

764-ECM
4 Speed ECM Motor Controller

Description

The 764-ECM 4 Speed Controller is designed to allow the replacement of a 24VAC operated discrete speed ECM fan motor with a speed (flow rate) adjustable ECM fan motor/controller combination. When used with a PWM capable ECM motor, the 764-ECM Controller will provide four discrete, user selectable 24VAC speed (flow rate) inputs.

Each selectable input has a manually adjustable, proportional PWM speed (flow rate) setting to control the RPM of the ECM fan motor. Each of the manual adjustments has a range of 0% PWM (Off) to 100 % PWM (Full on). The controller also has an LED indicator lamp that displays the intensity of the selected PWM output signal. The 764-ECM 4 Speed Motor Controller works with all sizes and voltages of PWM input capable ECM fan motors. The 764-ECM Controller is line voltage independent and requires only a 24VAC input signal to operate.

The 764-ECM 4 Speed Controllers come mounted in an easily installable track with screw driver adjustable speed (flow rate) potentiometers.

Application

Four manually adjustable, discrete speed (flow rate) inputs are available on the 764-ECM controller. The 764-ECM controller is wired to the PWM compatible ECM fan motor wires as shown in the wiring diagram on the back of this sheet.

Each of these four discrete inputs is activated by applying 24VAC to the appropriate "LO", "MED LO", "MED HI" or "HI" input terminal. The 24 RETURN wire is connected to the control's "24VAC COM" terminal. Each of the "LO", "MED LO", "MED HI" and "HI" speeds has its own dedicated potentiometer to set the precise condenser motor speed (flow rate) needed for the application.

These four manually adjustable discrete ECM motor speeds are accomplished using a Pulse Width Modulated (PWM) output signal. The four manually adjusted speed control pots each have a range of 0-100% PWM (Off to Full Speed).

The PWM signal operates at a nominal voltage level of 13.5VDC at 80Hz. It is capable of sourcing up to 5mA drive current.

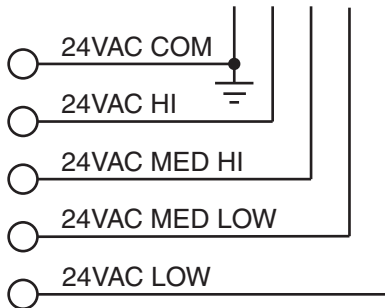
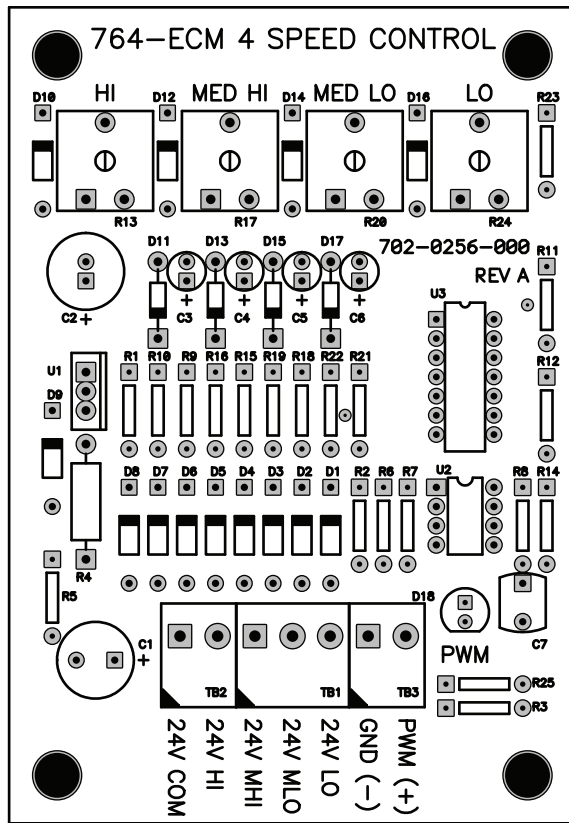
Specifications

Motor Types	PWM compatible ECM (dc brushless) Motors
Motor Speed	Field Adjustable
Input Voltage	
LO speed	24VAC (+20%/-10%)
MED LO speed	24VAC (+20%/-10%)
MED HI speed	24VAC (+20%/-10%)
HI speed	24VAC (+20%/-10%)
Output	0% to 100% PWM @ 80Hz 13.5VDC, 5mA (max.)
Humidity	95%, Non Condensing
Ambient	32° – 120° F
Dimensions	(L x W x H) 4.7" x 3.1" x 1.5"

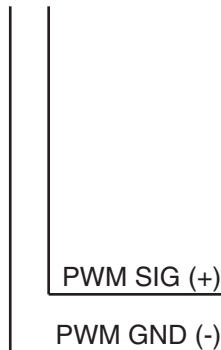
Installation Tip

The 764-ECM 4 Speed Control's PWM output signal to the PWM compatible ECM motor can be viewed on an RMS DC Voltmeter as a 0-13.5VDC signal.

A voltmeter reading of zero volts DC indicates zero motor RPM (flow rate) and a voltmeter reading of 13.5VDC indicates 100% motor RPM (flow rate). Voltmeter readings in between 0 Vdc and 13.5VDC indicate proportionally different motor RPMs (flow rates).



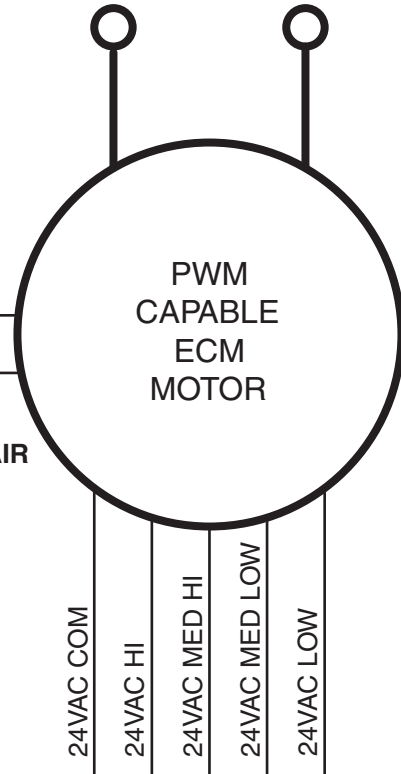
**CONNECT 24VAC INPUTS TO
24VAC SPEED CONTROL STAT
OR
INTEGRATED FURNACE CONTROL
24VAC SIGNALS**



**DRIVE MOTOR WITH
PWM SIGNAL WIRE PAIR**

**AC LINE VOLTAGE
FROM CONTACTOR**

T1 T2
OR NEUTRAL



**DO NOT CONNECT MOTOR
24VAC SPEED CONTROL SIGNALS**

CAUTION: If a ground reference is applied to the 24VAC power source, the "grounded" lead must be connected to the terminal labeled '24V COM'

Figure 1 - 764-ECM Wiring Diagram