

# TECHNICAL SUPPORT MANUAL

## Fan Coils

### FEM\*X, WAHM, WAHT

#### Safety Labeling and Signal Words

##### DANGER, WARNING, CAUTION, and NOTE

The signal words **DANGER**, **WARNING**, **CAUTION**, and **NOTE** are used to identify levels of hazard seriousness. The signal word **DANGER** is only used on product labels to signify an immediate hazard. The signal words **WARNING**, **CAUTION**, and **NOTE** will be used on product labels and throughout this manual and other manuals that may apply to the product.

**DANGER** – Immediate hazards which **will** result in severe personal injury or death.

**WARNING** – Hazards or unsafe practices which **could** result in severe personal injury or death.

**CAUTION** – Hazards or unsafe practices which **may** result in minor personal injury or product or property damage.

**NOTE** – Used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

##### Signal Words in Manuals

The signal word **WARNING** is used throughout this manual in the following manner:



The signal word **CAUTION** is used throughout this manual in the following manner:



##### Signal Words on Product Labeling

Signal words are used in combination with colors and/or pictures on product labels.

#### TABLE OF CONTENTS

|                                   |       |
|-----------------------------------|-------|
| Wiring Diagram .....              | 2 – 3 |
| Airflow Charts .....              | 4 – 5 |
| Model Number Identification ..... | 6 – 7 |

**ELECTRICAL SHOCK HAZARD**

**Failure to turn off electric power could result in personal injury or death.**

**Before installing or servicing system, turn off main power to the system. There may be more than one disconnect switch, including accessory heater(s).**

#### MODELS

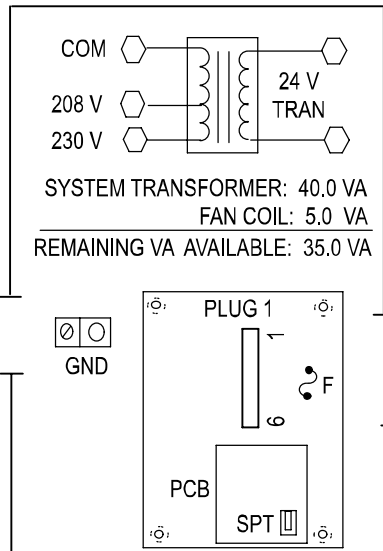
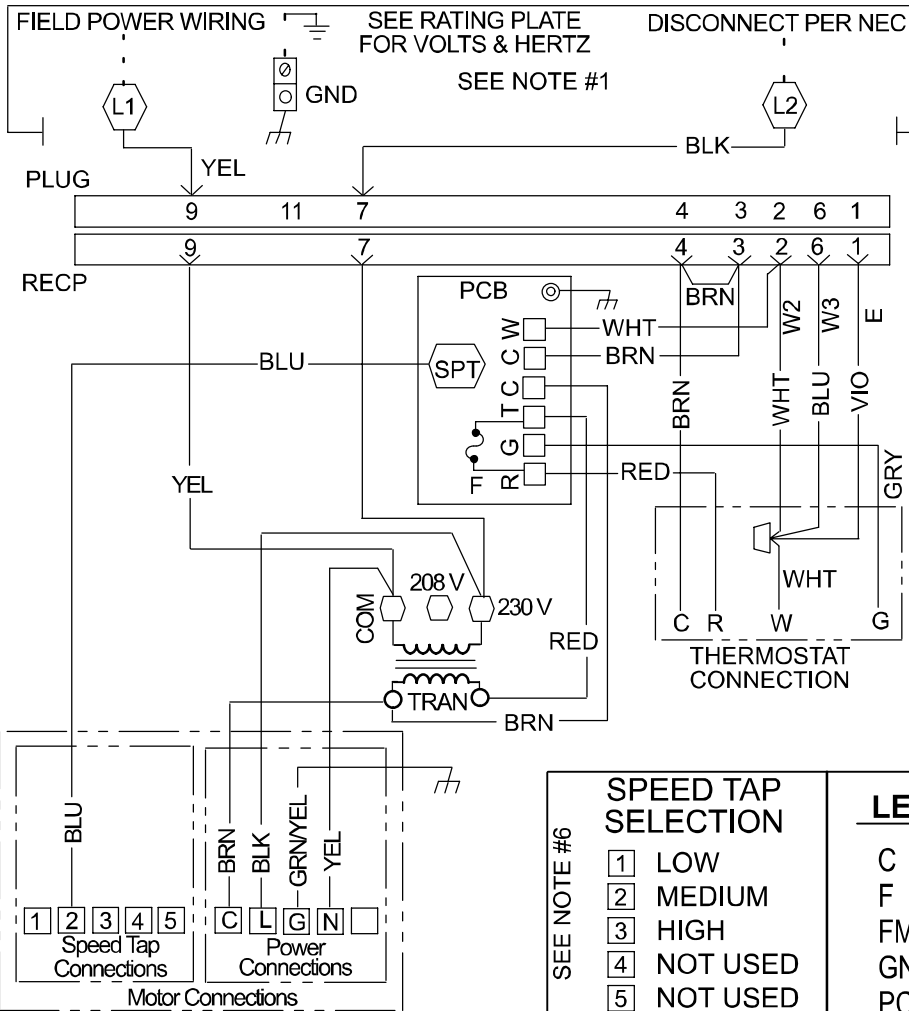
|             |             |           |           |           |           |
|-------------|-------------|-----------|-----------|-----------|-----------|
| FEM2X1800A1 | FEM4X1800A1 | WAHM182A1 | WAHM184A2 | WAHT182A1 | WAHT184A2 |
| FEM2X2400A1 | FEM4X2400A1 | WAHM242A1 | WAHM244A2 | WAHT242A1 | WAHT244A2 |
| FEM4X3000A1 | FEM2X3000A1 | WAHM302A1 | WAHM304A2 | WAHT302A1 | WAHT304A2 |
| FEM2X3500A1 | FEM4X3500A1 | WAHM362A1 | WAHM364A2 | WAHT362A1 | WAHT364A2 |
| FEM2X3600A1 | FEM4X3600A1 | WAHM422A1 | WAHM424A2 | WAHT422A1 | WAHT424A2 |
| FEM2X4200A1 | FEM4X4200A1 | WAHM482A1 | WAHM484A2 | WAHT482A1 | WAHT484A2 |
| FEM2X4800A1 | FEM4X4800A1 | WAHM602A1 | WAHM604A2 | WAHT602A1 | WAHT604A2 |
| FEM2X6000A1 | FEM4X6000A1 |           |           |           |           |

THIS COMPARTMENT MUST BE CLOSED EXCEPT FOR SERVICING

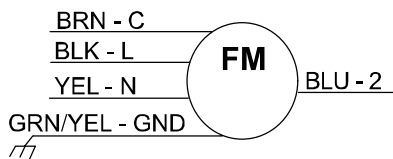
BLOWER MOTOR ROTATION

COOLING CONTROL ONLY

COMPONENT ARRANGEMENT



SYSTEM TRANSFORMER: 40.0 VA  
FAN COIL: 5.0 VA  
REMAINING VA AVAILABLE: 35.0 VA



SPEED TAP SELECTION

- 1 LOW
- 2 MEDIUM
- 3 HIGH
- 4 NOT USED
- 5 NOT USED

SEE NOTE #6

LEGEND

- C COMMON
- F LOW VOLTAGE FUSE
- FM FAN MOTOR
- GND EQUIPMENT GROUND
- PCB PRINTED CIRCUIT BOARD
- RECP RECEPTACLE
- SPT FAN SPEED TAP LOCATION
- TRAN TRANSFORMER
- UNMARKED TERMINAL
- - - FIELD POWER WIRING
- ◻ MARKED TERMINAL
- PLUG AND RECEPTACLE

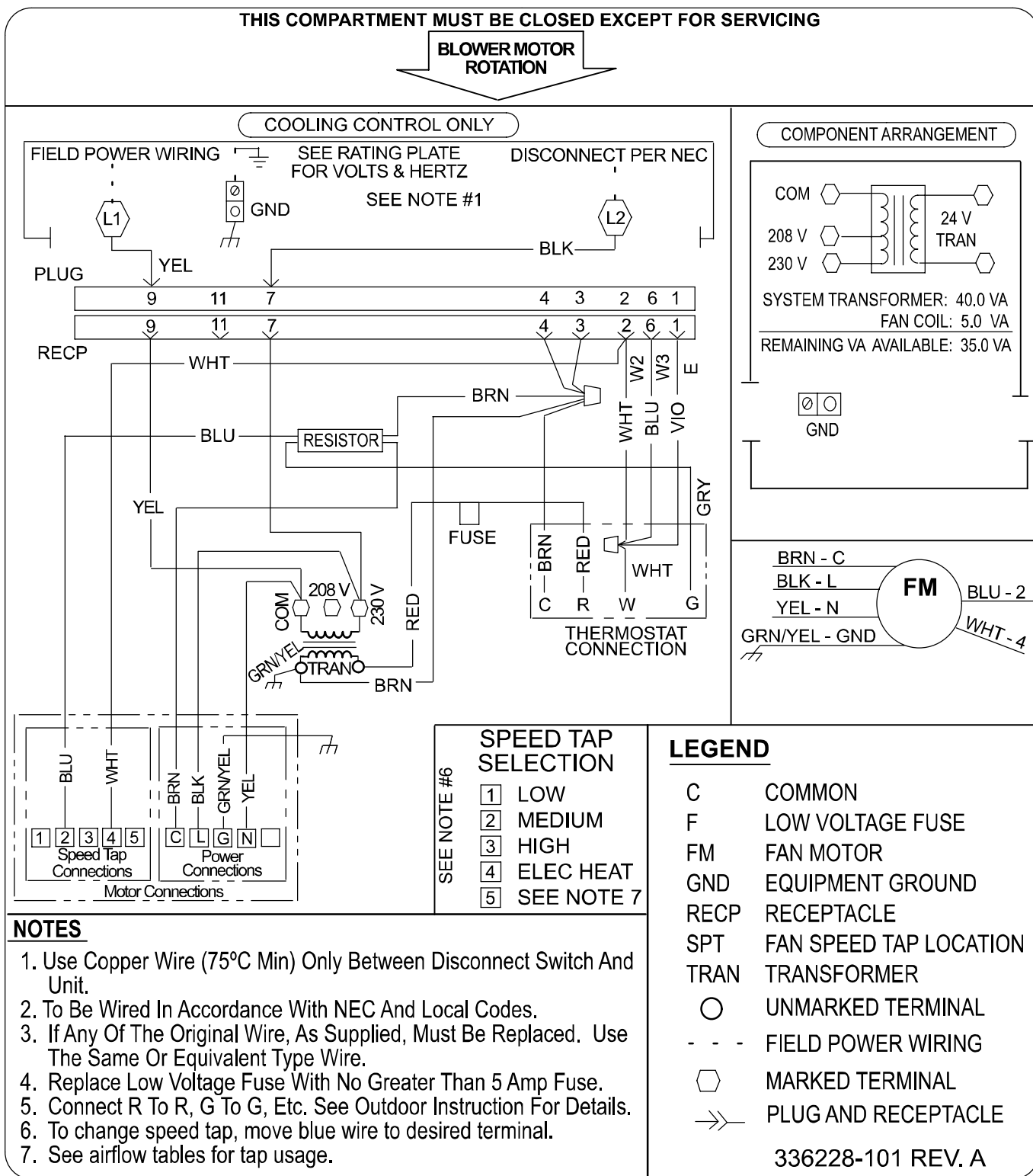
NOTES

1. Use Copper Wire (75°C Min) Only Between Disconnect Switch And Unit.
2. To Be Wired In Accordance With NEC And Local Codes.
3. If Any Of The Original Wire, As Supplied, Must Be Replaced. Use The Same Or Equivalent Type Wire.
4. Replace Low Voltage Fuse With No Greater Than 5 Amp Fuse.
5. Connect R To R, G To G, Etc. See Outdoor Instruction For Details.
6. To change speed tap, move blue wire to desired terminal.

330645-101 REV. B

Models

|             |             |           |           |
|-------------|-------------|-----------|-----------|
| FEM2X1800A1 | FEM4X1800A1 | WAHM182A1 | WAHT182A1 |
| FEM2X2400A1 | FEM4X2400A1 | WAHM242A1 | WAHT242A1 |
| FEM2X3000A1 | FEM4X3000A1 | WAHM302A1 | WAHT302A1 |
| FEM2X3500A1 | FEM4X3500A1 | WAHM362A1 | WAHT362A1 |
| FEM2X3600A1 | FEM4X3600A1 | WAHM422A1 | WAHT422A1 |
| FEM2X4200A1 | FEM4X4200A1 | WAHM482A1 | WAHT482A1 |
| FEM2X4800A1 | FEM4X4800A1 | WAHM602A1 | WAHT602A1 |
| FEM2X6000A1 | FEM4X6000A1 |           |           |



336228-101 REV. A

**Models**

|           |           |
|-----------|-----------|
| WAHM184A2 | WAHT184A2 |
| WAHM244A2 | WAHT244A2 |
| WAHM304A2 | WAHT304A2 |
| WAHM364A2 | WAHT364A2 |
| WAHM424A2 | WAHT424A2 |
| WAHM484A2 | WAHT484A2 |
| WAHM604A2 | WAHT604A2 |

| AIRFLOW PERFORMANCE – CFM at a given Speed and Static reading |              |   |      |      |      |      |      |
|---|--------------|---|------|------|------|------|------|
| Model<br>(* = 2 or 4)   | Blower Speed | Measured Static Pressure, inlet to outlet (inches water column) |      |      |      |      |      |
|   |              | 0.10  | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 |
| FEM*X1800<br>WAHM18*<br>WAHT18*                               | High         | 766   | 739  | 706  | 666  | 619  | 566  |
|   | Medium       | 701   | 659  | 619  | 578  | 538  | 499  |
|   | Low          | 614   | 572  | 530  | 486  | 441  | 396  |
| FEM*X2400<br>WAHM24*<br>WAHT24*                               | High         | 941   | 905  | 868  | 830  | 792  | 753  |
|   | Medium       | 823   | 786  | 747  | 707  | 665  | 622  |
|   | Low          | 633   | 583  | 533  | 482  | 431  | 378  |
| FEM*X3000<br>WAHM30*<br>WAHT30*                               | High         | 1130  | 1097 | 1063 | 1028 | 992  | 955  |
|   | Medium       | 1033  | 1000 | 965  | 928  | 888  | 846  |
|   | Low          | 840   | 802  | 760  | 713  | 663  | 609  |
| FEM2X3500<br>WAHM36*<br>WAHT36*                               | High         | 1437  | 1398 | 1354 | 1308 | 1257 | 1204 |
|   | Medium       | 1282  | 1238 | 1192 | 1142 | 1090 | 1036 |
|   | Low          | 1168  | 1118 | 1067 | 1014 | 959  | 903  |
| FEM*X3600   | High         | 1479  | 1437 | 1392 | 1344 | 1293 | 1240 |
|   | Medium       | 1327  | 1282 | 1236 | 1187 | 1135 | 1081 |
|   | Low          | 1192  | 1151 | 1100 | 1039 | 970  | 890  |
| FEM*X4200<br>WAHM42*<br>WAHT42*                               | High         | 1616  | 1578 | 1533 | 1480 | 1420 | 1353 |
|   | Medium       | 1479  | 1437 | 1392 | 1344 | 1293 | 1240 |
|   | Low          | 1303  | 1258 | 1211 | 1161 | 1108 | 1054 |
| FEM*X4800<br>WAHM48*<br>WAHT48*                               | High         | 1805  | 1772 | 1739 | 1704 | 1669 | 1632 |
|   | Medium       | 1652  | 1617 | 1581 | 1543 | 1504 | 1463 |
|   | Low          | 1458  | 1418 | 1377 | 1335 | 1292 | 1248 |
| FEM*X6000<br>WAHM60*<br>WAHT60*                               | High         | 2057  | 2024 | 1989 | 1954 | 1916 | 1878 |
|   | Medium       | 1799  | 1766 | 1731 | 1695 | 1658 | 1618 |
|   | Low          | 1667  | 1633 | 1596 | 1558 | 1517 | 1475 |

NOTES:

1. Airflow based on dry coil at 230V with factory approved filter and electric heater (2 element heater for model sizes 1800 – 3600, 3 element heater for model sizes 4200 – 6000)
2. Not recommended for use above 0.60 inches water column external static pressure.
3. Shaded cells indicate airflow is greater than 450 CFM per ton.

**STATIC PRESSURE CORRECTION FROM DRY TO WET COIL (inches of water column)**

Airflow performance chart above was developed using fan coils with DRY coils. When taking a static reading across a WET coil, adjust the static pressure numbers above by **adding** the values in this table (for a given CFM, wet coil will have greater static pressure drop than dry coil).

| Model<br>(* = 2 or 4)           | CFM  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                                 | 500  | 600  | 700  | 800  | 900  | 1000 | 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
| FEM*X1800<br>WAHM18*<br>WAHT18* | .034 | .049 | .063 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| FEM*X2400<br>WAHM24*<br>WAHT24* | .016 | .027 | .038 | .049 | .059 | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| FEM*X3000<br>WAHM30*<br>WAHT30* | -    | -    | -    | .049 | .059 | .070 | .080 | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| FEM2X3500<br>WAHM36*<br>WAHT36* | -    | -    | -    | -    | -    | .055 | .064 | .073 | .081 | -    | -    | -    | -    | -    | -    | -    |
| FEM*X3600                       | -    | -    | -    | -    | -    | .034 | .042 | .049 | .056 | -    | -    | -    | -    | -    | -    | -    |
| FEM*X4200<br>WAHM42*<br>WAHT42* | -    | -    | -    | -    | -    | -    | -    | .049 | .056 | .063 | .070 | -    | -    | -    | -    | -    |
| FEM*X4800<br>WAHM48*<br>WAHT48* | -    | -    | -    | -    | -    | -    | -    | -    | -    | .038 | .043 | .049 | .054 | .059 | -    | -    |
| FEM*X6000<br>WAHM60*<br>WAHT60* | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | .027 | .031 | .035 | .039 | .043 |

**STATIC PRESSURE DROP ACROSS FILTER (inches of water column)**

| Model<br>(* = 2 or 4)           | CFM  |      |      |      |      |      |      |      |      |
|---------------------------------|------|------|------|------|------|------|------|------|------|
|                                 | 400  | 600  | 800  | 1000 | 1200 | 1400 | 1600 | 1800 | 2000 |
| FEM*X1800<br>WAHM18*<br>WAHT18* | .020 | .044 | .075 | -    | -    | -    | -    | -    | -    |
| FEM*X2400<br>WAHM24*<br>WAHT24* | -    | .044 | .075 | .110 | -    | -    | -    | -    | -    |
| FEM*X3000<br>WAHM30*<br>WAHT30* | -    | -    | .048 | .072 | .100 | -    | -    | -    | -    |
| FEM2X3500<br>WAHM36*<br>WAHT36* | -    | -    | -    | .072 | .100 | .130 | -    | -    | -    |
| FEM*X3600                       | -    | -    | -    | .072 | .100 | .130 | -    | -    | -    |
| FEM*X4200<br>WAHM42*<br>WAHT42* | -    | -    | -    | -    | .070 | .092 | .120 | -    | -    |
| FEM*X4800<br>WAHM48*<br>WAHT48* | -    | -    | -    | -    | -    | .092 | .120 | .152 | -    |
| FEM*X6000<br>WAHM60*<br>WAHT60* | -    | -    | -    | -    | -    | -    | .120 | .152 | .187 |

| FAN COIL MODEL NUMBER IDENTIFICATION GUIDE |                          |          |          |                    |                        |                         |          |          |
|--|--------------------------|----------|----------|--------------------|------------------------|-------------------------|----------|----------|
|  | <b>F</b>                 | <b>E</b> | <b>M</b> | <b>4</b>           | <b>X</b>               | <b>1800</b>             | <b>A</b> | <b>1</b> |
| F = Fan Coil                               |                          |          |          |                    |                        |                         |          |          |
| S = Standard PSC                           |                          |          |          |                    |                        |                         |          |          |
| E = GE X-13                                | <b>MOTOR TYPE</b>        |          |          |                    |                        |                         |          |          |
| U = Upflow                                 |                          |          |          |                    |                        |                         |          |          |
| M = Multiposition                          | <b>INSTALLATION TYPE</b> |          |          |                    |                        |                         |          |          |
| 2 = R-22                                   |                          |          |          |                    |                        |                         |          |          |
| 4 = Environmentally Sound R-410A           |                          |          |          | <b>REFRIGERANT</b> |                        |                         |          |          |
| X = TXV                                    |                          |          |          |                    | <b>METERING DEVICE</b> |                         |          |          |
| 1800 = 18,000 BTUH = 1½ tons               |                          |          |          |                    |                        |                         |          |          |
| 2400 = 24,000 BTUH = 2 tons                |                          |          |          |                    |                        |                         |          |          |
| 3000 = 30,000 BTUH = 2½ tons               |                          |          |          |                    |                        |                         |          |          |
| 3500 & 3600 = 36,000 BTUH = 3 tons         |                          |          |          |                    |                        |                         |          |          |
| 4200 = 42,000 BTUH = 3½ tons               |                          |          |          |                    |                        |                         |          |          |
| 4800 = 48,000 BTUH = 4 tons                |                          |          |          |                    |                        |                         |          |          |
| 6000 = 60,000 BTUH = 5 tons                |                          |          |          |                    |                        | <b>NOMINAL CAPACITY</b> |          |          |
| Sales Code                                 |                          |          |          |                    |                        |                         |          |          |
| Engineering Revision                       |                          |          |          |                    |                        |                         |          |          |

| FAN COIL MODEL NUMBER IDENTIFICATION GUIDE          |                          |          |          |           |          |                                 |          |
|---|--------------------------|----------|----------|-----------|----------|---------------------------------|----------|
| Digit Position:                                     | 1, 2                     | 3        | 4        | 5, 6      | 7        | 8                               | 9        |
| Example Part Number:                                | <b>WA</b>                | <b>H</b> | <b>M</b> | <b>24</b> | <b>4</b> | <b>A</b>                        | <b>1</b> |
| WA = Air Handler                                    |                          |          |          |           |          |                                 |          |
| S = Standard Motor                                  |                          |          |          |           |          |                                 |          |
| H = High Efficiency Motor                           | <b>MOTOR TYPE</b>        |          |          |           |          |                                 |          |
| M = Multiposition Plain Copper Evaporator Coil      |                          |          |          |           |          |                                 |          |
| T = Multiposition Tin-coated Copper Evaporator Coil | <b>INSTALLATION TYPE</b> |          |          |           |          |                                 |          |
| 18 = 18,000 BTU/hr = 1½ TONS                        |                          |          |          |           |          |                                 |          |
| 24 = 24,000 BTU/hr = 2 TONS                         |                          |          |          |           |          |                                 |          |
| 30 = 30,000 BTU/hr = 2½ TONS                        |                          |          |          |           |          |                                 |          |
| 36 = 36,000 BTU/hr = 3 TONS                         |                          |          |          |           |          |                                 |          |
| 42 = 42,000 BTU/hr = 3½ TONS                        |                          |          |          |           |          |                                 |          |
| 48 = 48,000 BTU/hr = 4 TONS                         |                          |          |          |           |          |                                 |          |
| 60 = 60,000 BTU/hr = 5 TONS                         |                          |          |          |           |          | <b>NOMINAL COOLING CAPACITY</b> |          |
| 2 = R-22  |                          |          |          |           |          |                                 |          |
| 4 = R-410A  |                          |          |          |           |          | <b>REFRIGERANT</b>              |          |
| SALES DIGIT   |                          |          |          |           |          |                                 |          |
| EXTRA DIGIT   |                          |          |          |           |          |                                 |          |

| 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>EHK</b> | <b>05</b> | <b>A</b> | <b>K</b> | <b>N</b> | <b>1</b> |
| EHK = Electric Heater Kit  |            |           |          |          |          |          |
| 05 = 5 kW  |            |           |          |          |          |          |
| 07 = 7 kW  |            |           |          |          |          |          |
| 09 = 9 kW  |            |           |          |          |          |          |
| 10 = 10 kW   |            |           |          |          |          |          |
| 15 = 15 kW   |            |           |          |          |          |          |
| 18 = 18 kW   |            |           |          |          |          |          |
| 20 = 20 kW   |            |           |          |          |          |          |
| 25 = 25 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>   |            |           |          |          |          |          |
| Product Identifier   |            |           |          |          |          |          |
| Engineering Code   |            |           |          |          |          |          |