

GE ECM Motor™ Manual Control Unit

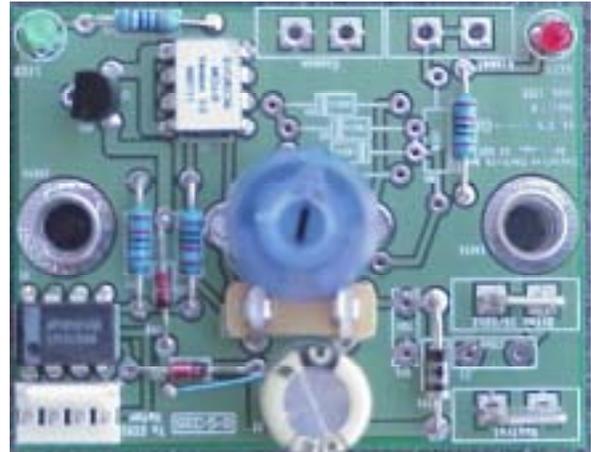
Application

The ECM-Manual Control Unit provides a means to field adjust the output of General Electric's ECM Motor™. These are fractional horsepower fan motors featuring an internal microprocessor to provide exceptional efficiency, performance and motor life. The motor may be programmed for constant airflow or constant torque. The ECM-MCU allows adjustment of the output from 0% to 100% of the programmed control range when the motor is programmed for Vspd control.

A lamp on the control continuously flashes out the motor's output, so instruments are not required to adjust or record the air balance setting. The motor may be programmed so an optional status lamp indicates over/underspeed or dirty filter.

Control circuits may interrupt power to the manual control unit to stop the ECM Motor™. Magnetic starters or power relays are not required!

Add a "T" suffix for motor cable terminal strip in place of motor connector.



EVO/ECM-MCU-S-L

Specifications

Power NEC Class II Only
 24 Vac ± 20% 50/60 Hz
 2 W, 4 VA + 1VA/Motor
 2 motors/control max.

Outputs Go & Vspd
 24 Vdc @ 20 mA

Signal Supports ECM Autoswitch Function

Thermal Stability >0.01%/°F
 Operating Environment 0°F to 130° (-18°C to 55°C)
 10-80% rh

Power Connections 1/4 Tabs

Cable 22 AWG, 4 Conductor

Ordering

ECM Manual Controller EVO/ECM-MCU

Use an "S" suffix for lamps and adjust on board top.

Use an "R" suffix for lamps and adjustment mounted for access through a mounting plate or cabinet wall.

Add an "L" suffix for the optional status lamp.

CMP Plenum Rated Cables

2' ECM-CBL02 *Cut In half To make pigtails for remote mounting. Controller may be mounted up to 400' from the motor.*

4' ECM-CBL04	20' ECM-CBL20
8' ECM-CBL08	35' ECM-CBL35
12' ECM-CBL12	50' ECM-CBL50

Operation

Turn the adjustment to the desired setting. Read the setting by watching the LAMP flashes. The LAMP continuously flashes out the current setting. After a pause, the LAMP flashes out the tens digit, then the units digit of a number (percent) between 1 and 99. If the lamp stays on, the setting is 100%. Long flashes represent the tens digit, and short flashes represent the units digit. A setting of 23% will flash two longs, and three shorts. The LAMP feature can be used to record an air balance setting, or to precisely set the signal to the ECM motor without using a meter.

Wiring

Power the EVO/ECM-MCU controller with a 24 Vac NEC Class II power source. Please observe all code requirements regarding Class II circuits to insure a safe, reliable installation. Connect the neutral connection to the grounded side of the 24 Vac Class II power source as required by code.

Connect the 24Vac 50/60Hz connection to the hot side of the 24 Vac Class II power source. The control circuit design may interrupt the hot side power source as a means to stop the ECM Motor™.

The control cable is fitted with a keyed 16 pin connector. Fit this connector into the mating socket on the ECM Motor™.

The other end is fitted with a 4 pin connector. Fit this connector into the mating socket on the edge of the EVO/ECM-MCU controller. Plug the connector in with the cable exiting toward the mounting plate. Be sure you are lined up with the socket before pushing in the connector.

Mounting

Mount the control inside a metal junction box, control cabinet or enclosure. Where adjustment without opening the enclosure is desired, make mounting, lamp and adjust holes through the cover or enclosure wall and mount the "R" version of the control to the inside.

The ECM Cable is factory fitted with a connector at each end. The end connecting to the controller may be pulled through an empty 3/4" conduit. Cut cable ECM-CAB02 in half for remote mounting. Use wire nuts or compression fittings at the control and motor end to connect the extended wire length to the pigtails.

Mount the controller with clearance for the 24 Vac power wires and control cable connector. Make sure the adjustment access hole is visible and accessible.

Testing

The EVO/ECM-MCU controller provides a "GO" signal and an "Vspd" signal to the ECM Motor™. The "GO" signal is simple, while the Vspd signal is complex. Both may be tested with a DC voltmeter. Make sure the AC power is between 18 and 32 Vac.

Set the DC voltmeter to measure 35 Vdc.

With the motor and controller powered and connected:

Measure the voltage between GREEN pin 3 (negative) and WHITE pin 15 (GO signal) of the ECM Motor™ connector. It should be at least 9 Vdc. It may be as high as 30 Vdc, depending on the length of the control wire and the number of connected motors.

Connect the meter between GREEN pin 3 and RED pin 14 (Signal). Rotate the control fully clockwise (100%). The voltage should be greater than 9 volts. Rotate the control counterclockwise, and observe the voltage fall to zero.

