



VMB-HW

Commercial Chilled Water Multi-Position Fan Coil

Variable Speed
High Efficiency Motor



VMB-HW

The **VMB-HW** Series includes a programmable, high efficiency motor that redefines comfort and energy savings. The **VMB-HW** motor automatically adjusts its torque and speed to maintain a preprogrammed level of constant airflow over a wide range of external static pressures. This variable speed technology offers better indoor air quality, more precise humidity control, quieter operation, consistent indoor air temperature, and lower utility bills.

High Efficiency - At full load conditions the **VMB-HW** motor is 20% more efficient than an induction motor and at constant fan speed it consumes only 60-80 watts of power compared to 400 watts for a standard induction motor.

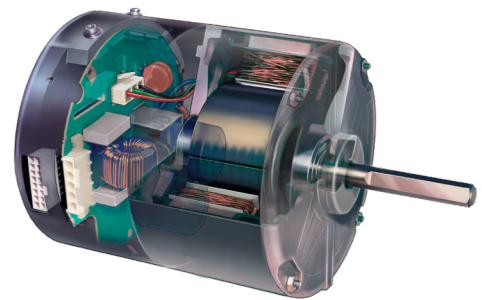
Quiet Operation - The versatile **VMB-HW** motor quietly “ramps up” when the unit is turned on and “ramps down” when the thermostat is satisfied, eliminating the annoying sounds of changing airflow.

Self-Regulating Constant Airflow - The **VMB-HW** motor is factory programmed to maintain a predetermined level of airflow over a wide range of external static pressures, ensuring optimum system performance and whole-house comfort. The benefits of constant fan operation are:

- **Consistent air distribution** (and temperature) throughout the home
- **Better indoor air quality** (further improved with the addition of high efficiency filter) - This allows the air to be filtered without excessive drafts and without sacrificing efficiency.
- **Better humidity control** - The **VMB-HW** is designed to extract much more moisture from the air than a conventional system by slowing the airflow over the cooling coil. The result is an improved summer comfort level at higher indoor temperatures.

Additional Standard Features:

- Vertical/horizontal drain pans
- Hot water coil assembly slides out for easier service
- Manual air vent on hot water coil
- Fully insulated cabinet
- Higher efficiency pleated filter
- Primary and secondary drain connections on cooling coil
- 120V motor, 24V control
- Compatible with most properly sized and installed zone control systems. Contact zone control manufacturer.
- Optional 208/230 and 277V models available. Contact factory.

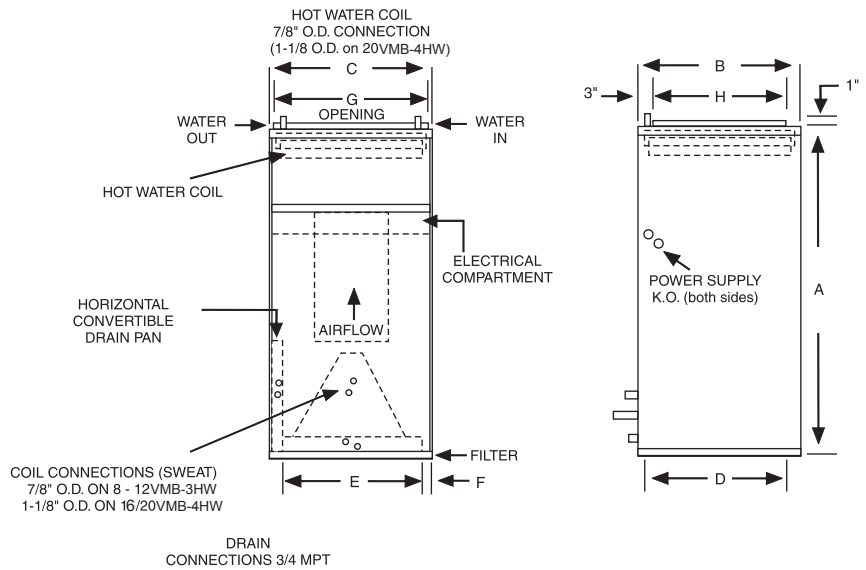


Variable Speed ECM Motor

VMB-HW

Features:

1. Separate cooling and heating coils (4 row cooling coil)
2. Variable speed motor
3. Vertical / horizontal drain pan (right-to-left and left-to-right airflow)
4. Manual air vent
5. Pleated filter(s)



| ELECTRICAL DATA | | | | |
|-----------------|-----------------|------------|--------------------|-------------------|
| UNIT MODEL | MOTOR HP (120V) | MOTOR AMPS | MIN. CIR. AMPACITY | MAX. HACR BREAKER |
| 8VMB-3HW | 1/3 | 4.8 | 6.0 | 15 |
| 12VMB-3HW | 1/2 | 7.3 | 10 | 15 |
| 16VMB-4HW | 1 | 10.5 | 14 | 15 |
| 20VMB-4HW | 1 | 11.5 | 15 | 15 |

| PHYSICAL DIMENSIONS | | | | | | | | | | |
|---------------------|----|----|--------|--------|--------|---|----|----|-------------|-----------------|
| UNIT MODEL | A | B | C | D | E | F | G | H | FILTER SIZE | SHIP WT. (LBS.) |
| 8VMB-3HW | 40 | 20 | 20 | 18-1/2 | 16 | 2 | 18 | 16 | 18 X 20 X 1 | 145 |
| 12VMB-3HW | 42 | 23 | 20 | 21-1/2 | 16 | 2 | 18 | 19 | 20 X 22 X 1 | 165 |
| 16VMB-4HW | 48 | 28 | 21-1/4 | 26-1/4 | 17-1/4 | 2 | 18 | 24 | 20 X 25 X 1 | 225 |

| AIR FLOW DATA | | | | | | | | | | | | | |
|---------------|-------------------|---|-----|---|----|------------------------------|------|------|------|------------|------|------|------|
| MODEL | OPERATING MODE | THERMOSTAT TERMINALS "X" ENERGIZED TERMINAL | | | | CONTROL BOARD SELECTION TAPS | | | | | | | |
| | | Y1 | HUM | G | W1 | COOL (CFM) | | | | HEAT (CFM) | | | |
| | | | | | | A | B | C | D | A | B | C | D |
| 8VMB-3HW | COOLING | X | | | | 800 | 720 | 640 | 560 | | | | |
| | COOL & DEHUMIDIFY | X | X | | | 640 | 575 | 510 | 450 | | | | |
| | CONTINUOUS BLOWER | | | X | | 400 | 360 | 320 | 280 | | | | |
| | HEATING | | | | X | | | | | 800 | 700 | 600 | 500 |
| 12VMB-3HW | COOLING | X | | | | 1200 | 1050 | 950 | 850 | | | | |
| | COOL & DEHUMIDIFY | X | X | | | 960 | 840 | 760 | 680 | | | | |
| | CONTINUOUS BLOWER | | | X | | 600 | 525 | 475 | 425 | | | | |
| | HEATING | | | | X | | | | | 1200 | 1050 | 900 | 750 |
| 16VMB-4HW | COOLING | X | | | | 1600 | 1420 | 1270 | 1120 | | | | |
| | COOL & DEHUMIDIFY | X | X | | | 1280 | 1135 | 1015 | 900 | | | | |
| | CONTINUOUS BLOWER | | | X | | 800 | 710 | 635 | 560 | | | | |
| | HEATING | | | | X | | | | | 1600 | 1400 | 1200 | 1000 |
| 20VMB-4HW | COOLING | X | | | | 1825 | 1700 | 1600 | 1400 | | | | |
| | COOL & DEHUMIDIFY | X | X | | | 1600 | 1440 | 1280 | 1120 | | | | |
| | CONTINUOUS BLOWER | | | X | | 1000 | 900 | 800 | 700 | | | | |
| | HEATING | | | | X | | | | | 1825 | 1700 | 1500 | 1250 |

Airflow shown are at standard air conditions, dry coil at 120 volts.

Max. ext. static pressure is 0.50" wtr

NOTES:

- The cooling and heating speed taps are factory set on "A".
- The delay profile is factory set on "Arid" setting.
- The adjust profile is factory set on "Normal:"
- Adjust profile (+) will increase airflow by 10%, while tap (-) will decrease airflow by 10%.

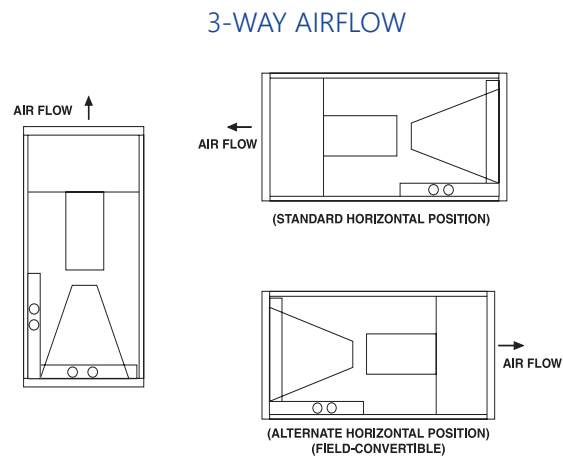
For additional sales and technical information on variable speed motors visit: www.thedealertools.com

Digital thermostats for these units must have a "C" terminal.



| COOLING PERFORMANCE DATA | | | | | | | | | | | | | | | |
|--------------------------|----------|------|-----------------|--------------------------|-----------|------------|--------------------------|-----------|------------|--------------------------|-----------|------------|--------------------------|-----------|------------|
| UNIT MODEL | NOM. CFM | GPM | P.D. (FT. WTR.) | 45°F ENTERING WATER | | | | | | 42°F ENTERING WATER | | | | | |
| | | | | 80°F DB/67°F WB ENT. AIR | | | 75°F DB/63°F WB ENT. AIR | | | 80°F DB/67°F WB ENT. AIR | | | 75°F DB/63°F WB ENT. AIR | | |
| | | | | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE | TOTAL MBH | SENS. MBH | TEMP. RISE |
| 8VMB-3HW | 600 | 3.0 | 2.5 | 19.0 | 13.8 | 12.7 | 14.5 | 12.1 | 9.7 | 20.7 | 14.4 | 13.8 | 15.8 | 12.6 | 10.5 |
| | | 4.5 | 5.5 | 22.4 | 15.1 | 9.9 | 17.1 | 13.1 | 7.6 | 24.4 | 15.9 | 10.8 | 18.6 | 13.7 | 8.3 |
| | | 6.0 | 9.5 | 24.4 | 15.9 | 8.2 | 18.7 | 13.7 | 6.2 | 26.6 | 16.8 | 8.9 | 20.3 | 14.4 | 6.8 |
| | 800 | 3.5 | 3.4 | 23.1 | 17.3 | 13.2 | 17.6 | 15.2 | 10.1 | 25.2 | 18.1 | 14.4 | 19.2 | 15.8 | 11.0 |
| | | 5.0 | 6.7 | 26.9 | 18.7 | 10.7 | 20.5 | 16.3 | 8.2 | 29.3 | 19.6 | 11.7 | 22.4 | 17.1 | 8.9 |
| | | 6.5 | 11.0 | 29.2 | 19.6 | 9.0 | 22.3 | 17.0 | 6.9 | 31.8 | 20.6 | 9.8 | 24.3 | 17.8 | 7.5 |
| 12VMB-3HW | 1000 | 4.0 | 2.4 | 28.3 | 21.6 | 14.1 | 21.6 | 19.0 | 10.8 | 30.8 | 22.5 | 15.4 | 23.6 | 19.7 | 11.8 |
| | | 6.0 | 4.8 | 33.9 | 23.7 | 11.3 | 25.9 | 20.6 | 8.6 | 36.9 | 24.8 | 12.3 | 28.2 | 21.6 | 9.4 |
| | | 8.0 | 7.9 | 37.3 | 25.0 | 9.3 | 28.5 | 21.7 | 7.1 | 40.6 | 26.3 | 10.2 | 31.0 | 22.7 | 7.8 |
| | 1200 | 5.0 | 3.5 | 33.7 | 25.5 | 13.5 | 25.8 | 22.4 | 10.3 | 36.8 | 26.6 | 14.7 | 28.1 | 23.3 | 11.3 |
| | | 6.5 | 5.5 | 38.0 | 27.1 | 11.7 | 29.1 | 23.7 | 8.9 | 41.5 | 28.4 | 12.8 | 31.7 | 24.7 | 9.7 |
| | | 8.0 | 7.9 | 41.0 | 28.2 | 10.3 | 31.3 | 24.6 | 7.8 | 44.7 | 29.6 | 11.2 | 34.1 | 25.7 | 8.5 |
| 16VMB-4HW | 1400 | 4.5 | 2.0 | 36.2 | 29.2 | 16.1 | 27.7 | 25.8 | 12.3 | 39.5 | 30.3 | 17.6 | 30.1 | 26.7 | 13.4 |
| | | 6.0 | 3.3 | 42.4 | 31.4 | 14.1 | 32.4 | 27.6 | 10.8 | 46.2 | 32.8 | 15.4 | 35.3 | 28.7 | 11.8 |
| | | 7.5 | 4.8 | 46.9 | 33.1 | 12.5 | 35.8 | 28.9 | 9.6 | 51.1 | 34.7 | 13.6 | 39.0 | 30.2 | 10.4 |
| | 1600 | 6.0 | 3.3 | 44.2 | 34.1 | 14.7 | 33.8 | 30.0 | 11.3 | 48.2 | 35.5 | 16.1 | 36.8 | 31.2 | 12.3 |
| | | 8.0 | 5.4 | 51.0 | 36.6 | 12.7 | 38.9 | 32.0 | 9.7 | 55.5 | 38.3 | 13.9 | 42.4 | 33.4 | 10.6 |
| | | 10.0 | 7.9 | 55.7 | 38.4 | 11.1 | 42.5 | 33.4 | 8.5 | 60.7 | 40.3 | 12.1 | 46.3 | 34.9 | 9.3 |
| 20VMB-4HW | 1600 | 6.5 | 3.8 | 46.1 | 34.8 | 14.2 | 35.2 | 30.6 | 10.8 | 50.3 | 36.3 | 15.5 | 38.4 | 31.8 | 11.8 |
| | | 8.5 | 6.0 | 52.3 | 37.1 | 12.3 | 39.9 | 32.4 | 9.4 | 57.0 | 38.8 | 13.4 | 43.5 | 33.8 | 10.2 |
| | | 10.5 | 8.6 | 56.6 | 38.7 | 10.8 | 43.2 | 33.7 | 8.2 | 61.7 | 40.7 | 11.8 | 47.1 | 35.2 | 9.0 |
| | 2000 | 7.0 | 4.3 | 52.4 | 40.9 | 15.0 | 40.0 | 36.1 | 11.4 | 57.1 | 42.6 | 16.3 | 43.6 | 37.4 | 12.5 |
| | | 10.0 | 7.9 | 61.7 | 44.3 | 12.3 | 47.1 | 38.8 | 9.4 | 67.3 | 46.4 | 13.5 | 51.4 | 40.5 | 10.3 |
| | | 13.0 | 12.5 | 67.5 | 46.5 | 10.4 | 51.6 | 40.5 | 7.9 | 73.6 | 48.8 | 11.3 | 56.2 | 42.4 | 8.6 |

| HEATING PERFORMANCE DATA | | | | | | | | | | |
|--------------------------|-------------------|-------------------|-------------------|------------------|---|-------|-------|-------|-------|------|
| UNIT MODEL | NOM. COOLING BTUH | NOM. CFM | GPM (HTG) | P.D. (FT. WATER) | BTUH (1000) AT ENTERING WATER TEMPERATURE | | | | | |
| | | | | | 120°F | 140°F | 160°F | 180°F | | |
| 8VMB-3HW | 18,000/ 24,000 | 800 | 3 | 1.8 | 26.4 | 37.0 | 47.6 | 58.1 | | |
| | | | 2 | 0.8 | 23.3 | 32.6 | 41.9 | 51.2 | | |
| | | | 1 | 0.5 | 20.7 | 29.0 | 37.3 | 45.6 | | |
| | | 700 | 3 | 1.8 | 24.8 | 34.7 | 44.6 | 54.5 | | |
| | | | 2 | 0.8 | 22.0 | 30.8 | 39.6 | 48.4 | | |
| | | | 1 | 0.5 | 19.7 | 27.6 | 35.5 | 43.4 | | |
| | | 600 | 3 | 1.8 | 22.9 | 32.0 | 41.1 | 50.3 | | |
| | | | 2 | 0.8 | 20.5 | 28.7 | 36.9 | 45.1 | | |
| | | | 1 | 0.5 | 18.6 | 26.0 | 33.4 | 40.9 | | |
| | | 12VMB-3HW | 30,000/ 36,000 | 1200 | 6 | 7.5 | 38.4 | 53.8 | 69.2 | 84.5 |
| | | | | | 4 | 3.6 | 35.1 | 49.2 | 63.3 | 77.3 |
| | | | | | 2 | 1.0 | 27.6 | 38.7 | 49.8 | 60.8 |
| 1050 | 6 | | | 7.5 | 37.2 | 51.0 | 64.9 | 78.9 | | |
| | 4 | | | 3.6 | 34.2 | 46.9 | 59.8 | 72.7 | | |
| | 2 | | | 1.0 | 27.2 | 37.4 | 47.7 | 58.0 | | |
| 900 | 6 | 7.5 | | 33.1 | 46.4 | 59.7 | 72.9 | | | |
| | 4 | 3.6 | | 30.8 | 43.1 | 55.4 | 67.7 | | | |
| | 2 | 1.0 | | 25.1 | 35.1 | 45.1 | 55.2 | | | |
| 16VMB-4HW | 42,000/ 48,000 | 1600 | | 8 | 4.8 | 60.4 | 84.6 | 108.8 | 132.9 | |
| | | | | 6 | 2.9 | 56.5 | 79.1 | 101.7 | 124.3 | |
| | | | | 4 | 1.4 | 49.6 | 69.5 | 89.4 | 109.2 | |
| | | 1400 | 8 | 4.8 | 56.2 | 78.7 | 101.2 | 123.7 | | |
| | | | 6 | 2.9 | 52.9 | 74.1 | 95.3 | 116.4 | | |
| | | | 4 | 1.4 | 47.0 | 65.8 | 84.6 | 103.4 | | |
| 1200 | | 8 | 4.8 | 51.4 | 71.9 | 92.4 | 113.0 | | | |
| | | 6 | 2.9 | 48.7 | 68.2 | 87.7 | 107.2 | | | |
| | | 4 | 1.4 | 43.9 | 61.4 | 78.9 | 96.5 | | | |
| 20VMB-4HW | | 48,000/ 60,000 | 1000 | 8 | 4.8 | 45.8 | 64.1 | 82.4 | 100.7 | |
| | | | | 6 | 2.9 | 43.8 | 61.3 | 78.8 | 96.3 | |
| | | | | 4 | 1.4 | 40.1 | 56.1 | 72.1 | 88.2 | |
| | 2000 | | 9 | 5.1 | 73.4 | 102.8 | 132.2 | 161.5 | | |
| | | | 7 | 3.3 | 68.9 | 96.5 | 124.1 | 151.6 | | |
| | | | 5 | 1.9 | 61.7 | 86.4 | 111.1 | 135.8 | | |
| 1750 | 9 | | 5.1 | 71.1 | 97.7 | 124.4 | 151.2 | | | |
| | 7 | | 3.3 | 67.0 | 92.1 | 117.3 | 142.7 | | | |
| | 5 | | 1.9 | 60.4 | 83.0 | 105.9 | 128.8 | | | |
| 1500 | 9 | | 5.1 | 62.8 | 87.9 | 113.0 | 138.1 | | | |
| | 7 | | 3.3 | 59.7 | 83.6 | 107.5 | 131.4 | | | |
| | 5 | | 1.9 | 54.6 | 76.4 | 98.2 | 120.1 | | | |
| 1250 | 9 | 5.1 | 58.0 | 79.5 | 101.1 | 124.4 | | | | |
| | 7 | 3.3 | 55.5 | 76.2 | 97.0 | 120.1 | | | | |
| | 5 | 1.9 | 51.3 | 70.5 | 89.8 | 109.2 | | | | |



NOTES:
 (1) Heat BTU is at 65° Entering Air Temperature.

VMB-HW

General Construction Features

Basic Unit

All models are manufactured with heavy gauge galvanized steel to resist corrosion. Each cabinet is fully insulated. Coil connections are stubbed out the cabinet for easier installation.

Coils

Coils have 3/8 inch copper tubing expanded to high efficiency aluminum fins. Manual air vents are provided and all coils are pressure tested to 350 psig.

Drain Pans

All fan coils can be installed vertically or horizontally (right-to-left airflow) with no modification. Horizontal drain pans can be repositioned within the cabinet to allow horizontal installation with left-to-right airflow. Each drain pan is coated with a "mastic" material to reduce corrosion. Threaded primary and secondary drain connections are also provided.

Motors

Standard motors are variable speed type with internal thermal overload protection and are mounted with rubber isolation bushings. Blower wheels are centrifugal, forward curved, and dynamically balanced.

Filters

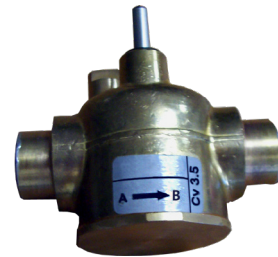
One inch pleated filters are factory installed.

Agency Listing

All standard models are ETL Listed.



Power Head



Valve Body
(2-way)



CP905

| | |
|---|-------------------------------|
| ACCESSORIES: (for chilled water coil) | |
| Power Heads: | |
| E50131180 | 24V |
| Separate Valve Bodies: (order power heads separately) (mount outside cabinet) | |
| E421317 | 3/4" 2-way - For 8-12VMBE-277 |
| E431317 | 3/4" 3-way - For 8-12VMBE-277 |
| E421417 | 1" 2-way - For 16-20VMBE-277 |
| E431417 | 1" 3-way - For 16-20VMBE-277 |
| Hand Valves: (Combination balance / shut-off) (2 usually req'd per coil) | |
| CP90 | For 8-12VMBE-277 |
| CP905 | For 16-20VMBE-277 |

NOTE:

1. Power head leads are 18".





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AUGUST 2024