



### FAN COILS WITH OBSERVER™ COMMUNICATING CONTROL ALL MODELS

- 2, 3, 4, and 5 Tons
- Multi-position installation
- Communicating, self configuring when used with Observer Communicating Wall Control
- Smart Diagnostic for easier troubleshooting
- Bi-flow hard-shutoff R-410A TXV metering device
- HUD approved for manufactured housing
- Sweat connections
- Primary and secondary brass drain connections
- Energy efficient variable speed ECM Motor
- Ultra-low power consumption during fan only operation
- High duct static capability
- Pre-painted galvanized sheet metal cabinet insulation with vapor barrier
- Cabinet construction designed to prevent cabinet sweating
- Meets requirements of a 2% cabinet leakage rate when tested at 1.0 in. w.c. of static pressure.
- Modular cabinet on 5 ton model
- 208/230-1-60 supply voltage
- Multiple electrical entry for application flexibility
- Low voltage terminal strip
- Easy plug connection provided for quick installation of accessory heater packages
- Factory supplied washable filter easily removed – no tools required.

### WARRANTY\*

- 10 year No Hassle Replacement™ limited warranty
- 5 year parts limited warranty
  - With timely registration, an additional 5 year parts limited warranty

\* For owner occupied, residential applications only. See warranty certificate for complete details and restrictions, including warranty coverage for other applications



Use of the AHRI Certified TM Mark indicates a manufacturer's participation in the program. For verification of certification for individual products, go to [www.ahridirectory.org](http://www.ahridirectory.org).



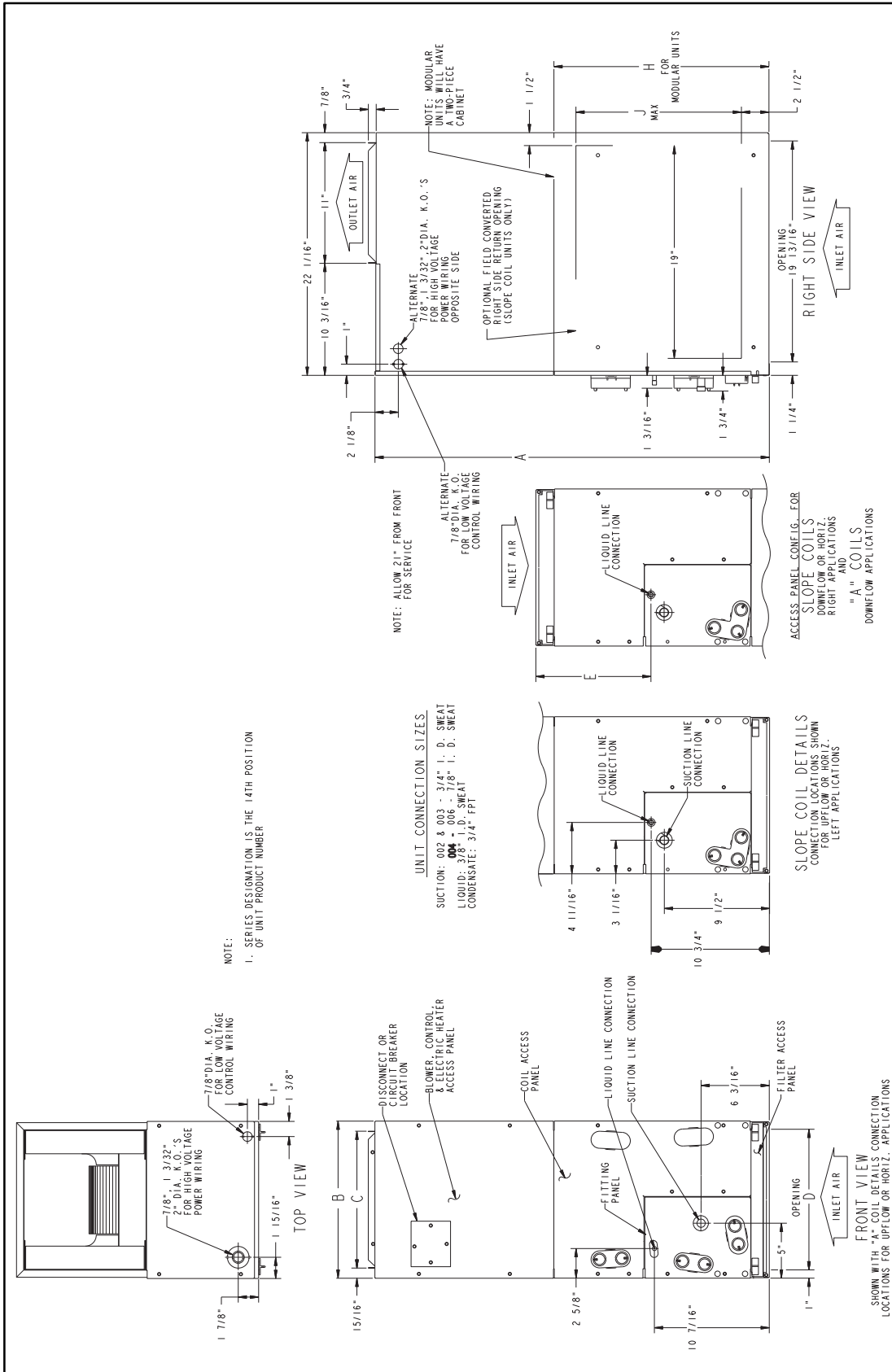
| Model Number | Tons | Nom. CFM (L/s) | Dimensions H x W x D in. (mm)                      | Filter Size in. (mm)            | Ship Wt lbs.(kg) |
|--------------|------|----------------|--|---------------------------------|------------------|
| FCM4X2400**  | 2    | 800<br>(378)   | 42-11/16 x 17-5/8 x 22-1/16<br>(1084 x 448 x 560)  | 16-3/8 x 21-1/2<br>(416 x 546)  | 135<br>(61)      |
| FCM4X3600**  | 3    | 1200<br>(566)  | 53-7/16 x 21-1/8 x 22-1/16<br>(1357 x 537 x 560)   | 19-7/8 x 21-1/2<br>(505 x 546)  | 150<br>(68)      |
| FCM4X4800**  | 4    | 1600<br>(755)  | 53-7/16 x 21-1/8 x 22-1/16<br>(1357 x 537 x 560)   | 19-7/8 x 21-1/2<br>(505 x 546)  | 172<br>(78)      |
| FCM4X6000**  | 5    | 1750<br>(826)  | 59-3/16 x 24-11/16 x 22-1/16<br>(1503 x 627 x 560) | 23-5/16 x 21-1/2<br>(592 x 546) | 207<br>(94)      |

\*\* A = Copper Tube, Aluminum Fin Evaporator Coil  
AT = Tin Coated Copper Tube, Aluminum Fin Evaporator Coil

| FAN COIL MODEL NUMBER IDENTIFICATION GUIDE |                          |          |                        |          |          |                         |                              |          |
|--|--------------------------|----------|------------------------|----------|----------|-------------------------|------------------------------|----------|
| DIGIT POSITION                             | 1                        | 2        | 3                      | 4        | 5        | 6,7,8,9                 | 10                           | 11       |
|  | <b>F</b>                 | <b>C</b> | <b>M</b>               | <b>4</b> | <b>X</b> | <b>1800</b>             | <b>A</b>                     | <b>T</b> |
| F = Fan Coil                               | <b>UNIT</b>              |          |                        |          |          |                         |                              |          |
| V = Variable speed                         |                          |          |                        |          |          |                         |                              |          |
| C = Communicating ECM                      | <b>MOTOR TYPE</b>        |          |                        |          |          |                         |                              |          |
| M = Multiposition                          |                          |          |                        |          |          |                         |                              |          |
| U = Upflow                                 | <b>INSTALLATION TYPE</b> |          |                        |          |          |                         |                              |          |
| 4 = Environmentally Sound R-410A           |                          |          | <b>REFRIGERANT</b>     |          |          |                         |                              |          |
| X = TXV                                    |                          |          | <b>METERING DEVICE</b> |          |          |                         |                              |          |
| 2400 = 24,000 BTUH = 2 tons                |                          |          |                        |          |          |                         |                              |          |
| 3600 = 36,000 BTUH = 3 tons                |                          |          |                        |          |          |                         |                              |          |
| 4800 = 48,000 BTUH = 4 tons                |                          |          |                        |          |          |                         |                              |          |
| 6000 = 60,000 BTUH = 5 tons                |                          |          |                        |          |          | <b>NOMINAL CAPACITY</b> |                              |          |
| A = Standard                               |                          |          |                        |          |          |                         |                              |          |
| AT = Tin Coated Copper Tube                |                          |          |                        |          |          |                         | <b>SALES CODE / FEATURES</b> |          |

| ACCESSORIES PART NUMBER IDENTIFICATION GUIDE |           |           |           |            |          |
|--|-----------|-----------|-----------|------------|----------|
|  | <b>EB</b> | <b>AC</b> | <b>01</b> | <b>NCB</b> | <b>A</b> |
| EB = Evaporator Blower                       |           |           |           |            |          |
| AC = Accessory                               |           |           |           |            |          |
| 01 = Product Identifier Number               |           |           |           |            |          |
| NCB = Non-Combustible Base Kit               |           |           |           |            |          |
| DFK = Down Flow Kit                          |           |           |           |            |          |
| PLG = Power Plug (no heat kit)               |           |           |           |            |          |
| SPK = Single Point Wiring Kit                |           |           |           |            |          |
| FKS = Filter Kit Small                       |           |           |           |            |          |
| FKM = Filter Kit Medium                      |           |           |           |            |          |
| FKL = Filter Kit Large                       |           |           |           |            |          |
| FKX = Filter Kit Extra Large                 |           |           |           |            |          |
| CTK = Condensate Trap Kit (PVC pipe)         |           |           |           |            |          |
| Sales Code                                   |           |           |           |            |          |

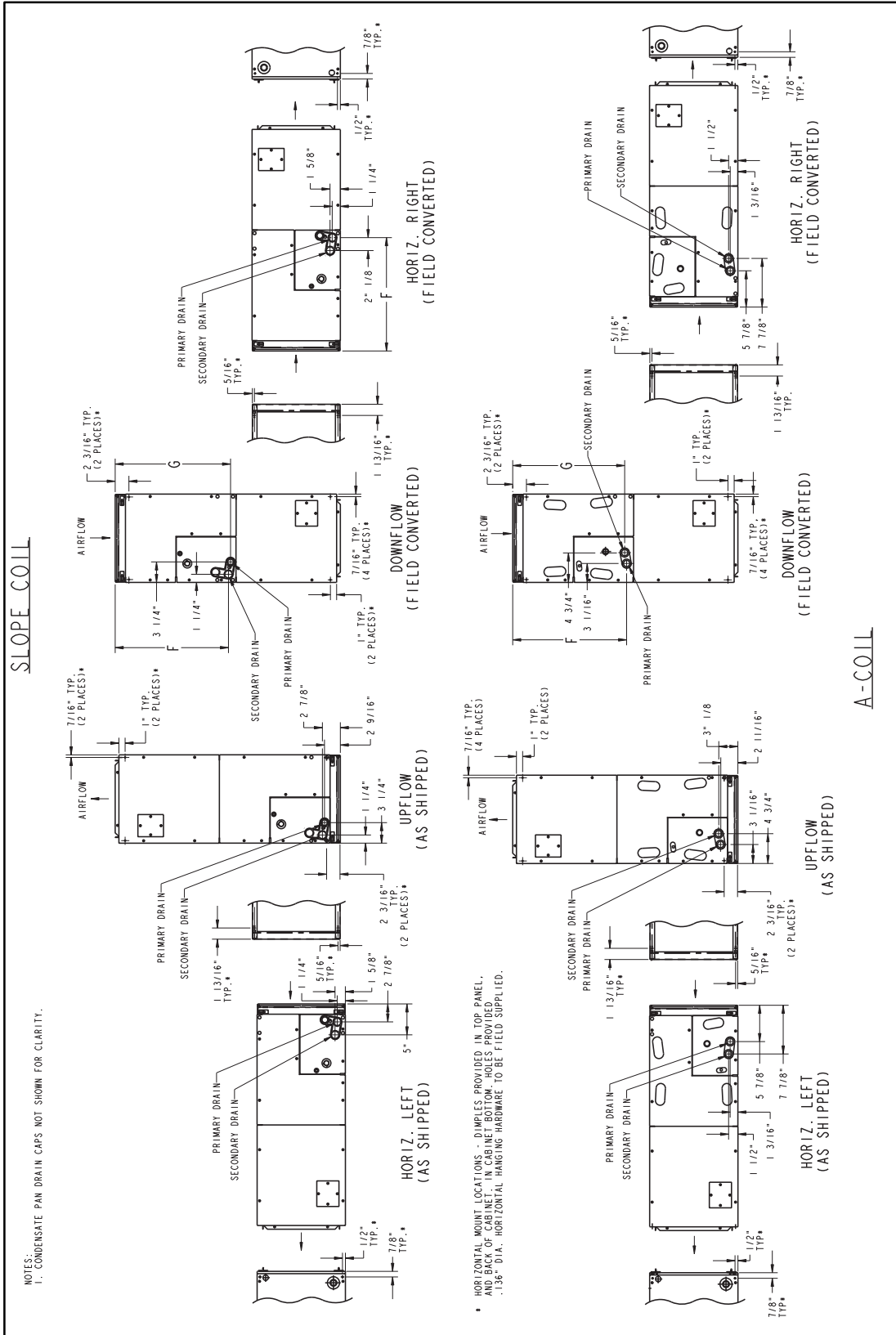
| ELECTRIC HEATER MODEL NUMBER IDENTIFICATION GUIDE                      |                           |           |                        |          |                              |          |
|--|---------------------------|-----------|------------------------|----------|------------------------------|----------|
|  | <b>EHC</b>                | <b>09</b> | <b>A</b>               | <b>K</b> | <b>N</b>                     | <b>1</b> |
| EHC = Communicating Electric Heater Kit                                |                           |           |                        |          |                              |          |
| EHK = Standard Electric Heater Kit                                     |                           |           |                        |          |                              |          |
| 05 = 5 kW  |                           |           |                        |          |                              |          |
| 07 = 8 kW  |                           |           |                        |          |                              |          |
| 09 = 9 kW  |                           |           |                        |          |                              |          |
| 10 = 10 kW   |                           |           |                        |          |                              |          |
| 15 = 15 kW   |                           |           |                        |          |                              |          |
| 18 = 18 kW   |                           |           |                        |          |                              |          |
| 20 = 20 kW   |                           |           |                        |          |                              |          |
| 25 = 24 kW   |                           |           |                        |          |                              |          |
| 30 = 30 kW   | <b>NOMINAL HEAT VALUE</b> |           |                        |          |                              |          |
| Sales Code   |                           |           |                        |          |                              |          |
| K = 208 / 230 single-phase   |                           |           |                        |          |                              |          |
| H = 208 / 230, 3-phase   |                           |           |                        |          |                              |          |
| KC = 208 / 230, supplied as single phase, field convertible to 3-phase |                           |           |                        |          |                              |          |
| HC = 208 / 230 supplied as 3-phase, field convertible to single phase  |                           |           | <b>VOLTAGE (60 Hz)</b> |          |                              |          |
| N = No protection  |                           |           |                        |          |                              |          |
| F = Fused  |                           |           |                        |          |                              |          |
| B = Breaker  |                           |           |                        |          | <b>Electrical Protection</b> |          |
| Engineering Code   |                           |           |                        |          |                              |          |



**DIMENSIONS**

| UNIT  | SIZE | A        |      | B        |     | C      |     | D        |     | E       |     | H*      |     |
|-------|------|----------|------|----------|-----|--------|-----|----------|-----|---------|-----|---------|-----|
|       |      | in       | mm   | in       | mm  | in     | mm  | in.      | mm  | in      | mm  | in      | mm  |
| FCM4X | 24   | 42-11/16 | 1084 | 17-5/8   | 448 | 15-3/4 | 400 | 15-5/8   | 397 | 10-3/4  | 273 | —       | —   |
| FCM4X | 36   | 53-7/16  | 1357 | 21-1/8   | 537 | 19-1/4 | 489 | 19-1/8   | 486 | 19-3/16 | 487 | —       | —   |
| FCM4X | 48   | 53-7/16  | 1357 | 21-1/8   | 537 | 19-1/4 | 489 | 19-1/8   | 486 | 19-1/2  | 495 | —       | —   |
| FCM4X | 60*  | 59-3/16  | 1503 | 24-11/16 | 627 | 22-3/4 | 578 | 22-11/16 | 576 | 25-1/4  | 641 | 34-1/16 | 865 |

\* Modular Cabinet



**DIMENSIONS**

| UNIT  | SIZE | F        |     | G        |     | COIL CONFIGURATION |     | SHIPPING WEIGHT |  |
|-------|------|----------|-----|----------|-----|--------------------|-----|-----------------|--|
|       |      | in       | mm  | in       | mm  | Slope              | "A" | lb / kg         |  |
| FCM4X | 24   | 18-9/16  | 472 | 18-1/4   | 464 | —                  | Yes | 135 / 61        |  |
| FCM4X | 36   | 26-15/16 | 684 | 27-1/2   | 699 | Yes                | —   | 150 / 68        |  |
| FCM4X | 48   | 27-1/4   | 692 | 26-15/16 | 684 | —                  | Yes | 172 / 78        |  |
| FCM4X | 60*  | 32-15/16 | 837 | 32-5/8   | 829 | —                  | Yes | 207 / 94        |  |

\* Modular Cabinet

| PHYSICAL DATA                        |                              |                       |                       |                        |
|--------------------------------------|------------------------------|-----------------------|-----------------------|------------------------|
| MODEL                                | FCM4X                        |                       |                       |                        |
| SIZE                                 | 24                           | 36                    | 48                    | 60                     |
| <b>COIL</b>                          |                              |                       |                       |                        |
| Refrigerant Metering Device          | R-410A REFRIGERANT TXV       |                       |                       |                        |
| TXV Size                             | 2 Ton                        | 3 Ton                 | 4 Ton                 | 5 Ton                  |
| Configuration                        | A                            | Slope                 | A                     | A                      |
| Rows—Fins/In.                        | 3 / 14.5                     |                       |                       |                        |
| Face Area (Sq Ft)                    | 3.46                         | 3.46                  | 5.93                  | 7.42                   |
| <b>MATCHES OUTDOOR UNIT SIZES</b>    |                              |                       |                       |                        |
| Nominal Cooling Tons                 | 1.5, 2, 2.5, 3               | 2, 2.5, 3, 3.5        | 2.5, 3, 3.5, 4        | 3, 3.5, 4, 5           |
| <b>FAN</b>                           |                              |                       |                       |                        |
| Air Discharge                        | Upflow, Downflow, Horizontal |                       |                       |                        |
| CFM/Ton (Nominal Clg/Htg)            | 350+                         |                       |                       |                        |
| Motor HP (ECM)                       | 1/2                          | 1/2                   | 1/2                   | 3/4                    |
| Filter<br>21-1/2-in (546 mm) x       | 16-3/8-in<br>(417 mm)        | 19-7/8-in<br>(505 mm) | 19-7/8-in<br>(505 mm) | 23-5/16-in<br>(592 mm) |
| <b>CABINET CONFIGURATION OPTIONS</b> |                              |                       |                       |                        |
|                                      | 1-piece                      | 1-piece               | 1-piece               | Modular                |

**PERFORMANCE DATA**

**AIRFLOW DELIVERY — COOLING, HEATING, ELECTRIC HEATING MODES**

The FCM4X fan coils with the Observer™ Communicating Wall Control will provide airflow at a rate that is requested by the wall control during air conditioning or heat pump heating (without electric heat) modes. The nominal airflow for both heating and cooling modes is 350 cfm/ton nominal size of the outdoor unit installed. The airflow actually requested by the wall control is modified by its internal algorithms for comfort or

efficiency concerns. Refer to the documentation for the wall control for more information on how the wall control controls the fan coil. Safe operation of electric heaters requires airflow delivery at or above the minimum CFM for electric heater application listed in the chart below. The fan coil will adjust its airflow delivery to maintain safe airflow as operating mode and staging conditions require.

**FCM4X FAN COIL AIRFLOW DELIVERY CHART (CFM) — ELECTRIC HEATING MODELS**

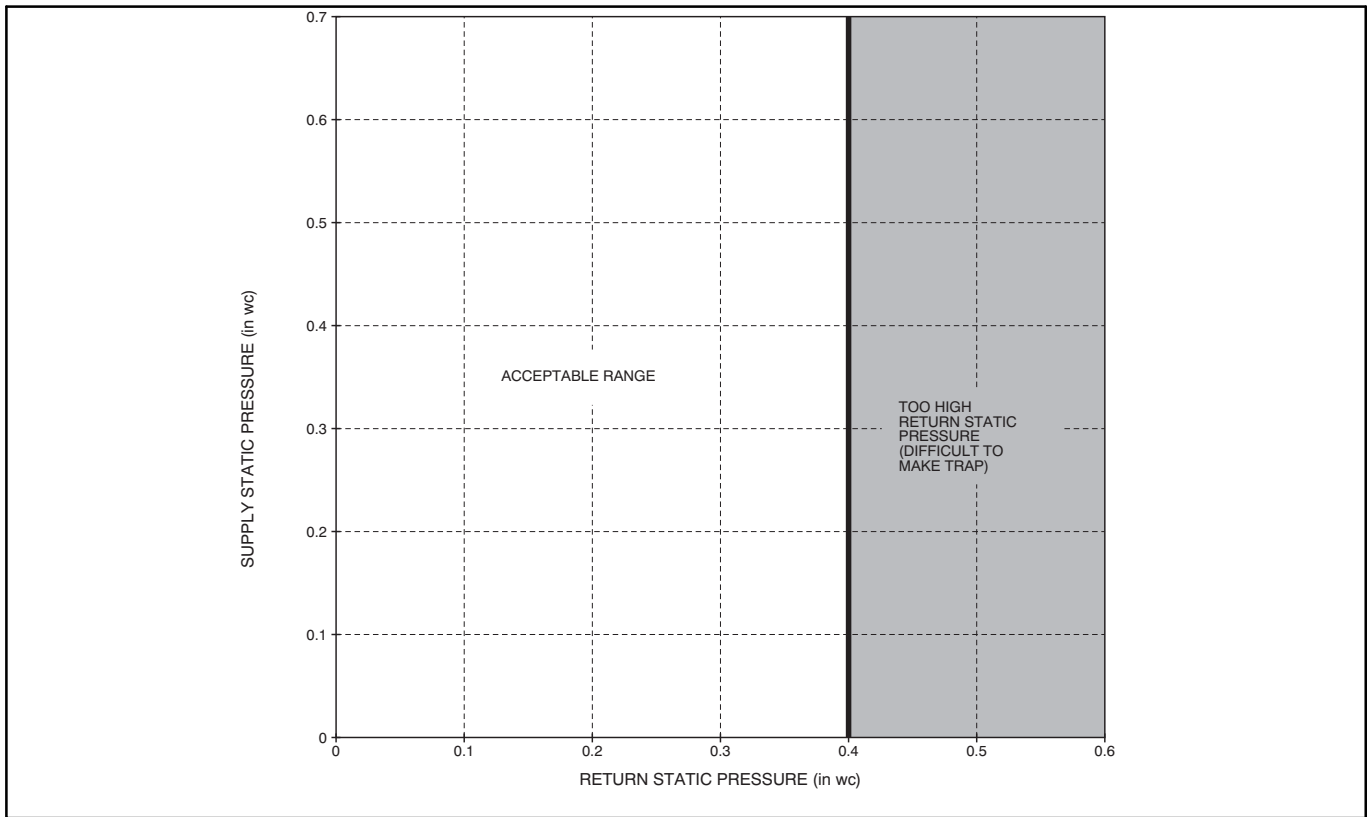
| MODEL FCM4X | OUTDOOR UNIT CAPACITY BTUH | ELECTRIC HEATER kW RANGE |      |      |      |      |       |      |
|-------------|----------------------------|--------------------------|------|------|------|------|-------|------|
|             |                            | 5                        | 7-9  | 10   | 15   | 20   | 24-25 | 30   |
| 24          | EMERGENCY                  | 625                      | 625  | 675  | 775  | 950  | —     | —    |
|             | 18,000                     | 625                      | 625  | 675  | —    | —    | —     | —    |
|             | 24,000                     | 650                      | 725  | 775  | 900  | —    | —     | —    |
|             | 30,000                     | 800                      | 875  | 875  | 925  | 1125 | —     | —    |
|             | 36,000                     | 975                      | 975  | 975  | 1025 | 1125 | —     | —    |
| 36          | EMERGENCY                  | 675                      | 700  | 775  | 850  | 1050 | —     | —    |
|             | 24,000                     | 675                      | 875  | 875  | 1100 | 1150 | —     | —    |
|             | 30,000                     | 800                      | 875  | 875  | 1100 | 1150 | —     | —    |
|             | 36,000                     | 975                      | 975  | 1025 | 1150 | 1250 | —     | —    |
|             | 42,000                     | 1125                     | 1125 | 1125 | 1150 | 1350 | —     | —    |
| 48          | EMERGENCY                  | 675                      | 700  | 775  | 850  | 1050 | 1400  | 1425 |
|             | 30,000                     | 800                      | 875  | 875  | 1100 | 1150 | —     | —    |
|             | 36,000                     | 975                      | 975  | 1025 | 1150 | 1250 | —     | —    |
|             | 42,000                     | 1125                     | 1125 | 1125 | 1150 | 1250 | —     | —    |
|             | 48,000                     | 1305                     | 1305 | 1305 | 1305 | 1350 | 1500  | 1600 |
| 60          | EMERGENCY                  | 1050                     | 1050 | 1050 | 1050 | 1125 | 1750  | 1750 |
|             | 36,000                     | 1050                     | 1050 | 1100 | 1350 | 1350 | —     | —    |
|             | 42,000                     | 1125                     | 1125 | 1150 | 1350 | 1350 | —     | —    |
|             | 48,000                     | 1300                     | 1300 | 1300 | 1350 | 1500 | 1750  | 1750 |
|             | 60,000                     | 1625                     | 1625 | 1625 | 1625 | 1750 | 1750  | 1750 |

Note 1: Emergency – Air conditioner with electric heater application, or emergency heat.

Note 2: These airflows are minimum airflows as UL listed.

Note 3: Dashed entry indicates that the heater/fan coil/outdoor unit combination is not approved. Do not apply.

**ACCEPTABLE DUCT CONDITIONS**



A07273

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.

**MINIMUM RPM TABLE**

| MODEL   | SYSTEM SIZES       | CFM RANGE  | MIN RPM |
|---------|--------------------|------------|---------|
| FCM4X24 | 018, 024, 030, 036 | 150 – 1200 | 300     |
| FCM4X36 | 024, 030, 036, 042 | 200 – 1400 | 285     |
| FCM4X48 | 030, 036, 042, 048 | 250 – 1600 | 275     |
| FCM4X60 | 036, 042, 048, 060 | 500 – 2000 | 275     |

**MAXIMUM STATIC TABLE**

| MODEL   | AIRFLOW DELIVERY | AVAILABLE STATIC PRESSURE |
|---------|------------------|---------------------------|
| FCM4X24 | 525 CFM          | 1.00 in wc                |
|         | 700 CFM          | 1.00 in wc                |
|         | 875 CFM          | 1.00 in wc                |
|         | 1050 CFM         | 0.80 in wc                |
|         | 1200 CFM         | 0.60 in wc                |
| FCM4X36 | 700 CFM          | 1.00 in wc                |
|         | 875 CFM          | 1.00 in wc                |
|         | 1050 CFM         | 1.00 in wc                |
|         | 1225 CFM         | 1.00 in wc                |
| FCM4X48 | 1400 CFM         | 0.80 in wc                |
|         | 875 CFM          | 1.00 in wc                |
|         | 1050 CFM         | 1.00 in wc                |
|         | 1225 CFM         | 1.00 in wc                |
| FCM4X60 | 1400 CFM         | 1.00 in wc                |
|         | 1600 CFM         | 0.50 in wc                |
|         | 1050 CFM         | 1.00 in wc                |
|         | 1225 CFM         | 1.00 in wc                |
| FCM4X60 | 1400 CFM         | 1.00 in wc                |
|         | 1750 CFM         | 1.00 in wc                |
|         | 2000 CFM         | 0.60 in wc                |
|         | 1050 CFM         | 1.00 in wc                |



NOTES:

- Contact manufacturer for cooling capacities at conditions other than shown in table.
- Formulas:  
 Leaving db = 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. Direct interpolation is permissible. Do not extrapolate.
- SHC is based on 80°F db temperature of air entering coil. Below 80°F db, subtract (Correction Factor x CFM) from SHC. Above 80°F db, add (Correction Factor x CFM) to SHC.
- Bypass Factor = 0 indicates no psychometric solution. Use bypass factor of next lower EWB for approximation.

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                 |
|               | <b>Correction Factor</b>               |      |      |      |      |                         |
| 0.10          | .098                                   | 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.  
 Correction Factor =  $1.09 \times (1 - \text{BF}) \times (\text{db} - 80)$

**ESTIMATED SOUND POWER LEVEL (dBA)**

| MODEL SIZE | CONDITIONS |      | OCTAVE BAND CENTER FREQUENCY |      |      |      |      |      |      |
|------------|------------|------|------------------------------|------|------|------|------|------|------|
|            | CFM        | ESP  | 63                           | 125  | 250  | 500  | 1000 | 2000 | 4000 |
| FCM4X24    | 400        | 0.25 | 61.0                         | 57.0 | 55.0 | 50.0 | 48.0 | 46.0 | 42.0 |
|            | 600        | 0.25 | 62.7                         | 58.7 | 56.7 | 51.7 | 49.7 | 47.7 | 43.7 |
|            | 800        | 0.25 | 64.0                         | 60.0 | 58.0 | 53.0 | 51.0 | 49.0 | 45.0 |
|            | 1000       | 0.25 | 65.0                         | 61.0 | 57.0 | 56.0 | 52.0 | 50.0 | 46.0 |
|            | 1200       | 0.25 | 65.8                         | 61.8 | 57.8 | 56.8 | 52.8 | 50.8 | 46.8 |
|            | 1400       | 0.25 | 66.4                         | 62.4 | 58.4 | 57.4 | 53.4 | 51.4 | 47.4 |
| FCM4X36    | 400        | 0.25 | 61.0                         | 57.0 | 55.0 | 50.0 | 48.0 | 46.0 | 42.0 |
|            | 600        | 0.25 | 62.7                         | 58.7 | 56.7 | 51.7 | 49.7 | 47.7 | 43.7 |
|            | 800        | 0.25 | 64.0                         | 60.0 | 58.0 | 53.0 | 51.0 | 49.0 | 45.0 |
|            | 1000       | 0.25 | 65.0                         | 61.0 | 59.0 | 54.0 | 52.0 | 50.0 | 46.0 |
|            | 1200       | 0.25 | 65.8                         | 61.8 | 59.8 | 54.8 | 52.8 | 50.8 | 46.8 |
|            | 1400       | 0.25 | 66.4                         | 62.4 | 58.4 | 57.4 | 53.4 | 51.4 | 47.4 |
| FCM4X48    | 400        | 0.25 | 61.0                         | 57.0 | 55.0 | 50.0 | 48.0 | 46.0 | 42.0 |
|            | 600        | 0.25 | 62.7                         | 58.7 | 56.7 | 51.7 | 49.7 | 47.7 | 43.7 |
|            | 800        | 0.25 | 64.0                         | 60.0 | 58.0 | 53.0 | 51.0 | 49.0 | 45.0 |
|            | 1000       | 0.25 | 65.0                         | 61.0 | 59.0 | 54.0 | 52.0 | 50.0 | 46.0 |
|            | 1200       | 0.25 | 65.8                         | 61.8 | 59.8 | 54.8 | 52.8 | 50.8 | 46.8 |
|            | 1400       | 0.25 | 66.4                         | 62.4 | 58.4 | 57.4 | 53.4 | 51.4 | 47.4 |
| FCM4X60    | 600        | 0.25 | 62.7                         | 58.7 | 56.7 | 51.7 | 49.7 | 47.7 | 43.7 |
|            | 800        | 0.25 | 64.0                         | 60.0 | 58.0 | 53.0 | 51.0 | 49.0 | 45.0 |
|            | 1000       | 0.25 | 65.0                         | 61.0 | 59.0 | 54.0 | 52.0 | 50.0 | 46.0 |
|            | 1200       | 0.25 | 65.8                         | 61.8 | 59.8 | 54.8 | 52.8 | 50.8 | 46.8 |
|            | 1400       | 0.25 | 66.4                         | 62.4 | 60.4 | 55.4 | 53.4 | 51.4 | 47.4 |
|            | 1600       | 0.25 | 67.0                         | 63.0 | 61.0 | 56.0 | 54.0 | 52.0 | 48.0 |
|            | 1800       | 0.25 | 67.5                         | 63.5 | 59.5 | 58.5 | 54.5 | 52.5 | 48.5 |
|            | 2000       | 0.25 | 68.0                         | 64.0 | 60.0 | 59.0 | 55.0 | 53.0 | 49.0 |
| 2150       | 0.25       | 68.3 | 64.3                         | 60.3 | 59.3 | 55.3 | 53.3 | 49.3 |      |

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

**AIRFLOW PERFORMANCE CORRECTION FACTORS**

| HEATER KW  | ELEMENTS | STATIC PRESSURE CORRECTION (in wc) |         |
|------------|----------|------------------------------------|---------|
|            |          | Sizes 24-48                        | Size 60 |
| 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   |

The FCM4X airflow performance table was developed using fan coils with 10kW 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.

**FACTORY-INSTALLED FILTER STATIC PRESSURE DROP (in wc)**

| MODEL FCM4X | CFM   |       |       |       |       |       |       |       |       |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|             | 400   | 600   | 800   | 1000  | 1200  | 1400  | 1600  | 1800  | 2000  |
| 24          | 0.020 | 0.044 | 0.048 | 0.072 | 0.100 | —     | —     | —     | —     |
| 36          | —     | 0.020 | 0.035 | 0.051 | 0.070 | 0.092 | —     | —     | —     |
| 48          | —     | —     | 0.035 | 0.051 | 0.070 | 0.092 | 0.120 | —     | —     |
| 60          | —     | —     | —     | 0.038 | 0.053 | 0.070 | 0.086 | 0.105 | 0.133 |



**AIR DELIVERY PERFORMANCE CORRECTION COMPONENT PRESSURE DROP (in wc)  
AT INDICATED AIRFLOW (DRY TO WET COIL)**

| MODEL<br>FCM4X | CFM   |       |       |       |       |       |       |       |       |       |       |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                | 600   | 700   | 800   | 900   | 1000  | 1100  | 1200  | 1300  | 1400  | 1500  | 1600  |
| 24             | 0.012 | 0.016 | 0.022 | 0.028 | 0.034 | 0.040 | 0.049 | —     | —     | —     | —     |
| 36             | —     | 0.026 | 0.034 | 0.042 | 0.052 | 0.063 | 0.075 | 0.083 | 0.091 | 0.098 | 0.110 |
| 48             | —     | 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  |
| 60             | 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.

**UNITS WITHOUT ELECTRIC HEAT**

| UNIT SIZE<br>FCM4X | VOLTS-PHASE | FLA | MIN CKT AMPS | BRANCH CIRCUIT     |                   |
|--------------------|-------------|-----|--------------|--------------------|-------------------|
|                    |             |     |              | Min Wire Size Awg* | Fuse/Ckt Bkr Amps |
| 24                 | 208/230-1   | 4.3 | 5.4          | 14                 | 15                |
| 36                 | 208/230-1   | 4.3 | 5.4          | 14                 | 15                |
| 48                 | 208/230-1   | 4.3 | 5.4          | 14                 | 15                |
| 60                 | 208/230-1   | 6.8 | 8.5          | 14                 | 15                |

\* Use copper wire only to connect unit. 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).

**NOTE:** If branch circuit wire length exceeds 100 ft / 30.5 m, consult NEC 210-19a to determine maximum wire length. Use 2% voltage drop.

FLA — Full Load Amps

**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   | —                | —                   |
| 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.

EHC ELECTRIC HEATER ELECTRICAL DATA

| Heater Model | Heater kW |      | Internal Circuit Protection | HEATER AMPS 208/230V |                |              | Min Ampacity ☆ 208/230V |                |              | Min Wire Size (AWG) 208/230V <sup>1</sup> |                |              | Min Gnd Wire Size 208/230V |                |              | Max Fuse/Ckt Bkr Amps 208/230V |                |              | Max Wire Length 208/230V (FT)†† |        |        |        |        |
|--------------|-----------|------|-----------------------------|----------------------|----------------|--------------|-------------------------|----------------|--------------|---|----------------|--------------|----------------------------|----------------|--------------|--------------------------------|----------------|--------------|---------------------------------|--------|--------|--------|--------|
|              | 230v      | 208v |                             | Phase                | Single Circuit | Dual Circuit |                         | Single Circuit | Dual Circuit |   | Single Circuit | Dual Circuit |                            | Single Circuit | Dual Circuit |                                | Single Circuit | Dual Circuit |                                 |        |        |        |        |
|              |           |      |                             |                      |                | L1, L2       | L3, L4                  |                | L1, L2       | L3, L4                                    |                | L1, L2       | L3, L4                     |                | L1, L2       | L3, L4                         |                | L1, L2       | L3, L4                          | L1, L2 | L3, L4 | L1, L2 | L3, L4 |
| EHC09AKC†    | 9         | 6.8  | 1                           | 32.8/36.0            | —              | —            | 49.5/53.5               | —              | —            | 8/6                                       | —              | —            | 10/10                      | —              | —            | 50/60                          | —              | —            | 54/87                           | —      | —      | —      | —      |
| EHC15AKF     | 15        | 11.3 | 3                           | 18.8/20.8            | —              | —            | 32.0/34.5               | —              | —            | 8/8                                       | —              | —            | 10/10                      | —              | —            | 35/35                          | —              | —            | 83/85                           | —      | —      | —      | —      |
| EHC15AKB     | 15        | 11.3 | 1                           | 54.2/59.9            | 36.2/40.0      | 18.1/20.0    | 76.3/83.4               | 53.8/58.5      | 22.7/25.0    | 4/4                                       | 6/6            | 10/10        | 8/8                        | 10/10          | 10/10        | 80/80                          | 60/60          | 25/25        | 88/89                           | 78/80  | 75/76  | —      | —      |
| EHC20AKF     | 20        | 15.0 | 1                           | 72.3/79.9            | 36.2/40.0      | 18.1/20.0    | 98.9/108.4              | 53.8/58.5      | 45.3/50.0    | 3/2                                       | 6/6            | 8/8          | 8/6                        | 10/10          | 10/10        | 100/110                        | 60/60          | 50/50        | 85/109                          | 78/80  | 59/59  | —      | —      |
| EHC20AKB     | 20        | 15.0 | 1                           | —                    | 36.2/40.0      | 36.2/40.0    | —                       | 53.8/58.5      | 45.3/50.0    | —   | 6/6            | 8/8          | —                          | 10/10          | 10/10        | —                              | 60/60          | 50/50        | —                               | 78/80  | 59/59  | —      | —      |
| EHC25AHCF†   | 24        | 18.0 | 3                           | 50.1/55.4            | —              | —            | 71.2/77.8               | —              | —            | 4/4                                       | —              | —            | 8/8                        | —              | —            | 80/80                          | —              | —            | 94/95                           | —      | —      | —      | —      |
| EHC30AHCF†   | 30        | 22.5 | 1                           | 86.7/95.5            | —              | —            | 116.9/127.9             | —              | —            | 1/1                                       | —              | —            | 6/6                        | —              | —            | 125/150                        | —              | —            | 115/116                         | —      | —      | —      | —      |
| EHC30AHCF†   | 30        | 22.5 | 3                           | 62.6/69.2            | —              | —            | 86.8/95.0               | —              | —            | 3/3                                       | —              | —            | 8/8                        | —              | —            | 90/100                         | —              | —            | 97/98                           | —      | —      | —      | —      |
| EHC30AHCF†   | 30        | 22.5 | 1                           | 109.0/120.0          | —              | —            | 144.8/158.5             | —              | —            | 0/00                                      | —              | —            | 6/6                        | —              | —            | 150/175                        | —              | —            | 117/1150                        | —      | —      | —      | —      |

FIELD MULTIPOINT WIRING OR 24 AND 30 KW SINGLE PHASE

| Heater Model | Heater kW |      | P<br>H<br>A<br>S<br>E | Heater Amps 208/230V |           |           | Minimum Circuit Ampacity 208/230V ☆ |           |           | Minimum Wire Size (AWG) 208/230V† |        |        | Min Gnd Wire Size 208/230V | Max Fuse/Ckt Bkr Amps 208/230V |        |        | Max Wire Length (FT)†† |        |        |
|--------------|-----------|------|-----------------------|----------------------|-----------|-----------|-------------------------------------|-----------|-----------|-----------------------------------|--------|--------|----------------------------|--------------------------------|--------|--------|------------------------|--------|--------|
|              | 230V      | 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 |
|              |           |      |                       |                      |           |           |                                     |           |           |                                   |        |        |                            |                                |        |        |                        |        |        |
| EHC25AHCF†   | 24        | 18.0 | 1                     | 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  | 59/60  | 73/73                  | 73/73  |        |
| EHC30AHCF†   | 30        | 22.5 | 1                     | 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  | 78/80  | 59/59                  | 59/59  |        |

Notes:

- 1 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).
- ☆ Includes blower motor amps of largest Fan Coil used with heater.
- † Supplied as single phase, field convertible to 3-phase.
- ‡ Supplied as 3-phase, field convertible to single phase, single or multiple supply circuits.
- †† Length shown is as measured one way along wire path between unit and service panel for a voltage drop not to exceed 2%.

**EHK ELECTRIC HEATER ELECTRICAL DATA**

| Heater Model | Heater 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) †† |              |       |
|--------------|-----------|------|-------|-----------------------------|----------------------|-----------|----------------|-------------------------|--------------|-----------|--------------------------------|-------|--------------|----------------------------|----------------|-------|--------------------------------|---------|----------------|----------------------------------|--------------|-------|
|              | 230v      | 208v |       |                             | Dual Circuit         |           | Single Circuit |                         | Dual Circuit |           | Single Circuit                 |       | Dual Circuit |                            | Single Circuit |       | Dual Circuit                   |         | Single Circuit |                                  | Dual Circuit |       |
|              |           |      |       |                             | L1,L2                | L3,L4     | L1,L2          | L3,L4                   | L1,L         | L3,L      | L1,L                           | L3,L  | L1,L         | L3,L                       | L1,L           | L3,L  | L1,L                           | L3,L    | L1,L           | L3,L                             | L1,L         | L3,L  |
| EHK05AKN*    | 5         | 3.8  | 1     | None                        | 18.1/20.0            | —         | —              | —                       | 26.0/28.4    | —         | —                              | 10/10 | —            | —                          | 30/30          | —     | —                              | 66/66   | —              | —                                |              |       |
| EHK05AKN**   | 5         | 3.8  | 1     | None                        | 18.1/20.0            | —         | —              | —                       | 31.2/33.5    | —         | —                              | 10/10 | —            | —                          | 35/35          | —     | —                              | 85/88   | —              | —                                |              |       |
| EHK05AKB*    | 5         | 3.8  | 1     | CH Bkr                      | 18.1/20.0            | —         | —              | —                       | 26.0/28.4    | —         | —                              | 10/10 | —            | —                          | 30/30          | —     | —                              | 66/66   | —              | —                                |              |       |
| EHK05AKB**   | 5         | 3.8  | 1     | CH Bkr                      | 18.1/20.0            | —         | —              | —                       | 31.2/33.5    | —         | —                              | 10/10 | —            | —                          | 35/35          | —     | —                              | 85/88   | —              | —                                |              |       |
| EHK07AKN     | 8         | 6.0  | 1     | None                        | 28.9/32.0            | —         | —              | —                       | 44.7/48.5    | —         | —                              | 8/8   | —            | —                          | 45/50          | —     | —                              | 59/60   | —              | —                                |              |       |
| EHK07AKB     | 8         | 6.0  | 1     | CH Bkr                      | 28.9/32.0            | —         | —              | —                       | 44.7/48.5    | —         | —                              | 8/8   | —            | —                          | 45/50          | —     | —                              | 59/60   | —              | —                                |              |       |
| EHK09AKCN†   | 9         | 6.8  | 1     | None                        | 32.8/36.0            | —         | —              | —                       | 49.5/53.5    | —         | —                              | 8/6   | —            | —                          | 50/60          | —     | —                              | 54/87   | —              | —                                |              |       |
| EHK10AKN     | 9         | 6.8  | 3     | None                        | 18.8/20.8            | —         | —              | —                       | 32.0/34.5    | —         | —                              | 8/8   | —            | —                          | 35/35          | —     | —                              | 83/85   | —              | —                                |              |       |
| EHK10AKB     | 10        | 7.5  | 1     | None                        | 36.2/40.0            | —         | —              | —                       | 53.8/58.5    | —         | —                              | 6/6   | —            | —                          | 60/60          | —     | —                              | 78/80   | —              | —                                |              |       |
| EHK10AKB     | 10        | 7.5  | 1     | CH Bkr                      | 36.2/40.0            | —         | —              | —                       | 53.8/58.5    | —         | —                              | 6/6   | —            | —                          | 60/60          | —     | —                              | 78/80   | —              | —                                |              |       |
| EHK15AKF     | 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                      | 8/8            | 10/10 | 80/90                          | 60/60   | 25/25          | 88/88                            | 78/80        | 75/76 |
| EHK15AKB     | 15        | 11.3 | 1     | CH Bkr                      | —                    | —         | —              | 18.1/20.0               | —            | —         | —                              | —     | 6/6          | 10/10                      | —              | —     | —                              | —       | —              | —                                | —            | —     |
| EHK15AHN     | 15        | 11.3 | 3     | None                        | 31.3/34.6            | —         | —              | —                       | 47.7/51.8    | —         | —                              | 8/6   | —            | —                          | 50/60          | —     | —                              | 56/90   | —              | —                                | —            | —     |
| EHK18AHN     | 18        | 13.5 | 3     | None                        | 37.6/41.5            | —         | —              | —                       | 55.5/60.4    | —         | —                              | 6/6   | —            | —                          | 60/70          | —     | —                              | 76/77   | —              | —                                | —            | —     |
| EHK20AKF     | 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                        | 8/6            | 10/10 | 100/110                        | 60/60   | 50/50          | 85/109                           | 78/80        | 59/59 |
| EHK20AKB     | 20        | 15.0 | 1     | CH Bkr                      | —                    | —         | —              | 36.2/40.0               | —            | —         | —                              | —     | 6/6          | 8/8                        | —              | —     | —                              | —       | —              | —                                | —            | —     |
| EHK25AHC†    | 24        | 18.0 | 3     | Fuse                        | 50.1/55.4            | —         | —              | —                       | 71.2/77.8    | —         | —                              | 4/4   | —            | —                          | 80/80          | —     | —                              | 94/95   | —              | —                                | —            | —     |
| EHK25AHC†    | 24        | 18.0 | 1     | Fuse                        | 86.7/95.5            | —         | —              | —                       | 116.9/127.9  | —         | —                              | 1/1   | —            | —                          | 125/150        | —     | —                              | 115/116 | —              | —                                | —            | —     |
| EHK30AHC†    | 30        | 22.5 | 3     | Fuse                        | 62.6/69.2            | —         | —              | —                       | 86.8/95.0    | —         | —                              | 3/3   | —            | —                          | 90/100         | —     | —                              | 97/98   | —              | —                                | —            | —     |
| EHK30AHC†    | 30        | 22.5 | 1     | Fuse                        | 109.0/120.0          | —         | —              | —                       | 144.8/158.5  | —         | —                              | 0/00  | —            | —                          | 150/175        | —     | —                              | 117/150 | —              | —                                | —            | —     |

**FIELD MULTIPOINT WIRING OR 24 AND 30 KW SINGLE PHASE**

| Heater Model | Heater kW |      | P | H | A | S | E | Heater Amps 208/230V |           |           | Minimum Wire Size (AWG) 208/230V † |           |           | Minimum Circuit Ampacity 208/230V ☆ |           |           | Min Gnd Wire Size 208/230V |           |           | Max Fuse/Ckt Bkr Amps 208/230V |           |           | Max Wire Length 208/230V (FT) †† |           |           |           |           |           |           |           |           |
|--------------|-----------|------|---|---|---|---|---|----------------------|-----------|-----------|------------------------------------|-----------|-----------|-------------------------------------|-----------|-----------|----------------------------|-----------|-----------|--------------------------------|-----------|-----------|----------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|              | 230V      | 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    |           |
|              |           |      |   |   |   |   |   | 24                   | 18.0      | 28.9/32.0 | 28.9/32.0                          | 36.2/40.0 | 36.2/40.0 | 44.7/48.5                           | 36.2/40.0 | 36.2/40.0 | 44.7/48.5                  | 36.2/40.0 | 36.2/40.0 | 44.7/48.5                      | 36.2/40.0 | 36.2/40.0 | 44.7/48.5                        | 36.2/40.0 | 36.2/40.0 | 44.7/48.5 | 36.2/40.0 | 36.2/40.0 | 44.7/48.5 | 36.2/40.0 | 36.2/40.0 |
| EHK30AHC†    | 30        | 22.5 | 1 | 1 | 1 | 1 | 1 | 36.2/40.0            | 36.2/40.0 | 36.2/40.0 | 36.2/40.0                          | 45.3/50.0 | 45.3/50.0 | 45.3/50.0                           | 45.3/50.0 | 6/6       | 8/8                        | 8/8       | 8/8       | 8/8                            | 8/8       | 60/60     | 50/50                            | 50/50     | 78/80     | 78/80     | 59/59     |           |           |           |           |

**Notes:**

- 1 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).
- \* When used with Fan Coil model sizes 2400, 3600.
- \*\* When used with Fan Coil model sizes 4200, 4800.
- ☆ Includes blower motor amps of largest Fan Coil used with heater.
- † Supplied as single phase, field convertible to 3-phase.
- ‡ Supplied as 3-phase, field convertible to single phase, single or multiple supply circuits.
- †† Length shown is as measured one way along wire path between unit and service panel for a voltage drop not to exceed 2%.

| ACCESSORIES |   |  |
|-------------|---|--|
| Part Number | Description   | Use with Model Sizes                             |
| EBAC01DSC   | Disconnect Kit  | Use with All Heaters 5kW thru 10kW               |
| EBAC01NCB   | Downflow Base Kit   | 24, 36, 48                                       |
| EBAC04NCB   |   | 60   |
| EBAC01DFS   | Bracket, Downflow Conversion Kit Slope Coil                     | 36   |
| EBAC02DFA   | Bracket, Downflow Conversion Kit A-Coil                         | 24, 48, 60                                       |
| EBAC01SPK   | Single Point Wiring Kit   | Only for use with 15kW and 20kW fused heaters    |
| EBAC01FKM   | Filter Kit<br>(washable, box of 12)                             | 24‡,   |
| EBAC01FKL   |   | 36‡, 48‡   |
| EBAC01FKX   |   | 60‡  |
| NASA00201FR | Standard Filter Rack (16 x 20 x 1 filter required)              | 24   |
| NASA00301FR | Standard Filter Rack (20 x 20 x 1 filter required)              | 36, 48   |
| NASA00401FR | Standard Filter Rack [quantity 2] (12 x 20 x 1 filter required) | 60   |
| EBAC01PLG   | Power Plug Kit  | ALL (Factory Installed)                          |
| EBAC01GSK   | Downflow/Horizontal Gasket Kit                                  | ALL (required for horizontal right and downflow) |
| TSTAT0101SC | Observer Self Configuring Communicating Wall Control            | ALL  |
| EBAC01CTK   | PVC Condensate Trap Kit (box of 50)                             | ALL  |

‡Factory supplied

| SELF CONFIGURING COMMUNICATING ELECTRIC HEATERS for FCM4X |  |                      |
|---|--|----------------------|
| Part Number   | Description  | Use with Model Sizes |
| EHC09AKCN   | 9 kW, single phase, no internal circuit protection                                   | ALL                  |
| EHC15AKF  | 15 kW, single phase, with fuses  | ALL                  |
| EHC15AKB  | 15 kW, single phase, with circuit breakers   | ALL                  |
| EHC20AKF  | 20 kW, single phase, with fuses  | ALL                  |
| EHC20AKB  | 20 kW, single phase, with circuit breakers   | ALL                  |
| EHC25AHCF   | 24 kW, supplied as 3 phase, field convertible to single phase, with fuses            | ALL                  |
| EHC30AHCF   | 30 kW, supplied as 3 phase, field convertible to single phase, with circuit breakers | 48 – 60              |

| STANDARD ELECTRIC HEATERS |  |                      |
|---------------------------|--|----------------------|
| Part Number               | Description  | Use with Model Sizes |
| EHK05AKN                  | 5 kW, single phase, no internal circuit protection   | ALL                  |
| EHK05AKB                  | 5 kW, single phase, with circuit breakers  | ALL                  |
| EHK07AKN                  | 8 kW, single phase, no internal circuit protection   | ALL                  |
| EHK07AKB                  | 8 kW, single phase, with circuit breakers  | ALL                  |
| EHK09AKCN                 | 9 kW, supplied as single phase, field convertible to 3-phase, no internal circuit protection | 3600, 4800, 6000     |
| EHK10AKN                  | 10 kW, single phase, no internal circuit protection  | ALL                  |
| EHK10AKB                  | 10 kW, single phase, with circuit breakers   | ALL                  |
| EHK15AKF                  | 15 kW, single phase, with fuses  | ALL                  |
| EHK15AKB                  | 15 kW, single phase, with circuit breakers   | ALL†                 |
| EHK15AHN                  | 15 kW, 3-phase, no internal circuit protection   | ALL†                 |
| EHK18AHN                  | 18 kW, 3-phase, no internal circuit protection   | 4800, 6000           |
| EHK20AKF                  | 20 kW, single phase, with fuses  | ALL†                 |
| EHK20AKB                  | 20 kW, single phase, with circuit breakers   | ALL†                 |
| EHK25AHCF                 | 24 kW, supplied as 3-phase, field convertible to single phase, with fuses                    | 4800, 6000           |
| EHK30AHCF                 | 30 kW, supplied as 3-phase, field convertible to single phase, with fuses                    | 4800, 6000           |

† 15kW & 20kW are not recommended for specific heat pump applications, see AIRFLOW DELIVERY (CFM)