

0 - +10V Output

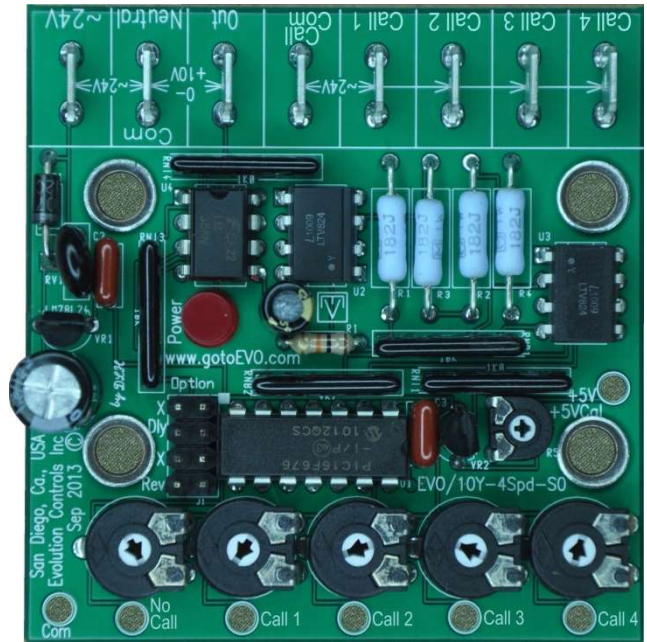
Application

The EVO/10Y-4Spd allows ~24V controls to select one of four adjustable 0 - +10V output values.

The control has four calls to select the desired 0 - +10V output. An adjustment associated with each call sets the 0 - +10V output to the desired value. A fifth adjustment sets the 0 - +10V output when no call is selected.

With the delay (Dly) option jumper installed, the EVO/™10Y-4spd changes the 0 - +10V output at a 2% per second rate. This ramping feature reduces occupant awareness of changes in motors or actuators controlled by the 0 - +10V Output.

Installing the reverse (Rev) option jumper reverses the adjust action. This feature allows logical adjust when adjusting from the back of the control. Or where a +10 – 0V (reversed) output is needed.



EVO/™10Y-4Spd

Features

- * Isolated Calls
- * Gradual Speed Change
- * Direct or Reverse Output
- * “No Call” Adjust

Specifications

| | |
|-----------------------|---|
| Power | ~24V NEC Class II USA ~24V ± 20% 50/60 Hz 2 W, 4 VA |
| Calls | ~24V ± 20% 50/60 Hz 1K8Ω load, 0.36VA |
| Output | 0 - +10V @ 20mA ≥5K0Ω passive load |
| Thermal Stability | >0.01%/°F |
| Operating Environment | 0 °F -> 130 °F (-18°C to 55°C) 10-80% rh |
| Connections | ¼" Tabs |

Ordering

EVO/™10Y-4Spd

Please use this designation as your company's part number, or include it in your company's part description.

Adjustment

The EVO/™10Y-4Spd +5VCal is factory set. Check Calibration by measuring between the Com test point and the +5V test point. R5 adjusts +5V.

+5VCal can be used to eliminate minor errors in the end to end accuracy of the control. With no calls, set No Call to achieve maximum voltage output. Then adjust +5VCal to achieve +10V at the Out terminal.

Set each 0 - +10V output by measuring the voltage between Com and the target call test point (Call _). Set the target call adjustment to the voltage associated with the desired 0 - +10V output on the Voltage vs. 0 - +10V output chart.

When an adjustment is turned, ramping is temporarily disabled to allow dynamic adjustment of the 0 - +10V signal.

10X Call Volts vs. 10Y Out Volts (2X=Y)

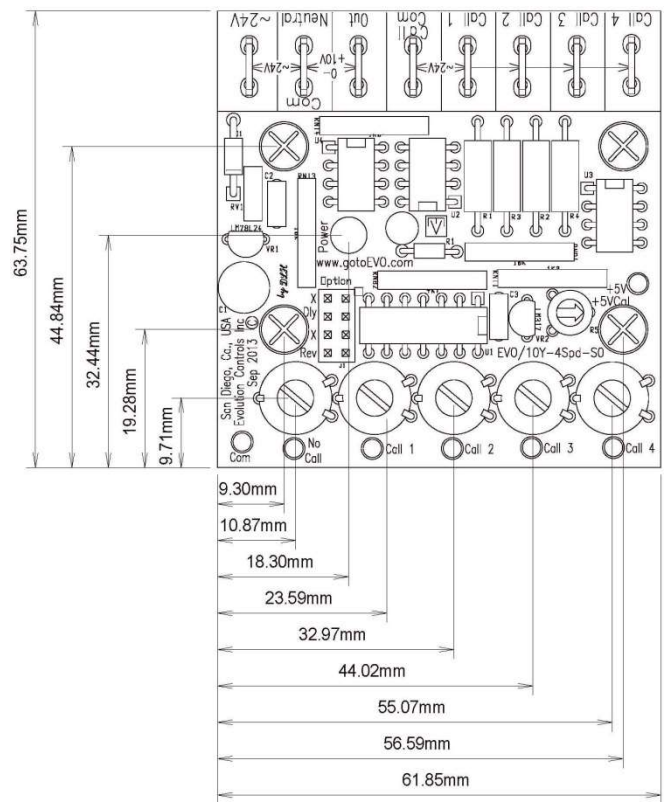
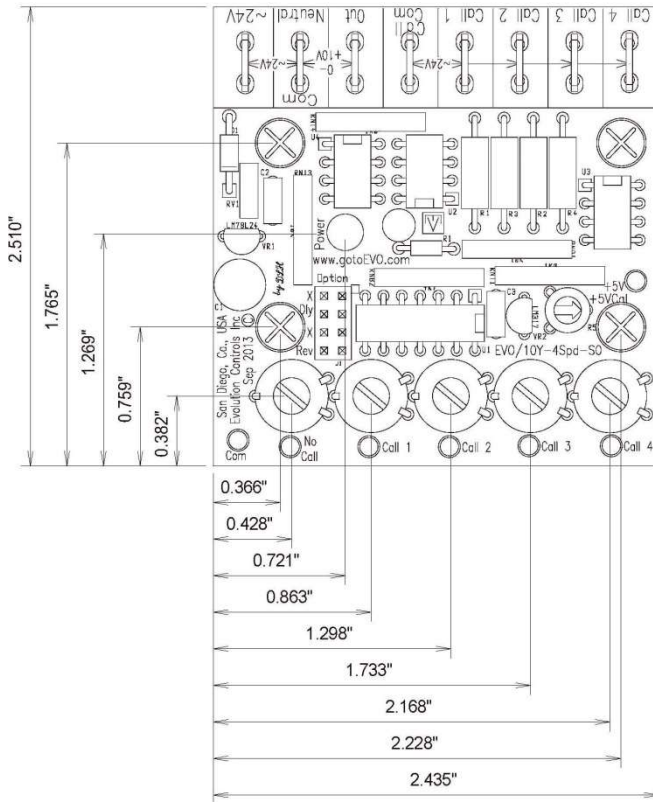
| VOLTS | | | | | | | | | | | | | | | | | | | |
|-------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|------|------|
| 10X | 10Y | 10X | 10Y | 10X | 10Y | 10X | 10Y | 10X | 10Y | 10X | 10Y | 10X | 10Y | 10X | 10Y | 10X | 10Y | 10X | 10Y |
| 0.05 | 0.1 | 0.55 | 1.1 | 1.05 | 2.1 | 1.55 | 3.1 | 2.05 | 4.1 | 2.55 | 5.1 | 3.05 | 6.1 | 3.55 | 7.1 | 4.05 | 8.1 | 4.55 | 9.1 |
| 0.10 | 0.2 | 0.60 | 1.2 | 1.10 | 2.2 | 1.60 | 3.2 | 2.10 | 4.2 | 2.60 | 5.2 | 3.10 | 6.2 | 3.60 | 7.2 | 4.10 | 8.2 | 4.60 | 9.2 |
| 0.15 | 0.3 | 0.65 | 1.3 | 1.15 | 2.3 | 1.65 | 3.3 | 2.15 | 4.3 | 2.65 | 5.3 | 3.15 | 6.3 | 3.65 | 7.3 | 4.15 | 8.3 | 4.65 | 9.3 |
| 0.20 | 0.4 | 0.70 | 1.4 | 1.20 | 2.4 | 1.70 | 3.4 | 2.20 | 4.4 | 2.70 | 5.4 | 3.20 | 6.4 | 3.70 | 7.4 | 4.20 | 8.4 | 4.70 | 9.4 |
| 0.25 | 0.5 | 0.75 | 1.5 | 1.25 | 2.5 | 1.75 | 3.5 | 2.25 | 4.5 | 2.75 | 5.5 | 3.25 | 6.5 | 3.75 | 7.5 | 4.25 | 8.5 | 4.75 | 9.5 |
| 0.30 | 0.6 | 0.80 | 1.6 | 1.30 | 2.6 | 1.80 | 3.6 | 2.30 | 4.6 | 2.80 | 5.6 | 3.30 | 6.6 | 3.80 | 7.6 | 4.30 | 8.6 | 4.80 | 9.6 |
| 0.35 | 0.7 | 0.85 | 1.7 | 1.35 | 2.7 | 1.85 | 3.7 | 2.35 | 4.7 | 2.85 | 5.7 | 3.35 | 6.7 | 3.85 | 7.7 | 4.35 | 8.7 | 4.85 | 9.7 |
| 0.40 | 0.8 | 0.90 | 1.8 | 1.40 | 2.8 | 1.90 | 3.8 | 2.40 | 4.8 | 2.90 | 5.8 | 3.40 | 6.8 | 3.90 | 7.8 | 4.40 | 8.8 | 4.90 | 9.8 |
| 0.45 | 0.9 | 0.95 | 1.9 | 1.45 | 2.9 | 1.95 | 3.9 | 2.45 | 4.9 | 2.95 | 5.9 | 3.45 | 6.9 | 3.95 | 7.9 | 4.45 | 8.9 | 4.95 | 9.9 |
| 0.50 | 1.0 | 1.00 | 2.0 | 1.50 | 3.0 | 2.00 | 4.0 | 2.50 | 5.0 | 3.00 | 6.0 | 3.50 | 7.0 | 4.00 | 8.0 | 4.50 | 9.0 | 5.00 | 10.0 |

Mounting

Mount the control inside a metal control cabinet or enclosure. Fasten the control mounting posts to an earthed metal surface. Mounting posts are 3/32"/2.38mm ID. Adjustment shafts are 0.20"/5mm dia. Use #8 Flat or oval head screws. The countersink taper forces a good earth connection between the mounting post and the PC board.



Mount the control with clearance for the ~24V power wires and control wiring. Mount the control so the power lamp is visible. Make sure there is access to the test points and the call adjustments.



Wiring

Power the EVO/™10Y-4Spd control with a ~24V 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.

Earth one side of the power source. Connect the neutral connection to the earthed side of the ~24V Class II power source.

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

Connect the ~24V connection to the hot side of the ~24V Class II power source. You may interrupt this connection as a means to zero the output signal. This is especially useful if you plan to set an output signal with no calls active (No Call). Many automation controllers will power the control directly from an on/off output.

Call isolation allows the calls to be powered from a device using a different ~24V power source than the ~24V used to power the EVO/10Y-4Spd.

