

Imperial [IP] Dimensions  
Metric (SI) in Parentheses

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## Application

The ECM-VCU control allows accurate manual adjustment and monitor of fans using Carnes ECM Motor. These are fractional horsepower air moving motors featuring an internal microprocessor. The design provides exceptional efficiency, performance and motor life. These self regulating motors may be factory configured so the fan will provide constant mass airflow.

The ECM-VCU features a 4 digit LED numerical display to allow easy reading in dark spaces. Watch the display and set the flow index with a screwdriver adjust. Twenty seconds later, the display shows the motor RPM. Then, the display periodically alternates between the flow index and motor RPM.

The ECM-VCU may also be used where automation systems only turn the fan on or off.

## Specifications

Power NEC Class II Only  
24 Vac  $\pm$  20% 50/60 Hz  
4 W, 6 VA

Flow Index  
Adjustment 270° rotation  
F Off-0-100

RPM 0-2,000 RPM  $\pm$  2%

Outputs  
Go & VSpd 24 Vdc @ 20 mA

*Vspd Supports ECM Autoswitch Function*

ECM 2.3 Set for Vspd Operation  
Set Status Flag (7) to RPM

Thermal  
Stability  $>0.01\%/^{\circ}\text{F}$

Operating Environment 0°F to 130°F (-18°C to 55°C)  
10-80% rh

Connections 1/4 Tabs



ECM-VCU (V999-5223)

## Operation

ECM motors configured for Vspd operation are factory configured for external torque or airflow adjustment. The configuration data includes the fan manufacturer's specified adjustment range. A numerical flow index accurately adjusts the fan to the desired torque or airflow. The flow index is a number from 0-100 having a linear relationship to the minimum to maximum torque or airflow range specified by the motor fan manufacturer. Refer to the fan manufacturer's specifications, data and charts to convert the flow index to torque or mass airflow.

The ECM-VCU allows local on/off and fan airflow adjustment. Rotating a single screwdriver adjuster changes the variable output signal to the motor from off to full output. While rotating the adjuster, a numerical flow index is locked on the illuminated numerical display. After adjustment, the display shows fan RPM.

## Mounting

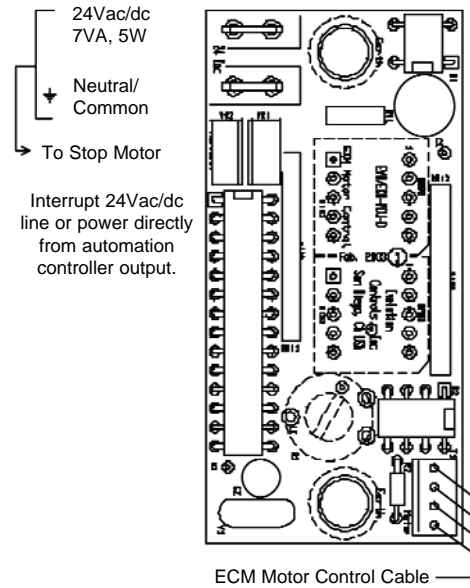
Power the ECM-VCU control with a 24Vac NEC Class II USA power source. Observe all code requirements and follow all safety practices regarding low voltage power supplies and circuits to insure a safe, reliable installation. DC voltages from 20 -30 Vdc may also be used to power the control.

Earth one side of the power source. Connect the neutral connection to the grounded side of the 24Vac Class II power source.

Connect the 24Vac 50/60Hz connection to the hot side of the 24Vac Class II power source. You may interrupt this connection as a means to stop the ECM Motor. Many automation controllers will power the control directly from an on/off output.

Connect to the motor using an ECM-CBL motor control cable.

## Mounting Plate Dimensions



## Wiring

Mount the control inside a metal control cabinet or enclosure with the display and adjuster visible through cutouts through the enclosure. Fasten the control mounting posts to a grounded metal surface.

The "mp" option provides the control mounted to a metal plate that fastens to a single gang electrical box<sup>USA</sup>.

Mount the control with clearance for the 24Vac power wires and control cable connector. The control's motor cable connector is sized so it may be pulled through an empty 3/4" conduit. 512.82 ohm resistor provides a 500 ohm dropping resistance.

## Display Side View

