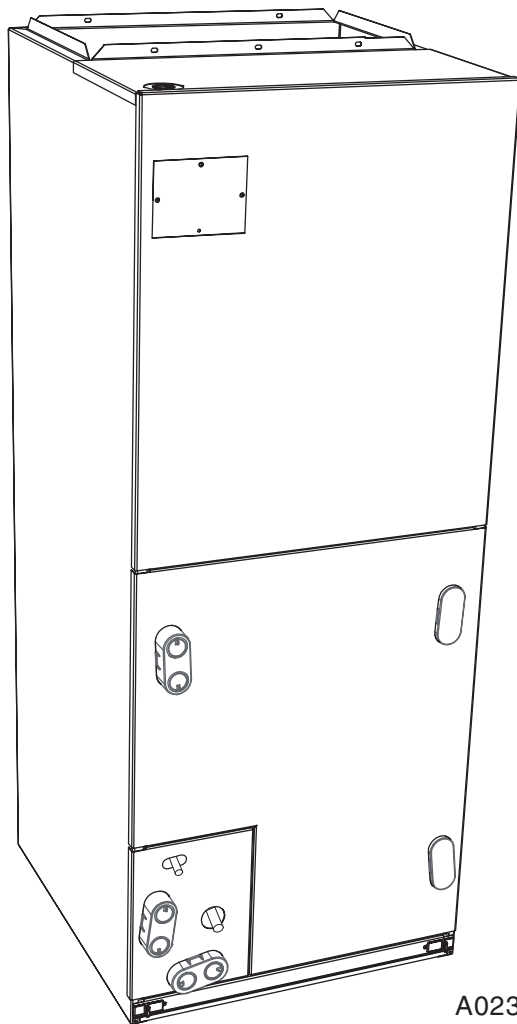




# Product Data

# FV4B Direct Expansion Variable Speed Fan Coil Puron® Refrigerant

Sizes 002 thru 006



A02332



## Premium Environmentally Sound Fan Coil

The latest in technology makes the FV4B the most advanced air handler available. With attention to quiet, efficient, and comfortable operation, Carrier has developed a new benchmark for Indoor Weather control.

Carrier's heat pump and air conditioning systems now feature Puron® (R-410A), the chlorine-free refrigerant that is the future for the residential heating and cooling industry. The FV4B using Puron® maximizes performance for environmentally sound systems. In addition to environmental safety, these systems are 30 to 40 percent more efficient than standard heating and cooling systems, thereby combining excellence in efficiency and environmental safety.

The FV4B provides these benefits due to Carrier's command of ECM "Electronically Commutating Motor" technology. These motors are extremely efficient at all speeds, and enable the FV4B to operate at the correct speed to deliver airflow precisely, ensuring proper performance across a wide range of duct static pressures. This adaptive efficiency also makes installation quality easier to achieve for today's demanding homeowner.

Carrier's command of ECM technology may be most evident in the comfort advantages that ECM can deliver. Operation set up steps on the Easy Select™ Board provide the installing technician with alternatives to maximize comfort and efficiency. For truly Custom Made Indoor Weather, the homeowner can achieve

command of both temperature and humidity in cooling and heating modes.

Another feature which sets the FV4B apart is the factory-installed TXV, which enhances efficiency and provides compressor-protecting operation at all recommended conditions. Grooved copper tubing, louvered aluminum fins, and the large

face areas of the FV4B refrigerant coils also provide superior efficiency, for high SEER and HSPF performance. Carrier leads the way in condensate control, a hallmark of these multipoise fan coils. All of these featured components are protected within a rugged, prepainted metal cabinet lined with super thick, high density insulation. For neat, high

quality installations the unit exterior features sweat refrigerant connections for simple leak free performance, and multiple electrical entry for both high and low voltage service.

For superior technology and unmatched comfort, the environmentally sound and efficient FV4B can't be beat.

## Features

### Environmentally Sound Refrigerant Technology

- Puron, chlorine-free non-ozone depleting refrigerant
- Thermostatic Expansion Valve (TXV) designed to maximize performance with Puron

### Energy Efficient Operation

- Electronically Commutating Motor (ECM) operates efficiently at all speeds
- Maximizes efficiency of heating and cooling systems
- Ultra low power consumption during fan only operation

### Indoor Weather Control

- Warm, comfortable heating air temperatures
- Unmatched humidity control, especially with Carrier's Thermidistat™ Control

### Airflow and Sound Technology

- Logarithmic spiral blower housings for high blower efficiency and quiet operation
- Diffuser air discharge section for high airflow efficiency and quiet, smooth operation
- High duct static capability
- Unique cabinet design that meets new stringent regulations for air leakage. Meets requirements of a 2% cabinet leakage rate when tested at 1.0 inches of static pressure

### Condensate Control and Disposal Technology

- Minimal standing water - less microbial growth for improved IAQ and reduced condensate line clogging and related condensate leakage
- Condensate fittings relocated away from turbulent airflow patterns at the blower entrance for improved condensate control performance
- Overflow feature for slope coil units allows condensate to exit the unit without damage to product under clogged primary and secondary line conditions
- Tested for condensate disposal at conditions much more severe than those required by ARI
- Primary and secondary drain connections to comply with HUD
- All pans constructed of an injection molded glass-filled polycarbonate engineering resin material, with brass drain connections.
- High density, super thick cabinetry insulation with vapor barrier
- Pre-painted galvanized sheet metal cabinet

### Heat Transfer Technology

- Grooved copper tubing
- Lanced sine wave aluminum fins
- Discreet refined counterflow refrigerant circuitry
- Bi-flow hard shut-off TXV metering device

### Quality Assisting, Ease of Installation and Service Features

- All units multipoise
- Provision made for suspending from roof or ceiling joints
- Modular cabinet on 006 unit
- Sweat connections for leak free service
- Multiple electrical entry for application flexibility (high and low voltage)
- Low voltage terminal strip, to safely hold connections within the cabinet
- Inspection plate on A-coil models for quick coil cleanliness inspection
- Cabinet construction features innovations designed to prevent cabinet sweating

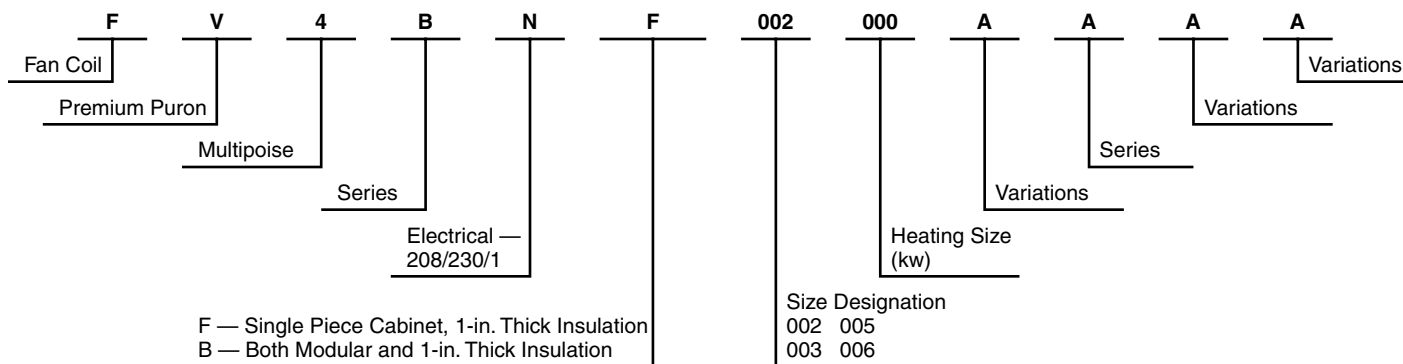
### Controls and Electrical Features

- Easy Select™ Board to maximize comfort, efficiency, and safe heater airflow operation
- Easy plug connection provided for quick installation of accessory heater packages
- 40VA 208/230v transformer
- Replaceable 5-amp blade-type auto fuse protects against transformer secondary short

### Filter Features

- Factory supplied filter
- Cleanable polyester filter media
- Filter "springs" out for easy access - no tools required
- Newly improved filter rack area - filter door insulation added for an improved air seal

# Model number nomenclature



REGISTERED  
 QUALITY  
 SYSTEM



CERTIFICATION APPLIES ONLY WHEN THE  
 COMPLETE SYSTEM IS LISTED WITH ARI.

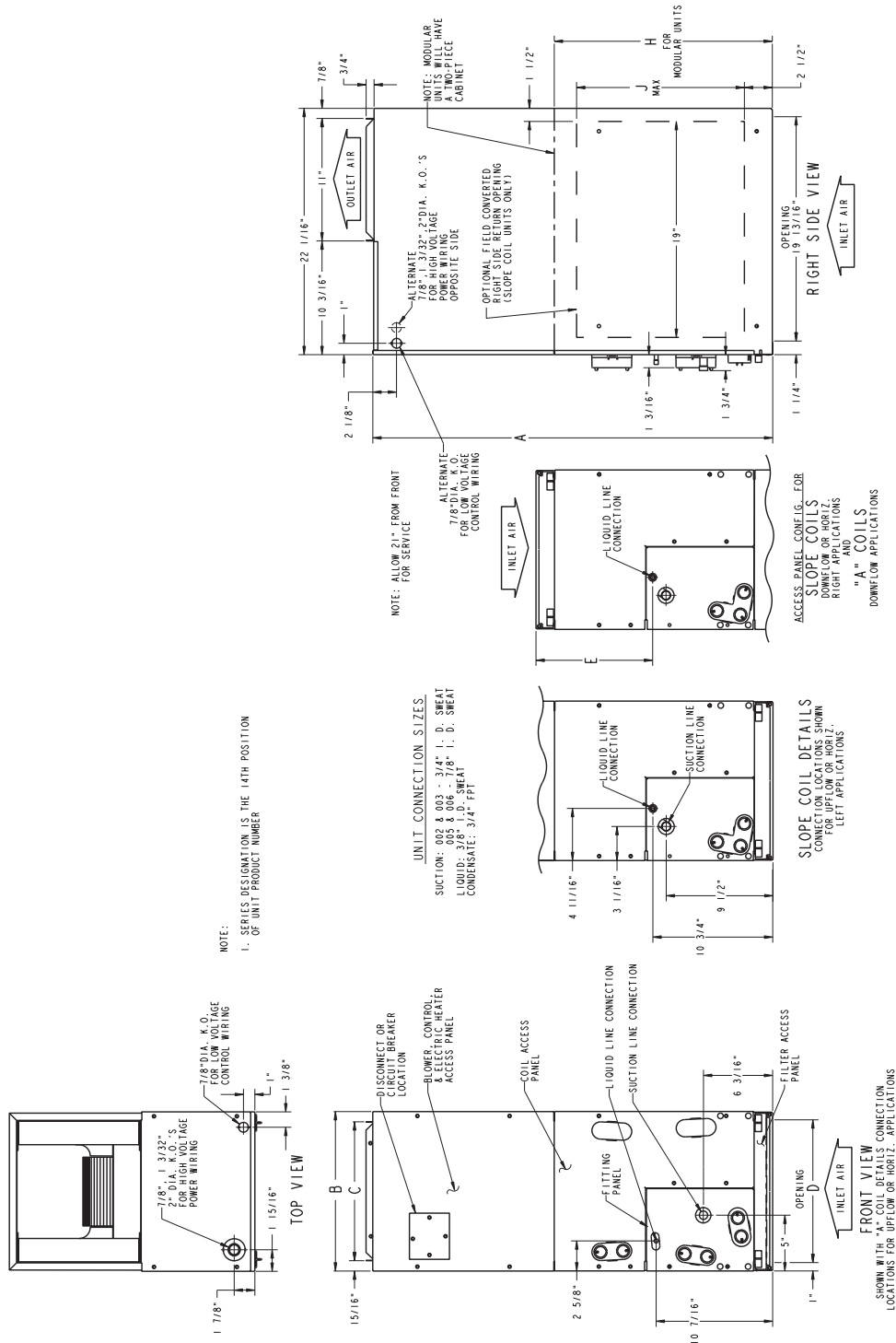


## Physical data

UNIT SIZE	002	003	005	006*
SHIPPING WEIGHT (Lb)	135	150	172	207
REFRIGERANT Metering Device	Puron (R-410A) TXV			
TXV SIZE	2-1/2 Ton	3 Ton	4 Ton	5 Ton
COIL Type	A	Slope	A	A
Rows—Fins/In.	3 - 14.5			
Face Area (Sq Ft)	3.46	3.46	5.93	7.42
FAN Air Discharge	Upflow, Downflow, Horizontal			
CFM (Nominal Clg/Htg)	525 / 470 700 / 630 875 / 785 1050 / 945	700 / 630 875 / 785 1050 / 945 1225 / 1100	875 / 785 1050 / 945 1225 / 1100 1400 / 1260	1050 / 945 1225 / 1100 1400 / 1260 1750 / 1575
MOTOR HP (ECM)	1/2	1/2	1/2	3/4
FILTER SIZE	21-1/2 X 16-3/8	21-1/2 X 19-7/8	21-1/2 X 19-7/8	21-1/2 X 23-5/16

\* Modular Unit

# Dimensions



A02321

UNIT	SIZE	A	B	C	D	E	H	J
FV4B	002	In.	In.	In.	In.	In.	In.	In.
	003	42-11/16	17-5/8	15-3/4	15-5/8	10-3/4	—	—
	005	53-7/16	21-1/8	19-1/4	19-1/8	19-3/16	—	19
	006	53-7/16	21-1/8	19-1/4	19-1/8	19-1/2	—	—
		59-3/16	24-11/16	22-3/4	22-11/16	25-1/4	34-1/16	—



# Performance data

## FV4B ADVANCED FAN COIL AIRFLOW DELIVERY CHART (CFM)

UNIT SIZE	OUTDOOR UNIT CAPACITY*	OPERATING MODE—COOLING						FAN ONLY Lo/Med/Hi
		Single-Speed Application		Two-Speed Application				
		Nominal A/C Cooling	A/C Cooling Dehumidity	High Speed		Low Speed		
				Nominal A/C Cooling	A/C Cooling Dehumidity	Nominal A/C Cooling	A/C Cooling Dehumidity	
002	018	525	420	—	—	—	—	350/350/525
	024	700	560	735	590	440	350	350/440/700
	030	875	700	—	—	—	—	440/550/875
	036	1050	840	1100	880	660	530	525/660/1050
003	024	700	560	735	590	440	415	415/440/700
	030	875	700	—	—	—	—	440/550/875
	036	1050	840	1100	880	660	530	525/660/1050
	042	1225	980	—	—	—	—	610/770/1225
005	030	875	700	—	—	—	—	440/550/875
	036	1050	840	1100	880	660	530	525/660/1050
	042	1225	980	—	—	—	—	610/770/1225
	048	1400	1120	1470	1175	880	705	700/880/1400
006	036	1050	840	1100	880	660	530	525/660/1050
	042	1225	980	—	—	—	—	610/770/1225
	048	1400	1120	1470	1175	880	705	700/880/1400
	060	1750	1400	1835	1470	1100	880	875/1100/1750

- NOTE:** 1. The above airflows result with the AC/HP CFM ADJUST select jumper set on NOM.  
 2. Airflow can be adjusted +15% or -10% by selecting HI or LO respectively for all modes except fan only.  
 3. Dry coil at 230 volts and with 10-kw heater and filter installed.  
 4. Airflows shown are at standard air conditions. (0.075 lb/ft<sup>3</sup> at 29.92 in-Hg).

\*Consult ARI ratings before matching outdoor unit with FV4B Fan Coil.

## FV4B ADVANCED FAN COIL AIRFLOW DELIVERY CHART (CFM)

UNIT SIZE	OUTDOOR UNIT CAPACITY*	OPERATING MODE—HEAT PUMP ONLY HEATING						FAN ONLY Lo/Med/Hi
		Single-Speed Application		Two-Speed Application				
		Heat Pump Comfort	Heat Pump Efficiency	High Speed		Low Speed		
				Heat Pump Comfort	Heat Pump Efficiency	Heat Pump Comfort	Heat Pump Efficiency	
002	018	470	525	—	—	—	—	350/350/470
	024	630	700	660	735	395	440	350/395/630
	030	785	875	—	—	—	—	440/495/785
	036	945	1050	990	1100	595	660	525/595/945
003	024	630	700	660	735	415	440	415/415/630
	030	785	875	—	—	—	—	440/495/785
	036	945	1050	990	1100	595	660	525/595/945
	042	1100	1225	—	—	—	—	610/695/1100
005	030	785	875	—	—	—	—	440/495/785
	036	945	1050	990	1100	595	660	525/595/945
	042	1100	1225	—	—	—	—	610/695/1100
	048	1260	1400	1320	1470	795	880	700/795/1260
006	036	945	1050	990	1100	595	660	540/595/945
	042	1100	1225	—	—	—	—	610/695/1100
	048	1260	1400	1325	1470	795	880	700/795/1260
	060	1575	1750	1655	1835	990	1100	875/990/1575

- NOTE:** 1. The above airflows result with the AC/HP CFM ADJUST select jumper set on NOM.  
 2. Airflow can be adjusted +15% or -10% by selecting HI or LO respectively.  
 3. Dry coil at 230 volts and with 10-kw heater and filter installed.  
 4. Airflows shown are at standard air conditions. (0.075 lb/ft<sup>3</sup> at 29.92 in-Hg).

\*Consult ARI ratings before matching outdoor unit with FV4B Fan Coil.

# Performance data continued

## AIRFLOW DELIVERY CHART (CFM) — ELECTRIC HEATING MODES

UNIT SIZE	OUTDOOR UNIT CAPACITY BtuH	ELECTRIC HEATER KW RANGE											
		0-5			0-10			0-15			0-20		
		Lo	Nom	Hi	Lo	Nom	Hi	Lo	Nom	Hi	Lo	Nom	Hi
002	18,000	625	625	625	675	675	675	—	—	—	—	—	—
	24,000	650	725	835	—	725	835	875	875	875	—	—	—
	30,000	815	905	1040	—	905	1040	900	900	1040	1100	1100	1100
	36,000	980	1085	1250	980	1085	1250	980	1085	1250	1100	1100	1250
003	24,000	675	725	835	875	875	875	—	—	—	—	—	—
	30,000	815	905	1040	875	905	1040	1100	1100	1100	—	—	—
	36,000	980	1085	1250	980	1085	1250	1100	1100	1250	1225	1225	1250
	42,000	1140	1270	1460	1140	1270	1460	1140	1270	1460	1225	1270	1460

UNIT SIZE	OUTDOOR UNIT CAPACITY BtuH	ELECTRIC HEATER KW RANGE											
		0-10			0-15			0-20			0-30		
		Lo	Nom	Hi	Lo	Nom	Hi	Lo	Nom	Hi	Lo	Nom	Hi
005	30,000	975	975	1040	1100	1100	1100	—	—	—	—	—	—
	36,000	980	1085	1250	1100	1100	1250	1250	1250	1250	—	—	—
	42,000	1140	1270	1460	1140	1270	1460	1250	1270	1460	—	—	—
	48,000	1305	1450	1665	1305	1450	1665	1305	1450	1665	1500	1500	1665
006	36,000	1100	1100	1250	1350	1350	1350	—	—	—	—	—	—
	42,000	1140	1270	1460	1350	1350	1460	1525	1525	1525	—	—	—
	48,000	1305	1450	1665	1350	1450	1665	1525	1525	1665	1750	1750	1750
	60,000	1630	1810	2085	1630	1810	2085	1630	1810	2085	1750	1810	2085

Where dash (—) appears indicates airflow not recommended for heater/system size.

**NOTE:** LO, NOM and HI refer to the AC/HP CFM ADJUST selection.

## MINIMUM CFM FOR ELECTRIC HEATER APPLICATION

UNIT SIZE	HEAT PUMP UNIT SIZE	CFM				
		Heater Size KW				
		5	8, 9, 10	15	18, 20	24, 30
002	Heater Only	625	625	725	875	—
	018	625	625	—	—	—
	024	650	725	875	—	—
	030	800	875	875	1040	—
	036	970	970	970	1040	—
003	Heater Only	675	700	1050	1050	—
	024	675	875	—	—	—
	030	800	875	1100	—	—
	036	975	975	1100	1225	—
	042	1125	1125	1125	1225	—
005	Heater Only	675	700	1050	1050	1400
	030	800	875	1100	—	—
	036	975	975	1100	1225	—
	042	1125	1125	1125	1225	—
	048	1305	1305	1305	1305	1400
006	Heater Only	1050	1050	1050	1050	1750
	036	1100	1100	1350	1350	—
	042	1125	1125	1350	1350	—
	048	1300	1300	1350	1465	1750
	060	1625	1625	1625	1750	1750

**NOTE:** 1. Heater Only—Air Conditioner with electric heater application.

2. These airflows are minimum acceptable airflows as UL listed.

3. Actual airflow delivered will be per the airflow delivery chart for Electric Heating Modes.

## Acceptable Duct Conditions

For satisfactory operation (specifically making dry secondary trap), subject fan coils must be installed with duct systems which fall within the "Acceptable Range" illustrated above.

The airflow performance charts for the FV4B fan coil depict nominal airflow delivery for heating and cooling mode operation versus duct system static pressure drop. Cooling mode operation is shown as solid vertical lines for all 4 system size selections. Heating mode operation for the 4 system size selections are shown as dashed vertical lines.

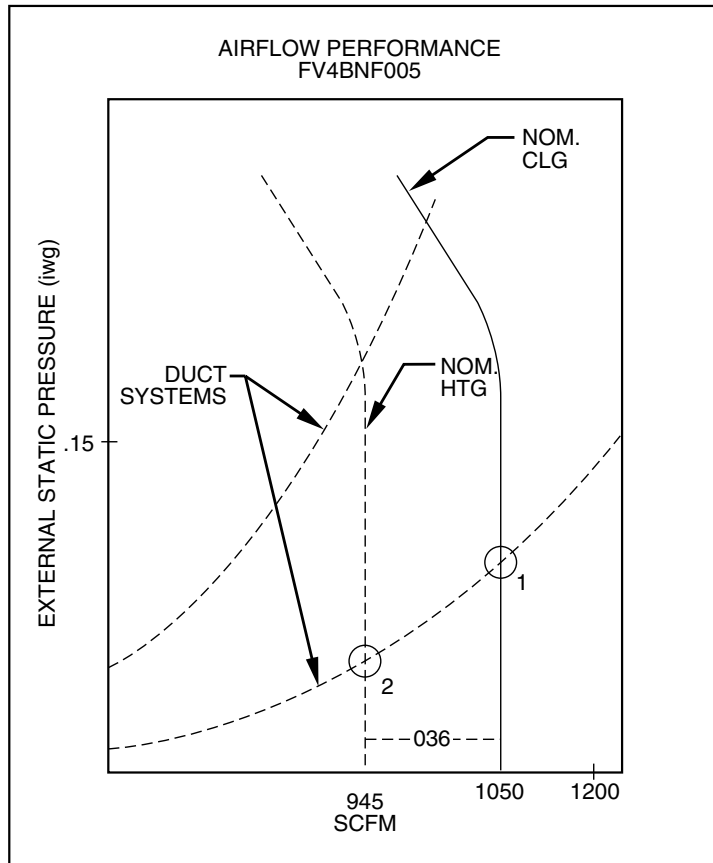
The dotted curved lines are static

pressure drop characteristics for several fixed-duct systems. These lines can be used to predict the system static pressure drop at any airflow given the actual drop at 1 known point.

For example, a duct system is designed for 0.15 in. water gage (iwg) drop at 1200 CFM. The FV4BNF005 operating at nominal cooling airflow would deliver 945 CFM with a duct system drop of 0.09 iw g. (See point 2.)

On the same duct system, the FV4BNF005 operating at nominal heating airflow would deliver 945 CFM with a duct system drop of 0.09 iw g. (See point 2.)

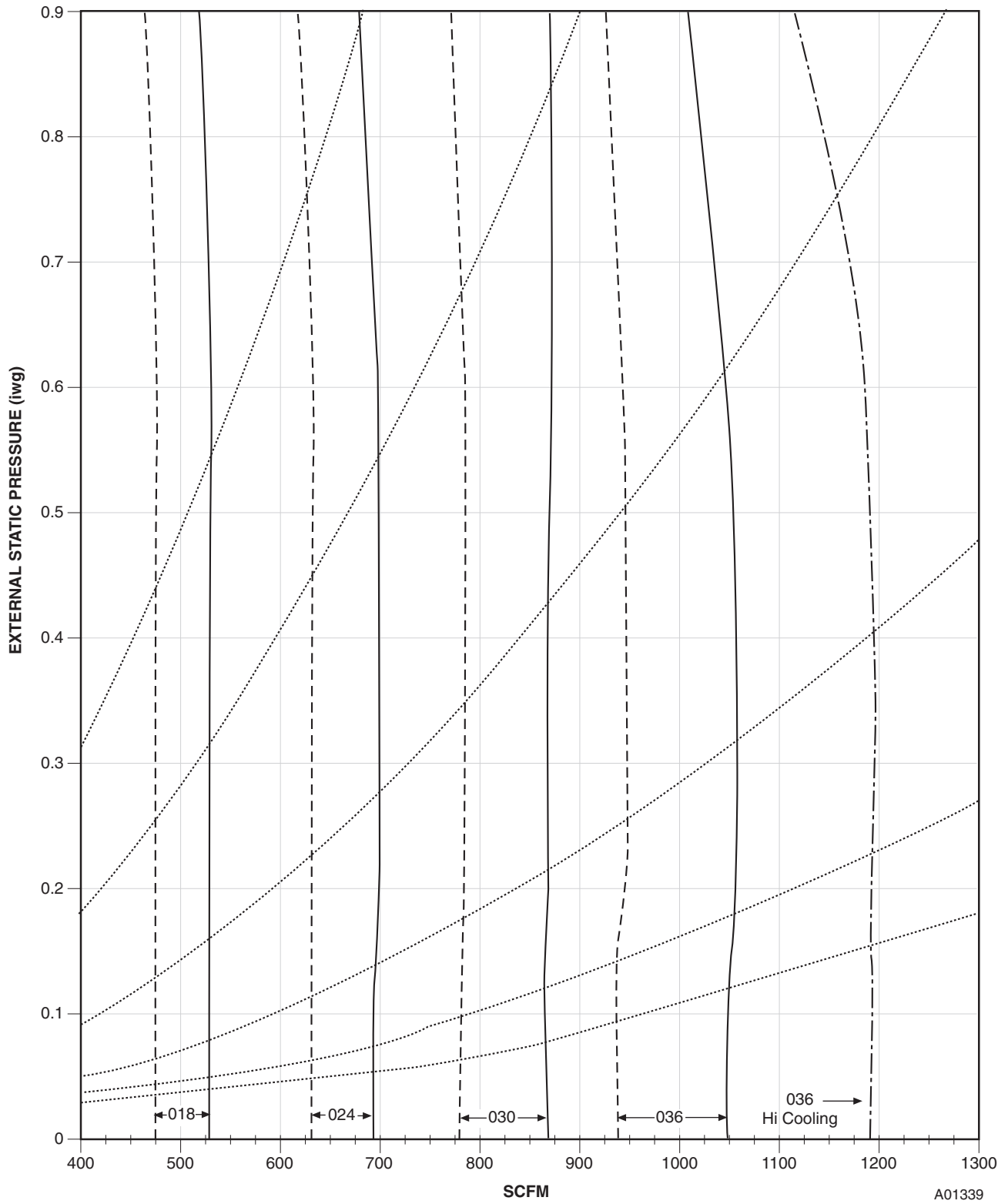
This example is but one of many possible duct system designs. The FV4BNF005 will deliver the above airflows against much higher static pressures.



A02296



# AIRFLOW PERFORMANCE

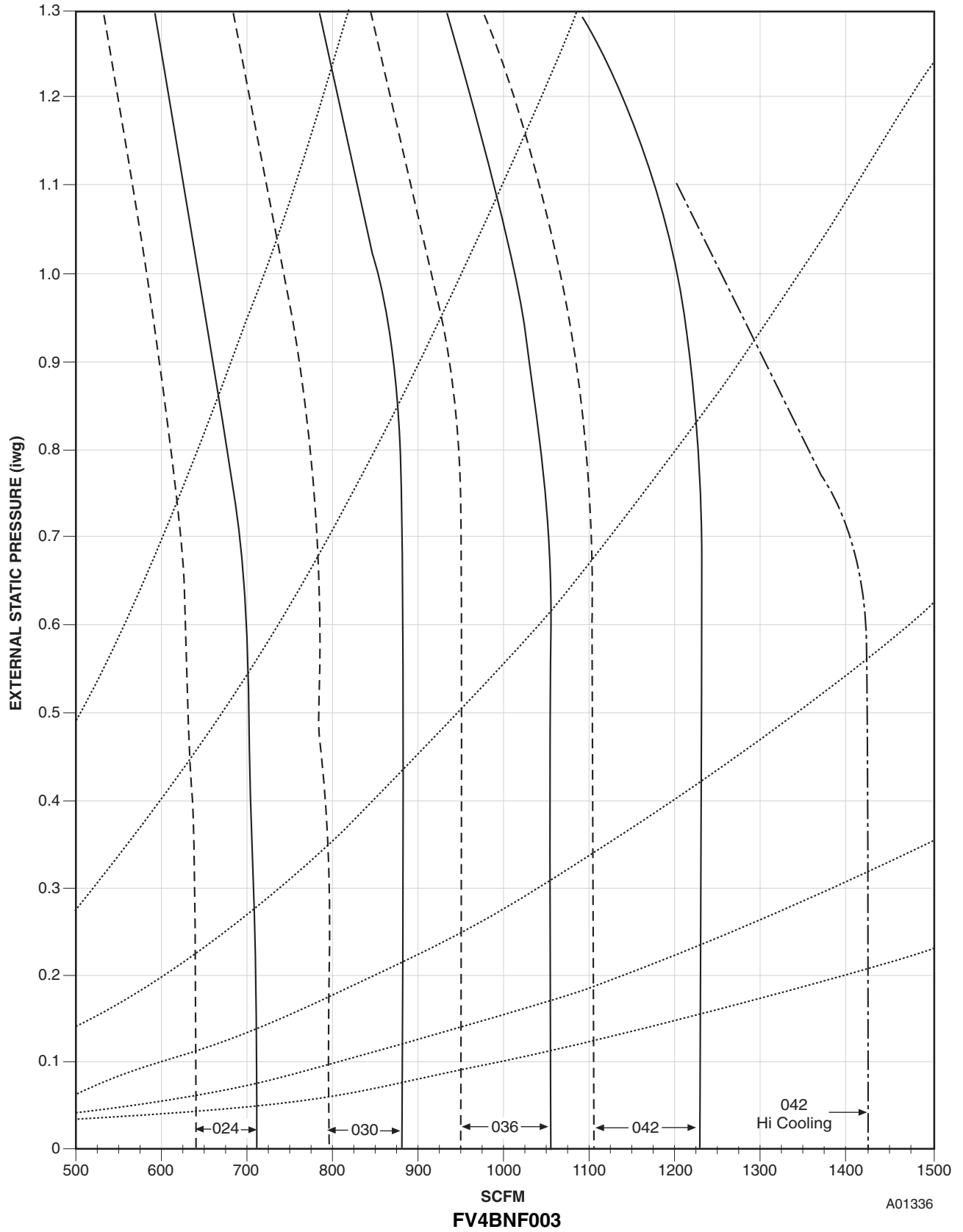


**FV4BNF002**

A01339

- Nominal Cooling and Heat Pump Efficiency airflow for each size selection. Airflow can be adjusted +15% to -10%
- - - Nominal Heat Pump Comfort airflow for each size selection. Airflow can be adjusted +15% to -10%
- · - · Maximum cooling airflow for largest size selection. Adjusted +15% from nominal.
- · · · Fixed Duct Systems (See description on page 8.)

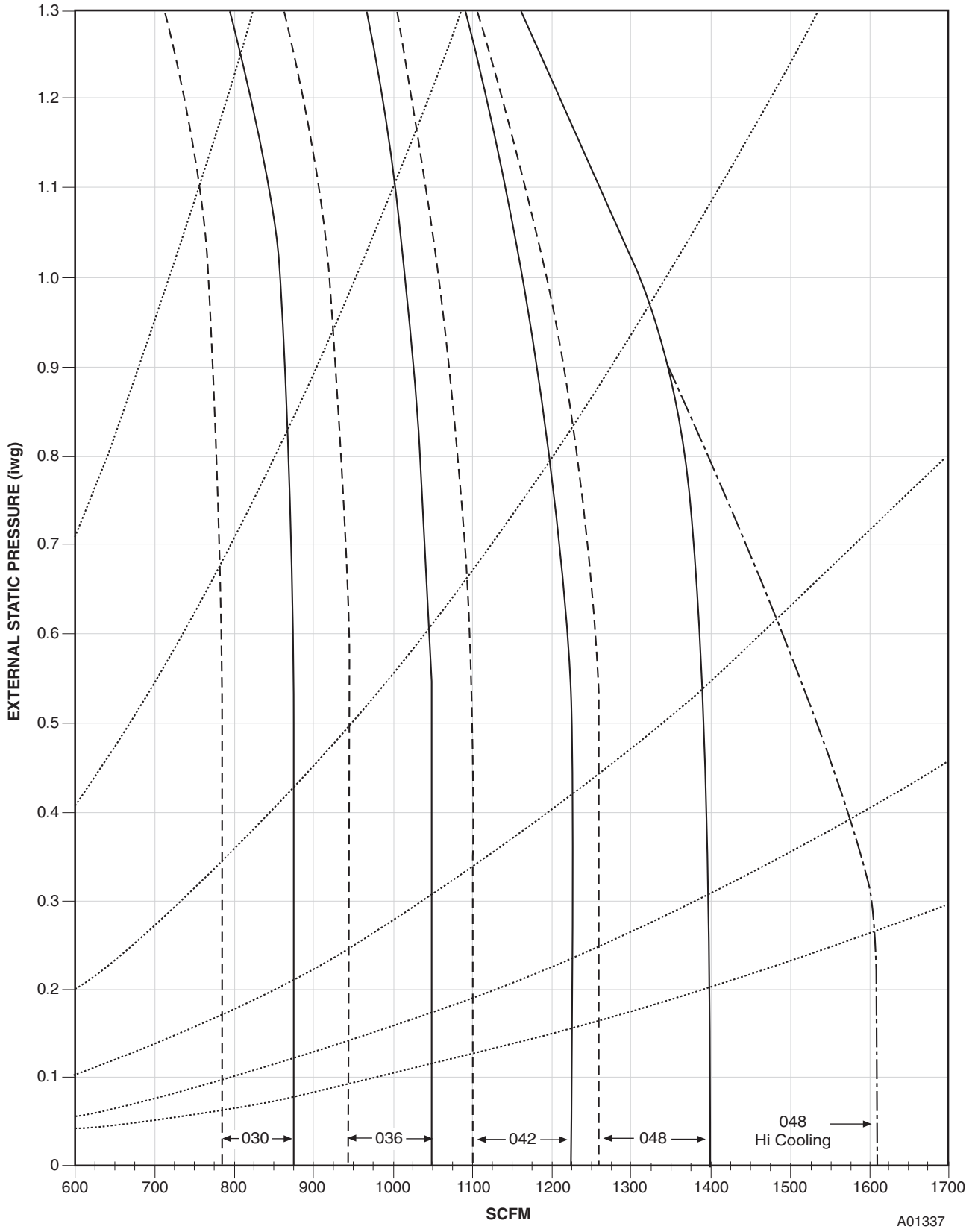
# AIRFLOW PERFORMANCE



A01336

- Nominal Cooling and Heat Pump Efficiency airflow for each size selection. Airflow can be adjusted +15% to -10%
- - - Nominal Heat Pump Comfort airflow for each size selection. Airflow can be adjusted +15% to -10%
- · · · Maximum cooling airflow for largest size selection. Adjusted +15% from nominal.
- · · · Fixed Duct Systems (See description on page 8.)

# AIRFLOW PERFORMANCE

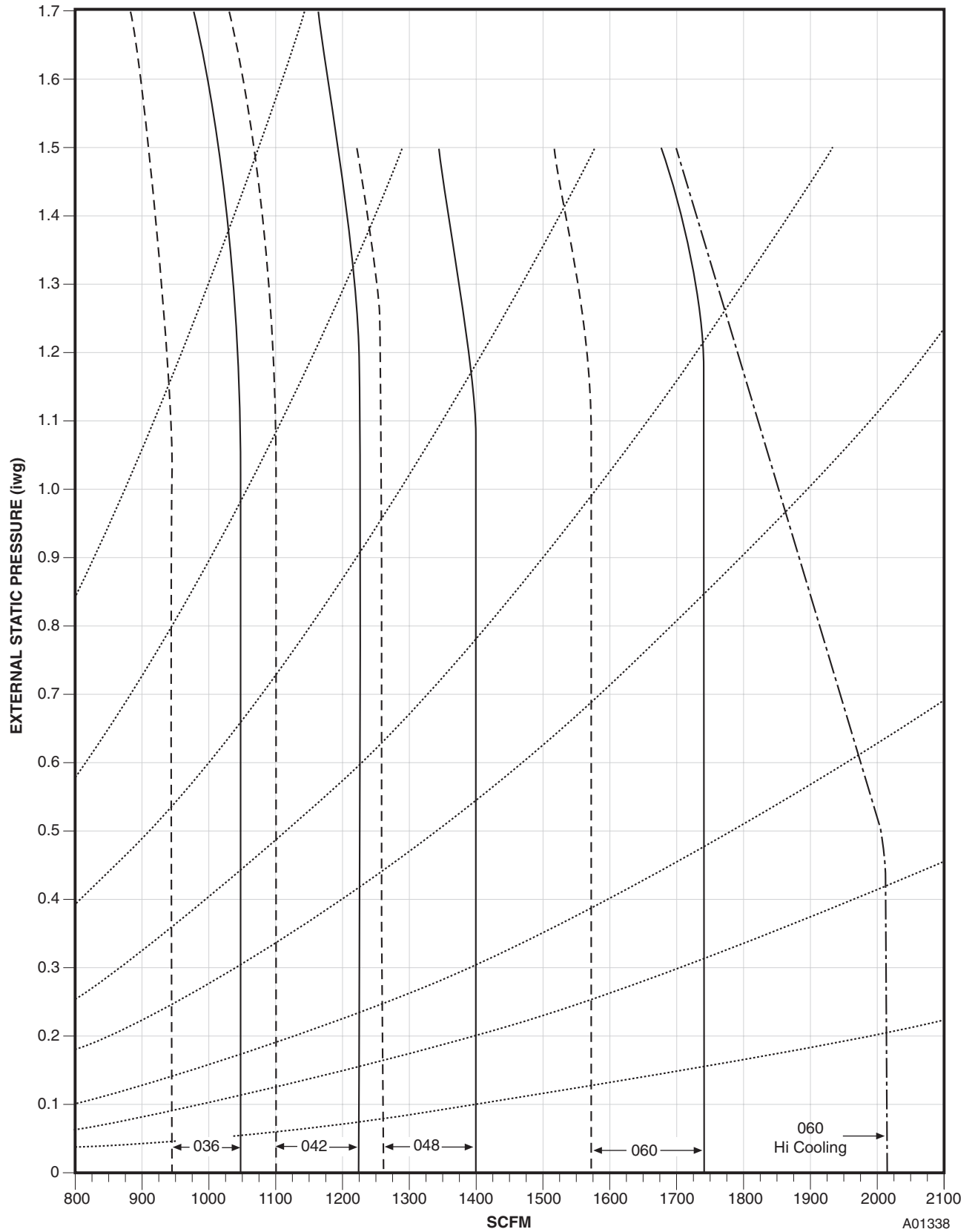


A01337

## FV4BNF005

- Nominal Cooling and Heat Pump Efficiency airflow for each size selection. Airflow can be adjusted +15% to -10%
- - - Nominal Heat Pump Comfort airflow for each size selection. Airflow can be adjusted +15% to -10%
- · - · - Maximum cooling airflow for largest size selection. Adjusted +15% from nominal.
- · · · · Fixed Duct Systems (See description on page 8.)

# AIRFLOW PERFORMANCE



**FV4BNB006**

A01338

- Nominal Cooling and Heat Pump Efficiency airflow for each size selection. Airflow can be adjusted +15% to -10%
- - - Nominal Heat Pump Comfort airflow for each size selection. Airflow can be adjusted +15% to -10%
- · - · - Maximum cooling airflow for largest size selection. Adjusted +15% from nominal.
- · · · · Fixed Duct Systems (See description on page 8.)

# Performance data continued

## COOLING CAPACITIES (MBtuh)

UNIT SIZE	EVAPORATOR AIR Cfm BF	COIL REFRIGERANT TEMPERATURE (°F)*														
		35			40			45			50			55		
		Evaporator Air — Entering Wet-Bulb Temperature (°F)														
		72	67	62	72	67	62	72	67	62	72	67	62	72	67	62
002	500	40	32	26	36	28	22	32	24	18	27	19	14	21	13	11
	0.04	18	18	19	16	16	17	14	14	15	12	12	13	10	10	11
	650	50	40	32	45	36	27	39	30	22	33	24	18	26	17	14
	0.07	21	22	23	19	20	21	16	17	18	14	15	16	12	13	14
	875	58	49	38	53	42	32	46	35	27	39	28	22	31	20	18
	0.10	24	26	28	22	24	25	19	21	22	17	19	19	15	16	18
003	1000	62	51	41	56	45	35	50	38	29	42	30	24	33	22	20
	0.11	26	28	31	23	26	28	21	23	25	18	20	21	16	18	20
	1250	67	55	45	61	49	39	54	42	33	46	34	28	37	25	24
	0.13	29	33	36	27	30	33	24	27	30	22	24	26	19	21	24
	800	59	48	38	53	42	32	46	35	24	39	27	20	30	18	16
	0.20	28	29	31	25	27	28	22	23	24	19	20	20	16	16	16
005	1000	68	56	45	61	49	37	54	41	29	45	32	25	35	22	20
	0.22	32	34	37	29	31	33	26	28	28	23	24	25	19	20	20
	1200	75	62	49	68	54	42	60	45	34	50	36	29	40	25	23
	0.25	35	39	42	32	36	38	29	32	33	26	28	29	22	23	23
	1400	80	67	54	73	59	46	64	49	38	54	39	32	43	28	27
	0.27	38	43	47	35	39	43	32	36	37	28	32	32	24	26	27
006	750	61	49	39	55	43	33	48	37	27	41	29	20	33	21	17
	0.04	27	27	28	24	25	25	21	22	22	18	18	18	15	15	15
	950	74	60	48	67	53	40	59	45	33	50	35	25	39	24	21
	0.06	32	34	35	29	30	31	25	26	27	22	23	23	18	18	19
	1150	89	72	57	79	63	48	69	52	38	58	41	31	44	29	25
	0.07	37	39	41	33	35	36	29	31	32	25	26	27	20	22	22
006	1500	103	84	66	92	73	56	81	61	46	67	48	39	52	34	31
	0.10	43	46	49	38	41	44	34	37	39	29	32	33	25	27	27
	1700	110	89	71	99	78	60	86	65	49	72	51	42	56	37	35
	0.11	45	50	53	41	45	48	36	39	42	31	34	36	27	29	30
	1050	77	62	50	69	55	43	61	47	35	52	38	27	41	27	22
	0.01	34	36	37	31	32	33	27	28	29	23	25	24	20	20	20
006	1300	100	82	65	90	71	55	79	60	45	66	47	37	49	32	27
	0.02	42	45	47	37	40	42	33	35	37	29	31	32	23	25	24
	1750	117	96	77	106	84	65	93	71	53	78	56	46	60	40	34
	0.04	48	53	57	44	48	52	39	43	46	34	38	39	29	31	31
	2050	126	103	83	114	91	71	99	76	59	84	60	50	65	44	39
	0.05	52	58	63	48	53	57	43	47	51	37	42	43	33	35	35
006	2300	132	108	87	119	95	75	105	80	63	88	63	54	70	47	42
	0.06	55	62	68	50	57	61	45	51	54	40	45	46	35	39	38

See notes on pg. 14.

\* Saturated suction leaving evaporator coil.

Sensible Heat Capacity (1000 Btuh)

Gross Cooling Capacity (1000 Btuh)

BF — Bypass Factor

**NOTES:**

1. Net capacities shown include a deduction for evaporator fan motor heat.
2. Contact manufacturer for cooling capacities at conditions other than shown in table.
3. Formulas:

$$\text{Leaving db} = \text{entering db} - \frac{\text{sensible heat cap.}}{1.09 \times \text{CFM}}$$

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.

4. Direct interpolation is permissible. Do not extrapolate.
5. SHC is based on 80°F db temperature of air entering coil. Below 80°F subtract (corr factor X CFM) from SHC. Above 80°F db, add (corr factor X CFM) to SHC.

**SHC Correction Factor**

BYPASS FACTOR	ENTERING AIR DRY-BULB TEMPERATURE (°F)					
	79	78	77	76	75	Under 75
	81	82	83	84	85	Over 85
	Correction Factor					
0.10	0.98	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.

$$\text{Correction Factor} = 1.09 \times (1 - \text{BF}) \times (\text{db} - 80)$$

# Performance data continued

## ESTIMATED SOUND POWER LEVEL (dBA)\*

UNIT SIZE	CONDITIONS		OCTAVE BAND CENTER FREQUENCY						
	CFM	ESP	63	125	250	500	1000	2000	4000
FV-002	400	0.25	63.0	59.0	55.0	52.0	50.0	48.0	44.0
	600	0.25	64.7	60.7	56.7	53.7	51.7	49.7	45.7
	800	0.25	66.0	62.0	58.0	55.0	53.0	51.0	47.0
	1000	0.25	67.0	63.0	59.0	56.0	54.0	52.0	48.0
	1200	0.25	67.8	63.8	59.8	56.8	54.8	52.8	48.8
	1400	0.25	68.4	64.4	60.4	57.4	55.4	53.4	49.4
FV-003	400	0.25	63.0	59.0	55.0	52.0	50.0	48.0	44.0
	600	0.25	64.7	60.7	56.7	53.7	51.7	49.7	45.7
	800	0.25	66.0	62.0	58.0	55.0	53.0	51.0	47.0
	1000	0.25	67.0	63.0	59.0	56.0	54.0	52.0	48.0
	1200	0.25	67.8	63.8	59.8	56.8	54.8	52.8	48.8
	1400	0.25	68.4	64.4	60.4	57.4	55.4	53.4	49.4
FV-005	400	0.25	63.0	59.0	55.0	52.0	50.0	48.0	44.0
	600	0.25	64.7	60.7	56.7	53.7	51.7	49.7	45.7
	800	0.25	66.0	62.0	58.0	55.0	53.0	51.0	47.0
	1000	0.25	67.0	63.0	59.0	56.0	54.0	52.0	48.0
	1200	0.25	67.8	63.8	59.8	56.8	54.8	52.8	48.8
	1400	0.25	68.4	64.4	60.4	57.4	55.4	53.4	49.4
FV-006	600	0.25	64.7	60.7	56.7	53.7	51.7	49.7	45.7
	800	0.25	66.0	62.0	58.0	55.0	53.0	51.0	47.0
	1000	0.25	67.0	63.0	59.0	56.0	54.0	52.0	48.0
	1200	0.25	67.8	63.8	59.8	56.8	54.8	52.8	48.8
	1400	0.25	68.4	64.4	60.4	57.4	55.4	53.4	49.4
	1600	0.25	69.0	65.0	61.0	58.0	56.0	54.0	50.0
FV-006	1800	0.25	69.5	65.5	61.5	58.5	56.5	54.5	50.5
	2000	0.25	70.0	66.0	62.0	59.0	57.0	55.0	51.0
	2150	0.25	70.3	66.3	62.3	59.3	57.3	55.3	51.3

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

CFM — Cubic Feet Per Minute  
 ESP — External Static Pressure  
 RPM — Revolutions Per Minute

# Performance data continued

## AIRFLOW PERFORMANCE CORRECTION FACTORS

The FV4B airflow performance table was developed using fan coils with 10-kw electric heaters (2 elements) in the units. For fan coils with heaters made up of a different number of elements, the external available static at a given CFM from the table may be corrected by adding or subtracting pressure. Use table for this correction.

HEATER KW	ELEMENTS	STATIC PRESSURE CORRECTION (In. wc)	
		Sizes 002–005	Size 006
0	0	+02	+03
5	1	+01	+02
8, 10	2	0	0
9, 15	3	–02	–03
20	4	–04	–06
18, 24, 30	6	–06	–10

## FACTORY-INSTALLED FILTER STATIC PRESSURE DROP (In. wc)

UNIT SIZE	CFM								
	400	600	800	1000	1200	1400	1600	1800	2000
002	0.020	0.044	0.048	0.072	0.100	—	—	—	—
003	—	0.020	0.035	0.051	0.070	0.092	—	—	—
005	—	—	0.035	0.051	0.070	0.092	0.120	—	—
006	—	—	—	—	0.070	0.092	0.120	0.152	0.187

## AIR DELIVERY PERFORMANCE CORRECTION COMPONENT PRESSURE DROP (IN. WC) AT INDICATED AIRFLOW (DRY TO WET COIL)

UNIT SIZE	CFM										
	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
002	0.012	0.016	0.022	0.028	0.034	0.040	0.049	—	—	—	—
003	—	0.026	0.034	0.042	0.052	0.063	0.075	0.083	0.091	0.098	0.110
005	—	0.006	0.008	0.010	0.012	0.015	0.017	0.020	0.023	0.027	0.030
	CFM										
	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100
006	0.013	0.016	0.018	0.020	0.023	0.027	0.030	0.034	0.039	0.044	0.048

**NOTE:** Subtract the above pressure drop corrections from unit airflow data when that component or condition is used. The remaining external static pressure will be available for the duct system.

# Accessories

ITEM	ACCESSORY PART NO.	FAN COIL SIZE USED WITH FV4B
<b>Disconnect Kit</b>	KFADK0101DSC	Cooling controls and heaters through 10-kw
<b>Downflow Conversion Kit (Slope)</b>	KFADC0201SLP	003
<b>Downflow Conversion Kit (A-coil)</b>	KFADC0401ACL	002, 005, 006
<b>Downflow Base Kit</b>	KFACB0201CFB	002
	KFACB0301CFB	003, 005
	KFACB0401CFB	006
<b>Filter Kit (12 Pack)</b>	KFAFK0212MED	002
	KFAFK0312LRG	003, 005
	KFAFK0412XXL	006
<b>Single-Point Wiring Kit</b>	KFASP0101SPK	Only with 15- and 20-kw fused heaters
<b>Airflow Sensor Kit (Air Cleaner)</b>	KEAAC0101AAA	All
<b>Air Cleaner 240-Volt Conversion Kit</b>	KEAV0201240	All
<b>PVC Condensate Drain Trap Kit (50 Pack)</b>	KFAET0150ETK	All
<b>ECM Motor Tester</b>	KFASD0301VSP	All
<b>Downflow/Horizontal Conversion Gasket Kit</b>	KFAHD0101SLP	All

## Accessory Description and Usage

### 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:** FV4 units with 3- through 10-kw electric resistance heaters and cooling controls.

### 2. 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 FV4 fan coils are used in downflow applications.

### 3. 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 FV4 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 L2 and L4 lugs. This allows the installer to run 2 heavy-gage, high-voltage wires into the fan coil rather than 4 light-gage, high-voltage wires.

**SUGGESTED USE:** FV4 fan coils only with 15- and 20-kw fused heaters.

### 5. 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.

### 6. Airflow Sensor Kit (Air Cleaner)

The airflow sensor kit ensures the FV4 fan coil and electronic air cleaner work as a system.

**REQUIRED USE:** This kit is required whenever an electronic air cleaner is used with an FV4 fan coil.

### 7. Fan Coil Filter

Kit shipped from factory with 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 factory-supplied filters (same filter).

### 8. 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:** FV4 Fan coils.

### 9. ECM Motor Tester

Operates variable speed blower at several speeds independent of circuit board and wiring harness.

**SUGGESTED USE:** FV4 Fan coils.

### 10. Downflow/Horizontal Conversion Gasket Kit

This kit provides the proper gasketing of units when applied in either a Downflow or Horizontal application.

**REQUIRED USE:** FV4B Fan coils.



# Electrical data

## UNITS WITHOUT ELECTRICAL HEAT

UNIT SIZE	VOLTS-PHASE	FLA	MIN CKT AMPS	BRANCH CIRCUIT	
				Min Wire Size Awg*	Fuse/Ckt Bkr Amps
002	208/230-1	4.3	5.4	14	15
003	208/230-1	4.3	5.4	14	15
005	208/230-1	4.3	5.4	14	15
006	208/230-1	6.8	8.5	14	15

\* Use copper wire only to connect unit. If other than uncoated (nonplated) 75°F 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).

NOTE: If branch circuit wire length exceeds 100 ft, consult NEC 210-19a to determine maximum wire length. Use 2% voltage drop.  
FLA — Full Load Amps

# Accessory electric heaters

## ELECTRIC HEATERS

HEATER PART NO.	KW @ 240V	VOLTS/PHASE	STAGES (KW OPERATING)	INTERNAL CIRCUIT PROTECTION	FAN COIL SIZE USED WITH	HEATING CAP. @ 230V‡	INTELLIGENT HEAT CAPABLE†† (KW OPERATING)
KFCEH0501N05	5	230/1	5	None	All	15,700	—
KFCEH0801N08	8	230/1	8	None	All	25,100	—
KFCEH0901N10	10	230/1	10	None	All	31,400	—
KFCEH3001F15	15	230/1	5, 15	Fuses**	All	47,100	5, 10, 15
KFCEH3201F20	20	230/1	5, 20	Fuses**	All	62,800	5, 10, 15, 20
KFCEH2901N09	9	230/1*	3, 9	None	All	28,300	3, 6, 9
KFCEH1601315	15	230/3	5, 15	None	All	47,100	—
KFCEH2001318	18	230/3	6, 12, 18	None	003, 005, 006	56,500	—
KFCEH3401F24	24	230/3†	8, 16, 24	Fuses	005, 006	78,500	8, 16, 24
KFCEH3501F30	30	230/3†	10, 20, 30	Fuses	005, 006	94,200	10, 20, 30
KFCEH2401C05	5	230/1	5	Ckt Bkr	All	15,700	—
KFCEH2501C08	8	230/1	8	Ckt Bkr	All	25,100	—
KFCEH2601C10	10	230/1	10	Ckt Bkr	All	31,400	—
KFCEH3101C15	15	230/1	5, 15	Ckt Bkr	All	47,100	5, 10, 15
KFCEH3301C20	20	230/1	5, 20	Ckt Bkr	All	62,800	5, 10, 15, 20

\* Field convertible to 3 phase.

† These heaters field convertible to single phase.

‡ Blower motor heat not included.

\*\* Single point wiring kit required for these heaters in Canada.

†† Heaters designated with KW Operating Values are Intelligent Heat capable when used with corporate 2-speed programmable thermostat (TSTATCCP2S01-B), Thermidistat™ Control (TSTATCCPRH01-B), or Comfort Zone II.

## ELECTRIC HEATER INTERNAL PROTECTION

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

\* All circuit breakers are 2 pole.

# Electric heater electrical data

HEATER PART NO.	KW		PHASE	INTERNAL CIRCUIT PROTECTION	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	L1,L2	L3,L4	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	Single Circuit	Dual Circuit
KFCEH0401N03	3	2.3	1	None	10.9/12.0	—	—	—	15.9/17.3	—	—	—	12/12	—	—	—	20/20	—	—	—	—	67/68	—	—	—	—		
KFCEH0501N05 <sup>†</sup>	5	3.8	1	None	18.1/20.0	—	—	—	26.0/28.4	—	—	—	10/10	—	—	—	30/30	—	—	—	—	66/66	—	—	—	—		
KFCEH0501N05 <sup>‡</sup>	5	3.8	1	None	18.1/20.0	—	—	—	31.2/33.5	—	—	—	10/10	—	—	—	35/35	—	—	—	—	85/88	—	—	—	—		
KFCEH2401C05 <sup>†</sup>	5	3.8	1	Ckt Bkr	18.1/20.0	—	—	—	26.0/28.4	—	—	—	10/10	—	—	—	30/30	—	—	—	—	66/66	—	—	—	—		
KFCEH2401C05 <sup>‡</sup>	5	3.8	1	Ckt Bkr	18.1/20.0	—	—	—	31.2/33.5	—	—	—	10/10	—	—	—	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	—	—	—	—		
KFCEH2501C08 <sup>†</sup>	9	6.8	1	None	32.8/36.0	—	—	—	49.5/53.5	—	—	—	8/8	—	—	—	50/60	—	—	—	—	54/67	—	—	—	—		
KFCEH2501C08 <sup>‡</sup>	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	—	—	—	—		
KFCEH2601C10	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	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	80/90	60/60	25/25	88/89	78/80	75/76	—	—	—	—		
KFCEH3101F15***	15	11.3	1	Ckt Bkr	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
KFCEH1601315	15	11.3	3	None	31.3/34.6	—	—	—	47.7/51.8	—	—	—	8/6	—	—	—	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	36.2/40.0	98.9/108.4	53.8/58.5	45.3/50.0	3/2	6/6	8/8	10/10	10/10	100/110	60/60	50/50	85/109	78/80	59/59	—	—	—	—		
KFCEH3301C20***	20	15.0	1	Ckt Bkr	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
KFCEH3401F24***	24	18.0	3	Fuse	50.1/55.4	—	—	—	71.2/77.8	—	—	—	4/4	—	—	—	80/80	—	—	—	—	94/95	—	—	—	—		
KFCEH3401F24***	24	18.0	1	Fuse	86.7/95.5	—	—	—	116.9/127.9	—	—	—	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	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	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	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	—	—	—	—	—	

- † 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 FK, FV fan coils and corporate 2-speed programmable thermostat (TSTATCCP2S01-B), Thermidstat™ Control (TSTATCCPRH01-B), or Comfort Zone II.
- NOTES: 1. For fan coil sizes 018-036.  
 2. For fan coil sizes 042-060 and all FK4D, FV4B sizes.  
 3. Single circuit application of F15 and F20 heaters requires single-point wiring kit accessory



# Matched system

