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VOLTSOOTER ELECTRONICS

Quality Lighting Kit for N-Scale Passenger Cars

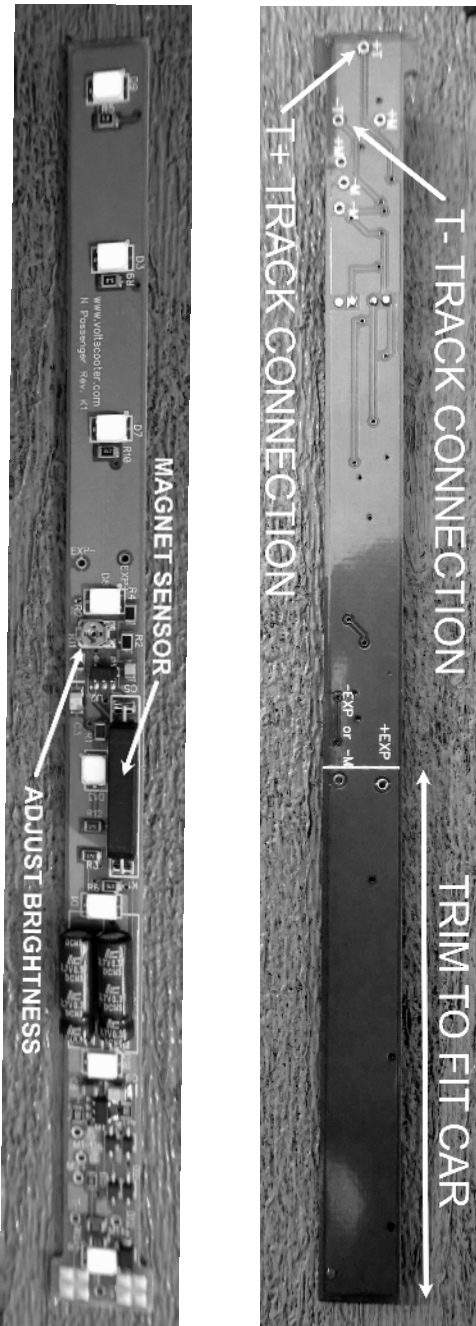
Constant, adjustable, regulated passenger car lighting board:

- Super-capacitors and regulators for consistent lighting.
- Magnetic light on/off control.
- 8 LEDs to insure uniform lighting.
- Drop-in installation for Railsmith N-Scale passenger cars.
- Instructions provided for installation in any cars, with or without electrical pickups.
- Adjustable from dim to bright.
- Will remain lit at constant brightness for up to 30 seconds.
- Size: 5.6" (143 mm) x 0.51" (13 mm) x 0.2" (5 mm).
- Can be shortened as much as 2.2" (58 mm) to 3.4" (87 mm).

Warranty

If for any reason this product does not meet your needs you may return it for a full refund. The warranty will be honored even if the product has been modified by installation. This offer is valid for a minimum of one year from the date of purchase.

2021 Rev. K



More instructions are available at
www.voltscooter.com.

Installation

Both sides of light board have connection points labeled. +T and -T should be connected to the car's track pickups.

+M and -M are for connecting an LED marker light (not supplied). The marker light connection is at 3 Volts and is current limited by a series 2,200 Ohm resistor. Connect the anode of the LED to +M and the cathode of the LED to -M.

The tabs at the end of the light board will connect with contacts provided on Walthers or Railsmith cars. In this case you will not need to install your own pickups, but you will need to connect the light board to track power and adjust the brightness before installation.

Brightness is adjusted on the front of the circuit board as shown on the back of this document.

The light board can be shortened by cutting between the white line and the end of the board.

Installing Your Own Pickups

Recommended tools:

- A small soldering iron that lets you get close to the solder point.
- Good lighting and magnification.
- Jewelers tweezers.

Recommended parts:

- Metal wheel sets with metal axles. Not plastic or metal wheels with a plastic axle.
- Plastic to make supports for the lighting board.
- Fine magnet wire (supplied).
- 0.008" phosphor bronze wire (supplied).

Installation is possible with most any truck. If the car is to be pulled by a steam engine or other locomotive with limited pulling power Kato or similar passenger trucks are recommended for low rolling resistance.

Two kinds of wires are supplied. The phosphor bronze wire is springy and not coiled.



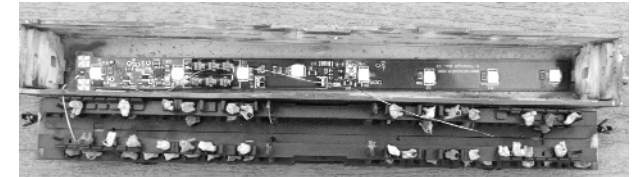
Insert and bend the phosphor bronze wire as shown above. Keep the loops on the end loose to minimize drag. The phosphor bronze wire should be next to the non-insulated side of the wheels (no insulation between the wheel and the axle).



Be sure to pre-fin the magnet wire. Sustained heat is needed for the hot solder to burn off the insulation on the magnet wire. Then bend a hook in the wire to secure the wires to each other and solder them.

With the trucks installed, drill a hole through the kingpin or through the bottom of the car near the kingpin. This hole will be used for passing the wire from the truck to the inside of the car. Insert the magnet wire into the drilled out kingpin hole.

Repeat for the other truck. The insulated wheels of the second truck will be on the opposite side of the car.



Solder the magnet wire to the +T and -T points on the light board. Place the car on powered track and adjust the light.

Install the light board into your car. The light can be turned on or off by passing a magnet (supplied) either left or right along the length of the car.

A stationary magnet positioned at track side near the top of the moving car can similarly turn the light on or off as the car passes the magnet. Whether the magnet turns the light on or off depends on cars direction of movement and the magnet polarity. In other words if your magnet causes the light to do the opposite of what you want, all you need do is reverse the magnet's direction. To use this feature it is important that all boards in consecutive cars be oriented the same way.

The light will remain in the last set state permanently until a magnet again passes by the car. If you desire the cars to be lit all the time then turn them on and keep magnets away from the cars.