



TECHNICAL GUIDE

MODELS: MVC**

**MODULAR VARIABLE SPEED AIR HANDLERS
FOR USE WITH SPLIT SYSTEM
COOLING & HEAT PUMP**

1200 - 2000 CFM BLOWERS

3 - 5 TON COILS

OPTIONAL 1 & 3 ϕ ELECTRIC HEATERS



Due to continuous product improvement, specifications are subject to change without notice.

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DESCRIPTION

This unique modular system allows the flexibility to handle any application. These versatile coils and blowers may be used for upflow, downflow, or horizontal left or right applications. They may be combined to function as a cooling only unit or with a heat pump including electric heat for 1 and 3 phase applications. The blower and electric heater could be used as stand alone electric furnaces.

FEATURES

Blowers - Models to match any air flow or voltage requirement. The compact size allows easy installation. Blowers are sized to deliver design air quantity both efficiently and quietly. The motors provide a selection of air quantities to match any application. All models include a one-minute blower off delay as standard to enhance system efficiency ratings. The durable, pre-painted steel protects the unit against rust and corrosion. All models have 1 inch foil face fiber glass insulation, providing a thermal insulation value of R-4.2.

Coils - Staggered rows of rifled copper tubes are mechanically expanded into enhanced surface aluminum fins to provide high heat transfer and long-lasting quality. The MC multi-position coils may be used for upflow, downflow, and horizontal left or right applications. Coil cabinets are insulated with 3/4" foil face insulation to prevent sweating.

Thermal Expansion Valves - Available with R-410A factory installed TXV's. Air Handlers maybe ordered as "Flex-coil" unit without a factory installed mertering device. Flex-coil models allow for field installed R-22 or R-410A TXV's for added flexibility to meet refrigerant system choice.

Electric Heaters - Both single and three phase electric heater models are available to match any requirement. All heaters include nickel-chromium elements with a 5-year limited warranty on 1 \emptyset heating elements and 1 year limited warranty on 3 \emptyset heating elements. Sequential operation is provided to control heaters in all models. Circuit breakers are used in 208/230 volt, single-phase heaters of 15 KW and larger.

Models equipped with circuit breakers may be altered in the field to use multi-source power supply. Over-temperature limit switches provide protection from airflow loss with fusible link backup protection.

Communication - These models may be connected as part of a communications system using a 4-wire connection bus.

Accessories - A full line of matching accessories available for use with the blower and coils to allow any type application.

LIMITATIONS

These units must be wired and installed in accordance with all national and local safety codes.

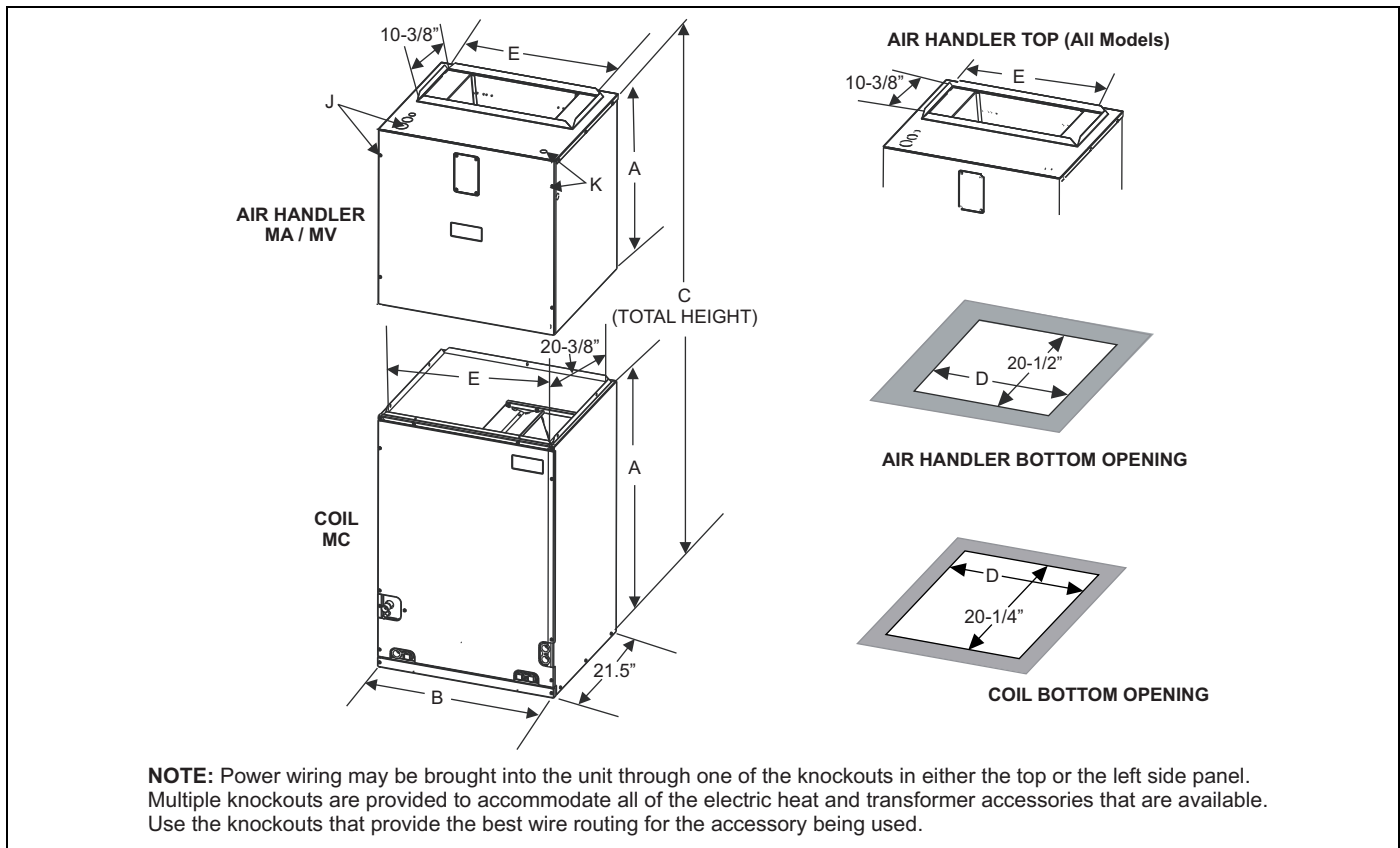
Voltage limits are as follows:

| AIR HANDLER VOLTAGE | NORMAL OPERATING VOLTAGE RANGE* |
|---------------------|---------------------------------|
| 208/230-1-60 | 187 - 253 |

* Rated in accordance with ARI Standard 110, utilization range "A".

Air flow must be within the minimum and maximum limits approved for electric heat, evaporator coils and outdoor units.

DIMENSIONS - (BLOWER WITH MC COILS)



DIMENSIONS

| Model | Dimensions | | | | | Wiring K.O.'s ¹ | | Refrigerant Connections | |
|---------------|------------|-------|--|------|----------|---|-------------|-------------------------|-------|
| | A | B | C | D | E | J | K | Line Size | |
| | Height | Width | Total Height | | | | | Liquid | Vapor |
| MV12B | 25 | 17.5 | 47 to 57 Depending on combination. | 16.5 | 14-19/32 | 7/8" (1/2") 1-3/8" (1") 1-23/32" (1-1/4") | 7/8" (1/2") | - | - |
| MV12D | 25 | 24.5 | | 23.5 | 21-19/32 | | | - | - |
| MV16C | 25 | 21 | | 20 | 18-3/32 | | | - | - |
| MV20D | 25 | 24.5 | | 23.5 | 21-19/32 | | | - | - |
| MC18B3XH1 | 22 | 17.5 | 47 to 57 Depending on combination | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC18B4FH1 | 22 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC24B3XH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC24B4FH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC30B3XH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC30B4FH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC35B3XH1 | 22 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC35B4FH1 | 22 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC35B4GH1 | 22 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC35B4HH1 | 22 | 17.5 | | 16.5 | 16 3/8 | - | - | 3/8 | 3/4 |
| MC35C3XH(1,2) | 26.5/22 | 21 | | 20 | 19 7/8 | - | - | 3/8 | 3/4 |
| MC35C4FH1 | 22 | 21 | | 20 | 19 7/8 | - | - | 3/8 | 3/4 |
| MC35C4GH1 | 22 | 21 | | 20 | 19 7/8 | - | - | 3/8 | 3/4 |
| MC35C4HH1 | 22 | 21 | | 20 | 19 7/8 | - | - | 3/8 | 3/4 |

For notes, see Page 3.

DIMENSIONS (Continued)

| Model | Dimensions | | | | | Wiring K.O.'s ¹ | | Refrigerant Connections | |
|-----------|------------|-------|---|--------|--------|----------------------------|---------|-------------------------|-------|
| | A | B | C | D | E | J | K | Line Size | |
| | Height | Width | Total Height | | | Power | Control | Liquid | Vapor |
| MC36B3XH1 | 26.5 | 17.5 | 47 to 57 Depending on combination | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC36B4FH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC36B4GH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC36B4HH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC36C3XH1 | 26.5 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC36C4FH1 | 26.5 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC36C4GH1 | 26.5 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC36C4HH1 | 26.5 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC42B3XH1 | 32 | 17.5 | 47 to 57 Depending on combination | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC42B4FH1 | 32 | 17.5 | | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC42B4HH1 | 32 | 17.5 | | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC42C3XH1 | 32 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC42C4FH1 | 32 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC42C4HH1 | 32 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC43B3XH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC43B4GH1 | 26.5 | 17.5 | | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 |
| MC43B4KH1 | 26.5 | 17.5 | 16.5 | 16 3/8 | – | – | 3/8 | 7/8 | |
| MC43C3XH1 | 26.5 | 21 | 20 | 19 7/8 | – | – | 3/8 | 7/8 | |
| MC43C4GH1 | 26.5 | 21 | 20 | 19 7/8 | – | – | 3/8 | 7/8 | |
| MC43C4KH1 | 26.5 | 21 | 20 | 19 7/8 | – | – | 3/8 | 7/8 | |
| MC48C3XH1 | 32 | 21 | 47 to 57 Depending on combination | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC48C4FH1 | 32 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC48C4HH1 | 32 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC48C4JH1 | 32 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC48C4KH1 | 32 | 21 | | 20 | 19 7/8 | – | – | 3/8 | 7/8 |
| MC48D3XH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC48D4FH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC48D4HH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC48D4JH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC48D4KH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC60D3XH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC60D4GH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC60D4HH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC60D4JH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC60D4KH1 | 32 | 24.5 | | 23.5 | 23 3/8 | – | – | 3/8 | 7/8 |
| MC62D3XH1 | 36 | 24.5 | | 61 | 23.5 | 23 3/8 | – | – | 3/8 |
| MC62D4HH1 | 36 | 24.5 | 23.5 | | 23 3/8 | – | – | 3/8 | 7/8 |
| MC62D4JH1 | 36 | 24.5 | 23.5 | | 23 3/8 | – | – | 3/8 | 7/8 |
| MC62D4KH1 | 36 | 24.5 | 23.5 | | 23 3/8 | – | – | 3/8 | 7/8 |

All MC coils include a factory installed horizontal drain pan.

(3X) = Models require field installed metering device.

1. Parenthesis indicate conduit size.

** Thermal Expansion Device Indicators - "2" indicates R-22 TXV is factory installed, "3X" indicates unit is a flex-coil model with a field installed R-22 or R-410A TXV, and "4" indicates R-410A TXV is factory installed. Letter indicates TXV size as required, see outdoor unit technical information for proper matches and requirements.

"H" models are available with a factory installed horizontal drain pan.

COOLING CAPACITY - Coil Only

| Blower Model | Coil Model | Rated CFM | Entering Air °F (Dry / Wet Bulb) | MBH @ Evaporator Temperature and Corresponding Pressure °F / PSIG | | | |
|--|------------|-----------|-------------------------------------|--|-----------|-----------|-----------|
| | | | | 35 / 61.5 | 40 / 68.5 | 45 / 76.0 | 50 / 84.0 |
| Multi-Position - Upflow / Downflow / Horizontal | | | | | | | |
| MV12B | MC30B**H | 1025 | 85 / 72 | 41.5 | 37.8 | 33.7 | 29.5 |
| | | | 80 / 67 | 36.2 | 32.4 | 28.6 | 24.5 |
| | | | 75 / 62 | 29.1 | 25.3 | 24.0 | 19.2 |
| | | | 70 / 57 | 24.1 | 21.5 | 18.7 | 15.8 |
| | MC36B**H | 1250 | 85 / 72 | 52.0 | 47.3 | 42.3 | 37.3 |
| | | | 80 / 67 | 41.7 | 36.8 | 32.3 | 27.4 |
| | | | 75 / 62 | 32.5 | 27.3 | 29.8 | 22.2 |
| MV12D | MC48D**H | 1125 | 85 / 72 | 46.8 | 42.4 | 37.6 | 33.0 |
| | | | 80 / 67 | 37.4 | 33.3 | 29.4 | 24.3 |
| | | | 75 / 62 | 28.9 | 24.6 | 21.7 | 19.6 |
| | | | 70 / 57 | 25.1 | 23.3 | 21.7 | 19.6 |
| | MC60D**H | 1275 | 85 / 72 | 53.7 | 48.4 | 43.5 | 37.5 |
| | | | 80 / 67 | 43.0 | 38.0 | 33.3 | 27.7 |
| | | | 75 / 62 | 33.1 | 28.1 | 24.5 | 22.4 |
| | MC61D**H | 1450 | 85 / 72 | 91.7 | 78.4 | 68.1 | 52.3 |
| | | | 80 / 67 | 73.4 | 61.5 | 52.0 | 38.6 |
| | | | 75 / 62 | 57.3 | 45.6 | 38.4 | 31.2 |
| | | | 70 / 57 | 49.2 | 43.0 | 38.4 | 31.2 |
| | MV16C | MC42C**H | 1400 | 85 / 72 | 88.4 | 76.0 | 63.3 |
| 80 / 67 | | | | 70.8 | 59.4 | 48.4 | 37.0 |
| 75 / 62 | | | | 55.2 | 43.9 | 35.8 | 29.9 |
| 70 / 57 | | | | 47.4 | 41.5 | 35.8 | 29.9 |
| MC48C**H | | 1650 | 85 / 72 | 100.5 | 86.4 | 72.0 | 56.8 |
| | | | 80 / 67 | 80.4 | 67.5 | 55.0 | 42.1 |
| | | | 75 / 62 | 62.7 | 49.9 | 40.7 | 34.0 |
| MV20D | MC48D**H | 1725 | 85 / 72 | 119.9 | 101.0 | 80.0 | 62.2 |
| | | | 80 / 67 | 96.0 | 79.2 | 62.6 | 45.8 |
| | | | 75 / 62 | 74.0 | 58.6 | 46.2 | 37.0 |
| | | | 70 / 57 | 64.3 | 55.4 | 46.2 | 37 |
| | MC60D**H | 2000 | 85 / 72 | 124.8 | 105.2 | 85.3 | 64.7 |
| | | | 80 / 67 | 99.9 | 82.5 | 65.2 | 47.7 |
| | | | 75 / 62 | 77 | 61.1 | 48.1 | 38.6 |
| | | | 70 / 57 | 66.9 | 57.7 | 48.1 | 38.6 |
| | MC61D**H | 2200 | 85 / 72 | 131.0 | 110.5 | 89.6 | 67.9 |
| | | | 80 / 67 | 104.9 | 86.6 | 68.5 | 50.1 |
| | | | 75 / 62 | 81.8 | 64.2 | 50.5 | 40.5 |
| | | | 70 / 57 | 70.2 | 60.6 | 50.5 | 40.5 |

PHYSICAL & ELECTRICAL DATA

| Model | | MV12BN21C | MV12DN21C | MV16CN21C | MV20DN21C |
|------------------------------------|-----------------|-------------------------|-------------|-------------|-------------|
| Blower - Diameter x Width | | 10 x 7 | 10 x 10 | 10 x 10 | 10 x 10 |
| Motor | HP | 1/2 | 1/2 | 3/4 | 1 |
| | Nominal RPM | 1200 | 1200 | 1200 | 1200 |
| Voltage | | 208/230 | | | |
| Amps | Full Load (230) | 4.3 | 4.3 | 5.0 | 7.0 |
| Permanent Filter ¹ | Type | DISPOSABLE OR PERMANENT | | | |
| | Size | 16 x 20 x 1 | 24 x 20 x 1 | 20 x 20 x 1 | 24 x 20 x 1 |
| | Filter Bulk Kit | 1PF0601BK | 1PF0604BK | 1PF0602BK | 1PF0604BK |
| Shipping / Operating Weight (lbs.) | | 75 / 71 | 88 / 82 | 88 / 82 | 94 / 88 |

1. Field Supplied.

FULL CASED "A" TYPE MULTI-POSITION

| Model | Application | Refrig. Conn. Types | Face Area (Sq. Ft.) | Rows Deep | Fin Per In. | Coil Size | Tube Geometry | Tube Dia. | Fin Type | TXV | Operating Weight (Lbs.) |
|---------------|---------------------|---------------------|---------------------|-----------|-------------|---------------|---------------|-----------|----------|------|-------------------------|
| MC18B3XH1 | Cooling / Heat Pump | Sweat | 3.40 | 2 | 14 | (2) 14 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 53 |
| MC18B4FH1 | | | | | | | | | | 4F | 53 |
| MC24B3XH1 | Cooling / Heat Pump | Sweat | 4.38 | 2 | 14 | (2) 18 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 56 |
| MC24B4FH1 | | | | | | | | | | 4F | 56 |
| MC30B3XH1 | Cooling / Heat Pump | Sweat | 4.38 | 2 | 14 | (2) 18 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 56 |
| MC30B4EH1 | | | | | | | | | | 4E | 56 |
| MC30B4FH1 | | | | | | | | | | 4F | 56 |
| MC35B3XH2 | Cooling / Heat Pump | Sweat | 3.9 | 3 | 12 | (2) 16 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 65 |
| MC35B4FH1 | | | | | | | | | | 4F | 67 |
| MC35B4GH1 | | | | | | | | | | 4G | 67 |
| MC35B4HH1 | | | | | | | | | | 4H | 67 |
| MC35C3XH(1,2) | Cooling / Heat Pump | Sweat | 3.9 | 3 | 12 | (2) 16 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 67 |
| MC35C4FH1 | | | | | | | | | | 4F | 69 |
| MC35C4GH1 | | | | | | | | | | 4G | 69 |
| MC35C4HH1 | | | | | | | | | | 4H | 69 |
| MC36B3XH1 | Cooling / Heat Pump | Sweat | 4.86 | 2 | 14 | (2) 20 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 65 |
| MC36B4FH1 | | | | | | | | | | 4F | 65 |
| MC36B4GH1 | | | | | | | | | | 4G | 65 |
| MC36B4HH1 | | | | | | | | | | 4H | 65 |
| MC36C3XH1 | Cooling / Heat Pump | Sweat | 4.86 | 2 | 14 | (2) 20 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 65 |
| MC36C4FH1 | | | | | | | | | | 4F | 65 |
| MC36C4GH1 | | | | | | | | | | 4G | 65 |
| MC36C4HH1 | | | | | | | | | | 4H | 65 |

For notes, see Page 6.

| | | | | | | | | | | | |
|-----------|---------------------|-------|------|---|----|---------------|-----------|-----|----------|------|----|
| MC42B3XH1 | Cooling / Heat Pump | Sweat | 5.83 | 2 | 14 | (2) 24 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 72 |
| MC42B4FH1 | | | | | | | | | | 4F | 72 |
| MC42B4HH1 | | | | | | | | | | 4H | 72 |
| MC42C3XH1 | Cooling / Heat Pump | Sweat | 5.83 | 2 | 14 | (2) 24 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 72 |
| MC42C2CH1 | | | | | | | | | | 2C | 72 |
| MC42C4FH1 | | | | | | | | | | 4F | 72 |
| MC42C4HH1 | | | | | | | | | | 4H | 72 |
| MC43B3XH1 | Cooling / Heat Pump | Sweat | 4.86 | 3 | 12 | (2) 20 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 73 |
| MC43B4GH1 | | | | | | | | | | 4G | 73 |
| MC43B4KH1 | | | | | | | | | | 4K | 73 |
| MC43C3XH1 | Cooling / Heat Pump | Sweat | 4.86 | 3 | 12 | (2) 20 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 75 |
| MC43C4GH1 | | | | | | | | | | 4G | 75 |
| MC43C4KH1 | | | | | | | | | | 4K | 75 |
| MC48C3XH1 | Cooling / Heat Pump | Sweat | 5.35 | 3 | 12 | (2) 22 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 82 |
| MC48C4FH1 | | | | | | | | | | 4F | 82 |
| MC48C4HH1 | | | | | | | | | | 4H | 82 |
| MC48C4JH1 | | | | | | | | | | 4J | 82 |
| MC48C4KH1 | | | | | | | | | | 4K | 82 |
| MC48D3XH1 | Cooling / Heat Pump | Sweat | 5.35 | 3 | 12 | (2) 22 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 82 |
| MC48D4FH1 | | | | | | | | | | 4F | 82 |
| MC48D4HH1 | | | | | | | | | | 4H | 82 |
| MC48D4JH1 | | | | | | | | | | 4J | 82 |
| MC48D4KH1 | | | | | | | | | | 4K | 82 |
| MC60D3XH1 | Cooling / Heat Pump | Sweat | 5.83 | 3 | 12 | (2) 24 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 86 |
| MC60D4GH1 | | | | | | | | | | 4G | 86 |
| MC60D4HH1 | | | | | | | | | | 4H | 86 |
| MC60D4JH1 | | | | | | | | | | 4J | 86 |
| MC60D4KH1 | | | | | | | | | | 4K | 86 |
| MC62D3XH1 | Cooling / Heat Pump | Sweat | 6.80 | 3 | 12 | (2) 28 x 17.5 | 1 x 0.866 | 3/8 | Enhanced | None | 98 |
| MC62D4HH1 | | | | | | | | | | 4H | 98 |
| MC62D4JH1 | | | | | | | | | | 4J | 98 |
| MC62D4KH1 | | | | | | | | | | 4K | 98 |

Note: MC coils available with a factory installed horizontal drain pan option (H).

ELECTRICAL DATA - 208/230-1-60

| Model | Heater Model* | Max. Static | Min. Speed Tap | Total Heat ¹ | | | | KW Staging | | | | | |
|-------|---------------|-------------|----------------|-------------------------|------|------|------|------------|------|---------|------|---------|------|
| | | | | kW | | MBH | | W1 Only | | W2 Only | | W1 + W2 | |
| | | | | 208V | 230V | 208V | 230V | 208V | 230V | 208V | 230V | 208V | 230V |
| MV12B | 4HK*6500506 | 0.5 | Heat-C | 3.6 | 4.8 | 12.3 | 16.4 | 3.6 | 4.8 | 3.6 | 4.8 | 3.6 | 4.8 |
| | 4HK*6500806 | 0.5 | Heat-C | 5.6 | 7.5 | 19.2 | 25.6 | 2.8 | 3.75 | 5.6 | 7.5 | 5.6 | 7.5 |
| | 4HK*6501006 | 0.5 | Heat-B | 7.2 | 9.6 | 24.6 | 32.8 | 3.6 | 4.8 | 7.2 | 9.6 | 7.2 | 9.6 |
| | 4HK165N1506 | 0.5 | Heat-B | 10.8 | 14.4 | 36.9 | 49.1 | 3.6 | 4.8 | 7.2 | 9.6 | 10.8 | 14.4 |
| MV12D | 4HK*6500506 | 0.5 | Heat-C | 3.6 | 4.8 | 12.3 | 16.4 | 3.6 | 4.8 | 3.6 | 4.8 | 3.6 | 4.8 |
| | 4HK*6500806 | 0.5 | Heat-C | 5.6 | 7.5 | 19.2 | 25.6 | 2.8 | 3.75 | 5.6 | 7.5 | 5.6 | 7.5 |
| | 4HK*6501006 | 0.5 | Heat-B | 7.2 | 9.6 | 24.6 | 32.8 | 3.6 | 4.8 | 7.2 | 9.6 | 7.2 | 9.6 |
| | 4HK16501506 | 0.5 | Heat-B | 10.8 | 14.4 | 36.9 | 49.1 | 3.6 | 4.8 | 7.2 | 9.6 | 10.8 | 14.4 |
| | 4HK16501806 | 0.5 | Heat-A | 13.2 | 17.6 | 45.1 | 60.1 | 3.3 | 4.4 | 6.6 | 8.8 | 13.2 | 17.6 |
| | 4HK16502006 | 0.5 | Heat-A | 14.4 | 19.2 | 49.2 | 65.5 | 3.6 | 4.8 | 7.2 | 9.6 | 14.4 | 19.2 |
| MV16C | 4HK*6500506 | 0.5 | Heat-D | 3.6 | 4.8 | 12.3 | 16.4 | 3.6 | 4.8 | 3.6 | 4.8 | 3.6 | 4.8 |
| | 4HK*6500806 | 0.5 | Heat-D | 5.6 | 7.5 | 19.2 | 25.6 | 2.8 | 3.75 | 5.6 | 7.5 | 5.6 | 7.5 |
| | 4HK*6501006 | 0.5 | Heat-C | 7.2 | 9.6 | 24.6 | 32.8 | 3.6 | 4.8 | 7.2 | 9.6 | 7.2 | 9.6 |
| | 4HK16501506 | 0.5 | Heat-C | 10.8 | 14.4 | 36.9 | 49.1 | 3.6 | 4.8 | 7.2 | 9.6 | 10.8 | 14.4 |
| | 4HK16501806 | 0.5 | Heat-B | 13.2 | 17.6 | 45.1 | 60.1 | 3.3 | 4.4 | 6.6 | 8.8 | 13.2 | 17.6 |
| | 4HK16502006 | 0.5 | Heat-B | 14.4 | 19.2 | 49.2 | 65.5 | 3.6 | 4.8 | 7.2 | 9.6 | 14.4 | 19.2 |
| MV20D | 4HK*6500506 | 0.5 | Heat-C | 3.6 | 4.8 | 12.3 | 16.4 | 3.6 | 4.8 | 3.6 | 4.8 | 3.6 | 4.8 |
| | 4HK*6500806 | 0.5 | Heat-C | 5.6 | 7.5 | 19.2 | 25.6 | 2.8 | 3.75 | 5.6 | 7.5 | 5.6 | 7.5 |
| | 4HK*6501006 | 0.5 | Heat-C | 7.2 | 9.6 | 24.6 | 32.8 | 3.6 | 4.8 | 7.2 | 9.6 | 7.2 | 9.6 |
| | 4HK16501506 | 0.5 | Heat-C | 10.8 | 14.4 | 36.9 | 49.1 | 3.6 | 4.8 | 7.2 | 9.6 | 10.8 | 14.4 |
| | 4HK16501806 | 0.5 | Heat-C | 13.2 | 17.6 | 45.1 | 60.1 | 3.3 | 4.4 | 6.6 | 8.8 | 13.2 | 17.6 |
| | 4HK16502006 | 0.5 | Heat-C | 14.4 | 19.2 | 49.2 | 65.5 | 3.6 | 4.8 | 7.2 | 9.6 | 14.4 | 19.2 |
| | 4HK16502506 | 0.5 | Heat-C | 18.0 | 24.0 | 61.5 | 81.9 | 3.6 | 4.8 | 10.8 | 14.4 | 18.0 | 24 |

1. See conversion table on Page 7.

* May be 0 (no breaker) or 1 (with breaker).

ELECTRICAL DATA - 208/230-3-60

| Models | Heat Kit - Three Phase | Max. Static | Min. Speed Tap | Total Heat ¹ | | | | KW Staging | | | | | |
|--------|------------------------|-------------|----------------|-------------------------|------|------|------|------------|------|---------|------|---------|------|
| | | | | kW | | MBH | | W1 Only | | W2 Only | | W1 + W2 | |
| | | | | 208V | 230V | 208V | 230V | 208V | 230V | 208V | 230V | 208V | 230V |
| MV12B | 4HK06501025 | 0.5 | Heat-B | 7.2 | 9.6 | 24.6 | 32.8 | 7.2 | 9.6 | 7.2 | 9.6 | 7.2 | 9.6 |
| MV12D | 4HK06501025 | 0.5 | Heat-B | 7.2 | 9.6 | 24.6 | 32.8 | 7.2 | 9.6 | 7.2 | 9.6 | 7.2 | 9.6 |
| | 4HK06501525 | 0.5 | Heat-B | 10.8 | 14.4 | 36.9 | 49.1 | 10.8 | 14.4 | 10.8 | 14.4 | 10.8 | 14.4 |
| | 4HK06501825 | 0.5 | Heat-A | 12.9 | 17.2 | 44.7 | 58.7 | 12.9 | 17.2 | 12.9 | 17.2 | 12.9 | 17.2 |
| MV16C | 4HK06501025 | 0.5 | Heat-C | 7.2 | 9.6 | 24.6 | 32.8 | 7.2 | 9.6 | 7.2 | 9.6 | 7.2 | 9.6 |
| | 4HK06501525 | 0.5 | Heat-C | 10.8 | 14.4 | 36.9 | 49.1 | 10.8 | 14.4 | 10.8 | 14.4 | 10.8 | 14.4 |
| | 4HK06501825 | 0.5 | Heat-B | 12.9 | 17.2 | 44.7 | 58.7 | 12.9 | 17.2 | 12.9 | 17.2 | 12.9 | 17.2 |
| MV20D | 4HK06501025 | 0.5 | Heat-C | 7.2 | 9.6 | 24.6 | 32.8 | 7.2 | 9.6 | 7.2 | 9.6 | 7.2 | 9.6 |
| | 4HK06501525 | 0.5 | Heat-C | 10.8 | 14.4 | 36.9 | 49.1 | 10.8 | 14.4 | 10.8 | 14.4 | 10.8 | 14.4 |
| | 4HK16502525 | 0.5 | Heat-C | 18.0 | 24.0 | 61.4 | 81.4 | 9.0 | 12.0 | 18.0 | 24.0 | 18.0 | 24.0 |

1. See conversion table on Page 7.

ELECTRICAL DATA (FOR SINGLE SOURCE POWER SUPPLY) - COPPER WIRE 208/230-1-60

| Model | Heater Model ^{1,*} | Field Wiring | | | | | | |
|-------|-----------------------------|---------------------|-----------------------|--------|------------------------------------|------|----------------------|------|
| | | Heater Amps 240V | Ampacity Min. Circuit | | Max. O.C.P. ² Amps/Type | | Wire Size - AWG 75°C | |
| | | | 208V | 230V | 208V | 230V | 208V | 230V |
| MV12B | 4HK*6500506 | 20.0 | 27.54 | 30.38 | 30 | 35 | 10 | 8 |
| | 4HK*6500806 | 31.3 | 39.73 | 44.50 | 40 | 45 | 8 | 8 |
| | 4HK*6501006 | 40.0 | 49.21 | 55.38 | 50 | 60 | 8 | 6 |
| | 4HK165N1506 | 60.0 | 70.88 | 80.38 | 90 | 90 | 4 | 3 |
| MV12D | 4HK*6500506 | 20.0 | 27.54 | 30.38 | 30 | 35 | 10 | 8 |
| | 4HK*6500806 | 31.3 | 39.73 | 44.50 | 40 | 45 | 8 | 8 |
| | 4HK*6501006 | 40.0 | 49.21 | 55.38 | 50 | 60 | 8 | 6 |
| | 4HK16501506 | 60.0 | 70.88 | 80.38 | 90 | 90 | 4 | 3 |
| | 4HK16501806 | 73.3 | 85.32 | 97.00 | 90 | 100 | 4 | 3 |
| | 4HK16502006 | 80.0 | 92.54 | 105.38 | 100 | 125 | 3 | 1 |
| MV16C | 4HK*6500506 | 20.0 | 29.29 | 31.88 | 30 | 35 | 10 | 8 |
| | 4HK*6500806 | 31.3 | 41.48 | 46.00 | 45 | 50 | 8 | 8 |
| | 4HK*6501006 | 40.0 | 50.96 | 56.88 | 60 | 60 | 6 | 6 |
| | 4HK16501506 | 60.0 | 72.63 | 81.88 | 90 | 90 | 3 | 3 |
| | 4HK16501806 | 73.3 | 87.07 | 98.50 | 90 | 100 | 3 | 2 |
| | 4HK16502006 | 80.0 | 94.29 | 106.88 | 100 | 125 | 3 | 1 |
| MV20D | 4HK*6500506 | 20.0 | 29.29 | 31.88 | 30 | 35 | 10 | 8 |
| | 4HK*6500806 | 31.3 | 41.48 | 46.00 | 45 | 50 | 8 | 8 |
| | 4HK*6501006 | 40.0 | 53.08 | 58.75 | 60 | 60 | 6 | 6 |
| | 4HK16501506 | 60.0 | 74.75 | 83.75 | 90 | 90 | 3 | 3 |
| | 4HK16501806 | 73.3 | 89.19 | 100.38 | 90 | 110 | 3 | 2 |
| | 4HK16502006 | 80.0 | 96.42 | 108.75 | 100 | 125 | 3 | 1 |
| | 4HK16502506 | 100.0 | 118.08 | 133.75 | 125 | 150 | 1 | 1/0 |

1. 30 kW 3 phase not approved for single source power supply.

2. OCP = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

* May be 0 (no breaker) or 1 (with breaker).

ELECTRICAL DATA (FOR SINGLE SOURCE POWER SUPPLY) - COPPER WIRE 208/230-3-60

| Models | Heat Kit - Three Phase | Heater Amps 240V | Field Wiring | | | | | |
|--------|---------------------------|------------------------|-----------------------|------|------------------------------------|------|----------------------|------|
| | | | Min. Circuit Ampacity | | Max. O.C.P. ¹ Amps/Type | | 75°C Wire Size - AWG | |
| | | | 208V | 230V | 208V | 230V | 208V | 230V |
| MV12B | 4HK06501025 | 23.1 | 30.9 | 34.3 | 35 | 35 | 8 | 8 |
| MV12D | 4HK06501025 | 23.1 | 30.9 | 34.3 | 35 | 35 | 8 | 8 |
| | 4HK06501525 | 34.7 | 43.4 | 48.8 | 45 | 50 | 8 | 8 |
| | 4HK06501825 | 41.4 | 50.6 | 57.1 | 50 | 60 | 8 | 6 |
| MV16C | 4HK06501025 | 23.1 | 32.6 | 35.1 | 35 | 35 | 8 | 8 |
| | 4HK06501525 | 34.7 | 45.1 | 49.6 | 45 | 50 | 8 | 8 |
| | 4HK06501825 | 41.4 | 52.4 | 58.0 | 60 | 60 | 6 | 6 |
| MV20D | 4HK06501025 | 23.1 | 34.8 | 37.6 | 35 | 40 | 8 | 8 |
| | 4HK06501525 | 34.7 | 47.3 | 52.1 | 50 | 60 | 8 | 6 |

1. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

Electrical Data - (For Multi-Source Power Supply) - Copper Wire - 208/230-3-60

| Models | Heater Model | Minimum Circuit Ampacity | | | Max. O.C.P. ¹ Amps/Type | | | 75°C Wire Size - AWG | | |
|--------|-----------------|--------------------------|-------------|-------|------------------------------------|---------|-------|----------------------|-------|-------|
| | | Circuit | | | | | | | | |
| | | 1st | 2nd | 3rd | 1st | 2nd | 3rd | 1st | 2nd | 3rd |
| MV20D | 4HK16502525 | 41.0 / 44.9 | 31.3 / 36.1 | - / - | 45 / 45 | 35 / 40 | - / - | 8 / 8 | 8 / 8 | - / - |

1. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

ELECTRICAL DATA (FOR MULTI SOURCE POWER SUPPLY) - COPPER WIRE 208/230-1-60

| Model | Heater Model | Min. Circuit Ampacity | | | Max. O.C.P. ¹ Amps/Type | | | 75°C Wire Size - AWG | | |
|-------|--------------|-----------------------|-------------|-------------|------------------------------------|---------|---------|----------------------|---------|---------|
| | | Circuit | | | Circuit | | | Circuit | | |
| | | 1st | 2nd | 3rd | 1st | 2nd | 3rd | 1st | 2nd | 3rd |
| | | 208/230 | 208/230 | 208/230 | 208/230 | 208/230 | 208/230 | 208/230 | 208/230 | 208/230 |
| MV12B | 4HK165N1506 | 49.2 / 55.4 | 21.7 / 25.0 | — | 50 / 60 | 25 / 25 | — | 8 / 6 | 10 / 10 | — |
| MV12D | 4HK16501506 | 49.2 / 55.4 | 21.7 / 25.0 | — | 50 / 60 | 25 / 25 | — | 8 / 6 | 10 / 10 | — |
| | 4HK16501806 | 45.6 / 51.2 | 39.7 / 45.8 | — | 50 / 60 | 40 / 50 | — | 8 / 6 | 8 / 8 | — |
| | 4HK16502006 | 49.2 / 55.4 | 43.3 / 50.0 | — | 50 / 60 | 45 / 50 | — | 8 / 6 | 8 / 8 | — |
| MV16C | 4HK16501506 | 51.0 / 56.9 | 21.7 / 25.0 | — | 50 / 60 | 25 / 25 | — | 8 / 6 | 10 / 10 | — |
| | 4HK16501806 | 17.3 / 52.7 | 39.7 / 45.8 | — | 50 / 60 | 40 / 50 | — | 8 / 6 | 8 / 8 | — |
| | 4HK16502006 | 51.0 / 56.9 | 43.3 / 50.0 | — | 50 / 60 | 45 / 50 | — | 8 / 6 | 8 / 8 | — |
| MV20D | 4HK16501506 | 53.1 / 58.8 | 21.7 / 25.0 | — | 60 / 60 | 25 / 25 | — | 6 / 6 | 10 / 10 | — |
| | 4HK16501806 | 49.5 / 54.6 | 39.7 / 45.8 | — | 50 / 60 | 40 / 50 | — | 8 / 6 | 8 / 8 | — |
| | 4HK16502006 | 53.1 / 58.8 | 43.3 / 50.0 | — | 60 / 60 | 45 / 50 | — | 6 / 6 | 8 / 8 | — |
| | 4HK16502506 | 49.3 / 56.5 | 43.3 / 50.0 | 21.7 / 25.0 | 50 / 60 | 45 / 50 | 25 / 25 | 8 / 6 | 8 / 8 | 10 / 10 |

1. OCP = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

KW & MBH CONVERSIONS

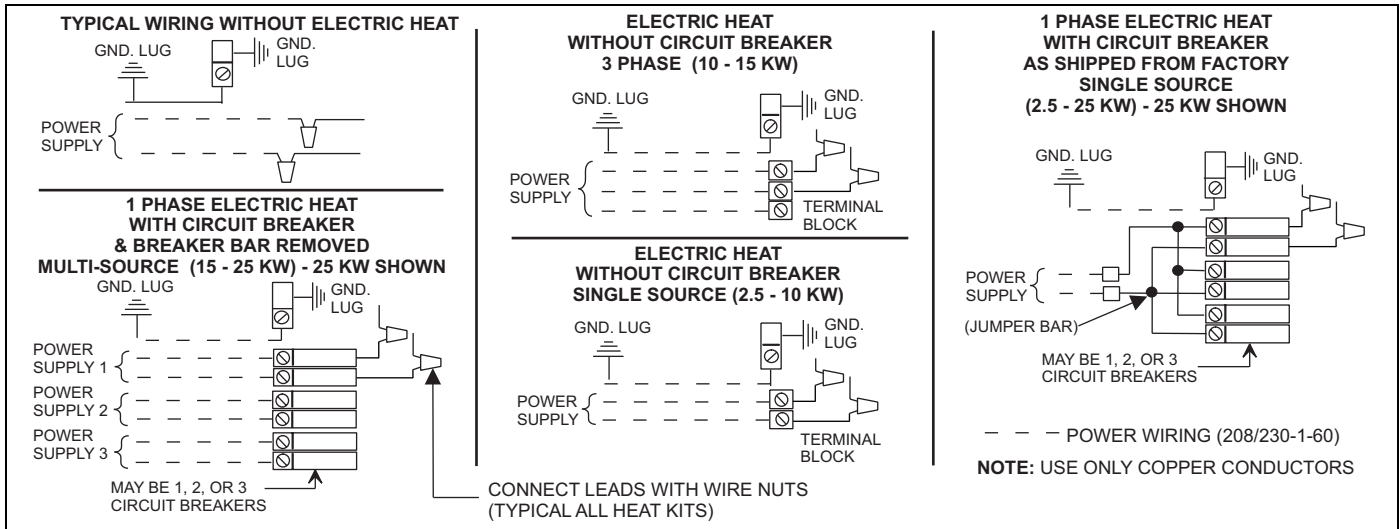
| | | | | | |
|-----|----------|--------------------|----------|-----------------------|------|
| FOR | 208-VOLT | OPERATION MULTIPLY | 240-VOLT | TABULATED KW & MBH BY | .751 |
| | 230-VOLT | | 240-VOLT | | .918 |

ELECTRICAL DATA - COOLING UNIT ONLY (60 Hz)

| MODEL | Total Motor Amps | | Minimum Circuit Ampacity | | Max. O.C.P. ¹ Amps/Type | Minimum Wire Size AWG @ 75°C |
|-------|------------------|------|--------------------------|------|------------------------------------|------------------------------|
| | 60 Hertz | | 60 Hertz | | | |
| | 208V | 230V | 208V | 230V | | |
| MV12B | 4.7 | 4.3 | 5.9 | 5.4 | 15 | 14 |
| MV12D | 4.7 | 4.3 | 5.9 | 5.4 | 15 | 14 |
| MV16C | 6.1 | 5.0 | 7.6 | 6.9 | 15 | 14 |
| MV20D | 7.8 | 7.0 | 9.7 | 8.8 | 15 | 14 |

1. OCP = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

POWER WIRING



ACCESSORIES

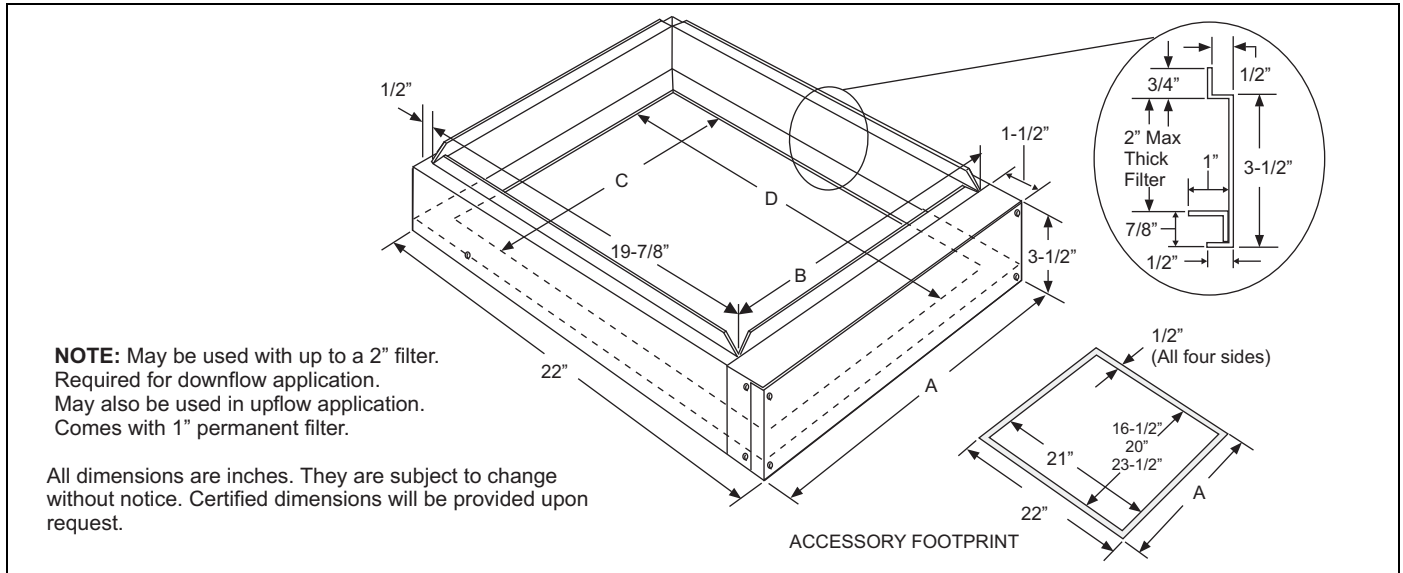
Refer to Price Manual for specific model numbers.

Electric Heaters - Models shown under Electrical Data include sequencers and temperature limit switches and fusible links for safe, efficient operation. Circuit breakers are provided where shown.

Suspension Kit - Suspension Kit Model 1BH0601 is designed specifically for upflow application of the units contained in this technical guide. For suspension of these units in horizontal applications, it is recommended to use angle support brackets with threaded rods at locations shown in air handler installation instructions.

Filter Rack - One of the following external filter rack accessories: 1FR07* or 1FR08* must be used when unit is installed for application outlined.

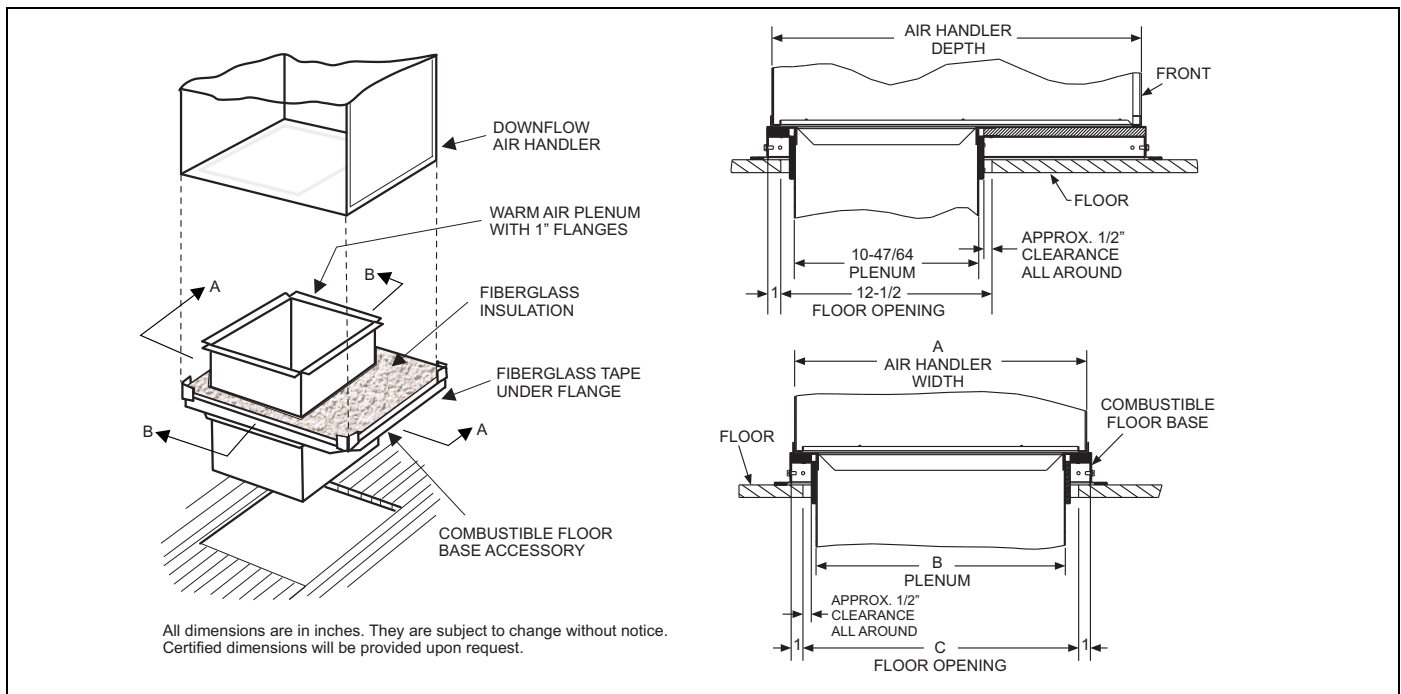
Combustible Floor Base - If an electric heat accessory which is rated for greater than zero clearance to combustible surfaces is installed in these air handlers in the downflow operating positions on a combustible floor, one of the following combustible floor base accessories is required: 1FB1817, 1FB1821, or 1FB1824.



FILTER RACK ACCESSORY

DIMENSIONS

| Filter Rack Model | | Used With | Rack Dimensions Inches | | | | Filter Dimensions Inches | | |
|-------------------|-----------------|--------------|------------------------|--------|--------|----|--------------------------|--------|-----------|
| Multi-Position | Horizontal Only | | A | B | C | D | Width | Length | Thickness |
| 1FR0817 | 1FR0717 | MV12B | 17-1/2 | 16-3/8 | 15-1/2 | 21 | 16 | 20 | 1 |
| 1FR0821 | 1FR0721 | MV16C | 21 | 19-7/8 | 19 | 21 | 20 | 20 | 1 |
| 1FR0824 | 1FR0724 | MV12D, MV20D | 24-1/2 | 23-3/8 | 22-1/2 | 21 | 24 | 20 | 1 |



COMBUSTIBLE FLOOR BASE ACCESSORY

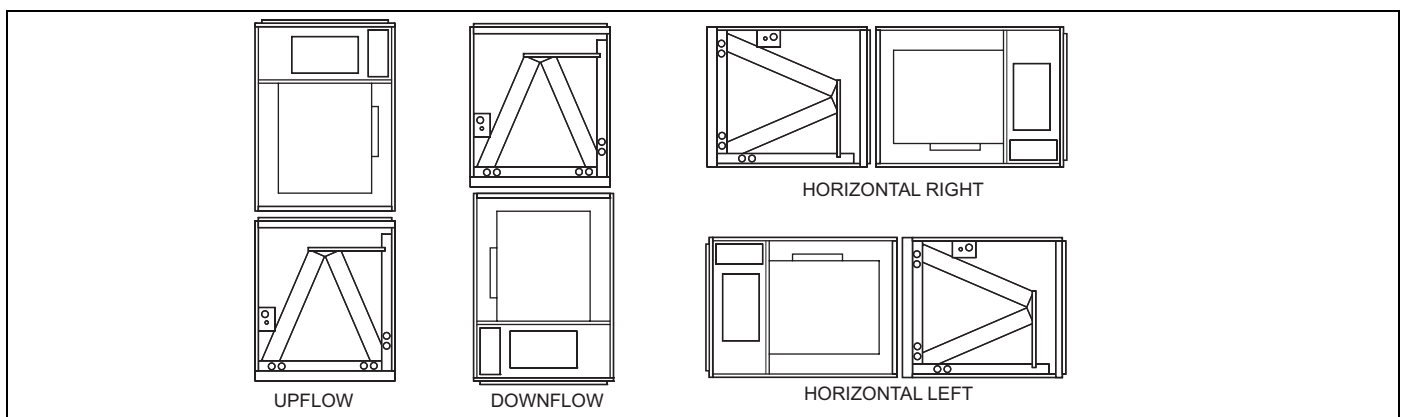
DIMENSIONS

| Floor Base Model | Used with | Dimensions | | | |
|------------------|--------------|------------|------|------|------|
| | | A | B | C | D |
| 1FB1817 | MV12B | 19.9 | 18.0 | 14.9 | 16.9 |
| 1FB1821 | MV16C | 23.4 | 21.5 | 18.4 | 20.4 |
| 1FB1824 | MV12D, MV20D | 26.9 | 25.0 | 21.9 | 23.9 |

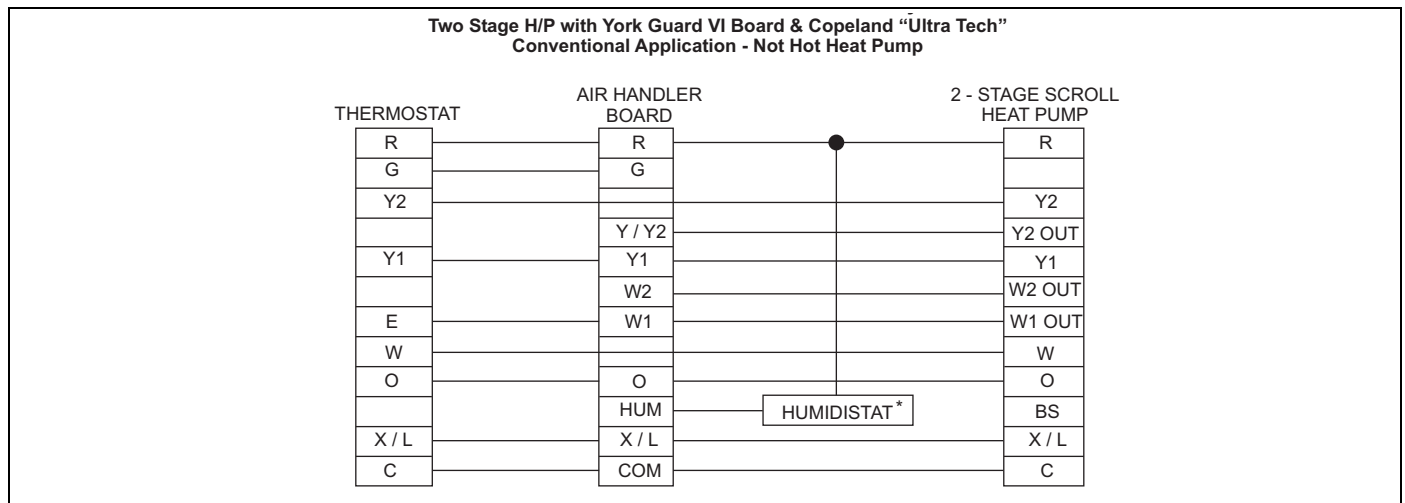
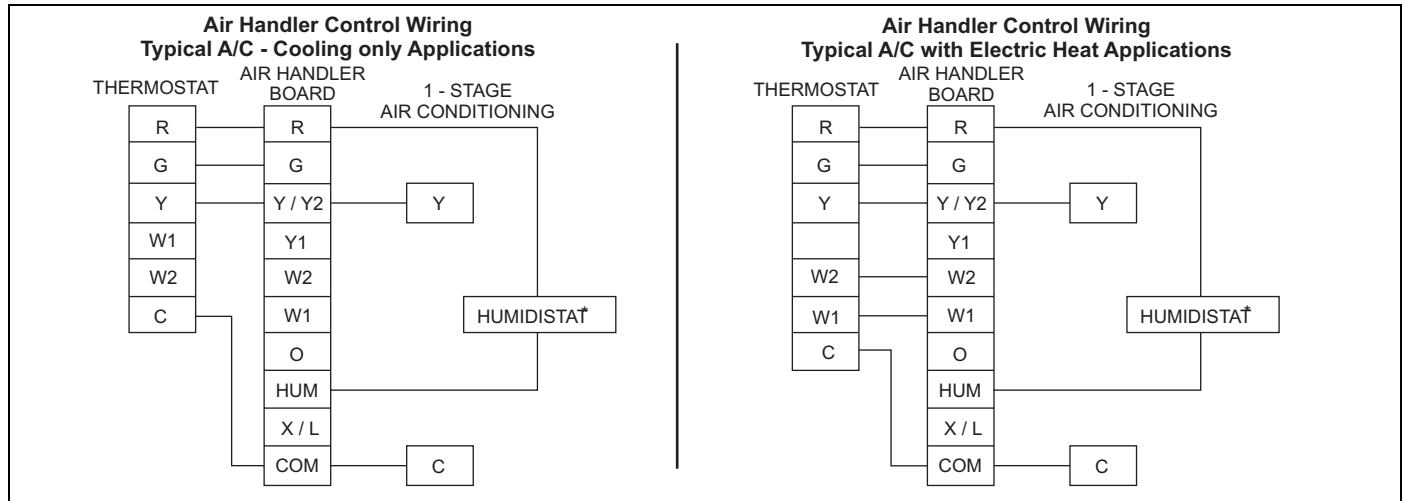
APPLICATION FACTORS - Rated CFM vs. Actual CFM

| % OF RATED AIR FLOW | 80% | 90% | RATED CFM | 110% | 120% |
|---------------------|------|------|-----------|------|------|
| CAPACITY FACTOR | 0.96 | 0.98 | 1.00 | 1.02 | 1.03 |

TYPICAL APPLICATIONS WITH MC MULTI-POSITION COILS

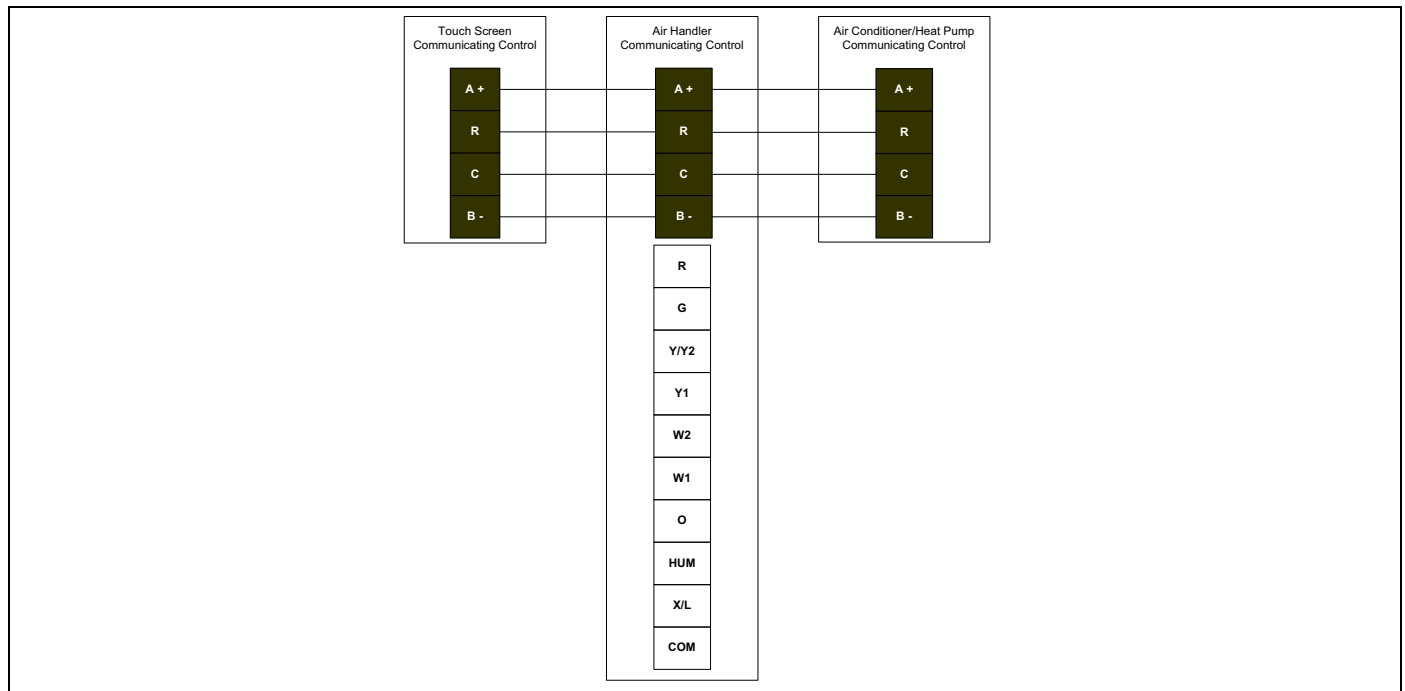


CONVENTIONAL CONTROL WIRING (24 VAC)



* Optional dehumidification humidistat switch contacts open on humidity rise.

CONTROL WIRING USING COMMUNICATION



AIR HANDLER AIR FLOW DATA

| HIGH/LOW SPEED COOLING AND HEAT PUMP AIRFLOW | | | | | |
|---|------|------------|------|------------------------|---------|
| CFM | | | | JUMPER SETTINGS | |
| 12B | | 12D | | | |
| High | Low | High | Low | COOL Tap | ADJ Tap |
| 1385 | 896 | 1411 | 907 | A | B |
| 1137 | 745 | 1159 | 767 | B | B |
| 1203 | 777 | 1227 | 799 | A | A |
| 1019 | 650 | 1007 | 662 | B | A |
| 1085 | 690 | 1083 | 716 | A | C |
| 943 | 615 | 958 | 629 | C | B |
| 889 | 585 | 908 | 603 | B | C |
| 746 | 493 | 767 | 537 | D | B |
| 817 | 537 | 840 | 568 | C | A |
| 646 | 467 | 660 | 516 | D | A |
| 738 | 481 | 780 | 532 | C | C |
| 580 | 465 | 603 | 517 | D | C |
| 16C | | 20D | | JUMPER SETTINGS | |
| High | Low | High | Low | COOL Tap | ADJ Tap |
| 2005 | 1433 | 2404 | 1579 | A | B |
| 1768 | 1145 | 2022 | 1313 | B | B |
| 2009 | 1299 | 2167 | 1388 | A | A |
| 1615 | 1040 | 1801 | 1159 | B | A |
| 1787 | 1159 | 1924 | 1256 | A | C |
| 1524 | 988 | 1818 | 1175 | C | B |
| 1445 | 940 | 1620 | 1024 | B | C |
| 1350 | 883 | 1638 | 1049 | D | B |
| 1384 | 906 | 1628 | 1030 | C | A |
| 1215 | 800 | 1442 | 929 | D | A |
| 1236 | 810 | 1434 | 911 | C | C |
| 1086 | 716 | 1305 | 859 | D | C |
| HIGH / LOW SPEED ELECTRIC HEAT AIRFLOW | | | | | |
| CFM | | | | JUMPER SETTINGS | |
| 12B | | 12D | | | |
| High | Low | High | Low | HEAT Tap | ADJ Tap |
| 1385 | 900 | 1411 | 913 | A | N / A |
| 1228 | 795 | 1258 | 817 | B | N / A |
| 1137 | 748 | 1159 | 769 | C | N / A |
| 917 | 603 | 928 | 619 | D | N / A |
| 16C | | 20D | | JUMPER SETTINGS | |
| High | Low | High | Low | HEAT Tap | ADJ Tap |
| 2006 | 1411 | 2408 | 1515 | A | N / A |
| 1868 | 1243 | 2218 | 1285 | B | N / A |
| 1468 | 983 | 1902 | 1070 | C | N / A |
| 1248 | 840 | 1407 | 823 | D | N / A |

- Airflow at nominal voltage, bottom return at 0.5 external static pressure, tested without filter installed, dry coil conditions.
- These units have variable speed motors that automatically adjust to provide constant CFM from 0.0" to 0.6" w.c. static pressure.
- From 0.6" to 1.0" static pressure, CFM is reduced by 2% per 0.1" increase in static.
- Operation on duct systems with greater than 1.0" w.c. external static pressure is not recommended.
- Both the COOL and the ADJUST tap must be set to obtain the cooling airflow desired (CFM).
- The ADJ tap does not affect the HEAT tap setting.
- Low speed cooling used only with two stage outdoor units. (Speed is preset to 65% of high speed).
- Dehumidification speed is 85% of jumper selected COOL tap and ADJUST tap.
- When operating in both heat pump and electric heat modes, the airflow (CFM) will be per HEAT Tap CFM values only.
- At some settings, LOW COOL and/or LOW HEAT airflow may be lower than what is required to operate an airflow switch on certain models of electronic air cleaners. Consult the instructions for the electronic air cleaner for further details.
- Airflow (CFM) indicator light (LED2) flashes once for every 100 CFM (i.e.: 12 Flashes is 1200 CFM) – blinks are approximate +/- 10% of actual CFM.

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550569-YTG-A-1209
 Supersedes: 255427-YTG-I-1208

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