

Electric Furnace KF/KFS Series



Model Code:

KFS	20	20	1
A	B	C	D

A: Series
 B: 20 - 208V 24 - 240V
 48 - 480V
 C: Kilowatts
 D: 1 or 3-phase

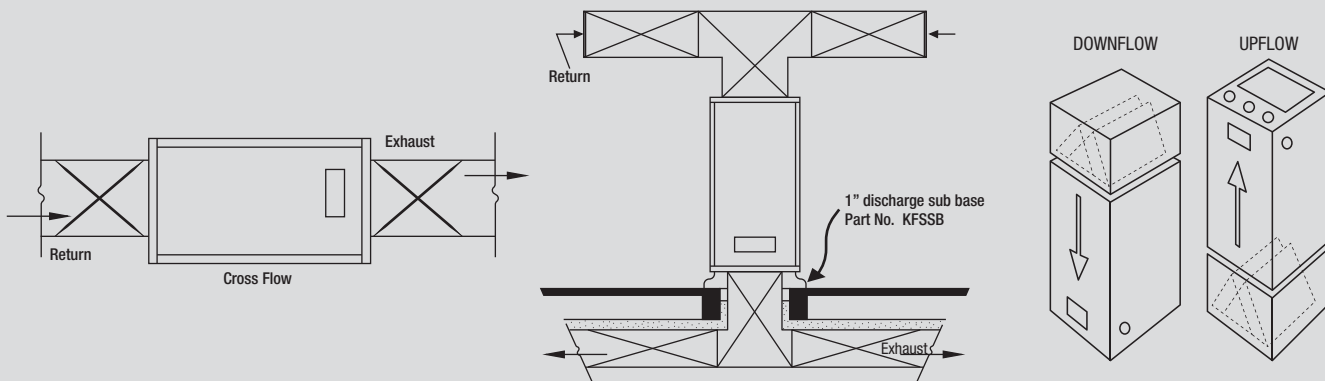


- Heavy duty open-coil element
- Direct drive motor
- Up to 3-speed motor
- Standard 24 Volt control
- Horizontal or vertical mount
- Insulated discharge cabinet
- Baked enamel finish
- Fan relay
- Silent contactors
- Sequenced elements
- Dual inlet blower
- 60 Amp disconnect protection (KFS)
- Manual reset limit on 20 kW and larger
- Welded galvanized steel construction
- Thermally protected motor
- Replaceable filter
- Mobile home approved



The KFS Series Electric Furnace

The KFS Series furnace is the quietest and most compact unit available in its class. Ideal for residential applications, and yet powerful enough for commercial and process heating applications as well. It's the perfect choice for both new and replacement installations. The compact design allows it to be installed in either upflow, downflow or horizontal applications. Featuring a maintenance free blower, an insulated cabinet for quiet operation, and heavy gauge coiled nickel-chromium wire heating elements, the KFS furnace will provide years of trouble-free operation.



Engineering Specifications

Contractor shall supply and install KFS Series electric furnaces manufactured by King Electrical Mfg. Company. Furnaces shall be of the wattage and voltage as indicated on the plans.

Transformer: Each furnace is equipped with a heavy-duty low voltage (24 Volt) transformer for the thermostat control circuit.

Contact or Time Delay Sequencer: Actuates heating element banks at random intervals to minimize electrical surges in compliance with E.E.I. and N.E.M.A. standards.

Heating Elements: Quick heating, long life Ni-Chrome elements are sized to provide proper watt density for maximum heat dissipation by fan-forced air convection currents.

Terminal Block: For field wiring (optional special order) KFSTB

Air Filter: Convenient access for replacement of standard 16" x 20" x 1" filter.

Overcurrent Protection: 208 and 240 volt KFS models have 60 amp circuit breakers. 480, 208 and 240 volt KF models have terminal blocks. Internal 60 amp fusing is provided for KF models over 48 amps.

Limit Control: Integral automatic high temperature limit control in each heating element bank prevents the delivery of air at unsafe temperatures. 20-35 kW use a manual reset limit control to completely shut the furnace off should an over temperature occur.

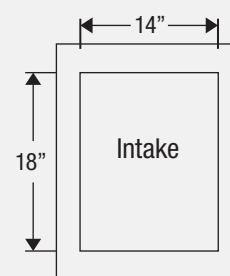
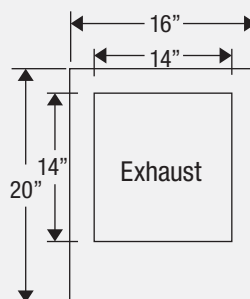
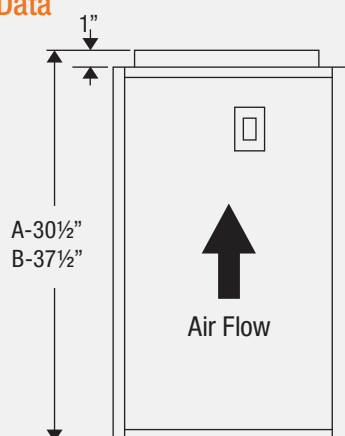
Fan Relay: Heavy-duty dual speed fan relay is standard with furnaces for air conditioning or summer fan operation.

Low Voltage Terminal Block: 24 Volt control screw terminals

Approvals: UL (E48864)

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Dimensional Data



The height of the KFS furnace is the only dimension that changes. Please refer to selection chart to determine the size of the unit.

Accessories

MODEL	UPC	DESCRIPTION	WEIGHT(lbs.)
KFS-4PJB	20185	* 4-Pole Jumper Bar - 15kW to 20kW	.05
KFS-6PJB	20184	* 6-Pole Jumper Bar - 25kW to 30kW	.05
KFSSB	20182	1" discharge sub base	5
KFS-Q02C	20181	Small Cooling Cabinet 16" L x 22" W x 19 1/2" H - 13 lbs.	25
KFS-Q03C	20180	Large Cooling Cabinet 18" L x 22" W x 19 1/2" H - 15 lbs.	25
KFS-DT	20186	Transition from 14" x 14" Outlet to 12" round	25

* For single strike connection

DIMENSIONAL CLEARANCE

Cabinet Sides	1 in.
Cabinet Front	0 in.
Exhaust duct within 3 feet of furnace	1 in.
Return Air Plenum	0 in.

Options

ADD SUFFIX:	DESCRIPTION
-JB	15 kW to 30 kW, 1-Phase
-1/3HP	1/3 HP Motor & Blower - 3 kW to 18 kW
-1/2HP	1/2 HP Motor & Blower - 3 kW to 35 kW
-2S1	Two Stage Control, 1-Phase Models (see quick selection guide)
-2S3	Two Stage Control, 3-Phase Models (5 kW increments only)
*-3S1	Three Stage Control, 1-Phase Models
-1/5 ECM	1/5 hp Electronically Controlled Motor
-1/3 ECM	1/3 hp Electronically Controlled Motor

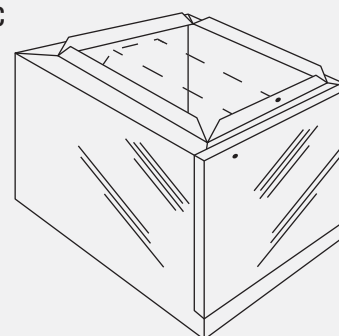
Factory Installed Options

ADD SUFFIX:	DESCRIPTION
-DS40	40 Amp, 3-Pole Disconnect Switch w/ Padlock Provision
-DS60	60 Amp, 3-Pole Disconnect Switch w/ Padlock Provision
-DS80	80 Amp, 3-Pole Disconnect Switch w/ Padlock Provision

Air Flow Chart

MOTOR HP (rpm)	MOTOR SPEED								
	MOTOR LOAD		LOW		MED		HIGH		
	VOLTAGE	AMPS	CFM	FPM	CFM	FPM	CFM	FPM	
1/5 (1075 rpm)	230	3.4	775	570	860	630	1000 ¹	735	
	380 / 460 ¹	1.7							
1/3 (1075 rpm)	230	3.2	1100 ²	810	1250	920	1540 ²	1130	
	380 / 460 ²	1.7							
1/2 (1075 rpm)	230	3.8	1250	920	1540	1130	1750 ³	1285	
	380 / 460 ²	1.9							
MOTOR WIRE COLOR			RED	BLUE	BLACK				
*Air Volume = Cubic Feet Per Minute (CFM)				*Air Velocity = Feet Per Minute (FPM)					
¹ Single speed only			² Low & High speed only		³ High speed only				

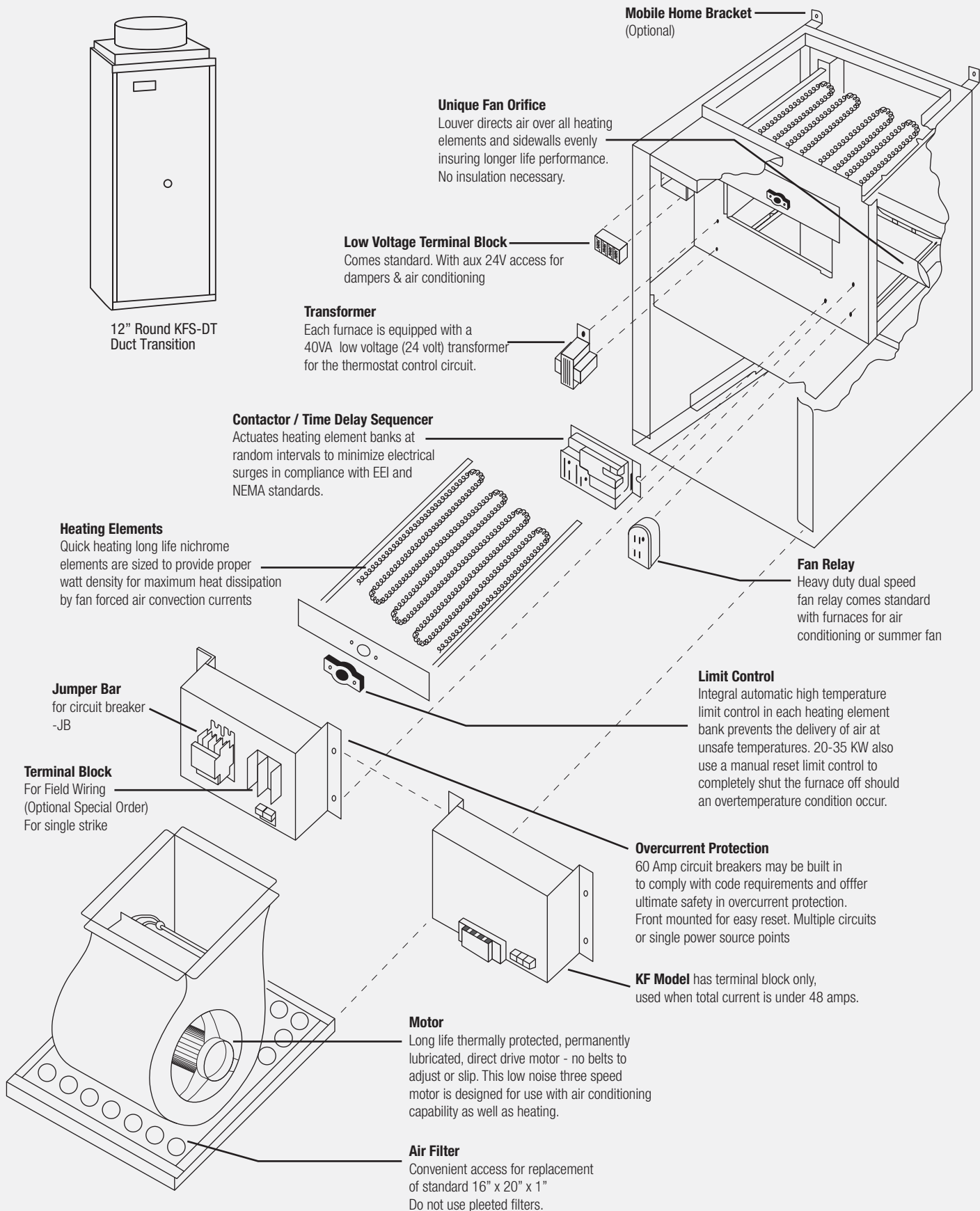
Q02C



	LENGTH	WIDTH	HEIGHT	WEIGHT
Q02C	16	22	19.5	13
Q03C	18	22	19.5	15

Electric Furnace KF/KFS Series

Internal Diagram - *exploded view*



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Ordering Information

MODEL	PHASE	KILO WATTS	BTU (000)	VOLTS	*AMPS	CIRCUIT PROTECTION				75°C WIRE SIZING				# OF ELEMENTS	MOTOR		TEMPERATURE RISE			HEIGHT	WT. (lbs)
						L1 L2	L3 L4	L5 L6	L7 L8	L1 L2	L3 L4	L5 L6	L7 L8		VOLTS	HP	LOW	MED.	HIGH		
KFS2003-1	1	3	10.2	208	17.8	20				#10				1	208	1/5	12°	11°	9°	30½"	57
KFS2404-1	1	4	13.6	240	20	20				#10				1	240	1/5	16°	15°	13°	30½"	57
KFS2005-1	1	5	17.1	208	27.2	40				#8				1	208	1/5	20°	18°	16°	30½"	57
KFS2405-1	1	5	17.1	240	24.2	30				#10				1	240	1/5	20°	18°	16°	30½"	57
KF4805-1	1	5	17.1	480	12.1	15				#14				1	480	1/5	20°	18°	16°	30½"	57
KFS2006-1	1	6	20.5	208	32.2	40				#8				2	208	1/5	24°	22°	19°	30½"	57
KFS2408-1	1	8	27.3	240	37	50				#6				2	240	1/5	32°	30°	25°	30½"	65
KFS2010-1	1	10	34.1	208	51.4	60				#6				2	208	1/5	41°	37°	32°	30½"	65
KFS2410-1	1	10	34.1	240	45	60				#6				2	240	1/5	41°	37°	32°	30½"	65
KF4810-1	1	10	34.1	480	22.5	30				#10				2	480	1/5	41°	37°	32°	30½"	65
KFS2412-1	1	11.5	39.2	240	51.3	40	30			#8	#10			2	240	1/5	47°	42°	36°	30½"	65
KF4812-1	1	11.5	39.2	480	25.7	40				#8				2	480	1/5	47°	42°	36°	30½"	65
KFS2015-1	1	15	51.2	208	75.5	40	60			#8	#6			3	208	1/5	61°	55°	47°	30½"	74
KFS2415-1	1	15	51.2	240	65.9	30	60			#10	#6			3	240	1/5	61°	55°	47°	30½"	74
KF4815-1	1	15	51.2	480	32.9	50				#6				3	480	1/5	61°	55°	47°	30½"	74
KFS2418-1	1	17.25	58.8	240	75.2	40	60			#8	#6			3	240	1/5	70°	63°	55°	30½"	74
KF4818-1	1	17.25	58.8	480	37.6	50				#6				3	480	1/5	70°	63°	55°	30½"	74
KFS2020A-1	1	20	68.3	208	99.5	60	60			#6	#6			4	208	1/5	81°	73°	63°	37½"	76
KFS2420A-1	1	20	68.3	240	86.7	60	60			#6	#6			4	240	1/5	81°	73°	63°	37½"	76
KF4820A-1	1	20	68.3	480	43.4	60				#6				4	480	1/5	81°	73°	63°	37½"	76
KFS2020-1	1	20	68.3	208	99.4	60	60			#6	#6			4	208	1/3	57°	51°	41°	37½"	76
KFS2420-1	1	20	68.3	240	86.5	60	60			#6	#6			4	240	1/3	57°	51°	41°	37½"	76
KF4820-1	1	20	68.3	480	43.4	60				#6				4	480	1/3	57°	51°	41°	37½"	76
KFS2422-1	1	22.5	76.8	240	96.9	60	60			#6	#6			4	240	1/3	57°	51°	41°	37½"	76
KF4822-1	1	22.5	76.8	480	48.6	60				#6				4	480	1/3	57°	51°	41°	37½"	76
KFS2025-1	1	25	85.3	208	123.4	30	60	60		#10	#6	#6		5	208	1/3	72°	63°	51°	37½"	81
KFS2425-1	1	25	85.3	240	107.4	30	60	60		#10	#6	#6		5	240	1/3	72°	63°	51°	37½"	81
KF4825-1	1	25	85.3	480	53.8	20	60			#12	#6			5	480	1/3	72°	63°	51°	37½"	81
KFS2030-1	1	30	102.4	208	147.4	60	60	60		#6	#6	#6		6	208	1/3	86°	76°	62°	37½"	85
KFS2430-1	1	30	102.4	240	128.2	60	60	60		#6	#6	#6		6	240	1/3	86°	76°	62°	37½"	85
KF4830-1	1	30	102.4	480	65.7	30	60			#10	#6			6	480	1/3	86°	76°	62°	37½"	85
KFS2435-1	1	34.5	117.7	240	146.9	15	60	60	60	#14	#6	#6	#6	6	240	1/3	99°	87°	71°	37½"	85
KF4835-1	1	34.5	117.7	480	73.6	40	60			#8	#6			6	480	1/3	99°	87°	71°	37½"	85

MODEL	PHASE	KILO WATTS	BTU (000)	VOLTS	*AMPS	CIRCUIT PROTECTION			75°C WIRE SIZING			# OF ELEMENTS	MOTOR		TEMPERATURE RISE			HEIGHT	WT. (lbs)	
						L1 / L2 / L3	L1 / L2 / L3	L1 / L2 / L3	L1 / L2 / L3	L1 / L2 / L3	VOLTS		HP	LOW	MED.	HIGH				
KFS2405-3	3	5	17.1	240	15.4	20				#12			1	240	1/5	20°	18°	16°	30½"	57
KF4805-3	3	5	17.1	480	7.7	10				#14			1	480	1/5	20°	18°	16°	30½"	57
KFS2009-3	3	9	30.7	208	28.3	40				#8			3	208	1/5	37°	33°	28°	30½"	74
KFS2410-3	3	10	34.1	240	27.4	40				#8			2	240	1/5	41°	37°	32°	30½"	74
KF4810-3	3	10	34.1	480	13.7	20				#12			2	480	1/5	41°	37°	32°	30½"	74
KFS2012-3	3	11.25	38.4	208	34.6	40				#8			3	208	1/5	46°	41°	35°	30½"	74
KFS2412-3	3	12	40.9	240	32.3	40				#8			3	240	1/5	47°	42°	36°	30½"	74
KF4812-3	3	12	40.9	480	16.1	20				#12			3	480	1/5	47°	42°	36°	30½"	74
KFS2015-3	3	15	51.2	208	43.5	60				#6			3	208	1/5	61°	55°	47°	30½"	74
KFS2415-3	3	15	51.2	240	45	50				#6			3	240	1/5	61°	55°	47°	30½"	74
KF4815-3	3	15	51.2	480	21.4	30				#10			3	480	1/5	61°	55°	47°	30½"	74
KFS2418-3	3	17.25	58.8	240	44.8	60				#6			3	240	1/5	70°	63°	55°	30½"	74
KF4818-3	3	17.25	58.8	480	22.4	40				#8			3	480	1/5	70°	63°	55°	30½"	74
KFS2420-3	3	20	68.3	240	51.3	70				#6			4	240	1/3	57°	51°	41°	37½"	76
KF4820-3	3	20	68.3	480	25.7	30				#12			4	480	1/3	57°	51°	41°	37½"	76
KFS2022-3	3	22.5	76.8	208	65.5	100				#3			6	208	1/3	64°	56°	46°	37½"	85
KFS2424-3	3	24	81.6	240	60.9	75				#4			6	240	1/3	69°	61°	49°	37½"	85
KF4824-3	3	24	81.6	480	30.5	50				#6			6	480	1/3	69°	61°	49°	37½"	85
KF2425-3	3	25	85.3	240	63	75				#4			5	240	1/3	72°	63°	51°	37½"	85
KF4825-3	3	25	85.3	480	32	50				#6			5	480	1/3	72°	63°	51°	37½"	85
KFS2030-3	3	30	102.4	208	86.5	110				#2			6	208	1/3	86°	76°	62°	37½"	85
KFS2430-3	3	30	102.4	240	75.3	100				#3			6	240	1/3	86°	76°	62°	37½"	85
KF4830-3	3	30	102.4	480	37.3	50				#6			6	480	1/3	86°	76°	62°	37½"	85
KFS2435-3	3	34.5	117.7	240	86.2	110				#2			6	240	1/3	99°	87°	71°	37½"	85
KF4835-3	3	34.5	117.7	480	43	60				#6			6	480	1/3	99°	87°	71°	37½"	85