

O Gauge 3-rail Integrated Crossing Flasher

Thank you for your purchase! The O gauge 3-rail integrated railroad crossing flasher has been specifically designed with the addition of a separate detection circuit board. The purpose of this separate detection circuit is twofold:

1. It converts incoming AC accessory power to DC to power the Dwarvin DFL unit.
2. It electrically isolates the track AC from the DFL to prevent any short circuits from damaging the crossing flashers.

Contents of the kit:

- 1 Lamplighter DFL (Dedicated Flashing Light) for crossing flashers
- 2 Railroad Crossing Flashers in 1:48th Scale
- 1 Detector Circuit Board
- 1 Power adapter jack with 2-position euro block
- 2 sections of self-adhesive Velcro

NOTE: We offer a Crossing Bell Sound Module (available separately for \$21.99) that plays a realistic ringing bell sound when the crossing flashers are on. This is a self-contained unit that easily wires into our DFL / Detector circuit. Product number DVFLRRXBELL

Mounting the Crossing Flashers

To mount the O gauge crossing flashers you will need to drill two 5/32" holes through your table top. You want to drill these holes approximately 1" away from the ties (on straight track) and a little further away on curved track (be sure to use a locomotive or car with the most amount of overhang both inside and outside the curve to determine the distance for the crossing flasher).

Insert the two optical fibers and the metal tube of the flasher into the hole and set to the desired depth. A 5/32" hole should provide enough snugness to prevent the signals from pivoting. However, if some adhesive is required **DO NOT use hot glue!** Use a small dab of super glue and accelerator or similar adhesive around the base of the flasher tubing.

Wiring your Crossing Flashers

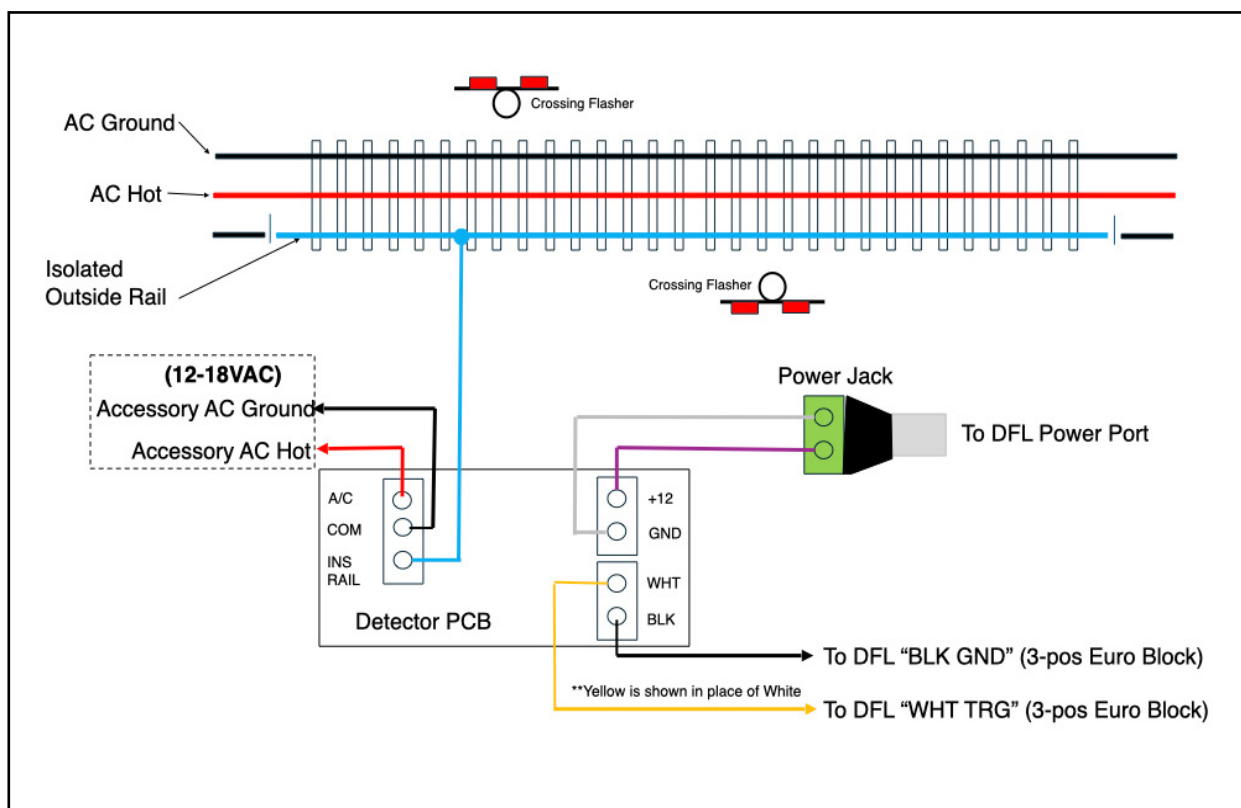
Installation requires you to create an insulated outside rail "block" approximately 10" from either end of the grade crossing (minimally 10" away from the grade crossing, it can of course, be much longer if desired). An insulated outside rail is a section / length of one outside rail (on 3-rail track) that is not electrically connected to the opposite outside rail. The electrically isolated rail should have either a gap cut in the rail or use plastic insulator pins at each end of the block. There should be 1 wire connected to the insulated rail (either via a lockon, some type of electrical clip or soldered).

The detector circuit should be powered off your AC accessory voltage (the power used to run lights, accessories, etc. NOT TRACK). The accessory voltage must be phased with all other transformers for proper operation. Do not power the detector from the track power!

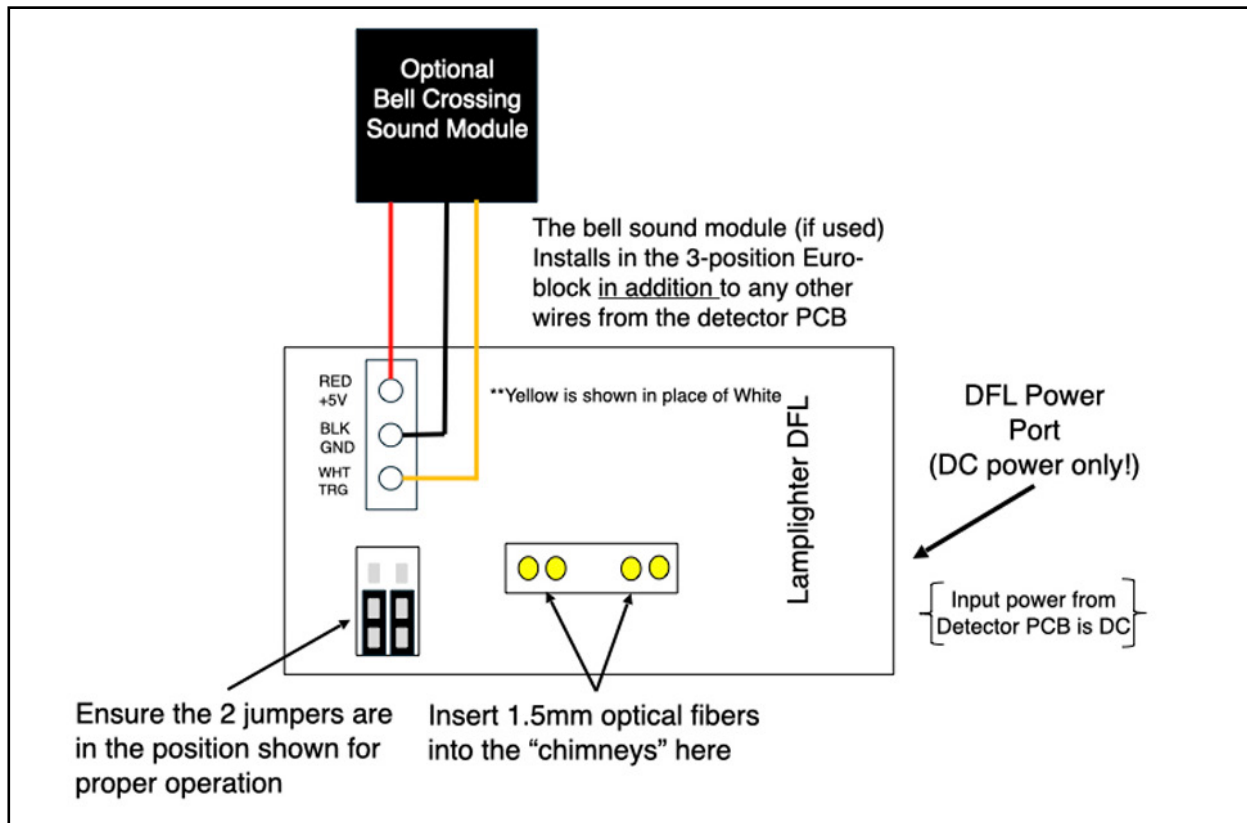
When operating in conventional mode the flashers may not work depending upon how low the track power. It is recommended you power the detector PCB from a fixed accessory AC source.

The diagram below outlines the electrical connections that need to be made. Using a small flathead screwdriver, loosen the terminals on the Euro-style connectors by turning them counter-clockwise to ensure the opening in each is position is open enough to accept your wires. Once the wire is inserted tighten the respective terminal by turning the screwdriver clockwise until it creates a firm grip on the wire end.

O Gauge 3-Rail Integrated Crossing Flasher Wiring Diagram DVIRRXX302



Wiring Diagram for Optional Bell Crossing Sound Module (DVFLRRXBELL) used with O Gauge 3-Rail Integrated Crossing Flasher DVIRRX302



Troubleshooting your O Gauge 3-Rail DFL Unit

Problem: The lights blink constantly

Solution: Confirm the insulated outside rail is in fact electrically isolated from the other grounded rail. You can double confirm by removing the input wire from the "WHT TRG" terminal on the DFL. If the lights stop blinking, the insulated trigger rail is not electrically isolated properly. There should be no voltage present on the "WHT TRG" terminal if there is not a train in the insulated block.

Crossing Flasher Replacement

If, during the course of normal use you should have to have an accident that damages the crossing flasher (let's all be honest, it happens when taking a train off the track or reaching over to adjust accessories or scenery) we offer separate sale crossing flashers (this saves from having to purchase a whole kit to replace one or two crossing flashers).

These separate sale crossing flashers are available for \$29.95 under part number DVFLRRX301.

For helpful tips and instructional videos, visit our website: www.Dwarvin.com

Appreciation: If you enjoy our product, please like us on [Facebook: DwarvinEnt/](https://www.facebook.com/DwarvinEnt/)

Concerns or questions? Please contact us at:

- **Email:** customerservice@trainz.com
- **Phone:** 866-285-5840

Thank you, **Dwarvin – Lighting without Wiring®** – by **Trainz.com**