

Getting started

Thank you for purchasing a *Logic Rail Technologies* product! Please read all instructions prior to installing this board. The Fusee Animator simulates the appearance of a burning fusee (railroad flare). It can also be used to simulate a roadside flare used near an automobile accident scene. There are several ways to trigger the circuit. You can use a photocell (included) to detect the presence of a train. Alternatively you can use anything that will "ground" the trigger input; this can be a simple SPST switch or the output from some other type of circuit. Once the circuit is triggered the fusee will begin "burning." When the trigger is removed (e.g. photocell uncovered or switch opened) the fusee will begin to extinguish; the time it takes to "burn out" is selectable (see below). As the fusee burns out you will see its brightness drop and flickering slow down.

You may wish to connect the Fusee Animator wires to a terminal block/strip such as Radio Shack #RSU 11673225. This will make your connections easier. Make sure that any unused wires don't touch any other wires; failure to do so may cause damage to the circuit board.

You should make all of the connections to the Fusee Animator before applying power to it. You can mount the Fusee Animator anywhere it is convenient underneath your layout using the four mounting holes provided. The holes will accept #4 screws; do not enlarge the holes as damage to the circuit board can result and your warranty will be voided! You should locate the fusee (i.e. the bulb) between the rails and drill a small hole (~ 1/16" diameter) to pass the wires through.

Wiring

Wiring for the Fusee Animator is shown in Figure 1 below. This diagram assumes you'll use the photocell to trigger the circuit; refer to Figure 2 if you want to use an SPST switch to trigger it. You will need the current limiting resistor if the voltage rating of the power source is greater than 12V. For example, if the input voltage is 16V then we would suggest a resistor value of 150 ohms. If the input voltage is 12V then no resistor is needed.

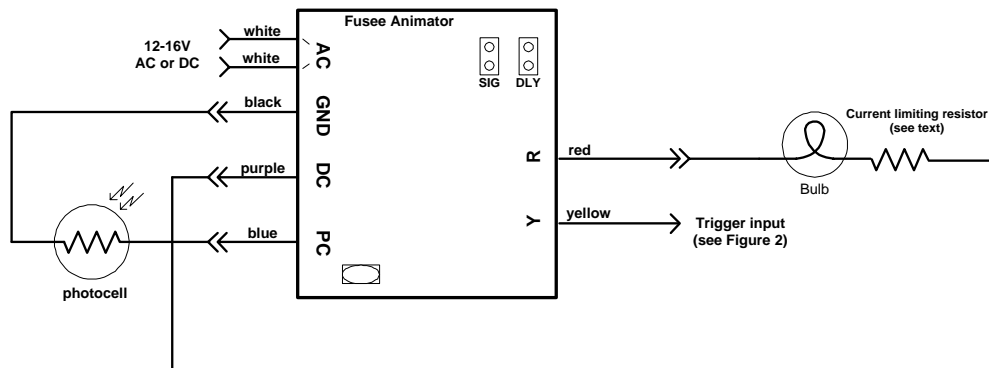


Figure 1 – Wiring diagram (using the photocell to trigger)

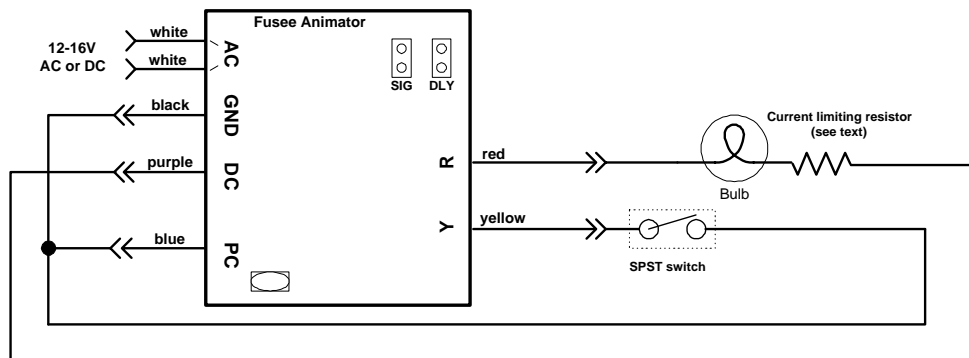


Figure 2 – Wiring diagram (using an SPST switch to trigger)

The SPST (Single Pole Single Throw) switch must be of the "Normally Open" variety. You can choose a momentary type (e.g. Radio Shack #275-1571) or standard On/Off (e.g. Radio Shack #275-645). Remember that once the switch is opened the fusee will begin to extinguish. You can also trigger the circuit using any device that provides an "open collector" output that switches to ground; you'll have to connect the GND wire of the Fusee Animator to a ground reference on the triggering device. If you are interested in doing this, and can't make sense of our description, please contact us for help!!!

The Photocell

The photocell should be mounted between the rails in the general area where you will locate the signal. Drill a 9/64" hole through the ballast, roadbed, and sub-roadbed. For the smaller scales this drilling may end up hitting the ties. Take your time so you don't mangle them! Figure 3 illustrates the placement of the photocell in between the rails. Insert the leads of the photocell into the hole from the top of your layout. One of the photocell leads has a piece of insulation on it so be sure the two leads don't touch each other (you won't damage anything if they do but the circuit won't work properly!).

If the leads do not protrude enough from the underside of your layout then it will be necessary to extend the leads; soldering wires to them is the most common method; make sure you insulate any connections you make to the photocell leads so that they don't short out. Once you have wired the photocell to the Fusee Animator and verified its operation you may wish to put a dab of white glue under the photocell to hold it in place; make sure you don't get glue on the top surface of the photocell as this may prevent it from operating properly.

The photocell requires a light source above it to function properly. On most layouts the room lighting should be sufficient. However, if the photocell is located in an area that doesn't get much overhead lighting or if you have simulated "nighttime" operations then it will be necessary to locate a light source on the layout near the photocell. Street lights and yard lights are common light sources. Locate the light source slightly to the left or right of the photocell and not directly over it; this will allow the Fusee Animator to still properly detect a train that has stopped over the photocell with the gap between cars over the photocell. You can adjust the sensitivity of the photocell on the circuit board using a small slotted head screwdriver. Insert the screwdriver in the component labeled "VR1". Turning the screwdriver clockwise will compensate for lower light levels. With nothing blocking the photocell turn the screwdriver counter-clockwise until the fusee begins to flicker. Then slightly turn the screwdriver clockwise. Repeat if necessary.

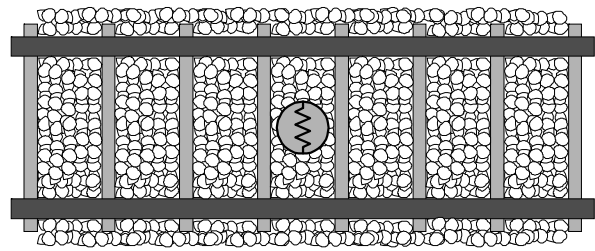


Figure 3 – photocell placement

Flicker rate selection

Two fusee flicker rates are supported: fast and slow. Choose the rate based on your own personal preference. To select the slow rate the jumper must be installed over both pins on the block "SIG"; for the fast rate the jumper must only cover one pin (it doesn't matter which one). You can change this as you wish even when the power to the Fusee Animator is on. The two options are illustrated in Figure 4.



Figure 4 – Flicker rate

Burn out time selection

The fusee burn out time can be either 10 seconds or 20 seconds. Choose the value based on your own personal preference. To select 20 seconds the jumper must be installed over both pins on the block "DLY"; for 10 seconds the jumper must only cover one pin (it doesn't matter which one). You can change this as you wish even when the power to the Fusee Animator is on. The two options are illustrated in Figure 5.

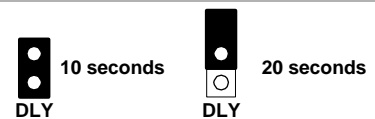


Figure 5 – Burn out time

Warranty

This product is warranted to be free from defects in materials or workmanship for a period of one year* from the date of purchase. **Logic Rail Technologies** reserves the right to repair or replace a defective product. The product must be returned to **Logic Rail Technologies** in satisfactory condition. This warranty covers all defects incurred during normal use of this product. This warranty is void under the following conditions:

- 1) If damage to the product results from mishandling or abuse.
- 2) If the product has been altered in any way (e.g. soldering).
- 3) If the current or voltage limitations of the product have been exceeded.

Requests for warranty service must include a dated proof of purchase, a written description of the problem, and return shipping and handling (\$4.00 inside U.S./\$8.00 outside U.S. - U.S. funds only). Except as written above, no other warranty or guarantee, either expressed or implied by any other person, firm or corporation, applies to this product.

***NOTE: the large version's light bulb has an average life of 5000 hours; the warranty does NOT cover this item.**

Technical Support

We hope the preceding instructions are sufficient for answering any questions you might have about the installation of this product. However, technical support is available should you need it. We would ask that you first contact your place of purchase for assistance. If you still need further assistance then please do not hesitate to contact us. You can reach us via phone, fax, mail and email; our contact information can be found on the top of page 1.