

Product Data



AIR HANDLER TECHNOLOGY AT ITS FINEST

The FH4C series fan coils are reliable, dependable, and a great value. These fan coils offer air handling for practical, no-nonsense applications, and outstanding performance. The FH4C electric-furnace fan coil is a compact and easy to install design. The multipoise units allow for great flexibility to meet those upflow, downflow, or horizontal installation requirements.

The unique cabinet design of these fan coils meet new, stringent regulations for cabinet air leakage — a requirement of 2% cabinet-leakage rate when tested at 1.0 in. of static pressure.

The FH4C model comes fully equipped with solid-state cooling controls. It has 3-speed PSC motors on all sizes, and will accept field-installed 3 through 30 kW heater packages. The heater packages can either be fused or with a circuit breaker, or non-fused for 10 kW or less. Units also come with factory-supplied power plug and cleanable, permanent-framed filter. Four sizes are available, 800 CFM through 2000 CFM.

STANDARD FEATURES

- Multipoise design for maximum versatility.
- Unique cabinet design that meets new stringent regulations for air leakage. Meets requirements of a 2% cabinet leakage rate when tested at 1.0 in. of static pressure.
- Field-installed heater packages from 3-30 kW (fused, circuit breaker, or non-fused).
- Control board with built-in, replaceable 5-amp blade-type auto fuse.
- Time-delay relay (TDR)
- High-density, super thick R- 4.2 insulation
- Newly-improved filter rack area — filter door insulation added for an improved air seal.
- HUD approved for manufactured housing.
- 40-VA, 208/230v transformer
- All models listed with UL (U.S. and Canada) and ARI.
- 3-speed motors
- Factory-supplied cleanable filter
- Factory-supplied power plug
- Pre-painted galvanized-steel cabinet (taupe metallic)

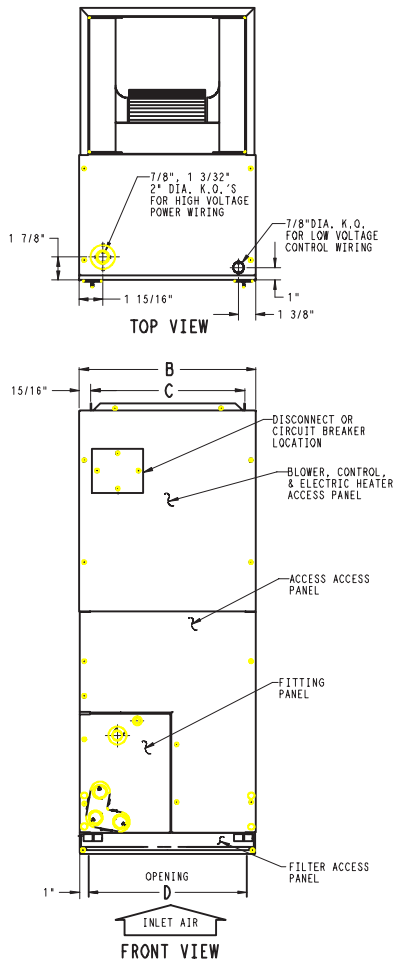
MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7-9	10-12
F	H	4	C	N	F	001	000
Product	Type	Position	Series	Electrical	Cabinet/ Insulation	Capacity	Heating Size
F = Fan Coil	H = Electric Furnace	4 = Multipoise	C	N = 208/230v, 1ph-60hz	B = Modular cabinet F = Single piece	001 = 18,000 002 = 24,000 003 = 36,000 004 = 42,000	000 = No Heat



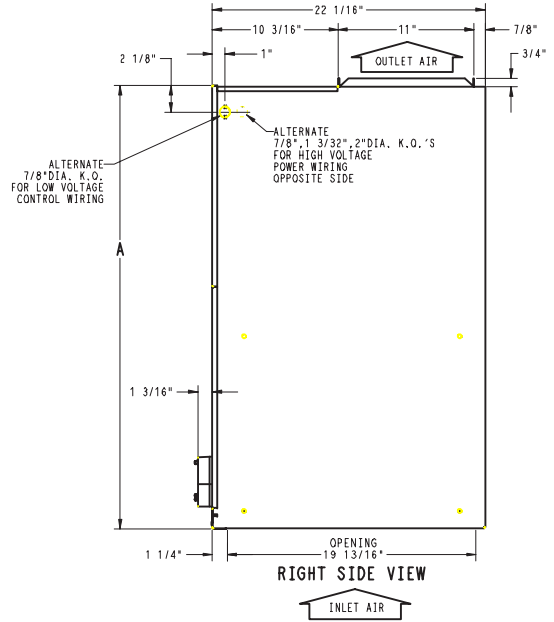
CERTIFICATION APPLIES ONLY WHEN THE COMPLETE SYSTEM IS LISTED WITH ARI

FH4C



NOTE:
1. SERIES DESIGNATION IS THE 14TH POSITION OF UNIT PRODUCT NUMBER.

NOTE: ALLOW 21" FROM FRONT FOR SERVICE

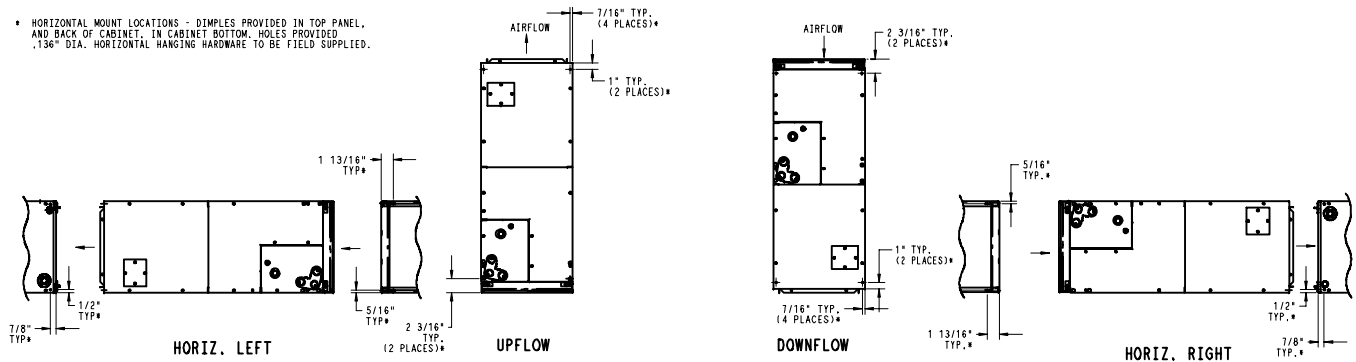


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DIMENSIONS (IN.)

UNIT	COIL TYPE	A	B	C	D
FH4CNF001000	Slope	47-11/16	17-5/8	15-3/4	15-5/8
FH4CNF002000	Slope	53-7/16	21-1/8	19-1/4	19-1/8
FH4CNF003000	A	53-7/16	21-1/8	19-1/4	19-1/8
FH4CNB004000	A	59-3/16	24-11/16	22-3/4	22-11/16

* HORIZONTAL MOUNT LOCATIONS - DIMPLES PROVIDED IN TOP PANEL AND BACK OF CABINET. IN CABINET BOTTOM, HOLES PROVIDED .136" DIA. HORIZONTAL HANGING HARDWARE TO BE FIELD SUPPLIED.



A05407

PHYSICAL DATA

ODS CATALOG ORDERING NO.	FIELD-INSTALLED HEAT ONLY (KW)	NOMINAL COOLING CAPACITY	DIMENSIONS (IN.)			SHIPPING WEIGHT (LBS.)
			Height	Width	Depth	
FH4CNF001000	3, 5, 9, 10, 15	N/A	47-11/16	17-5/8	22-1/16	93
FH4CNF002000	5, 8, 9, 10, 15, 20		53-7/16	21-1/8	22-1/16	117
FH4CNF003000	9, 10, 15, 18, 20, 24, 30		53-7/16	21-1/8	22-1/16	122
FH4CNB004000	9, 10, 15, 18, 20, 24, 30		59-3/16	24-11/16	22-1/16	140

6th digit: B – Modular cabinet
F – Single piece cabinet

SPECIFICATIONS

MODEL FH4C	001	002	003	004
FAN				
CFM (Nominal)	800	1200	1600	2000
Motor Type	PSC	PSC	PSC	PSC
Motor Hp	1/4	1/3	3/4	3/4
FILTER	21-1/2 x 16-3/8	19-7/8		23-5/16
CABINET CONFIGURATION OPTIONS				
	1-piece	1-piece	1-piece	Modular

PERFORMANCE DATA

FH4C FAN UNIT AIRFLOW PERFORMANCE WITH ACCESSORY COIL (CFM)

MODEL & SIZE	BLOWER SPEED	0.1	0.2	0.3	0.4	0.5	0.6
FH4C 001 with KFAEC0701024	High	1055	991	926	860	793	724
	Medium	934	878	818	754	686	614
	Low	690	666	633	591	538	476
FH4C 002 with KFAEC0801036	High	1566	1513	1455	1391	1322	1247
	Medium	1352	1316	1273	1223	1167	1103
	Low	1137	1112	1081	1043	998	946
FH4C 003 with KFAEC0901048	High	1902	1824	1743	1659	1571	1479
	Medium	1830	1763	1690	1611	1527	1436
	Low	1625	1584	1531	1465	1387	1296
FH4C 004 with KFAEC1001060	High	2128	2050	1965	1875	1778	1674
	Medium	1959	1898	1829	1750	1663	1566
	Low	1748	1709	1659	1598	1525	1442

NOTES:

- Airflow based upon dry coil at 230v with factory-approved accessory filter and electric heater (10-kW electric heat, sizes 001 and 002; 15-kW electric heat, sizes 003 and 004).
 - To avoid potential for condensate blowing out of drain pan prior to making drain trap:
 - Return static pressure must be less than 0.4 in. wc.
 - Horizontal applications of 048-070 sizes must have supply static greater than 0.20 in. wc.
 - Airflow above 400 cfm/ton on 004 size could result in condensate blowing off coil or splashing out of drain pan.
- – Airflow outside 400 cfm/ton.

FACTORY-INSTALLED FILTER STATIC PRESSURE DROP (IN. WC.)

FH4C UNIT SIZE	CFM								
	400	600	800	1000	1200	1400	1600	1800	2000
001	—	0.044	0.075	0.110	—	—	—	—	—
002	—	—	—	0.072	0.100	0.130	—	—	—
003	—	—	—	—	—	0.092	0.120	0.152	—
004	—	—	—	—	—	—	0.120	0.152	0.187

ELECTRIC HEATER STATIC PRESSURE DROP

The airflow performance data was developed using fan coils with 10-kW electric heaters (2 elements) in the 001 and 002 size units and 15-kW heaters (3 elements) in the 003 and 004 size units.

001, 002

HEATER ELEMENTS	KW	EXTERNAL STATIC PRESSURE CORRECTION
0	0	+0.02
1	3, 5	+0.01
2	8, 10	0
3	9, 15	-0.02
4	20	-0.04

003, 004

HEATER ELEMENTS	KW	EXTERNAL STATIC PRESSURE CORRECTION
0	0	+0.04
2	8, 10	+0.02
3	9, 15	0
4	20	-0.02
6	18, 24, 30	-0.10

The airflow performance data was developed using fan coils with 10-kW electric heaters (2 elements) in the 001 and 002 units and 15-kW heaters (3 elements) in the 003 and 004 units. For fan coils with heaters of a different number of elements, the available external static at a given CFM from the curve may be corrected by adding or subtracting available external static pressure as indicated above.

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	001	9,400
KFCEH0501N05	5	230/1	5	None	001, 002	15,700
KFCEH0801N08	8	230/1	8	None	001-004	25,100
KFCEH0901N10	10	230/1	10	None	001-004	31,400
KFCEH3201F20	20	230/1	5, 20	Fuse†	002-004	62,800
KFCEH1601315	15	230/3	5, 15	None	002-004	47,100
KFCEH2001318	18	230/3	6, 12, 18	None	003, 004	56,500
KFCEH3401F24	24	230/3*	8, 16, 24	Fuse	003, 004	78,300
KFCEH3501F30	30	230/3*	10, 20, 30	Fuse	003, 004	94,100
KFCEH2401C05	5	230/1	5	Circuit Breaker	001, 002	15,700
KFCEH2501C08	8	230/1	8	Circuit Breaker	001, 002	25,100
KFCEH2601C10	10	230/1	10	Circuit Breaker	001-004	31,400
KFCEH3301C20	20	230/1	5, 20	Circuit Breaker	002-004	62,800
KFCEH2901N09	9	230/1†	3, 9	None	002-004	28,200
KFCEH3001F15	15	230/1	5, 15	Fuse†	001-004	47,100
KFCEH3101C15	15	230/1	5, 15	Circuit Breaker	001-004	47,100

* Field convertible to 1 phase.

† Field convertible to 3 phase.

** Blower Motor heat not included.

‡ Single-point wiring kit required for these heaters in Canada.

FAN COIL ELECTRICAL DATA (UNITS WITHOUT ELECTRICAL HEAT)

UNIT SIZE	VOLTS (1 PHASE)	FLA†	MIN. CKT AMPS	BRANCH CIRCUIT	
				Min. Wire Size Awg*	Fuse Amps
001	208/230	1.8	2.3	14	15
002	208/230	2.7	3.4	14	15
003	208/230	4.3	5.4	14	15
004	208/230	5.4	6.8	14	15

* 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.

† Based on FB4B.

FLA - Full Load Amps

NOTE: If branch circuit wire length exceeds 100 ft consult NEC 215-2 to determine maximum wire length. Use 2% voltage drop.

ELECTRIC HEATER INTERNAL PROTECTION*

HEATER KW	PHASE	FUSE QTY./SIZE	CKT BKR QTY./SIZE†
3	1	—	—
5	1	—	1/60
8	1	—	1/60
10	1	—	1/60
15	1	2/30 —2/60	2/60
20	1	4/60	2/60
24	3/1	6/60	—
30	3/1	6/60	—
9	1/3	—	—
15	3	—	—
18	3	—	—

* 5-, 8-, 10-kW factory-installed heat has no internal protection. 15-kW factory-installed heat is internally protected with fuses.

† Circuit breakers are 2 pole.

ESTIMATED SOUND POWER LEVEL (DBA)

UNIT SIZE	CONDITIONS		OCTAVE BAND CENTER FREQUENCY*						
	CFM	Ext Static Pressure	63	125	250	500	1000	2000	4000
FH4-001	800	0.25	66.0	62.0	58.0	55.0	53.0	51.0	47.0
FH4-002	1200	0.25	67.8	63.8	59.8	56.8	54.8	52.8	50.0
FH4-003	1600	0.25	69.0	65.0	61.0	58.0	56.0	54.0	50.0
FH4-004	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.

ACCESSORY ELECTRIC HEATER ELECTRICAL DATA

HEATER PART NO.	KW		P H A S E	INTERNAL CIRCUIT PROTEC- TION	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			Single Circuit	Dual Circuit	L1,L2	L3,L4	Single Circuit	Dual Circuit	L1,L2	L3,L4	Single Circuit	Dual Circuit	L1,L2	L3,L4	Single Circuit	Dual Circuit	L1,L2	L3,L4	Single Circuit	Dual Circuit	L1,L2	L3,L4
KFCEH0401N03	3	2.3	1	None	10.9/12.0	—	—	15.9/17.3	—	—	12/12	—	—	20/20	—	—	—	—	67/68	—	—	—	—	
KFCEH0501N051	5	3.8	1	None	18.1/20.0	—	—	26.0/28.4	—	—	10/10	—	—	30/30	—	—	—	—	66/66	—	—	—	—	
KFCEH0501N052	5	3.8	1	None	18.1/20.0	—	—	31.2/33.5	—	—	8/8	—	—	35/35	—	—	—	—	85/88	—	—	—	—	
KFCEH2401C051	5	3.8	1	Ckt Bkr	18.1/20.0	—	—	26.0/28.4	—	—	10/10	—	—	30/30	—	—	—	—	66/66	—	—	—	—	
KFCEH2401C052	5	3.8	1	Ckt Bkr	18.1/20.0	—	—	31.2/33.5	—	—	8/8	—	—	35/35	—	—	—	—	85/88	—	—	—	—	
KFCEH0801N08	8	6.0	1	None	28.9/32.0	—	—	44.7/48.5	—	—	8/8	—	—	45/50	—	—	—	—	59/60	—	—	—	—	
KFCEH2501C08	8	6.0	1	Ckt Bkr	28.9/32.0	—	—	44.7/48.5	—	—	8/8	—	—	45/50	—	—	—	—	59/60	—	—	—	—	
KFCEH2901N09***	9	6.8	1	None	32.8/36.0	—	—	48.5/53.5	—	—	8/8	—	—	50/60	—	—	—	—	54/57	—	—	—	—	
KFCEH2901N09‡***	9	6.8	3	None	18.8/20.8	—	—	32.0/34.5	—	—	8/8	—	—	35/35	—	—	—	—	83/85	—	—	—	—	
KFCEH0901N10	10	7.5	1	None	36.2/40.0	—	—	53.8/58.5	—	—	6/6	—	—	60/60	—	—	—	—	78/80	—	—	—	—	
KFCEH2801C10	10	7.5	1	Ckt Bkr	36.2/40.0	—	—	53.8/58.5	—	—	6/6	—	—	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	10/10	10/10	10/10	10/10	60/60	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	
KFCEH1801315	15	11.3	3	None	31.3/34.6	—	—	47.7/51.8	—	—	8/8	—	—	50/60	—	—	—	—	56/60	—	—	—	—	
KFCEH2001318	18	13.5	3	None	37.6/41.5	—	—	55.5/60.4	—	—	6/6	—	—	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	100/110	10/10	10/10	10/10	60/60	60/60	50/50	78/80	85/109	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	
KFCEH401F24†***	24	18.0	3	Fuse	50.1/55.4	—	—	71.2/77.8	—	—	4/4	—	—	80/80	—	—	—	—	94/95	—	—	—	—	
KFCEH401F24†***	24	18.0	1	Fuse	86.7/85.5	—	—	116.8/127.9	—	—	1/1	—	—	125/150	—	—	—	—	115/116	—	—	—	—	
KFCEH3501F30†***	30	22.5	3	Fuse	62.6/69.2	—	—	86.8/95.0	—	—	3/3	—	—	90/100	—	—	—	—	97/98	—	—	—	—	
KFCEH3501F30†***	30	22.5	1	Fuse	109.0/120.0	—	—	144.8/158.5	—	—	0/00	—	—	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	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	8/8	8/8	8/8	40/40	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	8/8	8/8	8/8	60/60	50/50	50/50	78/80	59/59	59/59

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

‡ Field convertible to 3 phase.

** 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 tables of the National Electric Code (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%.

*** Heaters are Intelligent—Heat capable when used with the FE, FK and FV Fan Coils and corporate 2—Speed Programmable Thermostat (TSTATCCPS01—B), Thermidstat™ Control (TSTATCCPRH01—B), or Comfort Zone II.

NOTES:

1. For fan coil sizes 001 and 002.
2. For fan coil sizes 003 and 004.
3. Single circuit application of F15 and F20 heaters requires single—point wiring kit accessory.



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	001
		KFACB0201CFB	002
		KFACB0301CFB	003
		KFACB0401CFB	004
3.	Downflow Conversion Kit	KFADC0201SLP	Slope Coil Units—001, 002
		KFADC0401ACL	A-Coil Units—003, 004
4.	Single-Point Wiring Kit	KFASP0101SPK	Only with 15- and 20-kW Fused Heaters
5.	Filter Kit (12 Pack)	KFAFK0112SML	001
		KFAFK0212MED	002
		KFAFK0312LRG	003
		KFAFK0412XXL	004
6.	Filter Media Cabinet	FNCCABCC0017	001
		FNCCABCC0021	002, 003
		FNCCABCC0024	004
7.	Media Filter Cartridges	FILCCFNC0017	001
		FILCCFNC0021	002, 003
		FILCCFNC0024	004
8.	Evaporator Coil	KFAEC0701024	001
		KFAEC0801036	002
		KFAEC0901048	003
		KFAEC1001060	004
9.	Downflow/Horizontal Conversion Gasket Kit	KFAHD0101SLP	All

* Factory authorized and listed, field-installed.

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 safely.
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. minimum clearance between unit discharge plenum, ductwork, and combustible materials. 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. 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 2 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.

5. 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.

6. Filter Media 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 FILCCFNC00(14, 17, 21, 24) media filter cartridges.
SUGGESTED USE: To replace filters in fan coils.

7. 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.

8. Evaporator Coil Kit

The kit contains a heating/cooling coil and drain pan.
REQUIRED USE: Accessory coil used with fan unit.

9. 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.