PWM In / 0 to +10V Out

Application

The EVO™/10Y-PWMa interface converts DC PWM signals to a standard 0 to +10V automation signal.

The PWM input is optically isolated from the 0V to +10V signal circuit and power to prevent ground loops and allow multiple devices located over a distance to be driven by the same PWM signal.

The PWM signal connections are not polarity sensitive and may operate over a peak voltage range from +5V to +24V. Acceptable PWM rate is from 10 pulses per second to 200 pulses per second.

The output is short circuit and ~24V protected to reduce installation and startup failures caused by wiring errors.

A 2x3 pin header provides a means to select the pulses per second range, ~(ac) or +(dc) supply voltage and a calibration mode.

Inserting the Slow jumper reduces PWM signature in the 0V to +10V output signal, but slows the response to PWM change. Slow is recommended for systems that will work with slow response and for PWM Pulse rates less than 50 pulses per second.

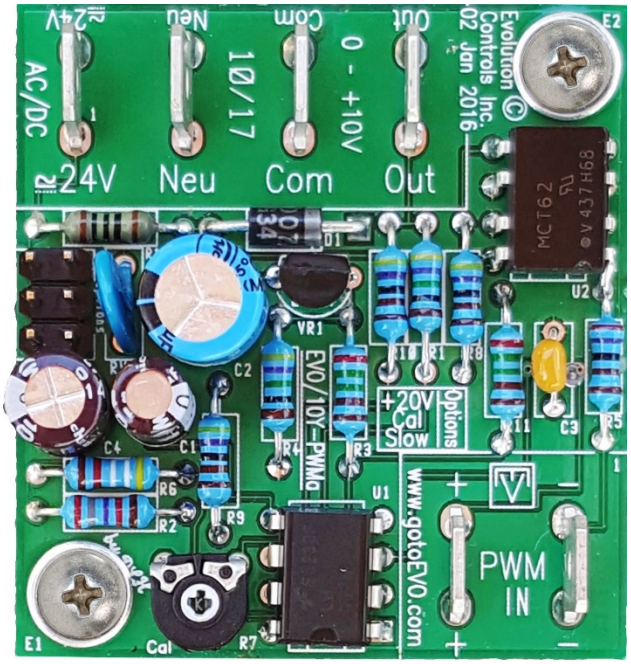
Insert the +20V jumper to change from a ~24V power to +20V power. Operate the control from +24V with the jumper removed.

Inserting the calibration jumper forces the output to 100% PWM allowing CAL to be adjusted to +10V at the signal output. CAL is factory adjusted, but may be field checked or adjusted to compensate for signal intolerances elsewhere in system.

Ordering

Order EVO/10Y-PWMa

Include EVO/10Y-PWMa in your part description



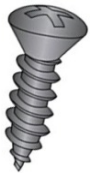
EVO/10Y-PWMa

Specifications

Power	~24V ± 20% 50/60 Hz 2W, 4VA NEC Class 2 or equal Or, +20V, 2W NEC Class 2 or equal
Signal	0 to 100% PWM in = 0V to +10V out
PWM *in*	+5V to +24V peak 10 to 200 Hz (pulses/second) 2.7KΩ Load
V *out*	0V to +10V @ 5mA
Accuracy	± 1.5% of full scale @ 100 Hz. *Notes: Percent of reading accuracy increases as input duty cycle increases.* *Accuracy increases with frequency.*
Operating	0^{o}F to 130 ^{o}F *imp* -18^{o}C to 55^{o}C *metric*
Environment	10%-80% rh
Connections	1/4 Tabs

Mounting

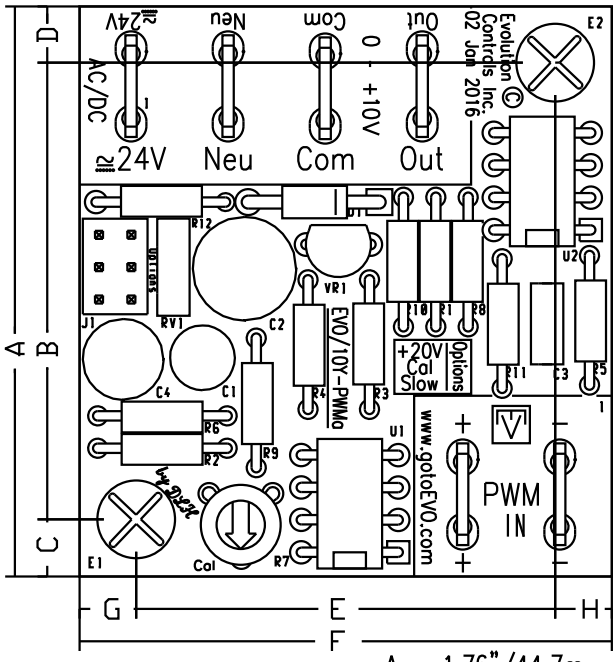
Mount the EVO/10Y-PWMa inside a control cabinet or other enclosure. Fasten the mounting posts to an earthed metal surface when possible.



Use #8 or 4mm pan head or flat head screws for mounting. The countersink tightens the mounting post collar to make a proper connection to the printed circuit board.

Mount with clearance for the ~24V or +20V power wires, PWM input wires, and output signal wires. Make sure the option header and Cal (R1) are accessible to service personnel.

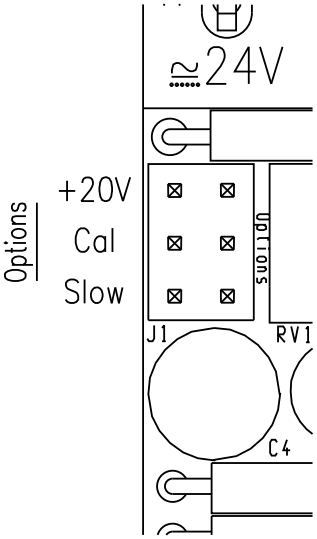
Keep high voltage wiring away from all EVO/10Y-PWMa circuitry or wiring. Follow NEC or other regional electrical code requirements for separation of high and low voltage wiring and components.



A = 1.76"/44.7m
B =1.41"/35.8mm
C = 0.18/4.5mm
D = 0.17"/4.4mm
E = 1.29"/32.9mm
F = 1.65"/41.78mm
G = 0.17"/4.4mm
H = 0.18"/4.5mm

Jumpers

+20V jumper	Insert to change from a ~24V power to +20V power. Operate the control from +24V with the jumper removed.
Calibration Jumper	Insert to force the output to 100% PWM allowing CAL to be adjusted to +10V at the signal output. CAL is factory adjusted, but may be field checked or adjusted to compensate for signal intolerances elsewhere in system.
Slow Jumper	Insert to reduce the PWM signature in the 0V to +10V output signal. Slow is recommended for systems that will work with slow response and for PWM Pulse rates less than 50 pulses per second.
Jumpers	Order from: http://www.mouser.com/



Wiring

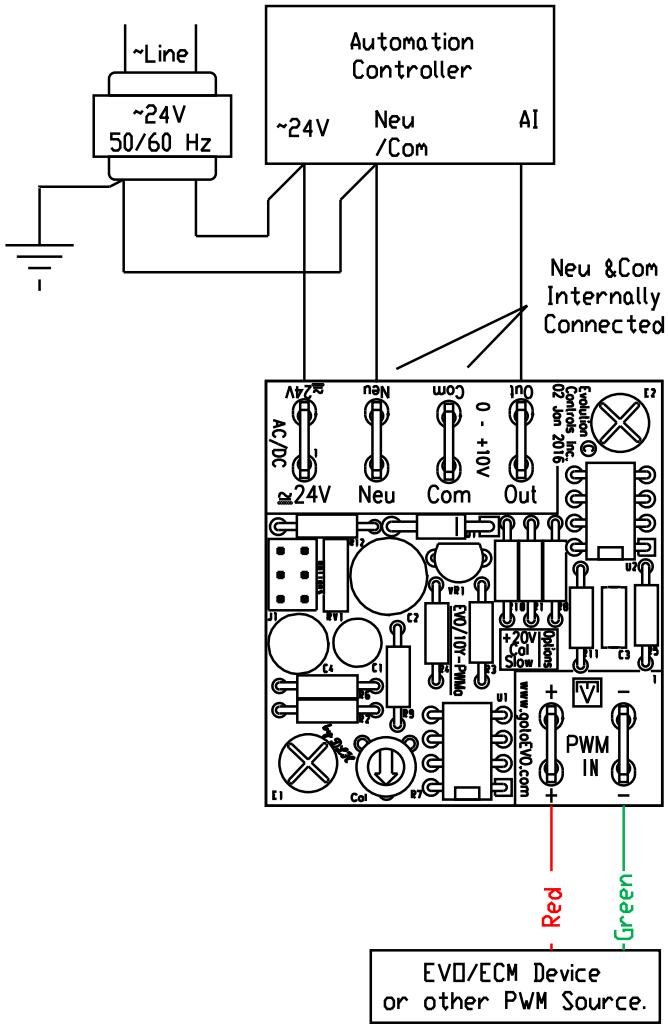
Power the EVO/10Y-PWMa with a ~24V NEC Class 2[USA] power limited transformer[1]. Observe all code requirements and follow all safety practices regarding low voltage power supplies and circuits to insure a safe, reliable installation.

Some applications may require an isolated power supply or alternative earthing scheme. Follow code requirements and carefully observe all safety practices concerning unearthed low voltage circuits.

Earth one lead of the ~24V side of the power transformer[2]. Connect the EVO/10Y-PWMa neutral connection to the earthed lead.

Or, earth the common or negative lead of the +24V NEC Class 2 power source. Be sure this practice is compatible with the selected supply.

The signal output is single-ended, so power neutral and signal common are internally connected.



[1] See NEC[USA] 725.41
[2] NEC[USA] 250.20.a.

0-+10V Transmitter Application

The PWMa can be used as receivers for an isolated 0-+10V transmission network. The network can stretch up to 1000 ft./300meters using awg 18/1mm twisted pair cable. Larger wire drives greater distances.

EVO/ECM-devices are used to convert a 0-+10V source signal to PWM. A typical EVO/ECM-device drives up to 5 PWMa loads. The EVO/ECM-MDR16 drives up to 16 PWMa loads. The EVO/ECM-4Spd takes up to 5 ~24V calls and produces a manually adjustable PWM for each call. The 4Spd drives up to 5 PWMa loads.