

Coach lighting switch

You can fit LEDs to illuminate your coach.

You can fit a battery to power the LEDs.

Alternatively, if you work on DCC, you can pick up power from the track.

But what is the best way to switch them on and off?

You can fit a switch to the coach but that creates two problems.

- Where to fit it unseen
- The fuss when you have a rake of coaches to switch on and off

How about a hidden switch (under the coach roof) that's switched on and off by waving a wand over it?

Not a magic wand; just a stick with a couple of magnets on it!

The latching reed switch

This reed switch has a magnet attached to its glass casing.

The magnet is too weak to fully pull the switch blades together. However, if you

place a more powerful magnet (with the same magnetic pole) close to the reed switch, the blades make contact. After removing the main magnet, the weak magnet is strong enough to maintain the switch closed. If you later pass the main magnet close to the reed switch, in the opposite magnetic pole, the blades release contact once more.



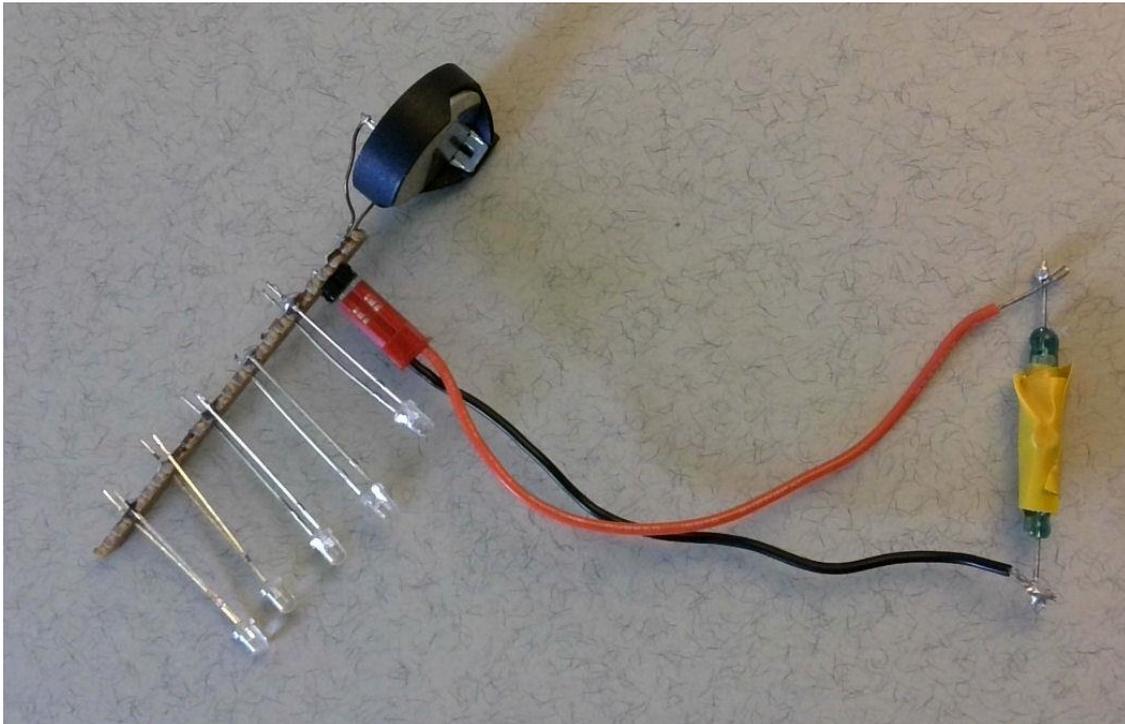
The trick is placing the magnet on the glass tube.

Too close and it keeps the switch permanently closed.

Too distant and it won't hold the switch on later.

I used a couple of pieces of heat shrink as the spacer but you could use a few turns of insulating tape or even 3D print a mount that holds the magnet and slides over the glass tube.

Here is a test circuit I made up that illustrates its operation.



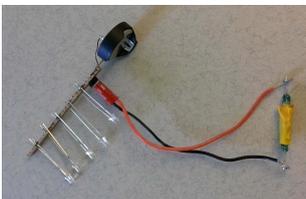
If a coach's LEDs are connected to a battery via a latched reed switch, passing a powerful magnet on a wand will switch on the LEDs; turning the wand over and moving it over the reed switch turns the LEDs off again.

If you have an exhibition layout that has a section at the front for public viewing and a rear section for the fiddle yard, this could save battery life.

As each coach approaches the public viewing section, it passes through a tunnel or under a gantry where a magnet switches the lights on.

As it leaves the public area, another magnet switches the lights off.

No current is drawn during the time when the lights are off.



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D Dick May 2020