



Overview

The Spooky Eyes 2.0 controls the output of sixteen pairs of eyes (LEDs) which can be placed in your haunted scene, haunted house, or dark attraction giving the appearance of sixteen creepy creatures lurking in the night. Each pair of eyes randomly blinks in a variety of ways and the speed and brightness of the blinks and delays can be custom programmed by the user. Each pair of eyes, which utilizes bicolored LEDs, can be switched from either red or green. An external trigger input can be used to provide a 'startle' effect and cause the eyes to instantly flash-on in the opposite color.

As well as creating spooky eyes animations, the controller can operate in a number of other modes as well including LED sequencer mode, random flash mode, and others. The random flash mode is perfect for controlling indicator lights on custom control panels for your prop. As with the spooky eye modes, brightness, speed, and color can all be custom programmed by the user.

Features

- Operating Voltage: 9VDC to 14VDC
- 16-Channels of Output
- Output current per channel: 25mA
- Each channel designed for bicolor LEDs
- Reverse voltage protection
- Short circuit protection
- 10 modes of Operation
- Pushbutton mode control
- Brightness and Rate Controls
- External trigger for 'startle' mode
- Internal memory remembers "last" mode
- True non-repeating random algorithms
- Flange mount for easy installation
- Removable terminal blocks

Operation

Using the Spooky Eyes 2.0 controller is extremely simple. Simply connect your LEDs to the controller as shown in the example diagram, connect the controller to a 12VDC source, and you are ready to go. The following paragraphs describe the various user controls.

Mode Pushbutton

Pressing the mode button cycles through each of the ten output modes. When power is removed, the internal memory of the controller remembers the last mode activated and restarts in that mode.

Brightness Control

The brightness adjustment knob controls the brightness of the output LEDs. Each of the sixteen channels is controlled through Pulse Width Modulation (PWM) for efficient dimming.

Rate Control

The rate adjustment knob controls the overall rate and speed of each mode.

OFF Mode Considerations for Battery Powered Controllers

When the unit is in OFF mode, the output driver is disabled, however, the microprocessor inside is in a quiescent state which is consuming a very small amount of power. If you are using a battery source, it is recommended to use an external switch to disconnect power from the controller when not in use.

Recommended LEDs

To take advantage of all the features of the Spooky Eyes 2.0 controller, including 'startle' mode, we recommend using bicolor LEDs. Bicolor LEDs are simply two opposing LEDs of differing colors in a single LED package. Look for LEDs that have a maximum continuous current range between 15 to 30mA. The bicolor LEDs should be the type that have two leads, not three.

We also have prepackaged LED sets and Spooky Eye Mounting board kits available.

External Trigger

The external trigger requires a contact closure to trigger. This can be in the form of a pushbutton, momentary switch, or relay contact. The trigger is detected when the contact is CLOSED. The contact closure wires should be connected to the '-' and 'IN' terminals on the trigger terminal block as shown in the diagram on the next page.

NOTE: *Sensors with active outputs, such as PIR sensors are **NOT** compatible with the Spooky Eyes 2.0 and may cause damage to the trigger circuit.*

External Trigger Test Mode

When the controller is in OFF mode, you can test your external trigger close contact switch. Simply put the controller into OFF mode and close your external switch. Output 1 will illuminate while the trigger contact is closed. This is useful for troubleshooting and test purposes.

Mode Descriptions

Spooky Eye Modes

In this mode, each pair of LED eyes turns on randomly until all LED eyes are ON. Once all LED eyes are illuminated, eyes will randomly 'blink' in a variety of different ways. This will occur for anywhere between 2 to 4 minutes at which point, all LED eyes will slowly and randomly turn off. After a short delay, the process will repeat. The RATE adjust will control how fast the eyes wake up and blink. There is both a red and green mode of operation.

Single Eye Modes

In single eye mode, LED eyes will 'wake up' randomly and one at a time. When on, they 'blink' and then turn off. The process repeats. There are a number of different 'blink' events and they are randomized each time an LED eye 'wakes up.' There is a both a red and green mode. The RATE adjust will control how fast this mode operates.

Sequencer Modes

This is the classic LED sequencer mode. In this mode, LEDs are illuminated one at a time sequentially back and forth. There is a red and green mode and the RATE adjust will control how fast the LEDs move back and forth.

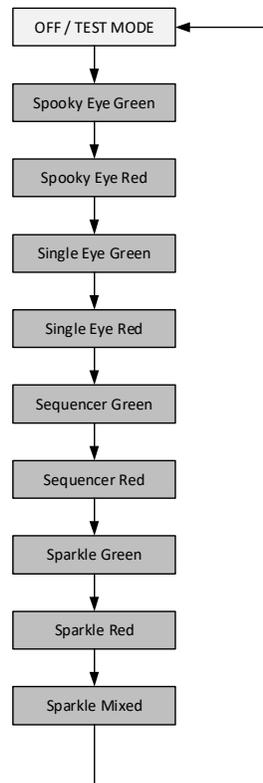
Sparkle Mode

This mode gives the output a sparkling or strobe effect. Each LED is randomly flashed ON and then OFF. This mode can be used to simulate camera flashes in a crowd, provide random blinks for a custom control panel prop, or used with wall mounted LEDs to disorient guests in a haunted attraction. There are green, red, and mixed modes. The RATE adjust controls how fast the LEDs flash.

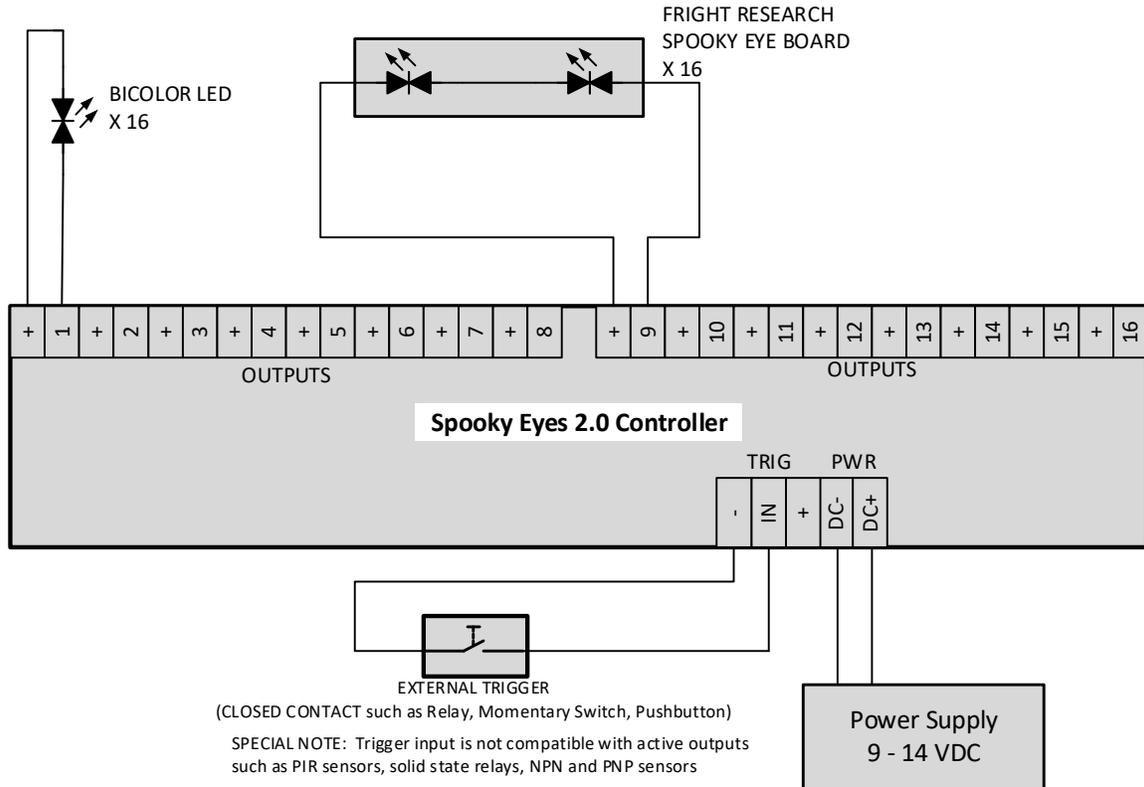
Trigger Event

When an external trigger is detected, the present mode will be interrupted and all LED channels will change color and turn on simultaneously. They will then slowly and randomly turn off before returning the previous operating mode. This event has the effect of creatures being 'startled' in the night and waking up. Audio or motion detector triggers work great for this feature. The trigger will only work during the spooky eye and single eye operating modes.

Mode Map



Typical Application



Notes:

1. Bicolor LEDs can be any color combination – red / green, red / blue, etc.
2. Spooky Eye boards are available as kits. These boards feature two LEDs and easily accommodate screw or tie wrap mounting.
3. When connecting bicolor LEDs, be sure to observe similar polarity for all LEDs. This ensures that all LEDs will illuminate the same color when turned ON.
4. Do NOT use PIR sensors with the trigger input. These are active output sensors and will cause damage to the trigger circuitry of this controller.