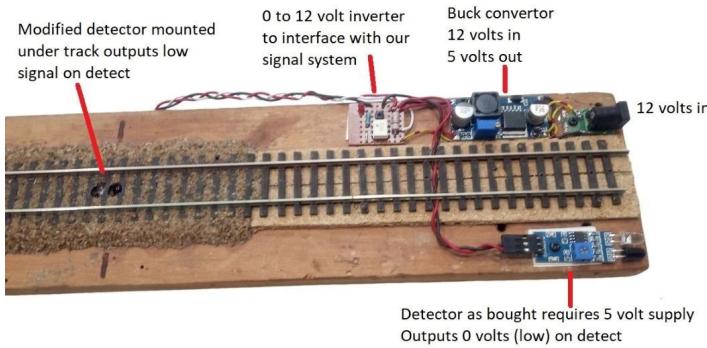


Test track description



This board contains scratch-built magnetic uncouplers for shunting with kadee couplers. These are magnets 6mm X 6mm 3mm high set under the track that pull the couplers apart to allow for hands free shunting. There are two magnets set with the north pole up on one, and south pole up on the other, this increases the magnetic field for better uncoupling.

The track also has an under track infrared detector, this will detect anything passing over it and we use these in some sections of our layout to show the exact position of trains in tunnels or over level crossings to link in with our signalling system.

Our signal system runs on 12 volts and the detector on 5 volts so there is also some interfacing between the two. The example on this board consists of a 12-volt input which feeds a buck converter to give the required 5 volts for the detector and an optoisolator to interface the two without interference or letting the magic smoke out. This is then fed to the signal system which sets the signals to the correct aspect.

On the display shown there are no signals so they are simulated by a LED connected to show when detection has taken place.

The modified detector module (LEDs repositioned) is placed under the track and emits infrared from one LED (the clear one) and detects the reflection from objects in the other LED (the dark one). The sensitivity is adjustable which helps to avoid false triggering, when set right, the one shown will detect the coupler, and of course, the rest of the wagon or locomotive. There is also an "as bought" detector to show what they look like, wave your hand in front of it to see it detect.

Materials used

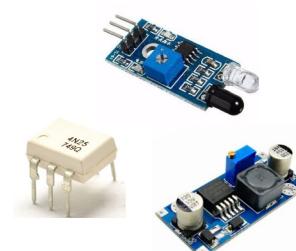
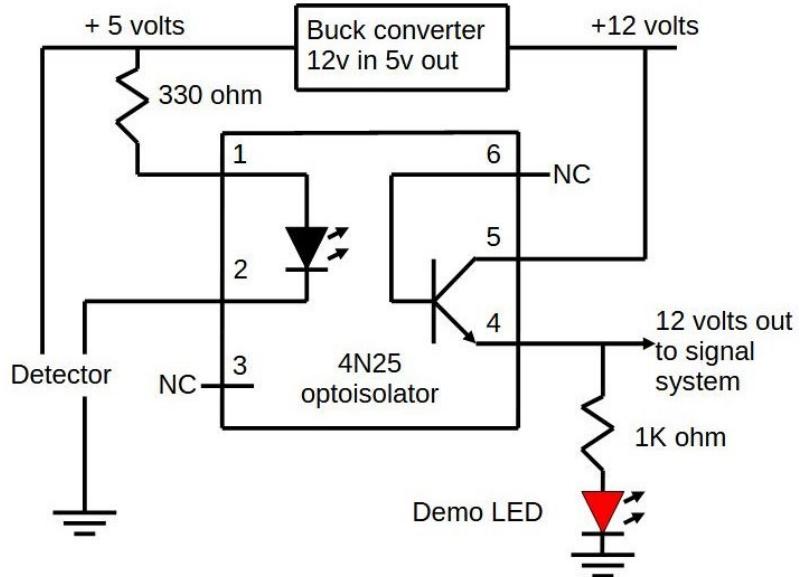
Infrared line follower module about \$1 online

4N25 optoisolator IC about \$1 online

Adjustable buck converter about \$1 online

2 resistors 1 LED (secondhand from my parts box)

DC power supply (secondhand from my parts box)



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