



# Electronic Furnace KF/KFS ECO2S Series



### Model Code:

KFS	24	20	1	2S1	ECM
A	B	C	D	E	F

- A: Series
- B: 24 - 240V 20 - 208V
- C: Kilowatts
- D: 1-phase 3-phase
- E: 2 Stage 2S1= 2 Stage 1-phase  
2S3= 2 Stage 3-phase
- F: ECM Motor



- Energy efficient ECM motor
- 2-Stage comfort heating 15% Savings
- Heavy duty open coil elements
- Sequenced heating elements
- Down flow or up flow
- 16" x 20" x 1" inlet filter
- Welded cabinet design
- Horizontal or vertical mount
- Mobile home approved
- Breaker disconnects
- Baked enamel finish
- Extended life
- Standard 24 volt control
- Fan only relay
- Quiet sound insulated cabinet
- 5 Year limited warranty



## The KFS ECO2S Electric Furnace

**ENERGY SAVINGS meets MAXIMUM COMFORT with the ECM Motor & 2 Stage Heating**

The ECO2S Series Model adds a state of the art electronically controlled motor and 2 heating stages for added comfort and Maximum Energy Savings. The KFS ECO2S 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.

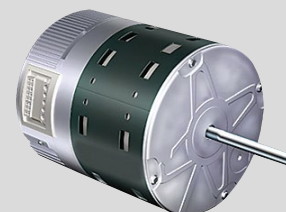
### Motor Features

- Energy Saver
- AFUE 100% (Energy Guide Rating) Most Efficient
- 3 speeds available
- Designed for extended life
- Efficiency up to 80%
- 60 second time delay

- Up to 33% greater efficiency with ECM motor
- Up to 200% greater efficiency with Endura Pro motor in constant fan mode

### Heating Features

- 2-Stage Elements & control
- Ni-Chrome Elements
- More even heating



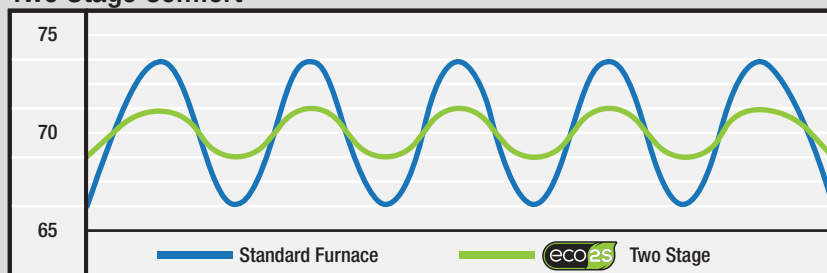
ECM Motor

## TWO STAGE COMFORT Why 2 Stage is Better

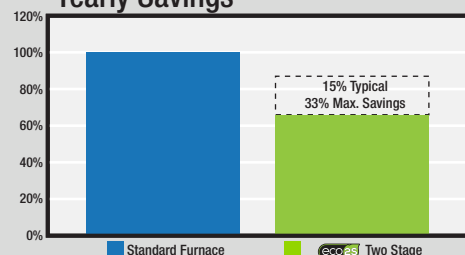
2 Stage controlled Furnaces allow you to use less energy during mild Spring and Fall temperatures. It's like having a smaller furnace installed just for spring and fall, then when winter hits you have the reserve power of the second heating stage to fight off the cold weather. It also has the benefit of creating more even comfort temperatures.

**Note:** The Furnace will run a percentage longer to reach the room temperature so the ECM motors efficiency is key to getting the most out of your Furnace.

### Two Stage Comfort

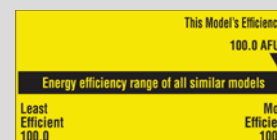


### Yearly Savings



The ECO2S Series is more efficient and will save you up to 33% more per year versus standard furnace motors

- Designed for extended life
- Energy efficient
- Improved reliability
- Cooler operating temperature
- 3 speeds
- 15% 2 Stage



# Electronic Furnace KF/KFS ECO2S Series

## Ordering Information- single phase

MODEL	BTUH	VOLTS	PHASE	KW	RESISTIVE AMPS	STAGE1	STAGE2	# OF ELEMENTS	INTERNAL CB	MOTOR	MOTOR FLA	SIZE	WT.(lbs)
KFS2004-1-ECM	12,799	208	1	3.8	18	4 kW	*N/A	1	NO	1/3HP	2.7	Fig. A	57.0
KFS2005-1-ECM	17,065	208	1	5.0	24	5 kW	*N/A	1	NO	1/3HP	2.7	Fig. A	57.0
KFS2008-1-2S1-ECM	27,304	208	1	8.0	38	4.25 kW	3.75 kW	2	NO	1/3HP	2.7	Fig. A	57.0
KFS2010-1-2S1-ECM	34,130	208	1	10.0	48	5 kW	5kW	2	60	1/3HP	2.7	Fig. A	65.0
KFS2012-1-2S1-ECM	40,956	208	1	12.0	58	12 kW	*N/A	3	60	1/3HP	2.7	Fig. A	74.0
KFS2015-1-2S1-ECM	51,195	208	1	15.0	72	10 kW	5 kW	3	60+60	1/3HP	2.7	Fig. A	74.0
KFS2018-1-2S1-ECM	58,874	208	1	17.3	83	8.6 kW	10kW	4	60+60	1/2HP	3.9	Fig. B	76.0
KFS2020-1-2S1-ECM	68,260	208	1	20.0	96	10 kW	10kW	4	60+60	1/2HP	3.9	Fig. B	76.0
KFS2025-1-2S1-ECM	85,325	208	1	25.0	120	15 kW	10 kW	5	60+60+60	3/4HP	6.0	Fig. B	81.0
KFS2030-1-2S1-ECM	102,390	208	1	30.0	144	20 kW	10 kW	6	60+60+60	3/4HP	6.0	Fig. B	85.0
KFS2404-1-ECM	13,652	240	1	4.0	17	4 kW	*N/A	1	60	1/3HP	2.9	Fig. A	57.0
KFS2405-1-ECM	17,065	240	1	5.0	21	5 kW	*N/A	1	60	1/3HP	2.9	Fig. A	57.0
KFS2408-1-2S1-ECM	27,304	240	1	8.0	33	4 kW	4 kW	2	60	1/3HP	2.9	Fig. A	57.0
KFS2410-1-2S1-ECM	34,130	240	1	10.0	42	5kW	5 kW	2	60	1/3HP	2.9	Fig. A	65.0
KFS2412-1-2S1-ECM	40,956	240	1	12.0	50	5.75 kW	5.75 kW	2	60	1/3HP	2.9	Fig. A	74.0
KFS2415-1-2S1-ECM	51,195	240	1	15.0	63	10 kw	5 kW	3	60+60	1/3HP	2.9	Fig. A	74.0
KFS2418-1-2S1-ECM	58,874	240	1	17.3	72	11.5 kw	5.75 kW	3	60+60	1/3HP	2.9	Fig. A	74.0
KFS2420-1-2S1-ECM	68,260	240	1	20.0	83	10kw	10 kW	4	60+60	1/2HP	4.2	Fig. B	76.0
KFS2425-1-2S1-ECM	85,325	240	1	25.0	104	15 kW	10 kW	5	60+60+60	1/2HP	4.2	Fig. B	81.0
KFS2430-1-2S1-ECM	102,390	240	1	30.0	125	20 kW	10 kW	6	60+60+60	3/4HP	6.2	Fig. B	85.0
KFS2435-1-2S1-ECM	117,749	240	1	34.5	144	23 kW	11.5 kW	6	60+60+60	3/4HP	6.2	Fig. B	85.0
KF4804-1-ECM	13,652	480	1	4.0	8	4 kW	*N/A	1	NO	1/3HP	0.8	Fig. A	57.0
KF4805-1-ECM	17,065	480	1	5.0	10	5 kW	*N/A	1	NO	1/3HP	0.8	Fig. A	57.0
KF4808-1-2S1-ECM	27,304	480	1	8.0	17	4 kW	4 kW	2	NO	1/3HP	0.8	Fig. A	57.0
KF4810-1-2S1-ECM	34,130	480	1	10.0	21	5 kW	5 kW	2	NO	1/3HP	0.8	Fig. A	65.0
KF4812-1-2S1-ECM	40,956	480	1	12.0	25	8 kW	4 kW	3	NO	1/3HP	0.8	Fig. A	74.0
KF4815-1-2S1-ECM	51,195	480	1	15.0	31	10 kW	5 kW	3	NO	1/3HP	0.8	Fig. A	74.0
KF4818-1-2S1-ECM	58,874	480	1	17.3	36	11.5 kW	5.75 kW	3	NO	1/3HP	0.8	Fig. A	74.0
KF4820-1-2S1-ECM	68,260	480	1	20.0	42	15 kW	5 kW	4	NO	1/2HP	1.2	Fig. B	76.0
KF4825-1-2S1-ECM	85,325	480	1	25.0	52	15 kW	10 kW	5	60	1/2HP	1.2	Fig. B	81.0
KF4830-1-2S1-ECM	102,390	480	1	30.0	63	20 kW	10 kW	6	60+60	3/4HP	1.7	Fig. B	85.0
KF4835-1-2S1-ECM	117,749	480	1	34.5	72	23 kW	11.5 kW	6	60+60	3/4HP	1.7	Fig. B	85.0

\*Not Available in 2-Stage.

## Ordering Information- three phase

MODEL	BTUH	VOLTS	PHASE	KW	RESISTIVE AMPS	STAGE1	STAGE2	# OF ELEMENTS	INTERNAL CB	MOTOR	MOTOR FLA	SIZE	WT.(lbs)
KFS2005-3-ECM	17,065	208	3	5.0	14	5 kW	*N/A	1	NO	1/3HP	2.7	Fig. A	57.0
KFS2007-3-2S3-ECM	25,598	208	3	7.5	21	3.8 kW	3.8 kW	2	NO	1/3HP	2.7	Fig. A	57.0
KFS2010-3-2S3-ECM	34,130	208	3	10.0	28	5 kW	5 kW	2	NO	1/3HP	2.7	Fig. A	65.0
KFS2012-3-2S3-ECM	42,662	208	3	12.5	34	7.5 kW	5 kW	3	NO	1/3HP	2.7	Fig. A	74.0
KFS2015-3-2S3-ECM	51,195	208	3	15.0	42	10 kW	5 kW	3	NO	1/3HP	2.7	Fig. A	74.0
KFS2020-3-2S3-ECM	68,260	208	3	20.0	56	15 kW	5 kW	4	60	1/2 HP	3.9	Fig. B	76.0
KFS2025-3-2S3-ECM	85,325	208	3	25.0	69	15 kW	10 kW	5	60+60	3/4 HP	6.0	Fig. B	81.0
KFS2030-3-2S3-ECM	102,390	208	3	30.0	83	20 kW	10 kW	6	60+60	3/4 HP	6.0	Fig. B	85.0
KFS2405-3-ECM	17,065	240	3	5.0	12	5 kW	*N/A	1	NO	1/3HP	2.9	Fig. A	57.0
KFS2410-3-2S3-ECM	34,130	240	3	10.0	24	5 kW	5 kW	2	NO	1/3HP	2.9	Fig. A	65.0
KFS2412-3-ECM	40,956	240	3	12.0	29	12 kW	*N/A	3	NO	1/3HP	2.9	Fig. A	74.0
KFS2415-3-2S3-ECM	51,195	240	3	15.0	36	10 kW	5 kW	3	NO	1/3HP	2.9	Fig. A	74.0
KFS2418-3-ECM	58,874	240	3	17.3	42	17.25 kW	*N/A	3	NO	1/3HP	2.9	Fig. A	74.0
KFS2420-3-2S3-ECM	68,260	240	3	20.0	48	10 kW	10 kW	4	60	1/2 HP	4.2	Fig. B	76.0
KFS2425-3-2S3-ECM	85,325	240	3	25.0	60	15 kW	10 kW	5	60	1/2 HP	4.2	Fig. B	81.0
KFS2430-3-2S3-ECM	102,390	240	3	30.0	72	20 kW	10kW	6	60+60	3/4 HP	6.2	Fig. B	85.0
KFS2435-3-ECM	117,749	240	3	34.5	83	35 kW	N/A	6	60+60	3/4 HP	6.2	Fig. B	85.0
KF4805-3-ECM	17,065	480	3	5.0	6	5 kW	*N/A	1	NO	1/3HP	0.8	Fig. A	57.0
KF4810-3-2S3-ECM	34,130	480	3	10.0	12	5 kW	5 kW	2	NO	1/3HP	0.8	Fig. A	65.0
KF4812-3-ECM	40,956	480	3	12.0	14	12 kW	*N/A	3	NO	1/3HP	0.8	Fig. A	74.0
KF4815-3-2S3-ECM	51,195	480	3	15.0	18	10 kW	5 kW	3	NO	1/3HP	0.8	Fig. A	74.0
KF4818-3-ECM	58,874	480	3	17.3	21	17.3 kW	*N/A	3	NO	1/3HP	0.8	Fig. A	74.0
KF4820-3-2S3-ECM	68,260	480	3	20.0	24	10 kW	10 kW	4	NO	1/2HP	1.2	Fig. B	76.0
KF4825-3-2S3-ECM	85,325	480	3	25.0	30	15 kW	10 kW	5	NO	1/2HP	1.2	Fig. B	81.0
KF4830-3-2S3-ECM	102,390	480	3	30.0	36	20 kW	10 kW	6	NO	3/4HP	1.7	Fig. B	85.0
KF4835-3-ECM	117,749	480	3	34.5	42	34.5 kW	*N/A	6	NO	3/4HP	1.7	Fig. B	85.0

\*Not Available in 2-Stage.

# Electronic Furnace KF/KFS ECO2S Series

## Accessories

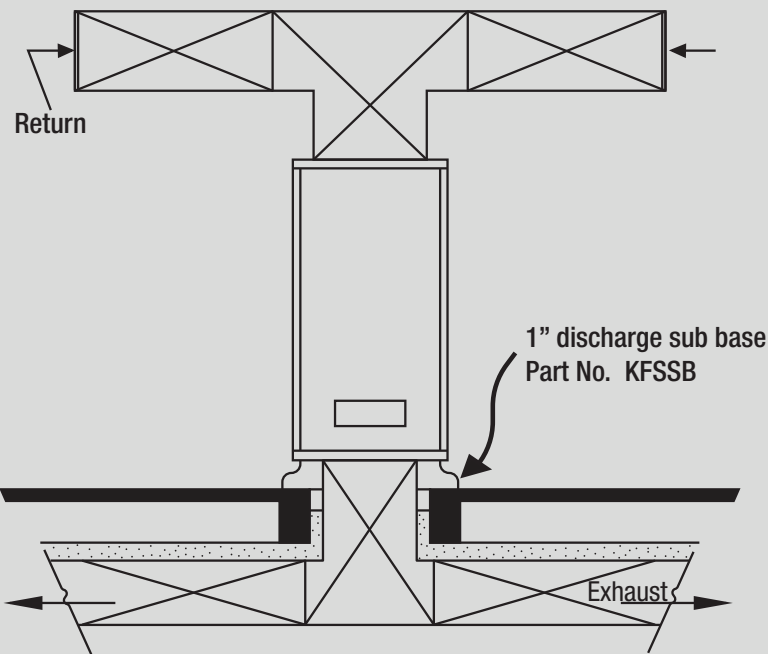
MODEL	UPC	DESCRIPTION	WEIGHT(lbs.)
KFS-4PJB	20185	* 4-Pole Jumper Bar - 15kW to 20kW	.05
KFS-6PJB	20184	* 6-Pole Jumper Bar - 25kW to 30kW	.05
KFSSB	20182	1" discharge sub base	5
KFS-Q02C	20181	Small Cooling Cabinet 16" L x 22" W x 19½" H - 13 lbs.	25
KFS-Q03C	20180	Large Cooling Cabinet 18" L x 22" W x 19½" 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.

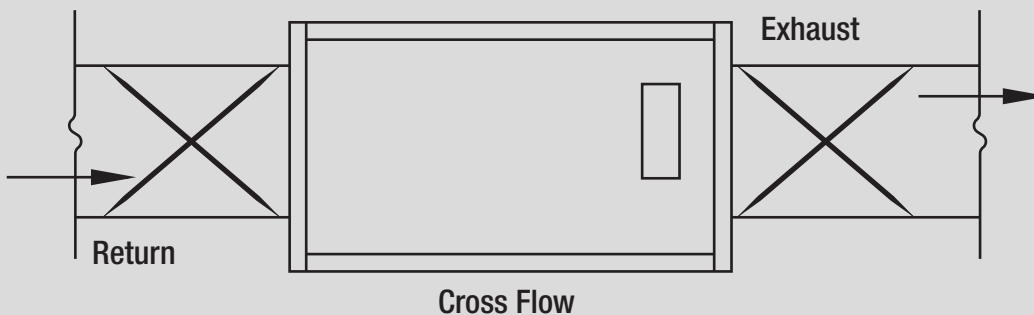
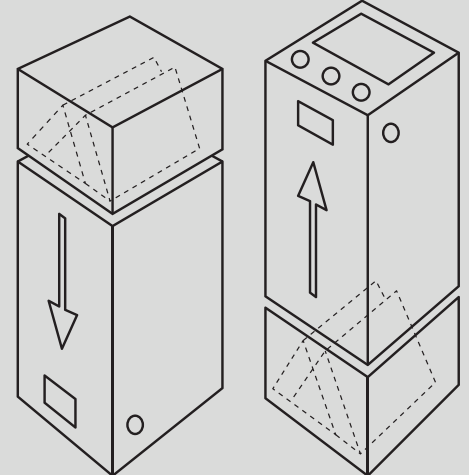
## Factory Installed Options

ADD SUFFIX:	DESCRIPTION
-DS32	32 Amp, 3-Pole Disconnect Switch w/ Padlock Provision
-DS63	63 Amp, 3-Pole Disconnect Switch w/ Padlock Provision
-DS80	80 Amp, 3-Pole Disconnect Switch w/ Padlock Provision
-DS100	100 Amp, 3-Pole Disconnect Switch w/ Padlock Provision



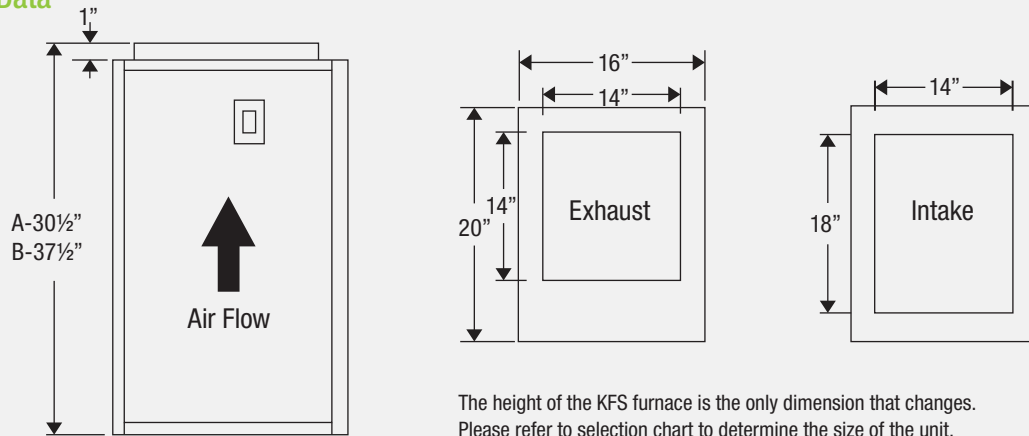
DOWN FLOW

UP FLOW



# Electronic Furnace KF/KFS ECO2S Series

## 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.

## Air Flow Chart (For 4 to 17.25kW Units with 1/3HP ECM Motor)

MODEL	KW	TORQUE	0.1"WC		0.2"WC		0.3"WC		0.4"WC		0.5"WC		0.6"WC		0.7"WC		0.8"WC		0.9"WC		1.0"WC			
			CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE
KF/KFS**04	4	6.8	832	15	708	18	593	21	510	25	442	29	374	34	320	39	278	46						
		9.4	1,030	12	919	14	826	15	739	17	658	19	594	21	546	23	494	26						
		12.0	1,168	11	1,085	12	992	13	902	14	835	15	783	16	736	17	700	18						
		17.0	1,376	9	1,320	10	1,259	10	1,189	11	1,116	11	1,060	12	1,016	12	987	13						
		20.0	1,582	8	1,536	8	1,462	9	1,380	9	1,275	10	1,192	11	1,107	11	1,043	12						
KF/KFS**05	5	6.8	832	19	708	22	593	27	510	31	442	36	374	42	320	49	278	57						
		9.4	1,030	15	919	17	826	19	739	21	658	24	594	27	546	29	494	32						
		12.0	1,168	14	1,085	15	992	16	902	18	835	19	783	20	736	21	700	23						
		17.0	1,376	11	1,320	12	1,259	13	1,189	13	1,116	14	1,060	15	1,016	16	987	16						
		20.0	1,582	10	1,536	10	1,462	11	1,380	11	1,275	12	1,192	13	1,107	14	1,043	15						
KF/KFS**08	8	6.8	832	30	708	36	593	43	510	50	442	57	374	68	320	79	278	91						
		9.4	1,030	25	919	27	826	31	739	34	658	38	594	43	546	46	494	51						
		12.0	1,168	22	1,085	23	992	25	902	28	835	30	783	32	736	34	700	36						
		17.0	1,376	18	1,320	19	1,259	20	1,189	21	1,116	23	1,060	24	1,016	25	987	26						
		20.0	1,582	16	1,536	16	1,462	17	1,380	18	1,275	20	1,192	21	1,107	23	1,043	24						
KF/KFS**10	10	6.8	832	38	708	45	593	53	510	62	442	71	374	84	320	99	278	NR						
		9.4	1,030	31	919	34	826	38	739	43	658	48	594	53	546	58	494	64						
		12.0	1,168	27	1,085	29	992	32	902	35	835	38	783	40	736	43	700	45						
		17.0	1,376	23	1,320	24	1,259	25	1,189	27	1,116	28	1,060	30	1,016	31	987	32						
		20.0	1,582	20	1,536	21	1,462	22	1,380	23	1,275	25	1,192	27	1,107	29	1,043	30						
KF/KFS**12	12	6.8	832	46	708	54	593	64	510	74	442	86	374	101	320	NR	278	NR						
		9.4	1,030	37	919	41	826	46	739	51	658	58	594	64	546	69	494	77						
		12.0	1,168	32	1,085	35	992	38	902	42	835	45	783	48	736	52	700	54						
		17.0	1,376	28	1,320	29	1,259	30	1,189	32	1,116	34	1,060	36	1,016	37	987	38						
		20.0	1,582	24	1,536	25	1,462	26	1,380	27	1,275	30	1,192	32	1,107	34	1,043	36						
KF/KFS**15	15	6.8	832	57	708	67	593	80	510	93	442	107	374	NR	320	NR	278	NR						
		9.4	1,030	46	919	52	826	57	739	64	658	72	594	80	546	87	494	96						
		12.0	1,168	41	1,085	44	992	48	902	53	835	57	783	61	736	64	700	68						
		17.0	1,376	34	1,320	36	1,259	38	1,189	40	1,116	42	1,060	45	1,016	47	987	48						
		20.0	1,582	30	1,536	31	1,462	32	1,380	34	1,275	37	1,192	40	1,107	43	1,043	45						
KF/KFS**18	17.25	6.8	832	66	708	77	593	92	510	107	442	NR	374	NR	320	NR	278	NR						
		9.4	1,030	53	919	59	826	66	739	74	658	83	594	92	546	100	494	110						
		12.0	1,168	47	1,085	50	992	55	902	60	835	65	783	70	736	74	700	78						
		17.0	1,376	40	1,320	41	1,259	43	1,189	46	1,116	49	1,060	51	1,016	54	987	55						
		20.0	1,582	34	1,536	35	1,462	37	1,380	40	1,275	43	1,192	46	1,107	49	1,043	52						

(1) \*\* Represents the voltage, 20=208V, 24=240V, 48=480V. Voltage of KF/KFS does not affect the data in this table.

(2) NR= Not Recommended, Temperature Rise is above maximum design parameter.

(3) The highlighted cells are the factory default torque setting for each model. The ECM motor has 5 field adjustable torque settings, allowing for a wide range of design choices.

(4) Blower: 9" diameter, 7" wide



# Electronic Furnace KF/KFS ECO2S Series

## Air Flow Chart (For 20 to 34.5kW Units with 1/2HP ECM Motor)

MODEL	KW	0.1"WC		0.2"WC		0.3"WC		0.4"WC		0.5"WC		0.6"WC		0.7"WC		0.8"WC		0.9"WC		1.0"WC		
		TORQUE	CFM	RISE (F)	CFM	RISE (F)	CFM	RISE (F)	CFM	RISE (F)	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE	CFM	RISE
KF/KFS**20	20	15.5			1,258	-	1,262	-	1,193	-	1,132	-	1,054	-	910	-	834	-	821	-	705	-
		19.0			1,466	-	1,419	-	1,300	-	1,285	-	1,218	-	1,180	-	1,015	-	979	-	934	-
		22.5			1,575	-	1,570	-	1,564	-	1,363	-	1,347	-	1,284	-	1,256	-	1,200	-	1,152	-
		26.0			1,690	-	1,679	-	1,640	-	1,546	-	1,472	-	1,430	-	1,378	-	1,358	-	1,315	-
		30.0			1,771	-	1,766	-	1,723	-	1,728	-	1,569	-	1,542	-	1,522	-	1,487	-	1,415	-
KF/KFS**25	25	15.5			1,258	-	1,262	-	1,193	-	1,132	-	1,054	-	910	-	834	-	821	-	705	NR
		19.0			1,466	-	1,419	-	1,300	-	1,285	-	1,218	-	1,180	-	1,015	-	979	-	934	-
		22.5			1,575	-	1,570	-	1,564	-	1,363	-	1,347	-	1,284	-	1,256	-	1,200	-	1,152	-
		26.0			1,690	-	1,679	-	1,640	-	1,546	-	1,472	-	1,430	-	1,378	-	1,358	-	1,315	-
		30.0			1,771	-	1,766	-	1,723	-	1,728	-	1,569	-	1,542	-	1,522	-	1,487	-	1,415	-
KF/KFS**30	30	15.5			1,258	-	1,262	-	1,193	-	1,132	-	1,054	-	910	-	834	NR	821	NR	705	NR
		19.0			1,466	-	1,419	-	1,300	-	1,285	-	1,218	-	1,180	-	1,015	-	979	-	934	-
		22.5			1,575	-	1,570	-	1,564	-	1,363	-	1,347	-	1,284	-	1,256	-	1,200	-	1,152	-
		26.0			1,690	-	1,679	-	1,640	-	1,546	-	1,472	-	1,430	-	1,378	-	1,358	-	1,315	-
		30.0			1,771	-	1,766	-	1,723	-	1,728	-	1,569	-	1,542	-	1,522	-	1,487	-	1,415	-
KF/KFS**35	35	15.5			1,258	-	1,262	-	1,193	-	1,132	-	1,054	-	910	NR	834	NR	821	NR	705	NR
		19.0			1,466	-	1,419	-	1,300	-	1,285	-	1,218	-	1,180	-	1,015	-	979	NR	934	NR
		22.5			1,575	-	1,570	-	1,564	-	1,363	-	1,347	-	1,284	-	1,256	-	1,200	-	1,152	-
		26.0			1,690	-	1,679	-	1,640	-	1,546	-	1,472	-	1,430	-	1,378	-	1,358	-	1,315	-
		30.0			1,771	-	1,766	-	1,723	-	1,728	-	1,569	-	1,542	-	1,522	-	1,487	-	1,415	-

- (1) \*\* Represents the voltage, 20=208V, 24=240V, 48=480V. Voltage of the KF/KFS unit does not affect the data in this table.
- (2) NR= Not Recommended, Temperature Rise is above maximum design parameter.
- (3) The highlighted cells are the factory default torque setting for each model. The ECM motor has 5 field adjustable torque settings, allowing for a wide range of design choices.
- (4) Blower: 10" diameter, 8" wide

## Engineering Specifications

Contractor shall supply and install KFS ECO2S 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 (40 VA) transformer for the thermostat control circuit.

**Time Delay Sequencer:** Actuates heating element banks 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.

**Terminal Block:** For field wiring (optional special order) KFSTB Single Strike Connection. Takes multiple circuits into a single feed.

**Air Filter:** Convenient access for replacement of standard 16" x 20" x 1" filter. Do not use pleated filters.

**Motor:** Energy Saving, Long life, thermally protected, permanently lubricated, direct drive ECM motor—no belts to adjust or slip. This low noise, 3 speed motor is designed for use with air conditioning capability as well as heating. Very quiet operating. 60 second fan delay.

**Overcurrent Protection:** 208 and 240 volt KFS models have 60 amp circuit breakers.

**Limit Control:** Integral automatic high temperature limit control in each heating element bank prevents the delivery of air at unsafe temperatures. 20-35 KW models use a manual reset limit control to completely shut the furnace off should an unsafe temperature occur. Summer fan only operation. Fan can be run independently from heating. Mobile Home approved.

**Unique Fan Orifice:** Louver directs air over all heating elements and side walls evenly ensuring longer life performance.

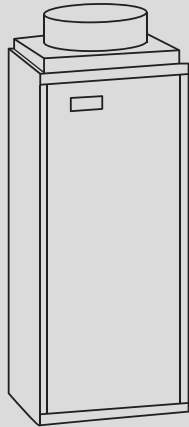
**Low Voltage Terminal Block:** 24 Volt control screw terminals.

**Approvals:** cULus (E48864) USA and Canada

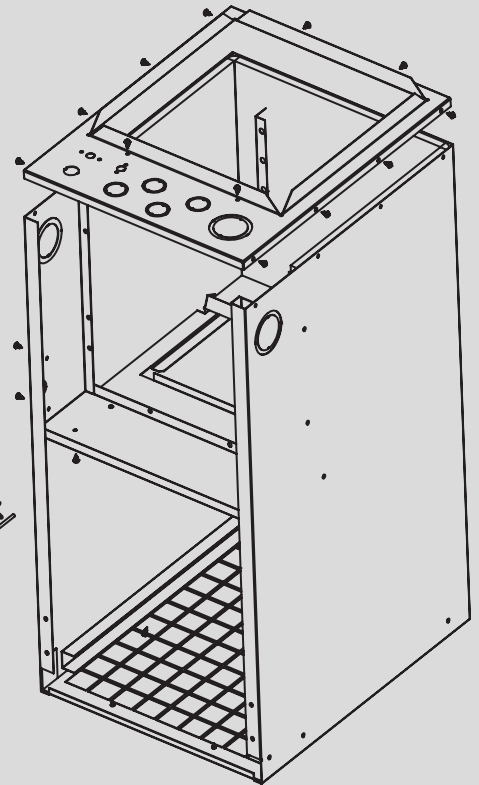
# Electronic Furnace KF/KFS ECO2S Series

## Internal Diagram - exploded view

### Smart Heating Solutions



**12" Round KFS-DT Duct Transition**



**Heating Elements**

**Transformer**

Each furnace is equipped with a 40VA low voltage (24 volt) transformer for the thermostat control circuit.

**Low Voltage Terminal Block**

Comes standard. With aux 24V access for dampers & air conditioning

**Heating Elements**

Quick heating long life nichrome 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)  
For single strike

**Fan Relay**

Heavy duty dual speed fan relay comes standard with furnaces for air conditioning or summer fan

**Time Delay / Contactor Sequencer**

Actuates heating element banks at random intervals to minimize electrical surges in compliance with EEL and NEMA standards.

**Limit Control**

Integral automatic high temperature limit control in each heating element bank prevents the delivery of air at unsafe temperatures. 20-35 KW also use a manual reset limit control to completely shut the furnace off should an overtemperature condition occur.

**Jumper Bar**

for circuit breaker-JB

**Limit Control**

**KF Model** has terminal block only, used when total current is under 48 amps.

**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 points

**Motor**

Energy Saving, Long life, thermally protected, permanently lubricated, direct drive ECM motor—no belts to adjust or slip. This low noise, 3 speed motor is designed for use with air conditioning capability as well as heating. Very quiet operating. 60 second fan delay.

**Air Filter**

Convenient access for replacement of standard 16" x 20" x 1"  
Do not use pleated filters.