# Switch Machine Reference Guide - Part 6 - Connecting LEDs

## 6.0 Connecting LEDs

The switch machine provides outputs for single color or bi-color LEDs on both the Standard and Auxiliary Fascia Control connectors. You may use both outputs simultaneously if desired. The Color Mode option will modify the behavior of LEDs connected to the Standard Control connector, but has no effect on LEDs connected to the Auxiliary Control connector. LEDs may be directly connected to the switch machine and require no external resistors. You may insert an optional resistor in series with the LED to reduce intensity, however in most cases this will not be required.

*The Fascia Control connectors are also inputs for pushbutton or toggle switches. You may connect switches and LEDs simultaneously to the control pins as your need requires*

It is convenient to use 942-113 Extension Cables or 942-112 Connecting Cables to wire discreet LEDs to the switch machine. Use the socket end to connect to the Standard or Auxiliary connector and remove the connector on the other end and connect wires to the LEDs as shown on the wiring diagrams. 942-113 Extension Cables can then be used to extend the connection length to the switch machine if needed. Alternately, compatible connectors are available at electronic suppliers who sell parts for Arduino, Raspberry Pi, and similar micro-controller boards.

LEDs connected to the Auxiliary connector will illuminate individually when the switch machine is in position, and be off while the turnout is moving between positions. Operation of LEDs on the Auxiliary connector is not affected by the selected Color Mode Option.

Connect single color normal and reverse LEDs to the Standard Control connector as shown in Fig 6.2 when using the default Alternate Color Mode. You may also connect single color LEDs as shown in Fig 6.4 when GRN Color Mode is used.

Two terminal bi-color LEDs connect to the Standard connector as shown in Fig 6.3. Change the Color Mode to bi-color to illuminate the LED for both turnout positions.

Three terminal bi-color LEDs may be used on the Standard connector as shown in Fig 6.4. Use GRN Color Mode to illuminate the LED for both turnout positions.

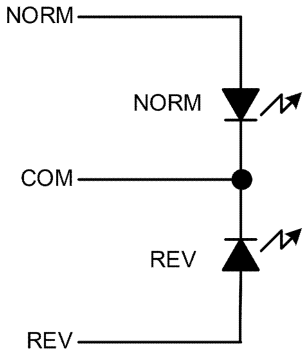



Fig 6.1: Single color or 3 terminal bi-color LEDs on Auxiliary connector

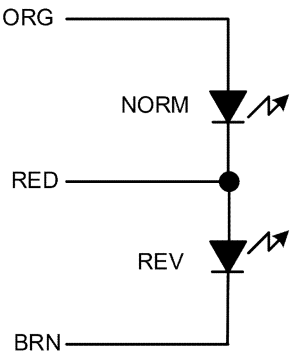
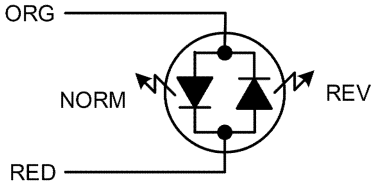



Fig 6.2: Single color LEDs on Standard connector (default Alternate Color Mode)




BRN – Not Connected

Fig 6.3: Two terminal bi-color LED on Standard connector (use Bi-Color Mode)

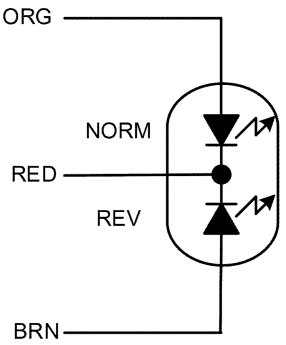



Fig 6.4: Three terminal bi-color LED on Standard connector (use GRN Mode)