



## Overview

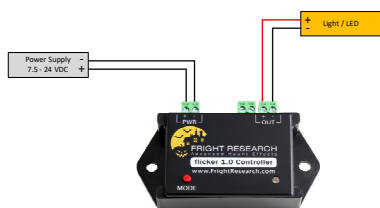
With our new patent pending true randomized pattern generator, the Flicker 2.0 is set to be the most advanced special effects pattern generator ever! With a thermal based random seed generator, every candle and flame pattern generated is truly unique.

A single pushbutton allows the user to cycle through a wide array of output light patterns including ember, candle, and flame flicker modes, flashing and strobe effects, as well as simulated neon and electrical fixture flicker. Steady state brightness modes are also available. Internal memory allows the device to resume the previously selected output mode in the event power is lost to the device. This is also useful for permanent installations where a single operating mode is required continuously.

## Features

- For use with LEDs (dimnable types)
- Incandescent and halogen lights
- Single button operation
- Memory saves mode during power loss
- Onboard mode sample LED
- True non-repeating random algorithms
- Operating Voltage: 7VDC to 24VDC
- Max. Load Current: 5A per channel
- Reverse Voltage Protection
- Flange mount for easy installation
- Removable terminal blocks

## Typical Application



## Operation

Using the Flicker 2.0 controller is extremely simple. Simply connect your light source as shown in the previous diagram and use the pushbutton to cycle through the various modes. Each press of the pushbutton will advance the operational mode by one. After all modes have been cycled through, the unit will enter OFF mode. In this mode, the output to the LED driver is disabled.

If the event you do not have an external light connected, there is an onboard LED which will illuminate and reflect the specific mode that is chosen.

## OFF Mode Considerations for Battery Powered Controllers

When the unit is in OFF mode, the output driver is disabled, however, the microprocessor inside is still in a quiescent state which is consuming a minute 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.

## Discrete LEDs and Current Limiting Resistors

The output driver of the Flicker 2.0 is not current regulated, therefore if you plan on using discrete LEDs, you will need to use the proper current limiting resistors with your discrete LEDs. Current limiting resistors should be utilized to ensure the maximum continuous current is not exceeded per the LED datasheet.

Please note, that LED bulbs and other commercially packaged LEDs that are labeled for 12V or 24V use, already have the proper current limiting resistors installed.

## Output Current Capability

The output driver stage of the Flicker 2.0 controller uses a high power, ultra-efficient N-channel switching MOSFET utilizing advanced Pulse Width Modulation (PWM) technology. The maximum output capability of the Flicker 2.0 is 5.0A. This is the highest output current of any flicker controller module available on the market today. The Flicker 2.0 can drive any number of LEDs or lights so long as the maximum output current is not exceeded.

It is important to note that because there are so many different operational modes which exhibit a



wide range of current waveforms, that there is no active current limiting on the output. It would be impossible to design an economical current limiting circuit that could protect the controller over all the different operational modes without adding significant cost to the controller. Therefore, it is very important that the customer use LEDs and lights that do not exceed the 5A output current rating.

For maximum reliability and in environments where the temperature exceeds 26deg, we recommend derating the unit to 3A maximum current.

## Mode Map

