

## EC Motor

### Application

The EVO/ECM-VCU control allows accurate manual adjustment and monitor of air moving EC Motors. These are fractional horsepower 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 EVO/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 EVO/ECM-VCU may also be used where automation systems only turn the fan on or off.

The VCU is also compatible with many PWM controlled pump motors, inverters and VFDs.

### Specifications

Power NEC Class II Only  
~24V ± 20% 50/60 Hz  
4 W, 6 VA

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

RPM 0-2000 RPM ± 2%

Outputs  
Go & Vspd +24V @ 20 mA

*Vspd Supports ECM Autoswitch Function*

### Motor Configuration

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

Thermal Stability >0.01%/°F

Operating Environment 0°F to 130 °F (-18°C to 55°C)  
10-80% rh  
Connections 1/4 Tabs

EVO/ECM-VCU-36-m



### Ordering

EVO/ECM-VCU-“a”-“b”

“a” Insert “36” for 36 Tachometer pulses/turn.

“b” Add “mp” for control mounted to mounting plate

### Operation

EC 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 EVO/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.

## Wiring

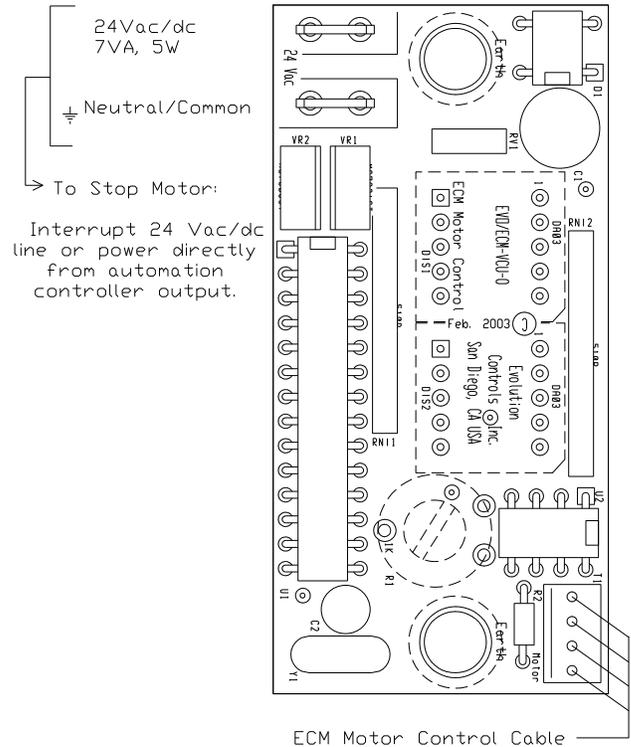
Power the EVO/ECM-VCU control with a ~24V NEC Class II <sup>USA</sup> power source. Observe all code requirements and follow all safety practices regarding low voltage power supplies and circuits to insure a safe, reliable installation. DC voltages from +20V to +30V may also be used to power the control.

Ground one leg of the ~24V power source at the transformer. Then connect it to the VCU's neutral connection

Connect the other leg of the ~24V power source to the VCU's ~24V connection.

You may interrupt the ~24V connection as a means to stop the ECM™ Motor. Most automation controllers will power the control directly from an on/off output.

Connect the VCU to the motor using an EVO/ECM-CBL motor control cable. Do not route or bundle the control cable with motor power or other high voltage wiring.

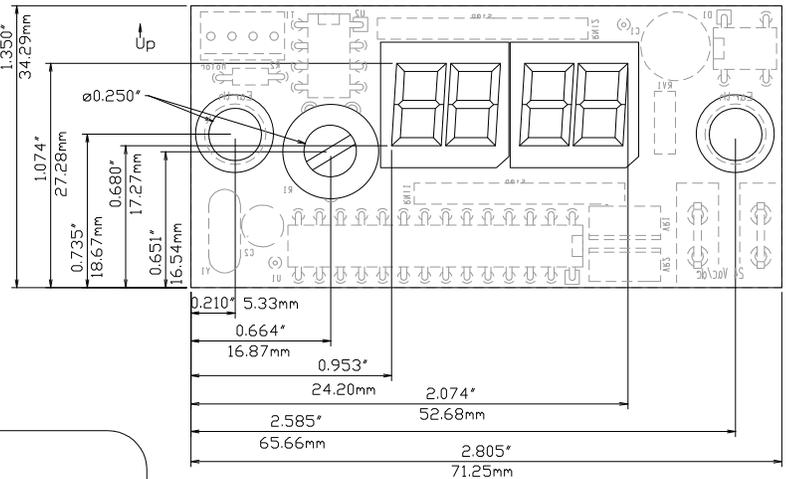


## Mounting

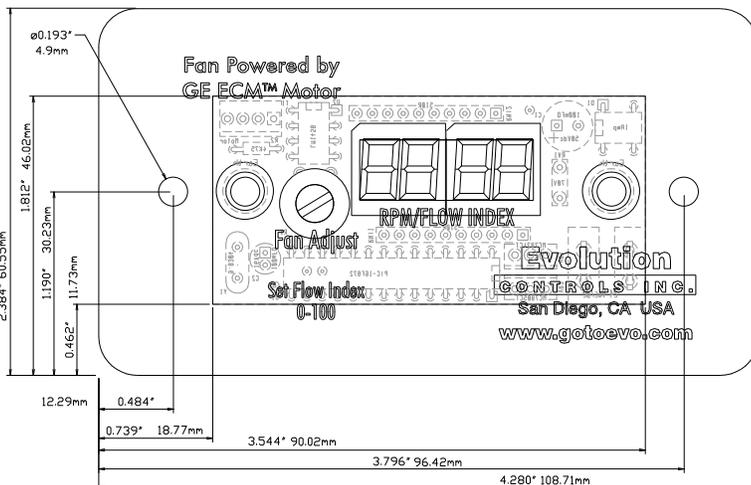
Mount the control inside a metal control cabinet or enclosure with the display and adjuster visible through cutouts through the enclosure. Fasten the control mounting posts to a grounded metal surface.

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 ~24V 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.



Display Side View



Mounting Plate Dimensions