

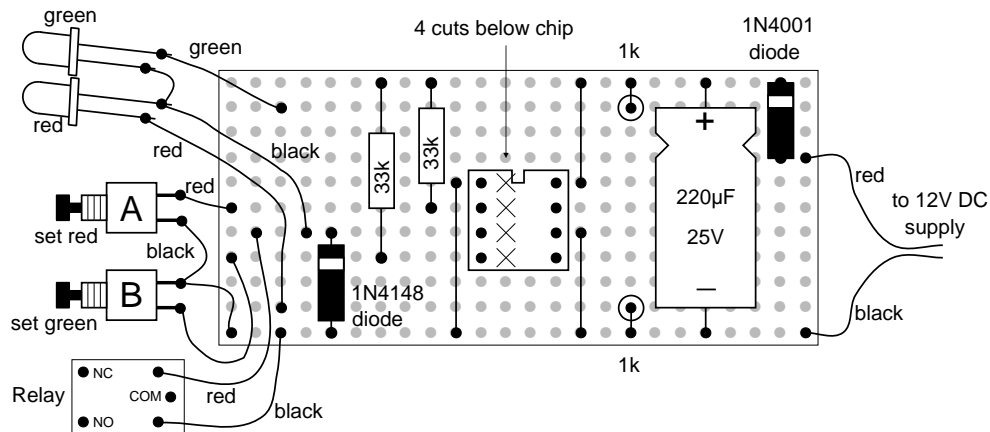
Model Railway Signal Project

A magnet under the train operates reed switches positioned on the track. The first reed switch changes the signal to red as the train passes, then further along the track a second reed switch changes the signal back to green ready for the next train. The isolated section of track just in front of the signal is switched off by the relay when the signal is red so a train will stop automatically at the red signal.

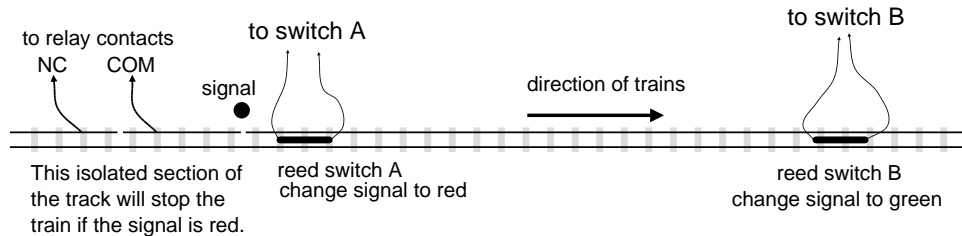
Parts Required

- resistors: 1k \times 2, 33k \times 2
- capacitor: 220 μ F
- 1N4001 diode
- 1N4148 diode
- miniature magnet - each locomotive needs one
- 555 timer IC
- 8-pin DIL socket for IC
- red LED (3mm best)
- green LED (3mm best)
- push-switch \times 2
- reed switch \times 2
- relay SPCO 12V coil
- stripboard 11 rows \times 24 holes

Stripboard layout



Track connections



- Connect the reed switches to push-switches A and B (see the stripboard layout).
- The switches can be held in place between the rails with a small piece of blu tac.
- Connect the track wires to the COM and NC contacts of the relay.
- When soldering to the track make sure you solder to the *outside* of the rail.
- Each locomotive will need a miniature magnet glued to its underside - test first with blu tac, but superglue is probably best once you are sure it is in the correct position.
- Note: railway signals have red at the bottom, unlike road traffic lights where red is at the top.

Circuit diagram

