets stringent regulations for 2% cabinet leakage rate when tested at 1.0 inches static pressure
- Installation-flexible, multipoise units
- Horizontal hanging provisions on cabinet
- No tools required to access filter
- Newly improved filter rack area filter door insulation added for improved air seal
- Factory-installed heater packages available on select models (5- through 15-kW)
- 3- through 30-kW accessory heaters - field installed
- Factory-supplied power plug
- Easy plug-in provisions for heater installation
- Entry options for high and low voltage wiring hook-up
- Leak-preventing sweat connections
- Puron refrigeration factory-installed Teflon-ring pistons on FB4CNF (018-048) coils
- Thermostatic expansion valve, TXV, on all FB4CNP coils and FB4CNF060
- Designed for manufactured housing applications.

ADDITIONAL FEATURES

- Factory-installed heater packages available on select models

MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12
F	B	4	C	N	F	0	1	8	0	0	0

Product
F = Fan Coil

Type
B = Base, Puron

Position
4 = Multipoise

Series
C

Electrical
N = 208/230v, 1 ph, 60 Hz

Cabinet Style
F = Single Piece with piston (TXV on FB4CNF060)
P = TXV

Capacity
018 = 18,000
024 = 24,000
030 = 30,000
036 = 36,000
042 = 42,000
048 = 48,000
060 = 60,000

Coil Type
0 = Copper
T = Tin–plate
L = Aluminum

Heating Siz
00 = No He
05 = 5 kW
75 = 7.5 kW
08 = 8 kW
10 = 10 kW
11 = 11 kW
15 = 15 kW

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ArmorTech™

DIMENSIONS

UNIT	SERIES	ELECTRICAL CHARACTERISTICS				A	B	C	D	E	F	G	H	J	COIL CONFIGURATION SLOPE "A"	SHIPPING WT (LBS) NON TIN-COATED	SHIPPING WT (LBS) TIN-COATED
FB4CNF018	B,C	X	*			42 11/16"	14 5/16"	12 7/16"	12 5/16"	10 7/16"	18 1/8"	18 5/8"	-	12"	X -	112	112
FB4CNF024	B,C	X	*			42 11/16"	14 5/16"	12 7/16"	12 5/16"	10 7/16"	18 1/8"	18 5/8"	-	12"	X -	112	112
FB4CNF030	B,C	X	*			49 5/8"	17 5/8"	15 3/4"	15 5/8"	15 3/8"	23 1/8"	23 5/8"	-	17"	X -	122	122
FB4CNF036	B,C	X	*			49 5/8"	17 5/8"	15 3/4"	15 5/8"	15 3/8"	23 1/8"	23 5/8"	-	17"	X -	122	122
FB4CNF042	B,C	X	*			49 5/8"	21 1/8"	19 1/4"	19 1/8"	15 11/16"	23 7/16"	23 1/8"	-	-	- X	157	157
FB4CNF048	B,C	X	*			49 5/8"	21 1/8"	19 1/4"	19 1/8"	15 11/16"	23 7/16"	23 1/8"	-	-	- X	157	157
FB4CNF060	B,C,D	X	*			53 7/16"	21 1/8"	19 1/4"	19 1/8"	19 1/2"	27 1/4"	26 15/16"	-	-	- X	175	175
				208/230-1-60													
				208/230-3-60													

X=YES
O=NO
*=YES, DUE TO AVAILABLE FIELD INSTALLED HEATERS.

NOTE:
1. SERIES DESIGNATION IS THE 14TH POSITION OF UNIT PRODUCT NUMBER
2. ALL DIMENSIONS ARE IN "INCHES" UNLESS NOTED.

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Fig. 1 - FB4CNF - English

DIMENSIONS (cont.)

UNIT	SERIES	ELECTRICAL CHARACTERSTICS			A	B	C	D	E	F	G	H	J	COIL CONFIGURATION SLOPE	COIL CONFIGURATION "A"	SHIPPING WT (LBS)
FB4CNP018L	A	X	*		42 11/16"	14 5/16"	12 7/16"	12 5/16"	10 7/16"	18 1/8"	18 5/8"	-	12"	X	-	112
FB4CNP024L	A	X	*		42 11/16"	14 5/16"	12 7/16"	12 5/16"	10 7/16"	18 1/8"	18 5/8"	-	12"	X	-	112
FB4CNP030L	A	X	*		49 5/8"	17 5/8"	15 3/4"	15 5/8"	15 3/8"	23 1/8"	23 5/8"	-	17"	X	-	122
FB4CNP036L	A	X	*		49 5/8"	17 5/8"	15 3/4"	15 5/8"	15 3/8"	23 1/8"	23 5/8"	-	17"	X	-	122
FB4CNP042L	A	X	*		49 5/8"	21 1/8"	19 1/4"	19 1/8"	15 11/16"	23 7/16"	23 1/8"	-	-	-	X	157
FB4CNP048L	A	X	*		49 5/8"	21 1/8"	19 1/4"	19 1/8"	15 11/16"	23 7/16"	23 1/8"	-	-	-	X	157
FB4CNP060L	D	X	*		53 7/16"	21 1/8"	19 1/4"	19 1/8"	19 1/2"	27 1/4"	26 15/16"	-	-	-	X	175
		208/230-1-60														
		208/230-3-60														

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Fig. 2 - FB4CNP - English

DIMENSIONS (cont.)

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A12509

Fig. 3 - FB4CNF and FB4CNP - English

DIMENSIONS (cont.)

Fig. 4 - FB4CNF - Metric

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DIMENSIONS (cont.)

UNIT	SERIES	ELECTRICAL CHARACTERSTICS		A	B	C	D	E	F	G	H	J	COIL CONFIGURATION SLOPE	COIL CONFIGURATION "A"	SHIPPING WT (Kgs)
FB4CNP018L	A	X	*	1084.3	363.6	315.9	312.8	265.1	460.4	473.1	-	304.8	X	-	50.8
FB4CNP024L	A	X	*	1084.3	363.6	315.9	312.8	265.1	460.4	473.1	-	304.8	X	-	50.8
FB4CNP030L	A	X	*	1260.5	447.7	400.0	396.9	390.5	587.4	600.1	-	431.8	X	-	55.3
FB4CNP036L	A	X	*	1260.5	447.7	400.0	396.9	390.5	587.4	600.1	-	431.8	X	-	55.3
FB4CNP042L	A	X	*	1260.5	536.6	489.0	485.8	398.5	595.3	587.4	-	-	-	X	71.2
FB4CNP048L	A	X	*	1260.5	536.6	489.0	485.8	398.5	595.3	587.4	-	-	-	X	71.2
FB4CNP060L	D	X	*	1357.3	536.6	489.0	485.8	495.3	692.2	684.2	-	-	-	X	79.4
		208/230-1-60													
		208/230-3-60													

X=YES
O=NO
*=YES, DUE TO AVAILABLE FIELD INSTALLED HEATERS.

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Fig. 5 – FB4CNP – Metric

DIMENSIONS (cont.)

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Fig. 6 - FB4CNF and FB4CNP - Metric

PHYSICAL DATA

ORDERING NO.	NOMINAL COOLING CAPACITY (Btuh)	DIMENSIONS			
		Height	Width	Depth	
FB4CN(F,P)018(0,T,L)	18,000	42–11/16 in. 1084mm	14–5/16 in. 363mm	22–1/16 in. 560mm	
FB4CN(F,P)024(0,T,L)	24,000	42–11/16 in. 1084mm	14–5/16 in. 363mm	22–1/16 in. 560mm	
FB4CN(F,P)030(0,T,L)	30,000	49–5/8 in. 1260mm	17–5/8 in. 447mm	22–1/16 in. 560mm	
FB4CN(F,P)036(0,T,L)	36,000	49–5/8 in. 1260mm	17–5/8 in. 447mm	22–1/16 in. 560mm	122 lb 55 kg
FB4CN(F,P)042(0,T,L)	42,000	49–5/8 in. 1260mm	21–1/8 in. 536mm	22–1/16 in. 560mm	157 lb 71 kg
FB4CN(F,P)048(0,T,L)	48,000	49–5/8 in. 1260mm	21–1/8 in. 536mm	22–1/16 in. 560mm	157 lb 71 kg
FB4CN(F,P)060(0,T,L)	60,000	53–7/16 in. 1357mm	21–1/8 in. 536mm	22–1/16 in. 560mm	175 lb 79 kg

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SPECIFICATIONS

FB4C	18	24	30	36	42	48	60
EVAPORATOR COIL							
Face Area (sq. ft)	2.23		2.97		4.45		5.93
Configuration	Slope				A		
FB4CNF Metering Device (Teflon–ring piston) Puron Refrigerant	EA52PT052	EA52PT057	EA52PT067	EA52PT070	EA52PT076	EA52PT080	TXV (Copper and Tin models only)
FB4CNP Metering Device Puron Refrigerant	TXV	TXV	TXV	TXV	TXV	TXV	TXV (Aluminum models only)
FILTER*							
21–1/2–in (546 mm) X	13–in (330 mm)		16–3/8–in (417 mm)		19–7/8–in (505 mm)		
BLOWER ASSEMBLY							
Motor Type (ECM)	Multi–tap ECM						
Motor HP	1/3	1/3	1/3	1/2	1/2	3/4	3/4
CFM	600	800	1000	1200	1400	1600	1750

*Filter must be field–supplied for FB4C units.

PERFORMANCE DATA

FB4C AIRFLOW PERFORMANCE (CFM)

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MODEL & SIZE	BLOWER SPEED	0.10	0.20	0.30	0.40		
FB4C 018	Tap 5	767	739	702	669		
	Tap 4	614	569	534	486		
	Tap 3	701	660	616	581		
	Tap 2	614	569	534	486		
	Tap 1	614	569	534	486		
FB4C 024	Tap 5	969	936	892	835		
	Tap 4	826	795	766	743		
	Tap 3	826	795	766	743	706	660
	Tap 2	701	660	616	581	537	499
	Tap 1	617	592	552	507	472	420
FB4C 030	Tap 5	1108	1090	1065	1034	1009	974
	Tap 4	1026	1000	969	938	899	865
	Tap 3	1026	1000	969	938	899	865
	Tap 2	909	873	842	799	762	724
	Tap 1	825	795	757	722	674	634
FB4C 036	Tap 5	1301	1276	1245	1218	1176	1121
	Tap 4	1227	1191	1169	1143	1105	1074
	Tap 3	1227	1191	1169	1143	1105	1074
	Tap 2	1087	1062	1030	1001	966	930
	Tap 1	1026	1000	969	938	899	865
FB4C 042	Tap 5	1560	1544	1507	1464	1424	1358
	Tap 4	1419	1397	1358	1320	1279	1239
	Tap 3	1419	1397	1358	1320	1279	1239
	Tap 2	1249	1220	1184	1142	1093	1052
	Tap 1	1242	1205	1158	1110	1069	1026
FB4C 048	Tap 5	1743	1712	1679	1642	1610	1574
	Tap 4	1669	1634	1599	1564	1531	1499
	Tap 3	1669	1634	1599	1564	1531	1499
	Tap 2	1452	1413	1377	1339	1308	1271
	Tap 1	1300	1256	1221	1182	1142	1101
FB4C 060	Tap 5	1897	1867	1836	1808	1774	1736
	Tap 4	1817	1785	1757	1724	1693	1655
	Tap 3	1817	1785	1757	1724	1693	1655
	Tap 2	1657	1621	1589	1557	1518	1474
	Tap 1	1443	1412	1377	1332	1286	1243

– Airflowabove 450 cfm/ton.

NOTES:

1. Airflow based upon dry coil at 230v with factory–approved filter and electric heater (2 element heater sizes 018 through 036, 3 element heater sizes 042 through 060). For FB4C models, airflow at 208 volts is approximately the same as 230 volts because the multi–tap ECM motor is a constant torque motor. The torque doesn't drop off at the speeds the motor operates.
2. To avoid potential for condensate blowing out of drain pan prior to making drain trap:
   Return static pressure must be less than 0.40 in. wc.
   Horizontal applications of 042 – 060 sizes must have supply static greater than 0.20 in. wc.
3. Airflow above 400 cfm/ton on 048–060 size could result in condensate blowing off coil or splashing out of drain pan.

PERFORMANCE DATA (cont.)

GROSS COOLING CAPACITIES (MBH) - PURON® REFRIGERANT

UNIT SIZE	INDOOR COIL AIR		SATURATED TEMPERATURE LEAVING EVAPORATOR (°F / °C)														
			35 / 2			40 / 4			45 / 7			50 / 10					
	CFM	EWB	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF	TC	SHC	BF			
FB4C 018	525	72 / 22	41	20	0.00	37	17	0.00	32	15	0.00	27	13	0.0			
		67 / 19	33	20	0.03	29	18	0.03	24	16	0.03	19	13	0.0			
		62 / 17	26	20	0.03	22	18	0.03	18	16	0.04	14	14	0.1			
	600	72 / 22	45	22	0.00	40	19	0.00	35	17	0.01	30	15	0.0			
		67 / 19	37	22	0.04	32	20	0.04	27	17	0.04	21	15	0.0			
		62 / 17	29	22	0.04	24	20	0.04	19	18	0.05	15	15	0.1			
	675	72 / 22	49	24	0.00	44	21	0.00	38	19	0.03	32	16	0.0			
		67 / 19	40	24	0.05	35	22	0.05	29	19	0.05	23	16	0.05	16	14	0.06
		62 / 17	32	25	0.05	27	22	0.05	21	19	0.06	17	17	0.14	14	14	0.29
FB4C 024	700	72 / 22	43	22	0.00	38	20	0.00	33	17	0.03	28	15	0.04	22	12	0.05
		67 / 19	35	23	0.05	30	20	0.05	25	18	0.05	20	15	0.05	14	13	0.06
		62 / 17	28	23	0.06	23	21	0.06	18	18	0.06	15	15	0.14	12	12	0.29
	800	72 / 22	47	24	0.00	42	22	0.01	36	19	0.04	31	17	0.06	24	14	0.06
		67 / 19	38	25	0.06	33	22	0.06	28	20	0.07	22	17	0.07	15	14	0.08
		62 / 17	30	26	0.07	25	23	0.07	20	20	0.08	16	16	0.17	13	13	0.31
	900	72 / 22	51	26	0.00	45	24	0.03	40	21	0.06	33	18	0.07	26	15	0.07
		67 / 19	41	27	0.07	36	25	0.08	30	22	0.08	24	19	0.08	17	16	0.09
		62 / 17	33	28	0.08	28	25	0.08	22	22	0.09	18	18	0.19	15	15	0.33
FB4C 030	875	72 / 22	62	31	0.00	56	28	0.00	49	24	0.02	41	21	0.04	32	17	0.04
		67 / 19	51	32	0.04	44	28	0.05	37	25	0.05	29	21	0.05	21	18	0.05
		62 / 17	40	32	0.05	34	29	0.05	27	25	0.06	21	21	0.13	18	18	0.28
	1000	72 / 22	68	34	0.00	61	31	0.00	53	27	0.04	45	23	0.05	35	19	0.06
		67 / 19	56	35	0.06	49	31	0.06	41	28	0.06	32	24	0.06	22	20	0.07
		62 / 17	44	36	0.06	37	32	0.06	29	28	0.07	24	24	0.16	20	20	0.30
	1125	72 / 22	74	37	0.00	66	33	0.02	58	29	0.05	48	25	0.06	38	21	0.07
		67 / 19	60	38	0.07	53	34	0.07	44	30	0.07	35	26	0.07	24	22	0.08
		62 / 17	48	39	0.07	40	35	0.07	32	31	0.09	26	26	0.18	21	21	0.32
FB4C 036	1050	72 / 22	68	34	0.00	61	31	0.00	53	27	0.04	45	23	0.05	35	20	0.06
		67 / 19	56	36	0.06	49	32	0.06	41	28	0.06	32	24	0.07	22	20	0.07
		62 / 17	44	36	0.07	37	33	0.07	30	29	0.08	24	24	0.17	20	20	0.31
	1200	72 / 22	75	38	0.00	67	34	0.03	58	30	0.06	49	26	0.07	38	22	0.07
		67 / 19	61	39	0.07	53	35	0.08	45	31	0.08	35	27	0.08	25	22	0.09
		62 / 17	49	40	0.08	41	36	0.08	32	32	0.09	26	26	0.19	22	22	0.33
	1350	72 / 22	81	41	0.00	72	37	0.05	63	32	0.07	53	28	0.08	41	23	0.09
		67 / 19	66	43	0.08	58	38	0.09	48	34	0.09	38	29	0.09	27	25	0.10
		62 / 17	53	44	0.09	44	40	0.09	35	35	0.11	29	29	0.22	24	24	0.35
FB4C 042	1225	72 / 22	89	44	0.00	80	40	0.00	70	35	0.02	58	30	0.03	46	25	0.04
		67 / 19	73	45	0.04	63	41	0.04	53	36	0.04	42	31	0.04	29	25	0.05
		62 / 17	58	46	0.04	48	41	0.04	38	36	0.05	30	30	0.12	25	25	0.28
	1400	72 / 22	98	49	0.00	88	44	0.00	77	39	0.03	64	33	0.04	50	28	0.05
		67 / 19	80	50	0.05	70	45	0.05	58	39	0.05	46	34	0.05	32	28	0.06
		62 / 17	64	51	0.06	53	46	0.06	42	40	0.06	34	34	0.14	28	28	0.29
	1575	72 / 22	106	53	0.00	95	48	0.00	83	42	0.04	69	36	0.05	54	30	0.06
		67 / 19	87	55	0.06	76	49	0.06	63	43	0.06	50	37	0.07	35	31	0.07
		62 / 17	69	56	0.07	58	50	0.07	46	44	0.08	37	37	0.17	31	31	0.31
FB4C 048	1400	72 / 22	88	46	0.00	79	42	0.00	69	37	0.03	58	31	0.04	45	26	0.05
		67 / 19	72	48	0.05	63	43	0.05	52	37	0.05	41	32	0.05	29	27	0.06
		62 / 17	57	49	0.06	48	43	0.06	38	38	0.06	30	30	0.14	25	25	0.29
	1600	72 / 22	97	51	0.00	87	46	0.01	75	40	0.04	63	35	0.06	49	29	0.06
		67 / 19	79	52	0.06	69	47	0.06	57	41	0.07	45	36	0.07	32	30	0.08
		62 / 17	63	54	0.07	53	48	0.07	42	42	0.08	34	34	0.17	28	28	0.31
	1800	72 / 22	105	55	0.00	94	50	0.03	82	44	0.06	68	38	0.07	54	31	0.07
		67 / 19	86	57	0.07	75	51	0.08	62	45	0.08	49	39	0.08	34	33	0.09
		62 / 17	68	59	0.08	57	53	0.08	45	47	0.09	37	37	0.19	30	30	0.33
FB4C 060	1600	72 / 22	106	54	0.00	95	49	0.00	82	43	0.01	69	37	0.03	54	31	0.04
		67 / 19	86	56	0.04	75	50	0.04	63	44	0.04	49	37	0.04	35	31	0.05
		62 / 17	68	56	0.04	57	50	0.04	45	44	0.05	36	36	0.12	29	29	0.28
	1750	72 / 22	113	58	0.00	101	52	0.00	88	46	0.02	74	39	0.04	58	33	0.04
		67 / 19	92	59	0.04	80	53	0.05	67	47	0.05	53	40	0.05	37	33	0.05
		62 / 17	73	61	0.05	61	54	0.05	49	48	0.06	39	39	0.13	32	32	0.28
	2000	72 / 22	124	64	0.00	111	57	0.00	97	50	0.04	81	43	0.05	63	36	0.06
		67 / 19	101	66	0.06	88	59	0.06	74	52	0.06	58	44	0.06	41	37	0.07
		62 / 17	80	67	0.06	67	60	0.06	53	53	0.07	43	43	0.16	35	35	0.30

CFM – Cubic Ft per Minute **EWB** – Entering Wet Bulb °F (°C) **LWB** – Leaving Wet Bulb °F (°C) **TC** – Gross Cooling Capacity 1000 Btuh
SHC – Gross Sensible Capacity 1000 Btuh **BF** – Bypass Factor **MBH** – 1000 Btuh

RESURGAM CITY OF PORTLAND, MAINE
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PERFORMANCE DATA (cont.)

NOTES:

1. Contact manufacturer for cooling capacities at conditions other than shown in table.
2. Formulas:
   Leaving db = entering db $-\frac{\text{sensible heat cap.}}{1.09 \times \text{CFM}}$
   Leaving wb = wb corresponding to enthalpy of air leaving coil (h_{lwb})
   $h_{lwb} = h_{ewb} - \frac{\text{total capacity (Btuh)}}{4.5 \times \text{CFM}}$
   where h_{ewb} = enthalpy of air entering coil. Direct interpolation is permissible. Do not extrapolate.
3. SHC is based on 80°F (27°C) db temperature of air entering coil. Below 80°F (27°C) db, subtract (Correction Factor x CFM) from SHC. Above 80°F (27°C) db, add (Correction Factor x CFM) to SHC.
4. Bypass Factor = 0 indicates no psychometric solution. Use bypass factor of next lower EWB for approximation.

SHC CORRECTION

BYPASS FACTOR	ENTERING AIR DRY–BUL					
	79	78	77	76		
	81	82	83	84		
	ENTERING AIR DRY–BUL					
	26	25	25	24		
	27	28	28	29		
	Correction					
0.10	.098	1.96	2.94	3.92	4.91	Use formula shown below
0.20	0.87	1.74	2.62	3.49	4.36	
0.30	0.76	1.53	2.29	3.05	3.82	

Interpolation is permissible.
Correction Factor = 1.09 x (1 – BF) x (db – 80)

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FB4C AIR DELIVERY PERFORMANCE CORRECTION COMPONENT PRESSURE DROP (in wc) AT INDICATED AIRFLOW (DRY TO WET COIL)

UNIT SIZE	CFM															
	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000
018	0.034	0.049	0.063	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
024	0.034	0.049	0.063	0.076	0.089	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –
030	– –	– –	– –	0.049	0.059	0.070	0.080	– –	– –	– –	– –	– –	– –	– –	– –	– –
036	– –	– –	– –	– –	– –	0.070	0.080	0.090	0.099	– –	– –	– –	– –	– –	– –	– –
042	– –	– –	– –	– –	– –	– –	– –	0.049	0.056	0.063	0.070	– –	– –	– –	– –	– –
048	– –	– –	– –	– –	– –	– –	– –	– –	– –	0.063	0.070	0.076	0.083	0.090	– –	– –
060	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	0.049	0.054	0.059	0.065	0.070

ELECTRIC HEATER STATIC PRESSURE DROP (in wc)

FB4C 018 – 036			FB4C 042 – 060		
HEATER ELEMENTS	kW	EXTERNAL STATIC PRESSURE CORRECTION	HEATER ELEMENTS	kW	EXTERNAL STATIC PRESSURE CORRECTION
0	0	+.02	0	0	+.04
1	3, 5	+.01	2	8, 10	+.02
2	8, 10	0	3	9, 15	0
3	9, 15	–.02	4	20	–.02
4	20	–.04	6	18, 24, 30	–.10

The airflow performance data was developed using fan coils with 10–kW electric heaters (2 elements) in the 018 through 036 size units and 15–kW heaters (3 elements) in the 042 through 060 size units. For fan coils with heaters of a different number of elements, the external available static at a given CFM from the curve may be corrected by adding or subtracting available external static pressure as indicated above.

MINIMUM CFM AND MOTOR SPEED SELECTION

FB4C	HEATER kW									
	3	5	8	9	10	15	18	20	24	30
018	525	525	525	—	600	—	—	—	—	—
024	700	700	700	—	700	775	—	—	—	—
030	—	875	875	—	875	875	—	1060	—	—
036	—	1050	970	970	970	920	—	1040	—	—
042	—	—	1225	1225	1225	1225	1225	1225	—	—
048	—	—	1400	1400	1400	1400	1400	1400	1400	1400
060	—	—	1750	1750	1750	1750	1750	1750	1750	1750

Speed Tap 4 (white wire) is used for electric heat only. White wire must remain on tap 4.

PERFORMANCE DATA (cont.)

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FIELD-INSTALLED FILTER STATIC PRESSURE DROP (in wc)

FB4C	CFM						
	400	600	800	1000	1200	1400	1600
018	0.02	0.044	0.075	—	—	—	—
024, 030	—	0.022	0.048	0.072	0.100	—	—
036, 042, 048	—	—	—	0.051	0.070	0.092	0.120
060	—	—	—	—	—	—	0.086

ACCESSORY ELECTRIC HEATERS

HEATER PART NO.	kW @ 240V	VOLTS/ PH	STAGES (kW OPERATING)	INTERNAL CIRCUIT PROTECTION	FAN COIL SIZE USED WITH	HEATING CAP.** @ 230V
KFCEH0401N03	3	230/1	3	None	018–024	9,400
KFCEH0501N05	5	230/1	5	None	018–060	15,700
KFCEH0801N08	8	230/1	8	None	018–060	25,100
KFCEH0901N10	10	230/1	10	None	018–060	31,400
KFCEH3201F20	20	230/1	5, 20	Fuse‡	030–060	62,800
KFCEH1601315	15	230/3	5, 15	None	036–060	47,100
KFCEH2001318	18	230/3	6, 12, 18	None	042–060	56,500
KFCEH3401F24	24	230/3*	8, 16, 24	Fuse	048, 060	78,300
KFCEH3501F30	30	230/3*	10, 20, 30	Fuse	048, 060	94,100
KFCEH2401C05	5	230/1	5	Circuit Breaker	018–060	15,700
KFCEH2501C08	8	230/1	8	Circuit Breaker	018–060	25,100
KFCEH2601C10	10	230/1	10	Circuit Breaker	018–060	31,400
KFCEH3301C20	20	230/1	5, 20	Circuit Breaker	030–060	62,800
KFCEH2901N09	9	230/1†	3, 9	None	036–060	28,200
KFCEH3001F15	15	230/1	5, 15	Fuse‡	024–060	47,100
KFCEH3101C15	15	230/1	5, 15	Circuit Breaker	024–060	47,100

*Field convertible to 1 phase.
†Field convertible to 3 phase.
‡Single point wiring kit required for these heaters in Canada.
**Blower Motor heat not included.

ESTIMATED SOUND POWER LEVEL (dBA)

FB4C	CONDITIONS		OCTAVE BAND CENTER FREQUENCY*						
	CFM	Ext Static Pressure	63	125	250	500	1000	2000	4000
018	600	0.25	64.7	60.7	56.7	53.7	51.7	49.7	45.7
024	800	0.25	66.0	62.0	58.0	55.0	53.0	51.0	47.0
030	1000	0.25	67.0	63.0	59.0	56.0	54.0	52.0	48.0
036	1200	0.25	67.8	63.8	59.8	56.8	54.8	52.8	48.8
042	1400	0.25	68.4	64.4	60.4	57.4	55.4	53.4	49.4
048	1600	0.25	69.0	65.0	61.0	58.0	56.0	54.0	50.0
060	2000	0.25	70.0	66.0	62.0	59.0	57.0	55.0	51.0

*Estimated sound power levels have been derived using the method described in the 1987 ASHRAE HVAC Systems & Applications Handbook, Chapter 52, p. 52.7.

PERFORMANCE DATA (cont.)

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ELECTRICAL DATA FOR UNITS WITH FACTORY-INSTALLED HEAT

FB4CNF	MTR HP	MTR FLA	VOLTS / PH/ HZ	HEAT PACK INSTALLED	SINGLE CIRCUIT			DUAL CIRC					
					HEATER AMPS	MCA	MOCP	HTR. AMPS	MCA	MOCP	H A		
								L1/L2	L1/L2	L1/L2	L		
018(0,T,L)05	1/3	2.8	208/230/1/60	MKFCEH0501N05	18.1/20.0	26.1/28.5	30/30	N/A	N/A	N/A			
018(0,T,L)08	1/3	2.8	208/230/1/60	MKFCEH0801N08	28.9/32.0	39.6/43.5	40/45	N/A	N/A	N/A			
024(0,T,L)05	1/3	4.1	208/230/1/60	MKFCEH0501N05	18.1/20.0	27.8/30.0	30/30	N/A	N/A	N/A	N/A	N/A	N/A
024(T,L)10	1/3	4.1	208/230/1/60	MKFCEH0901N10	36.2/40.0	50.4/55.1	60/60	N/A	N/A	N/A	N/A	N/A	N/A
030(0,T,L)08	1/3	2.8	208/230/1/60	MKFCEH0801N08	28.9/32.0	39.6/43.5	40/45	N/A	N/A	N/A	N/A	N/A	N/A
030(0,T,L)10	1/3	2.8	208/230/1/60	MKFCEH0901N10	36.2/40.0	48.8/53.5	50/60	N/A	N/A	N/A	N/A	N/A	N/A
036(T,L)10	1/2	4.1	208/230/1/60	MKFCEH0901N10	36.2/40.0	50.4/55.1	60/60	N/A	N/A	N/A	N/A	N/A	N/A
042(T,L)10	1/2	4.1	208/230/1/60	MKFCEH0901N10	36.2/40.0	50.4/55.1	60/60	N/A	N/A	N/A	N/A	N/A	N/A
042(T,L)15	1/2	4.1	208/230/1/60	MKFCEH1501F15	54.2/59.9	72.9/80.0	80/80	36.2/40.0	50.4/55.2	50/60	18.1/20.0	22.6/25.0	25/25
048(T,L)10	3/4	6.0	208/230/1/60	MKFCEH0901N10	36.2/40.0	52.8/57.5	60/60	N/A	N/A	N/A	N/A	N/A	N/A
048(T,L)15	3/4	6.0	208/230/1/60	MKFCEH1501F15	54.2/59.9	75.3/82.4	80/90	36.2/40.0	52.8/57.5	60/60	18.1/20.0	22.6/25.0	25/25

ELECTRICAL DATA FOR UNITS WITHOUT ELECTRICAL HEAT

MODEL NO.	MTR HP	MTR FLA	VOLTS/PH/HZ	SINGLE CIRCUIT		BRANCH CIRCUIT MIN WIRE SIZE* AWG
				MCA	MAXIMUM OVERCURRENT PROTECTION	
FB4CN(F,P)018(0,T,L)00	1/3	2.8	208/230/1/60	3.5	15	14
FB4CN(F,P)024(0,T,L)00	1/3	4.1	208/230/1/60	5.1	15	14
FB4CN(F,P)030(0,T,L)00	1/3	2.8	208/230/1/60	3.5	15	14
FB4CN(F,P)036(0,T,L)00	1/2	4.1	208/230/1/60	5.1	15	14
FB4CN(F,P)042(0,T,L)00	1/2	4.1	208/230/1/60	5.1	15	14
FB4CN(F,P)048(0,T,L)00	3/4	6.0	208/230/1/60	7.5	15	14
FB4CN(F,P)060(0,T,L)00	3/4	6.0	208/230/1/60	7.5	15	14

*Use copper wire only. Use 75°C only in this application. When using non–metallic (NM) sheathed cable, wire size required should be based on that of 60°C conductors, instead of wire sizes shown in table above per NEC Article 336–26.
NOTE: If branch circuit wire length exceeds 100 ft (30 m), consult NEC 215–2 to determine maximum wire length. Use 2% voltage drop.
FLA – Full Load Amps

ACCESSORY ELECTRIC HEATER ELECTRICAL DATA

HEATER PART NO.	kW		PHASE	INTERNAL CIRCUIT PROTECTION	HEATER AMPS 208/230V			BRANCH CIRCUIT														
								Min Ampacity 208/230V*			Min Wire Size (AWG) 208/230V†			Min Gnd Wire Size 208/230V			Max Fuse/Ckt Bkr Amps 208/230V			Max Wire Length 208/230V (Ft)‡		
					Single Circuit	Dual Circuit		Single Circuit	Dual Circuit		Single Circuit	Dual Circuit		Single Circuit	Dual Circuit		Single Circuit	Dual Circuit		Single Circuit	Dual Circuit	
	240v	208v				L1,l2	L3,L4		L1,L2	L3,L4		L1, L2	L3, L4		L1, L2	L3,L4		L1,L2	L3,L4		L1,L2	L3,L4
KFCEH0401N03	3	2.3	1	None	10.9/12.0	—	—	15.9/17.3	—	—	12/12	—	—	12/12	—	—	20/20	—	—	67/68	—	—
KFCEH0501N05[1]	5	3.8	1	None	18.1/20.0	—	—	26.0/28.4	—	—	10/10	—	—	10/10	—	—	30/30	—	—	66/66	—	—
KFCEH0501N05[2]	5	3.8	1	None	18.1/20.0	—	—	31.2/33.5	—	—	8/8	—	—	10/10	—	—	35/35	—	—	85/88	—	—
KFCEH2401C05[1]	5	3.8	1	Ckt Bkr	18.1/20.0	—	—	26.0/28.4	—	—	10/10	—	—	10/10	—	—	30/30	—	—	66/66	—	—
KFCEH2401C05[2]	5	3.8	1	Ckt Bkr	18.1/20.0	—	—	31.2/33.5	—	—	8/8	—	—	10/10	—	—	35/35	—	—	85/88	—	—
KFCEH0801N08	8	6.0	1	None	28.9/32.0	—	—	44.7/48.5	—	—	8/8	—	—	10/10	—	—	45/50	—	—	59/60	—	—
KFCEH2501C08	8	6.0	1	Ckt Bkr	28.9/32.0	—	—	44.7/48.5	—	—	8/8	—	—	10/10	—	—	45/50	—	—	59/60	—	—
KFCEH2901N09	9	6.8	1	None	32.8/36.0	—	—	49.5/53.5	—	—	8/6	—	—	10/10	—	—	50/60	—	—	54/87	—	—
KFCEH2901N09**	9	6.8	3	None	18.8/20.8	—	—	32.0/34.5	—	—	8/8	—	—	10/10	—	—	35/35	—	—	83/85	—	—
KFCEH0901N10	10	7.5	1	None	36.2/40.0	—	—	53.8/58.5	—	—	6/6	—	—	10/10	—	—	60/60	—	—	78/80	—	—
KFCEH2601C10	10	7.5	1	Ckt Bkr	36.2/40.0	—	—	53.8/58.5	—	—	6/6	—	—	10/10	—	—	60/60	—	—	78/80	—	—
KFCEH3001F15	15	11.3	1	Fuse	54.2/59.9	36.2/40.0	18.1/20.0	76.3/83.4	53.8/58.5	22.7/25.0	4/4	6/6	10/10	8/8	10/10	10/10	80/90	60/60	25/25	88/89	78/80	75/76
KFCEH3101C15	15	11.3	1	Ckt Bkr	—	36.2/40.0	18.1/20.0	—	53.8/58.5	22.7/25.0	—	6/6	10/10	—	10/10	10/10	—	60/60	25/25	—	78/80	75/76
KFCEH1601315	15	11.3	3	None	31.3/34.6	—	—	47.7/51.8	—	—	8/6	—	—	10/10	—	—	50/60	—	—	56/90	—	—
KFCEH2001318	18	13.5	3	None	37.6/41.5	—	—	55.5/60.4	—	—	6/6	—	—	10/8	—	—	60/70	—	—	76/77	—	—
KFCEH3201F20	20	15.0	1	Fuse	72.3/79.9	36.2/40.0	36.2/40.0	98.9/108.4	53.8/58.5	45.3/50.0	3/2	6/6	8/8	8/6	10/10	10/10	100/110	60/60	50/50	85/109	78/80	59/59
KFCEH3301C20	20	15.0	1	Ckt Bkr	—	36.2/40.0	36.2/40.0	—	53.8/58.5	45.3/50.0	—	6/6	8/8	—	10/10	10/10	—	60/60	50/50	—	78/80	59/59
KFCEH3401F24††	24	18.0	3	Fuse	50.1/55.4	—	—	71.2/77.8	—	—	4/4	—	—	8/8	—	—	80/80	—	—	94/95	—	—
	24	18.0	1	Fuse	86.7/95.5	—	—	116.9/127.9	—	—	1/1	—	—	6/6	—	—	125/150	—	—	115/116	—	—
KFCEH3501F30††	30	22.5	3	Fuse	62.6/69.2	—	—	86.8/95.0	—	—	3/3	—	—	8/8	—	—	90/100	—	—	97/98	—	—
	30	22.5	1	Fuse	109.0/120.0	—	—	144.8/158.5	—	—	0/00	—	—	6/6	—	—	150/175	—	—	117/150	—	—

FIELD MULTIPOINT WIRING OF 24-AND 30-kW SINGLE PHASE

HEATER PART NO.	kW		PHASE	HEATER AMPS 208/230V			MIN AMPACITY 208/230V*			MIN WIRE SIZE (AWG) 208/230V†			MIN GND WIRE SIZE 208/230V	MAX FUSE/CKT BKR AMPS 208/230V			MAX WIRE LENGTH 208/230V (FT)‡		
	240V	208V		L1,L2	L3,L4	L5,L6	L1,L2	L3,L4	L5,L6	L1,L2	L3,L4	L5,L6		L1,L2	L3,L4	L5,L6	L1,L2	L3,L4	L5,L6
KFCEH3401F24††	24	18.0	1	28.9/32.0	28.9/32.0	28.9/32.0	44.7/48.5	36.2/40.0	36.2/40.0	8/8	8/8	8/8	10/10	45/50	40/40	40/40	59/60	73/73	73/73
KFCEH3501F30††	30	22.5	1	36.2/40.0	36.2/40.0	36.2/40.0	53.8/58.5	45.3/50.0	45.3/50.0	6/6	8/8	8/8	10/10	60/60	50/50	50/50	78/80	59/59	59/59

*Includes blower motor amps of largest fan coil used with heater.

†Copper wire must be used. If other than uncoated (non–plated), 75°C ambient, copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used, consult applicable (ANSI/NFPA 70).

‡Length shown is as measured 1 way along wire path between unit and service panel for a voltage drop not to exceed 2%.

**Field convertible to 3 phase.

††Field convertible to 1 phase, single or multiple supply circuit.

NOTES:

1. For fan coil sizes 018–036.
2. For fan coil sizes 042–060.
3. Single circuit application of F15 and F20 heaters requires single–point wiring kit accessory.

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HEATER ELECTRICAL DATA

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/01/14

ELECTRIC HEATER INTERNAL PROTECTION

HEATER kW	PHASE	FUSE QTY/SIZE	
5	1	—	
8	1	—	
9	1/3	—	
10	1	—	
15	1	2/30–2/60	2/60
15	3	—	—
18	3	—	—
20	1	4/60	2/60
24	1/3	6/60	—
30	1/3	6/60	—

*All circuit breakers are 2 pole.

When using units with 20-, 24-, and 30-kW electric heaters, maintain a 1-in. (25mm) clearance from combustible materials to discharge plenum and ductwork and maintain a distance of 36-in (914mm) from the unit. Use an accessory downflow base to maintain proper clearance on downflow installations. Use flexible connectors between ductwork and unit to prevent transmission of vibration. When electric heater is installed, use heat resistant material for flexible connector between ductwork and unit at discharge connection. Ductwork passing through unconditioned space must be insulated and covered with vapor barrier

ACCESSORIES

	ITEM	ACCESSORY PART NO.*	FAN COIL SIZE USED WITH
1.	Disconnect Kit	KFADK0201DSC	Cooling controls and heaters 3– through 10–kW
2.	Downflow Base Kit	KFACB0101CFB	018, 024
		KFACB0201CFB	030, 036
		KFACB0301CFB	042, 048, 060
3.	Downflow Conversion Kit †	KFADC0201SLP	Slope Coil Units—018, 024, 030, 036
		KFADC0401ACL	A–Coil Units—042, 048, 060
4.	Downflow/Horizontal Conversion Gasket Kit	KFAHD0101SLP	All
5.	Horizontal Water Management Kit (25 pack) ‡	KFAHC0125AAA	All
6.	Single–Point Wiring Kit	KFASP0101SPK	Only with 15– and 20–kW Fused Heaters
7.	Filter Kit (12 Pack)	KFAFK0112SML	018, 024
		KFAFK0212MED	030, 036
		KFAFK0312LRG	042, 048, 060
8.	Fan Coil Filter Cabinet (Fan Coil Filter Media)	FNCCABCC0014 (FILXXFNC0014)	018, 024
		FNCCABCC0017 (FILXXFNC0017)	030, 036
		FNCCABCC0021 (FILXXFNC0021)	042, 048, 060
9.	PVC Condensate Trap Kit (50 pack)	KFAET0150ETK	All
10.	Air Cleaner 240–volt Conversion Kit	KEAVC0201240	All
11.	Standard Filter Rack Kit	KFAFR0101FRM	018, 024
		KFAFR0201FRM	030, 036
		KFAFR0301FRM	042, 048, 060
		KFAFR0401FRM	NA
12.	TXV Kit Puron R–410A	KSATX0201PUR	018, 024, 030
		KSATX0301PUR	036, 042
		KSATX0401PUR	048
13.	TXV Kit R–22	KSATX0601HSO	018, 024, 030, 036, 042
		KSATX0701HSO	048
		KSATX1001HSO	060

* Factory authorized and listed, field–installed.
† KFAHD0101SLP must also be purchased for downflow applications.
‡ KFAHD0101SLP must also be purchased for downflow or horizontal applications.

RESURGAM CITY OF PORTLAND, MAINE
Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 05/01/14

Accessory Kits Description Suggested and Required Use

1. **Disconnect Kit**
   The kit is used to disconnect electrical power to the fan coil so service or maintenance may be performed sa
   SUGGESTED USE: Units for 3- through 10-kW electric resistance heaters and cooling controls.
2. **Downflow Base Kit**
   This kit is designed to provide a 1-in. (25mm) minimum clearance between unit discharge plenum, ductwor
   als. It also provides a gap-free seal with the floor.
   REQUIRED USE: This kit must be used whenever fan coils are used in downflow applications.
3. **Downflow Conversion Kit**
   Fan coils are shipped from the factory for upflow or horizontal-left applications. Downflow conversion kits provide proper condensate water drainage and support for the coil when used in downflow applications. Separate kits are available for slope coils and A-coils.
   REQUIRED USE: This kit must be used whenever fan coils are used in downflow applications.
4. **Downflow/Horizontal Conversion Gasket Kit**
   This kit provides the proper gasketing of units when applied in either a downflow or horizontal application.
   REQUIRED USE: Fan coils in either downflow or horizontal applications.
5. **Horizontal Applications - Water Management Kit**
   This kit provides proper installation of fan coils under conditions of high static pressure and high relative humidity.
   SUGGESTED USE: All fan coils.
6. **Single Point Wiring Kit**
   The single point wiring kit acts as a jumper between L1 and L3 lugs, and between the L2 and L4 lugs. This allows the installer to run two heavy-gauge, high-voltage wires into the fan coil rather than 4 light-gauge, high-voltage wires.
   SUGGESTED USE: Fan coils with 15- and 20-kW fused heaters only.
7. **Filter Kit (12 pack)**
   The kit consists of 12 fan coil framed filters. These filters collect large dust particles from the return air entering the fan coil and prevents them from collecting on the coil. This process helps to keep the coil clean, which increases heat transfer and, in turn, the efficiency of the system.
   SUGGESTED USE: To replace filters in fan coils.
   REQUIRED USE: All units unless a filter grille is used.
8. **Fan Coil Filter Cabinet**
   This cabinet is mounted to the fan coil on the return air end and designed to slip over the outer fan coil casing. The cabinets are insulated using the same insulation as production fan coils. They are designed for the removal of particulates from indoor air using FILXXFNC00(14, 17, 21, 24) media filter cartridges. These fan coil media filter cartridge kits are designed for the removal of particles from indoor air. The cartridge is installed in the return air duct next to the air handler or further upstream.
   SUGGESTED USE: All fan coils.
9. **Condensate Drain Trap Kit**
   This kit consists of 50 PVC condensate traps. Each trap is pre-formed and ready for field installation. This deep trap helps the system make and hold proper condensate flow even during blower initiation.
   SUGGESTED USE: All fan coils.
10. **Air Cleaner 240-volt Conversion Kit**
    The AIRA electronic air cleaner comes ready for 115-v operation.
    REQUIRED USE: This kit is required when running 240-volt circuit to air cleaner.
11. **Standard Filter Rack Kit**
    This kit mounts in fan coil filter rack area and modifies the existing filter rack to support standard 1-in. filter sizes.
    SUGGESTED USE: Fan coils using standard filter sizes.

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