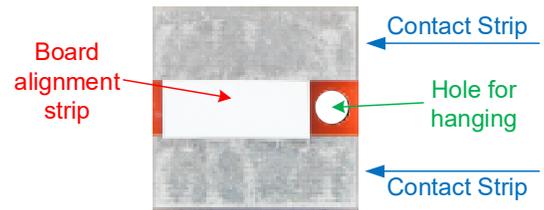


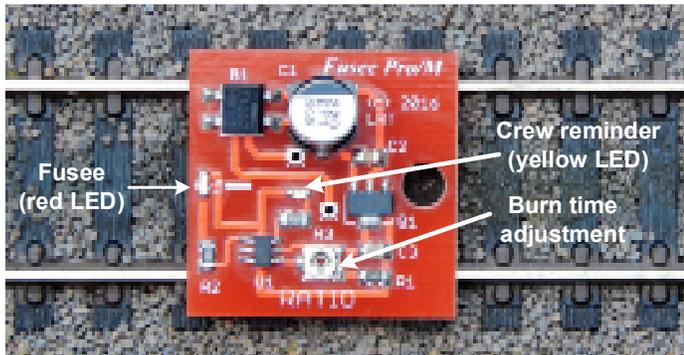
Getting started

Thank you for purchasing a **Logic Rail Technologies** product! Please read all instructions prior to using this board. The Fusee Pro/M simulates the appearance of a burning fusee (railroad flare). Rule 99, also known as the Flagging Rule, is part of the General Code of Operating Rules broadly accepted by prototype railroads. Part of Rule 99 states when a train is outside of yard or block signaling limits, or when signaling is not used, the train's flagman must drop a lighted fusee at the rear of a slow-moving train; this requires a train approaching from the rear to stop and wait until the fusee burns out (the nominal burn time for a fusee is 10 minutes), thus keeping trains separated at a safe interval.

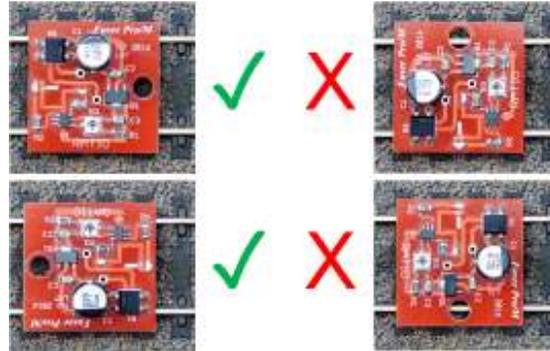
The Fusee Pro/M is a mobile device - that's what the "M" stands for! ☺. Unlike its counterpart, the Fusee Pro, you can place the Fusee Pro/M at ANY location along your track. The Fusee Pro/M takes its power from the rails so **constant track power is required** (e.g. DCC). The Fusee Pro/M is placed across the rails (N scale up through On3) and picks up power via the two contact strips on the underside of the circuit board. The board can be hung on the layout fascia when not in use.



Underside of the Fusee Pro/M board



Board features



Proper board orientation

When the Fusee Pro/M is placed across the rails (one of two orientations!) it will begin the fusee burn cycle approximately 4 seconds after it detects power. When the burn cycle begins the fusee will light up brightly for an instant to represent ignition. It will then flicker with varying intensity as it "burns." Once the fusee burns out a yellow LED on the board will flash briefly every 8 seconds as a gentle reminder that the board is lying across the rails; crews of following trains will appreciate its removal! The fusee can be triggered again by lifting the board off the rails and then placing it back down across the rails.

CAUTION: Handle the board by its edges; static electricity can permanently damage the board!

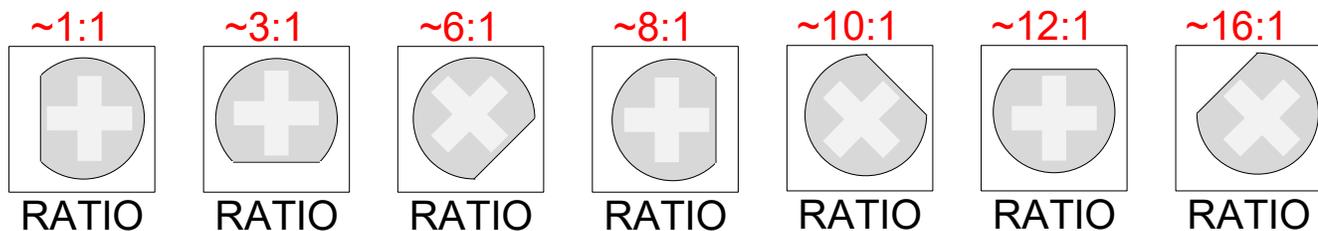
Board alignment strip

A strip of styrene is included in the package. You can glue this along the center line of the board's underside to help align the board across the rails; we recommend a dab of white glue rather than ACC. The first picture above shows the strip attached. When attached, the styrene strip also serves as a deterrent against placing the board across the rails in the wrong orientation; doing so would short out the rail power!

Burn Time Adjustment

The Fusee Pro/M provides a realistic burn time (typically 10 minutes) aligned to the scale time factor you're operating at. For example, if you are running your operating sessions with a fast clock set to a 3:1 ratio then 10 minutes in "fast time" equates to 3 minutes 20 seconds of real time. The Fusee Pro/M provides a range of burn times from ~38 seconds (16:1 fast time ratio) to ~10 minutes (1:1 fast time ratio also known as real time!). You can only adjust the burn time when the board is NOT sitting on the rails receiving power. Use a small (e.g. 2 mm) slotted head screwdriver to turn the silver dial above the word "RATIO." The following illustrations show the **approximate** fast time ratios based on the position of the flat portion of the dial. For more precise fast time ratio determination we recommend that you perform your own calibration procedure: pick a setting, activate the fusee and time the burn cycle. Divide the burn cycle time into 10 minutes and you have the fast time ratio. Adjust the dial as necessary!
Note that there is a point when the fast time ratio will "flip" from 1:1 to 16:1!

The illustrations are referenced to the same orientation of the word "RATIO" on the circuit board. For example, in the circuit board photo at right the fast time ratio is roughly at a 12:1 position.



Technical Specifications

The Fusee Pro/M has the following technical specifications:

Board size:	1.0" x 1.0"
Applicable scales:	N, HO, HOn3, HOn2, S, Sn3, On3, and On30
Input voltage (min):	9V AC or DC or DCC track power
Input voltage (max):	16V AC or DC or DCC track power
Total power consumption (max):	< 20 mA

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. painting or soldering to the circuit board).
- 3) If the current or voltage limits 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 (\$7.00 inside U.S./\$15.00 outside U.S. - U.S. funds only); if we determine that warranty coverage applies then we will refund the return shipping and handling fee. 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 are sufficient for answering any questions you might have about using the product. However, technical support is available should you need it. You can reach us via phone, mail and email; our contact information can be found on the top of page 1.