



Stars Management DMCC

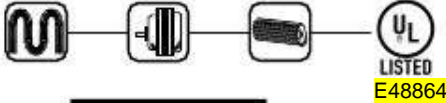
SUBMITTAL

**MAKE UP
AIR HEATER
(KFS Series)**

ELECTRIC FURNACE

KFS
SERIES

3000 - 34,000 WATTS • SMALLEST FURNACE ON THE MARKET



FEATURES:

- Open-Coil Element
- Efficiency Motor
- Dual Inlet Squirrel Cage Blower
- 3-speed blower motor
- 24 Volt control
- Horizontal or vertical mount
- Nickel-Chromium elements
- Fan relay
- Silent contactors
- Sequenced elements
- 60 Amp disconnect protection (KFS)

- Manual reset limit on 20 kW and larger
- Insulated outlet
- 16" x 20" x 1" inlet filter
- Thermally protected motor
- Welded galvanized Steel construction
- Baked enamel finish

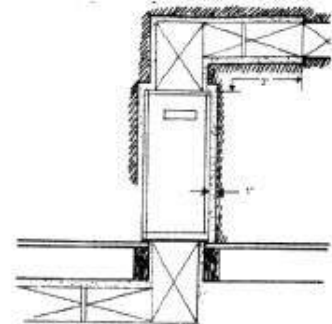
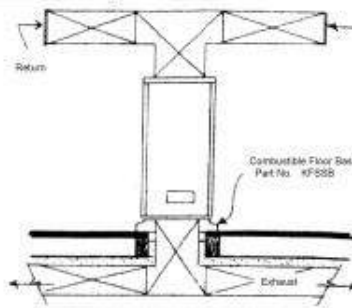
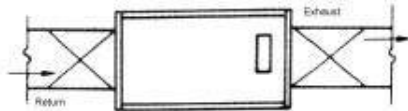
The KFS Series furnace is the most compact residential unit in its class. Quiet operation makes it a great companion. Multi-position mounting allows you to put it almost anywhere it will fit.

If it is commercial, residential or process heating, this air furnace will do the job and give years of excellent maintenance-free service.



OPTIONS

- Control options
- ECM motor (contact factory)



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 heavyduty 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.

Motor: Long life, thermally protected, permanently lubricated, direct drive motor – no belts to adjust or slip. This low noise, three speed motor is designed for use with air conditioning capability as well as heating.

Overcurrent Protection: 60 Amp circuit breakers may be built in To comply with code requirements and offer ultimate safety in overcurrent protection. Front mounted for easy reset. Multiple circuits or single power source options.

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: Heavyduty dual speed fan relay is standard with furnaces for air conditioning or summer fan operation.

Mobile home bracket: (Optional)

Unique Fan Orifice: Louver directs air over all heating elements and side walls evenly ensuring longer life performance. No insulation necessary.

Low Voltage Terminal block: 24 Volt control screw terminals

Approvals: UL (E48864)

MODEL CODE:

KFS2020A-1

KFS Series
 208 Volts
 20 Kilowatts
 A 1/5 HP Motor
 1 1 or 3 Phase
 KF - No Circuit Breaker(s)

QUICK SELECTION CHART:

KILO WATTS	2-STAGE OPTIONS		PHASE	208V		240V		480V		WT. (lbs.)
	1st	2nd		MODEL	UPC #093319 PART #	MODEL	UPC #093319 PART #	MODEL	UPC #093319 PART #	
3			1	KFS2003-1	18000					57
4			1			KFS2404-1	18003			57
5			1	KFS2005-1	18006	KFS2405-1	18009	KF4805-1	18012	57
			3			KFS2405-3	18070	KF4805-3	18072	
6			1	KFS2006-1	18015	KFS2406-1	18010	KF4806-1	18013	57
8	4	4	1			KFS2408-1	18090			65
9			3	KFS2009-3	18114					74
10	5	5	1	KFS2010-1	18027	KFS2410-1	18030	KF4810-1	18033	65
			3			KFS2410-3	18074	KF4810-3	18076	
*12			1			KFS2412-1	18036	KF4812-1	18039	65
			3	KFS2012-3	18035	KFS2412-3	18117	KF4812-3	18040	
*15	5	10	1	KFS2015-1	18042	KFS2415-1	18045	KF4815-1	18048	74
			3	KFS2015-3	18120	KFS2415-3	18123	KF4815-3	18127	
18	5.75	11.5	1			KFS2418-1	18051	KF4818-1	18054	74
			3			KFS2418-3	18130	KF4818-3	18133	
20	10	10	1	KFS2020A-1	18057	KFS2420A-1	18060	KF4820A-1	18062	76
				KFS2020-1	18066	KFS2420-1	18069	KF4820-1	18055	
22			3			KFS2420-3	18078	KF4820-3	18080	76
			1			KFS2422-1	18071			
24	12	12	3			KFS2424-3	18139	KF4824-3	18082	85
			1	KFS2022-3	18058					
*25	12	13	1	KFS2025-1	18084	KFS2425-1	18087	KF4825-1	18063	81
			3			KFS2425-3	18086	KF4825-3	18088	
*30	15	15	1	KFS2030-1	18093	KFS2430-1	18096	KF4830-1	18099	85
			3	KFS2030-3	18142	KFS2430-3	18145	KF4830-3	18148	
34.5	17.25	17.25	1			KFS2435-1	18108	KF4835-1	18111	85
			3			KFS2435-3	18102	KF4835-3	18105	

DIMENSIONS:

Dimensional Data

A - 30 1/2"
 B - 37 1/2"

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

OPTIONS	
ADD SUFFIX:	DESCRIPTION
-JB	15 kW to 30 kW, 1-Phase
-1/3HP	1/3 HP Motor and Blower - 3 kW to 18 kW
-1/2HP	1/2 HP Motor and 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
-1/4 ECM	1/4 hp Electronically Controlled Motor
-1/3 ECM	1/3 hp Electronically Controlled Motor

ACCESSORIES:

MODEL	DESCRIPTION	UPC #093319 PART #	WT. (lbs.)
KFS-4PJB	* 4-Pole Jumper Bar - 15kW to 20kW	20185	.05
KFS-6PJB	* 6-Pole Jumper Bar - 25kW to 30kW	20184	.05
KFS-MB	Mobile Home Mounting Bracket	20183	1
KFSSB	Non-Combustible Floor Base	20182	5
KFS-Q02C	Small Cooling Cabinet 16" L x 22" W x 19 1/2" H - 13 lbs.	20181	25
KFS-Q03C	Large Cooling Cabinet 18" L x 22" W x 19 1/2" H - 15 lbs.	20180	25
KFS-DT	Transition from 14" x 14" Outlet to 12" round	20186	25

DIMENSIONAL CLEARANCE	
Cabinet Sides	1 inch
Cabinet Front	0 Inches
Exhaust Duct within 3 feet of furnace	1 inch
Return Air Plenum	0 inches

AIR DELIVERY CHART:

MOTOR HP (rpm)	MOTOR SPEED							
	MOTOR LOAD		LOW		MED		HIGH	
	VOLTAGE	AMPS	CFM	FPM	CFM	FPM	CFM	FPM
1/5 (1075 rpm)	2301 380 / 4601	3.4 1.7	775	570	860	630	1000 ¹	735
1/3 (1075 rpm)	2302 380 / 4602	3.2 1.7	1100 ²	810	1250	920	1540 ²	1130
1/2 (1075 rpm)	2303 380 / 4603	3.8 1.9	1250	920	1540	1130	1750 ³	1285
MOTOR WIRE COLOR			RED		BLUE		BLACK	
Air Volume = Cubic Feet Per Minute (CFM) Air Velocity = Feet Per Minute (FPM)								

* For single strike connection

¹Single speed only ²Low and High speed only ³High speed only



TECHNICAL DATA CHART:

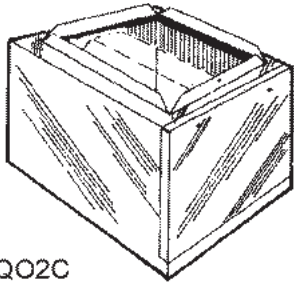
380V-3Ø Heaters are available in most kW ratings

CATALOG #	PHASE	KILO WATTS	BTU (000)	VOLTS	*AMPS	CIRCUIT PROTECTION				75°C WIRE SIZING				# OF ELE MENTS	MOTOR		TEMPERATURE RISE			CABINET SIZE 16" x 20" x 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				240	24.2	30		#10			480	15	#14								
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				240	45	30		#6			480	30	#10								
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				480	25.7	40		#8			480	40	#8								
KFS2015-1	1	15	51.2	208	75.5	40	60			#8	#6			3	208	1/5	61°	55°	47°	30½"	74
KFS2415-1				240	65.9	30	60	#10	#6		480	50	#6								
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				480	37.6	40	60	#6	#6		480	50	#6								
KFS2020A-1	1	20	68.3	208	99.5	60	60			#6	#6			4	208	1/5	81°	73°	63°	37½"	76
KFS2420A-1				240	86.7	60	60	#6	#6		480	60	#6								
KF4820A-1				480	43.4	60	60			#6	#6										
KFS2020-1	1	20	68.3	208	99.4	60	60			#6	#6			4	208	1/3	57°	51°	41°	37½"	76
KFS2420-1				240	86.5	60	60	#6	#6		480	60	#6								
KF4820-1				480	43.4	60	60			#6	#6										
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				480	48.6	60	60	#6	#6		480	60	#6								
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				240	107.4	30	60	#10	#6	#6	480	20	#12		#6						
KF4825-1				480	53.8	20	60			#6	#6	#6									
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				240	128.2	60	60	#6	#6	#6	480	60	#6		#6						
KF4830-1				480	65.7	30	60	60		#6	#6	#6									
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				480	73.6	40	60	#8	#6	#6	480	40	#6		#6						

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

* Includes motor load



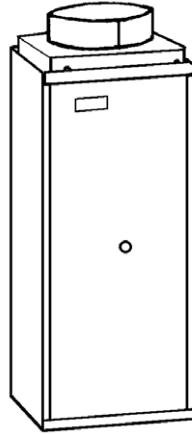
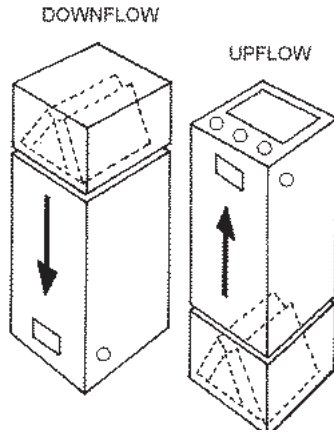


Q02C

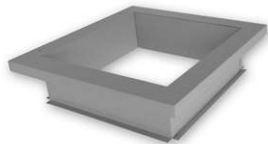
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Q02C	16	22	19.5	13
Q03C	18	22	19.5	15

FACTORY INSTALLED OPTIONS:

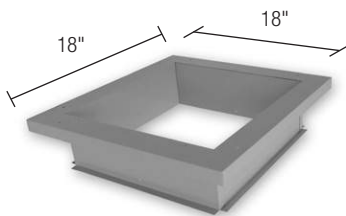
ADD SUFFIX:	DESCRIPTION
-DS30	30 Amp, 3-Pole Disconnect Switch w/ Door Interlock and Padlock Provision
-DS40	40 Amp, 3-Pole Disconnect Switch w/ Door Interlock and Padlock Provision
-DS60	60 Amp, 3-Pole Disconnect Switch w/ Door Interlock and Padlock Provision
-DS80	80 Amp, 3-Pole Disconnect Switch w/ Door Interlock and Padlock Provision



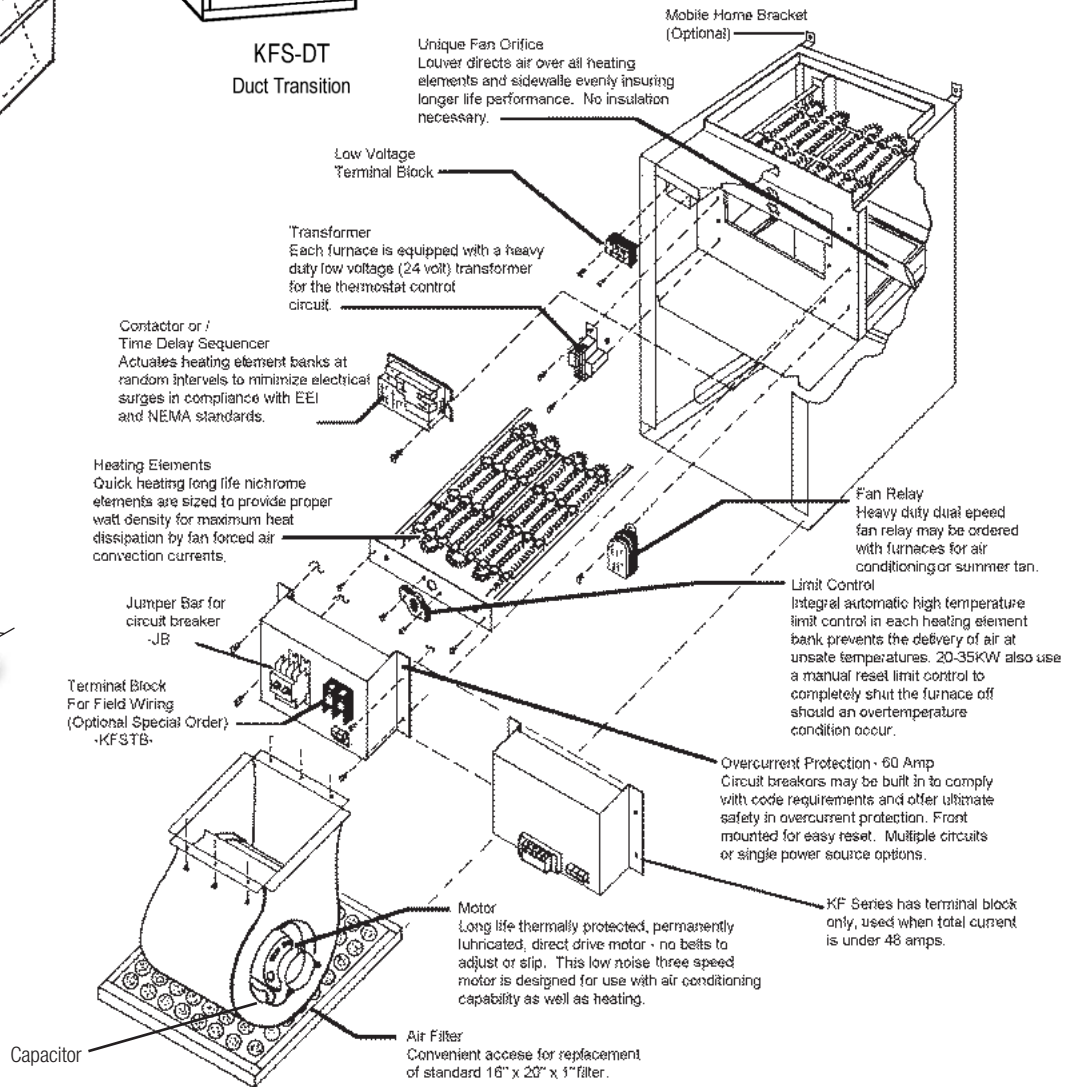
KFS-DT
Duct Transition



Downflow requires sub base KFSSB in combustible flooring installations like wood subfloor.



KFSSB - provides required 1" spacing



**LZFE.E48864****Heating and Cooling Equipment**[Page Bottom](#)**Heating and Cooling Equipment**[See General Information for Heating and Cooling Equipment](#)**KING ELECTRICAL MFG CO**9131 10TH AVE S
SEATTLE, WA 98108 USA

E48864

Electric central heating furnaces.

Electric central heating furnaces, Models+ KF2404, -05, -06, -08, -10, KFS2404, -05, -06, -08, -10, -12, -15, -17, -18, -20, -23, -29, -30, -34, -35, KFS2415-3, -18-3, -24-3, -30-3, -34-3.**Installation:**

Model	A	A _D	B	D	E _L	E _P	E _R	F
KF or KFS Upflow	1	1	C0	1	1	1	1	C
KF or KFS Downflow	1	1	C0	1	1	1	1	NC*

+-Model numbers may have prefix letter "T".

*-When mounted on combustible flooring in downflow position special sub-base KFSB must be used.

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