LOGIC RAIL™ TECHNOLOGIES

"Sophisticated Model Railroad Electronics"

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Light EFX-16 relay board
Instructions

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Getting started

Thank you for purchasing a ***Logic Rail Technologies*** product! This board connects to any of the outputs from our ***Light EFX-16*** board and provides the equivalent of a Single Pole Double Throw (SPDT) switch. It is intended to be used to turn higher voltage or higher current devices on/off using the capabilities of the ***Light EFX-16***. Example uses are:

- Sound modules such as those from Innovative Train Technology and Iowa Scaled Engineering
- Electroluminescent (EL) signs from Miller Engineering
- Overhead lighting (simple on/off – NOT adjustable brightness)

The ***Light EFX-16*** provides many different lighting effects. However, only a select few of them should be used with this relay board. The recommended effects are:

- Steady On
- Blink
- Random on/off (10-300) or (2-60)
- Bathroom light

The Random and Bathroom light (just another type of random on/off) effects may be particularly useful with sound modules. For example, you might want to have industry or factory noise turn on and off at random times.

Other acceptable effects are:

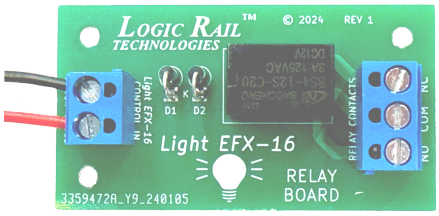
- Traffic light A/B
- Traffic light A/B, Yellow (EU). Pedestrian Green (EU) or Pedestrian Red

NOTE 1: Do NOT select a lighting effect that may involve fading or rapid blinking. This will quickly wear out the relay and would not be covered under our warranty!

NOTE 2: You MUST set the brightness to 100%. A lower value will likely burn out the relay due to the waveform (PWM) of the output when not 100%. That would not be covered under our warranty!

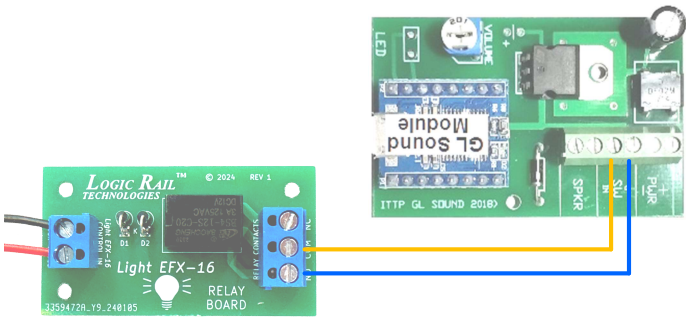
Connecting the relay board to the *Light EFX-16*

The relay board connects to any one of the 16 output connectors on the *Light EFX-16* board. One of our Just Plug®-compatible cable assemblies is provided; you can extend the wires from that cable assembly using your own wire (we recommend 28 AWG or larger wire). From the stripped wire end of the cable assembly connect the red wire to the terminal labeled +LE16 and connect the black wire to the terminal labeled LE16n. The relay board does not require any additional power connections as it is powered through the *Light EFX-16* output. The relay board consumes the equivalent of a 20mA LED.



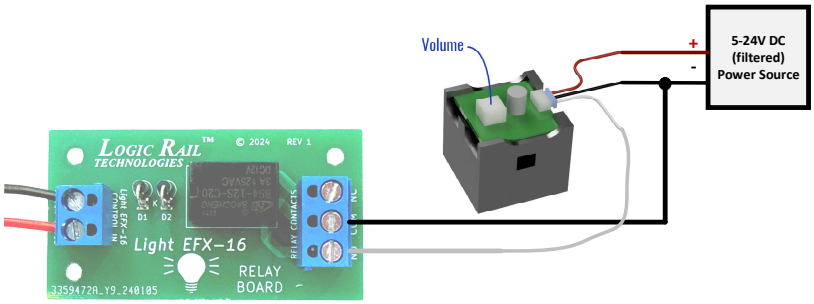
Using the relay contacts

The relay board contacts are in the form of an SPDT switch. The contacts are rated at a maximum of 3 amps and 125V (AC or DC). Typically you would use the COM and NO (Normally Open) terminals to turn power on/off for the device you wish to control. Below are several examples of wiring to different devices. The first one shows the connections to a sound module from Innovative Train Technology (https://ittproducts.com). With these sound modules you can have power connected all the time and the relay board will control the module's switch input.

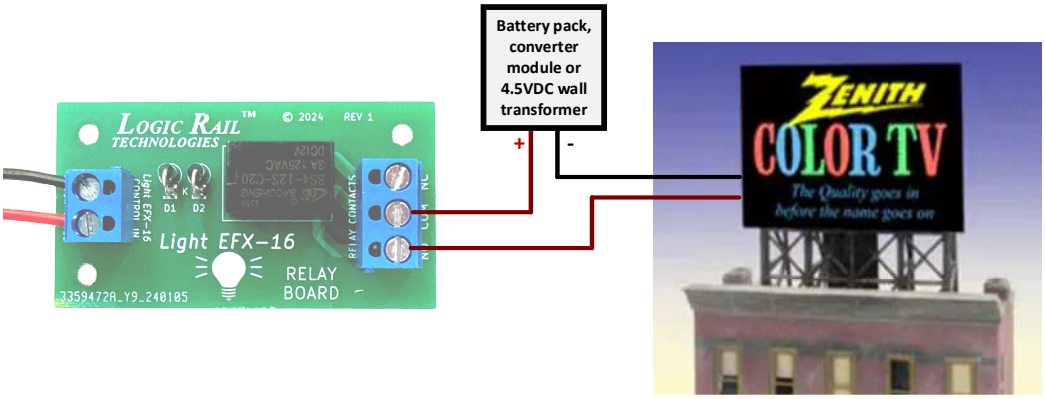


Not shown are the connections to the speaker and to the power source.

The next example uses a SoundBytes™ module from Iowa Scaled Engineering (https://www.iascaled.com/). You could use a Random effect or a time-based effect to have their "cicada" module turn on.



The final example uses the relay contacts to turn power on/off to a Miller Engineering sign (https://microstru.com/). Simply wire the relay contacts in series with the positive power connection.



Mounting the board

You can mount this board to a non-metallic surface using the three mounting holes provided near the corners of the board. The holes will accept #4 screws; do not enlarge the holes or over tighten the screws (flexing the board) as damage to the circuit board can result and your warranty will be voided!

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 to the circuit board).
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 ($10.00 inside U.S./$20.00 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.

Technical Support

We hope the preceding instructions sufficiently answer any questions you might have about the installation of this product. However, technical support is available should you need it. You can reach us via phone or email.