



# SUBMITTAL SHEET

Job Name: \_\_\_\_\_

Submitted By: \_\_\_\_\_

Date: \_\_\_\_\_

Location: \_\_\_\_\_

Architect: \_\_\_\_\_

Engineer: \_\_\_\_\_

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

Contractor: \_\_\_\_\_

Submitted By: \_\_\_\_\_

King Contact: \_\_\_\_\_

[Quotes@king-electric.com](mailto:Quotes@king-electric.com)

Date: \_\_\_\_\_

| Tag | Qty | Item Number | Watts | Volts | PH | Amps | Weight |
|-----|-----|-------------|-------|-------|----|------|--------|
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## Accessories

| Tag | Qty | Item Number |
|-----|-----|-------------|
|     |     |             |
|     |     |             |
|     |     |             |

# 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.

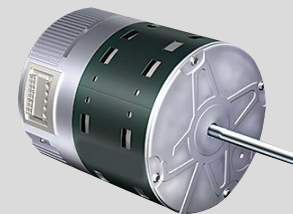
### Motor Features

- 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 ECM motor in constant fan mode

### Heating Features

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



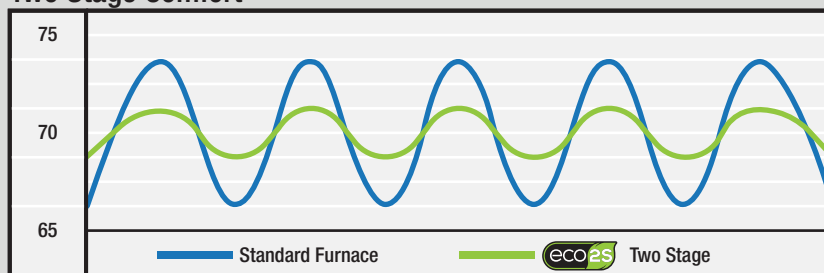
ECM Motor

## TWO STAGE COMFORT Why 2 Stage is Better

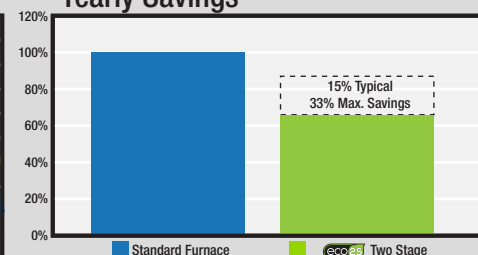
2 Stage controlled Furnaces allow you to use less energy during mild Spring and Fall temperatures. It's like having a smaller furnace installed just for spring and fall, then when winter hits you have the reserve power of the second heating stage to fight off the cold weather. It also has the benefit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

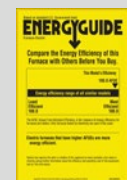
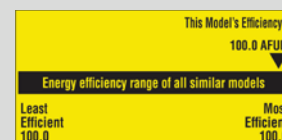


### Yearly Savings



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             | 60          | 1/3HP | 2.7       | Fig. A | 57.0     |
| KFS2005-1-ECM     | 17,065  | 208   | 1     | 5.0  | 24             | 5 kW    | *N/A    | 1             | 60          | 1/3HP | 2.7       | Fig. A | 57.0     |
| KFS2008-1-2S1-ECM | 27,304  | 208   | 1     | 8    | 38             | 4.25    | 3.75 kW | 2             | 60          | 1/3HP | 2.7       | Fig. A | 57.0     |
| KFS2010-1-2S1-ECM | 34,130  | 208   | 1     | 10.0 | 48             | 5 kW    | 5 kW    | 2             | 60          | 1/3HP | 2.7       | Fig. A | 65.0     |
| KFS2012-1-2S1-ECM | 40,956  | 208   | 1     | 12.0 | 58             | 7.5 kW  | 4.5 kW  | 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       | 1/3HP | 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    | 1/2HP | 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             | NO          | 1/2HP | 1.2       | Fig. B | 81.0     |
| KF4830-1-2S1-ECM  | 102,390 | 480   | 1     | 30.0 | 63             | 20 kW   | 10 kW   | 6             | NO          | 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             | NO          | 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             | 60          | 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             | 60          | 1/3HP  | 2.7       | Fig. A | 57.0     |
| KFS2010-3-2S3-ECM | 34,130  | 208   | 3     | 10.0 | 28             | 5 kW     | 5 kW     | 2             | 60          | 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             | 60          | 1/3HP  | 2.7       | Fig. A | 74.0     |
| KFS2015-3-2S3-ECM | 51,195  | 208   | 3     | 15.0 | 42             | 10 kW    | 5 kW     | 3             | 60          | 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             | 60          | 1/3HP  | 2.9       | Fig. A | 57.0     |
| KFS2410-3-2S3-ECM | 34,130  | 240   | 3     | 10.0 | 24             | 5 kW     | 5 kW     | 2             | 60          | 1/3HP  | 2.9       | Fig. A | 65.0     |
| KFS2412-3-2S3-ECM | 40,956  | 240   | 3     | 12.0 | 29             | 6.5 kW   | 5.5 kW   | 3             | 60          | 1/3HP  | 2.9       | Fig. A | 74.0     |
| KFS2415-3-2S3-ECM | 51,195  | 240   | 3     | 15.0 | 36             | 10 kW    | 5 kW     | 3             | 60          | 1/3HP  | 2.9       | Fig. A | 74.0     |
| KFS2418-3-2S3-ECM | 58,874  | 240   | 3     | 17.3 | 42             | 12.3 kW  | 5 kW     | 3             | 60          | 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     |
| 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     |
| KF4835-3-2S3-ECM  | 117,749 | 480   | 3     | 34.5 | 42             | 17.25 kW | 17.25 kW | 6             | NO          | 3/4HP  | 1.7       | Fig. B | 85.0     |

\*Not Available in 2-Stage.

# Electronic Furnace KF/KFS ECO2S Series

## Accessories

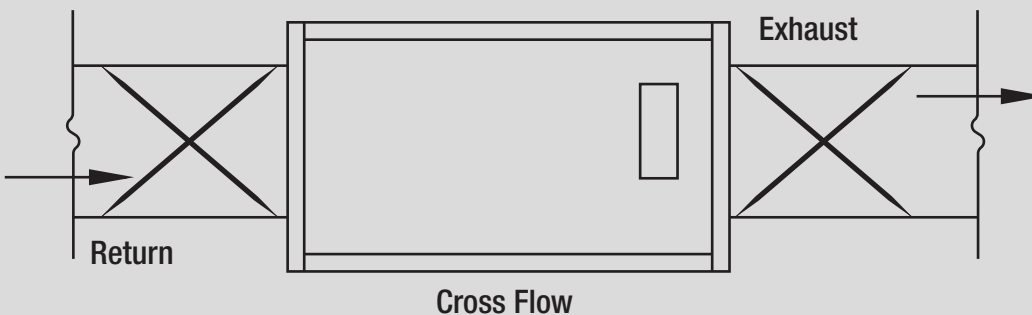
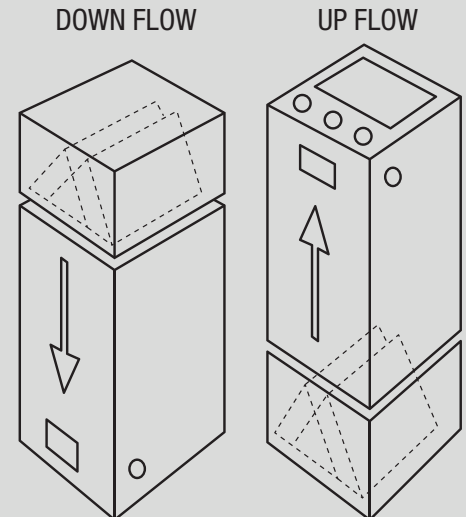
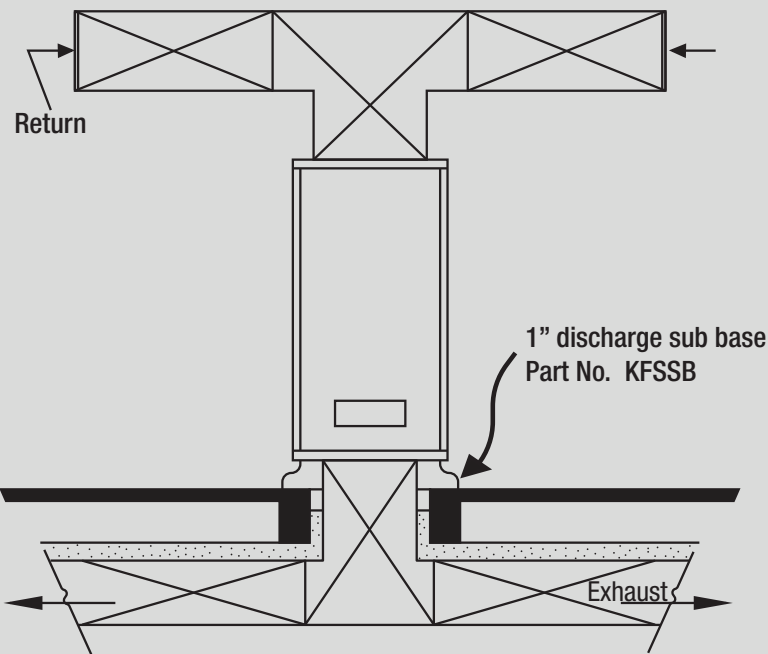
| MODEL    | UPC   | DESCRIPTION   | WEIGHT(lbs.) |
|----------|-------|---|--------------|
| KFS-4PJB | 20185 | * 4-Pole Jumper Bar - 15kW to 20kW                              | .05          |
| KFS-6PJB | 20184 | * 6-Pole Jumper Bar - 25kW to 30kW                              | .05          |
| KFSSB    | 20182 | Outlet Collar ( To provide 1" clearance for combustible floors) | 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. |

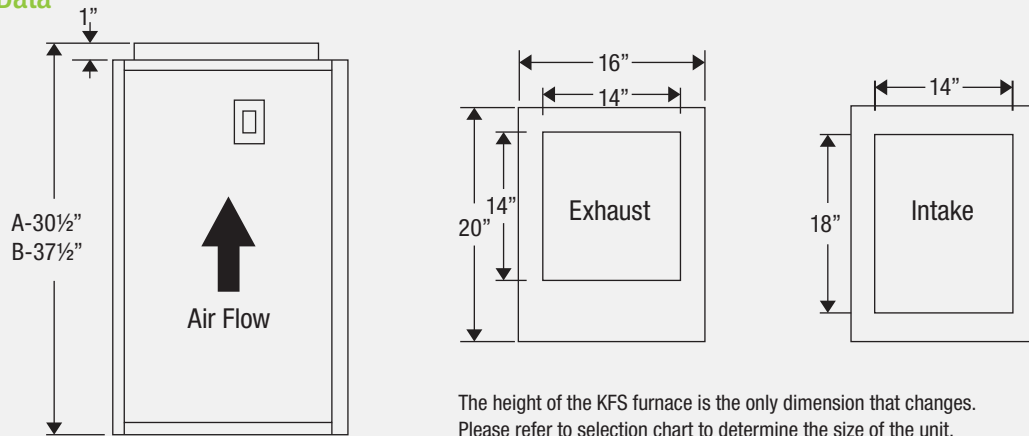
## Factory Installed Options

| 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 |
| -3/4HP      | Sub 3/4HP Motor for 20kW & 25kW Models Only            |



# 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 (F) | CFM    | RISE (F) | CFM    | RISE (F) | CFM    | RISE (F) | CFM    | RISE (F) | CFM    | RISE (F) | CFM    | RISE (F) | CFM    | RISE (F) | CFM    | RISE (F) | CFM    | RISE (F) | CFM | RISE (F) |
| KF/KFS**04 | 4     | (2) 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     | (2) 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     | (1) 6.8  | 832    | 30       | 708    | 36       | 593    | 43       | 510    | 50       | 442    | 57       | 374    | 68       | 320    | 79       | 278    | 91       |        |          |        |          |     |          |
|            |       | (2) 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    | (1) 6.8  | 832    | 38       | 708    | 45       | 593    | 53       | 510    | 62       | 442    | 71       | 374    | 84       | 320    | 99       | 278    | NR       |        |          |        |          |     |          |
|            |       | (2) 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       |        |          |        |          |     |          |
|            |       | (1) 9.4  | 1,030  | 37       | 919    | 41       | 826    | 46       | 739    | 51       | 658    | 58       | 594    | 64       | 546    | 69       | 494    | 77       |        |          |        |          |     |          |
|            |       | (2) 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       |        |          |        |          |     |          |
|            |       | (1) 9.4  | 1,030  | 46       | 919    | 52       | 826    | 57       | 739    | 64       | 658    | 72       | 594    | 80       | 546    | 87       | 494    | 96       |        |          |        |          |     |          |
|            |       | (2) 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       |        |          |        |          |     |          |
|            |       | (1) 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       |        |          |        |          |     |          |
|            |       | (2) 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       |        |          |        |          |     |          |

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

B NR= Not Recommended, Temperature Rise is above maximum design parameter.

C 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.

D (1) = Stage 1 Torque Settings (2) = Stage 2 Torque Settings / (2) = Default for Single Stage KFUH

E Blower: 10" diameter, 8" wide

# Electronic Furnace KF/KFS ECO2S Series

## Air Flow Chart (For 20 to 25kW 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   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE |    |
| KF/KFS**20 | 20 |          |     | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)  |    |
|            |    | (1) 15.0 |     |        | 1,258 | 50     | 1,262 | 50     | 1,193 | 53     | 1,132 | 56     | 1,054 | 60     | 910   | 69     | 834   | 76     | 821   | 77     | 705   | 90   |    |
|            |    | (2) 19.0 |     |        | 1,466 | 43     | 1,419 | 45     | 1,300 | 49     | 1,285 | 49     | 1,218 | 52     | 1,180 | 54     | 1,015 | 62     | 979   | 65     | 934   | 68   |    |
|            |    | 22.5     |     |        | 1,575 | 40     | 1,570 | 40     | 1,564 | 40     | 1,363 | 46     | 1,347 | 47     | 1,284 | 49     | 1,256 | 50     | 1,200 | 53     | 1,152 |      | 55 |
|            |    | 26.0     |     |        | 1,690 | 37     | 1,679 | 38     | 1,640 | 39     | 1,546 | 41     | 1,472 | 43     | 1,430 | 44     | 1,378 | 46     | 1,358 | 47     | 1,315 | 48   |    |
| KF/KFS**25 | 25 | 15.5     |     |        | 1,258 | 63     | 1,262 | 63     | 1,193 | 66     | 1,132 | 70     | 1,054 | 75     | 910   | 87     | 834   | 95     | 821   | 96     | 705   | NR   |    |
|            |    | (1) 19.0 |     |        | 1,466 | 54     | 1,419 | 56     | 1,300 | 61     | 1,285 | 61     | 1,218 | 65     | 1,180 | 67     | 1,015 | 78     | 979   | 81     | 934   | 85   |    |
|            |    | 22.5     |     |        | 1,575 | 50     | 1,570 | 50     | 1,564 | 51     | 1,363 | 58     | 1,347 | 59     | 1,284 | 62     | 1,256 | 63     | 1,200 | 66     | 1,152 | 69   |    |
|            |    | (2) 26.0 |     |        | 1,690 | 47     | 1,679 | 47     | 1,640 | 48     | 1,546 | 51     | 1,472 | 54     | 1,430 | 55     | 1,378 | 57     | 1,358 | 58     | 1,315 | 60   |    |
|            |    | 30.0     |     |        | 1,771 | 45     | 1,766 | 45     | 1,723 | 46     | 1,728 | 46     | 1,569 | 50     | 1,542 | 51     | 1,522 | 52     | 1,487 | 53     | 1,415 | 56   |    |

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

B NR= Not Recommended, Temperature Rise is above maximum design parameter.

C 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.

D (1) = Stage 1 Torque Settings (2) = Stage 2 Torque Settings / (2) = Default for Single Stage KFUH

E Blower: 10" diameter, 8" wide

## Air Flow Chart (For 20 to 25kW Units with OPTIONAL 3/4HP 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   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE |  |
| KF/KFS**20 | 20 |          |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)  |  |
|            |    | (1) 26.0 |       |        | 1,592 | 40     | 1,592 | 40     | 1,581 | 40     | 1,551 | 41     | 1,529 | 41     | 1,496 | 42     | 1,432 | 44     | 1,353 | 47     | 1,231 | 51   |  |
|            |    | 30.0     |       |        | 1,789 | 35     | 1,758 | 36     | 1,716 | 37     | 1,650 | 38     | 1,598 | 40     | 1,552 | 41     | 1,451 | 41     | 1,451 | 44     | 1,282 | 49   |  |
|            |    | (2) 35.0 |       |        | 1,814 | 35     | 1,819 | 35     | 1,828 | 35     | 1,866 | 34     | 1,849 | 34     | 1,794 | 35     | 1,688 | 37     | 1,561 | 40     | 1,316 | 48   |  |
|            |    | 40.5     |       |        | 2,080 | 30     | 2,122 | 30     | 2,082 | 30     | 2,054 | 31     | 1,916 | 33     | 1,814 | 35     | 1,700 | 37     | 1,482 | 43     | 1,230 | 51   |  |
| KF/KFS**25 | 25 | 45.0     |       |        | 2,174 | 29     | 2,154 | 29     | 2,148 | 29     | 2,138 | 30     | 2,094 | 30     | 1,928 | 33     | 1,671 | 38     | 1,471 | 43     | 1,232 | 51   |  |
|            |    | (1) 26.0 |       |        | 1,592 | 50     | 1,592 | 50     | 1,581 | 50     | 1,551 | 51     | 1,529 | 52     | 1,496 | 53     | 1,432 | 55     | 1,353 | 58     | 1,231 | NR   |  |
|            |    | 30.0     |       |        | 1,789 | 44     | 1,758 | 45     | 1,716 | 46     | 1,692 | 47     | 1,650 | 48     | 1,598 | 49     | 1,552 | 51     | 1,451 | 54     | 1,282 | 62   |  |
|            |    | (2) 35.0 |       |        | 1,814 | 44     | 1,819 | 43     | 1,828 | 43     | 1,866 | 42     | 1,849 | 43     | 1,794 | 44     | 1,688 | 47     | 1,561 | 51     | 1,316 | 60   |  |
|            |    | 40.5     |       |        | 2,080 | 38     | 2,122 | 37     | 2,082 | 38     | 2,054 | 38     | 1,916 | 41     | 1,814 | 44     | 1,700 | 46     | 1,482 | 53     | 1,230 | 64   |  |
| 45.0       |    |          | 2,174 | 36     | 2,154 | 37     | 2,139 | 37     | 2,138 | 37     | 2,094 | 38     | 1,928 | 41     | 1,671 | 47     | 1,471 | 54     | 1,232 | 64     |       |      |  |

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

B NR= Not Recommended, Temperature Rise is above maximum design parameter.

C 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.

D (1) = Stage 1 Torque Settings (2) = Stage 2 Torque Settings / (2) = Default for Single Stage KFUH

E Blower: 10" diameter, 8" wide

## Air Flow Chart (For 30 to 35kW Units with 3/4HP 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   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE   | CFM   | RISE |  |
| KF/KFS**30 | 30 |          |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)    |       | (F)  |  |
|            |    | (1) 26.0 |       |        | 1,592 | 60     | 1,592 | 60     | 1,581 | 60     | 1,551 | 61     | 1,529 | 62     | 1,496 | 63     | 1,432 | NR     | 1,353 | NR     | 1,231 | NR   |  |
|            |    | 30.0     |       |        | 1,789 | 53     | 1,758 | 54     | 1,716 | 55     | 1,692 | 56     | 1,650 | 57     | 1,598 | 59     | 1,552 | 61     | 1,451 | 65     | 1,282 | 74   |  |
|            |    | 35.0     |       |        | 1,814 | 52     | 1,819 | 52     | 1,828 | 52     | 1,866 | 51     | 1,849 | 51     | 1,794 | 53     | 1,688 | 56     | 1,561 | 61     | 1,316 | 72   |  |
|            |    | (2) 40.5 |       |        | 2,080 | 46     | 2,122 | 45     | 2,082 | 46     | 2,054 | 46     | 1,916 | 49     | 1,814 | 52     | 1,700 | 56     | 1,482 | 64     | 1,230 | 77   |  |
| KF/KFS**35 | 35 | 45.0     |       |        | 2,174 | 44     | 2,154 | 44     | 2,148 | 44     | 2,138 | 44     | 2,094 | 45     | 1,928 | 49     | 1,671 | 57     | 1,471 | 64     | 1,232 | 77   |  |
|            |    | 26.0     |       |        | 1,592 | 69     | 1,592 | 69     | 1,581 | 60     | 1,551 | 71     | 1,529 | 72     | 1,496 | NR     | 1,432 | NR     | 1,353 | NR     | 1,231 | NR   |  |
|            |    | (1) 30.0 |       |        | 1,789 | 62     | 1,758 | 63     | 1,716 | 64     | 1,692 | 65     | 1,650 | 67     | 1,598 | 69     | 1,552 | 71     | 1,451 | NR     | 1,282 | NR   |  |
|            |    | 35.0     |       |        | 1,814 | 61     | 1,819 | 61     | 1,828 | 60     | 1,866 | 59     | 1,849 | 60     | 1,794 | 62     | 1,688 | 66     | 1,561 | 71     | 1,316 | 84   |  |
|            |    | (2) 45.0 |       |        | 2,080 | 53     | 2,122 | 52     | 2,082 | 53     | 2,054 | 54     | 1,916 | 58     | 1,814 | 61     | 1,700 | 65     | 1,482 | 75     | 1,230 | 90   |  |
| 45.0       |    |          | 2,174 | 51     | 2,154 | 51     | 2,148 | 52     | 2,138 | 52     | 2,094 | 53     | 1,928 | 57     | 1,671 | 66     | 1,471 | 75     | 1,232 | 90     |       |      |  |

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

B NR= Not Recommended, Temperature Rise is above maximum design parameter.

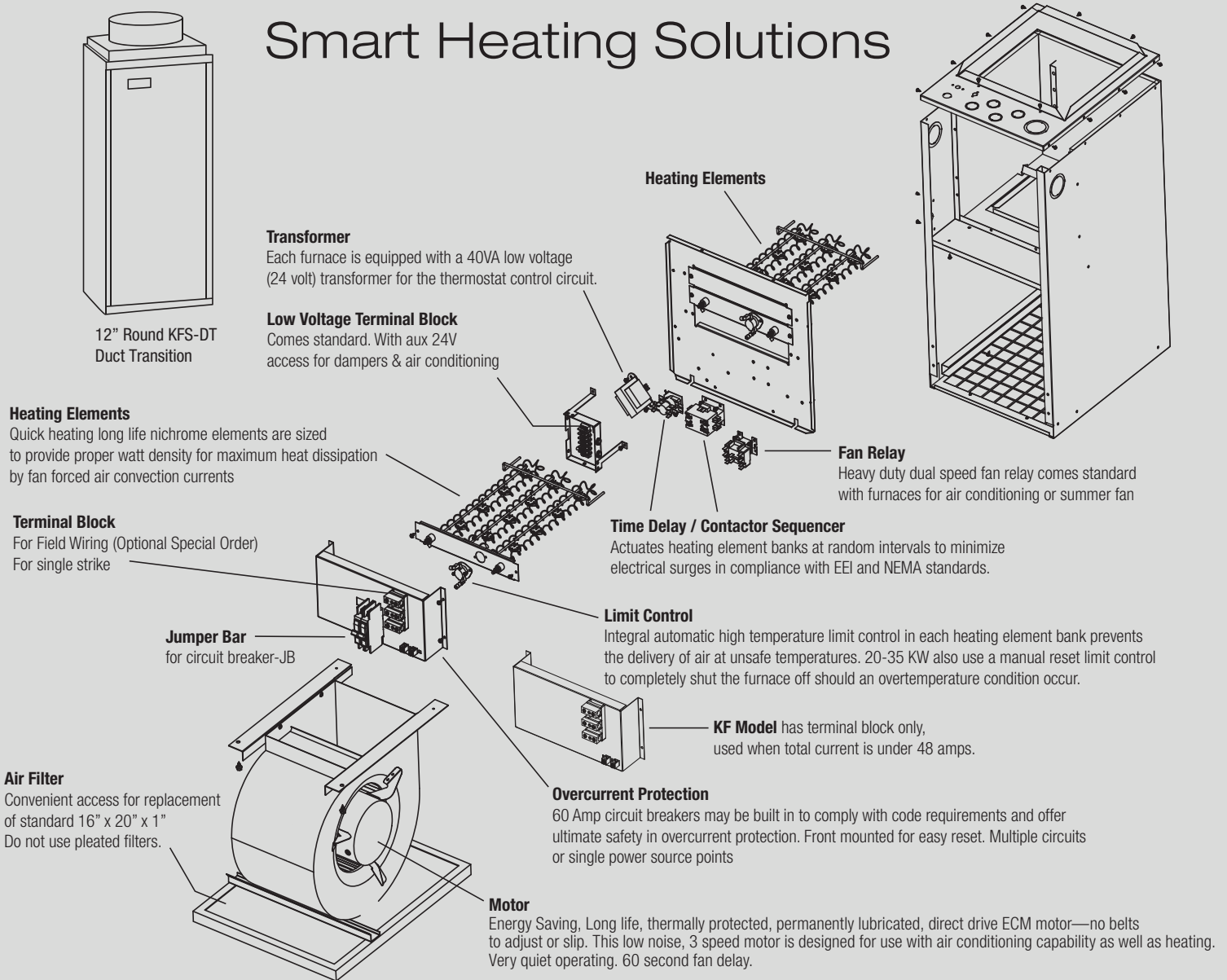
C The highlighted cells are the factory default torque setting for each model. The ECM motor has 5 field adjustable torque settings, allowing for a wide range of design choices.

D (1) = Stage 1 Torque Settings (2) = Stage 2 Torque Settings / (2) = Default for Single Stage KFUH

E Blower: 10" diameter, 8" wide

## Internal Diagram - exploded view

### Smart Heating Solutions



## 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