IRDOT-1

The IRDOT-1 can be used to give an indication of the presence of a train in hidden sidings, inside engine sheds and stations with overall roofs and other locations where the train is difficult to see by the operator. The indication is given by the illunination of an LED which can be wired to a control panel.

The IRDOT-1 is also used to automatically trigger some of our other boards when the train has reached a certain location. Examples are the SA series of boards Timer, Simple Shuttle, IRDASC-1, 2, 3 and DSS. Anadvantage over

DESCRIPTION

The IRDOT-1 uses infrared to detect trains. When it detects a train it lights an LED and gives an output for activating other controls. The LED may be mounted on a control panel. It is simple to wire, requiring 2 wires for power and 2 wires for the LED.

USES

As the IRDOT-1 can operate in tunnels and detect all types of rolling stock it is very suitable for train positioning and indicating track occupation in hidden sidings and loops. It is usually best to position the IRDOT-1 at the end of the loop where the front of the train is to stop. Once the "train detected" LED lights the train can be stopped. The IRDOT-1 operates in both light and in the dark.

It is also used to activate automatic controls. For example when used with the SA8 Station Stop it is located at the positions where the train is to start slowing and where it is to stop. WIRING: This is as detailed below , but full instructions are supplied with the IRDOT-1.

TERMINALS

1 To positive power supply

2 Electronic switch (open collector transistor)

3 11 volts output

4 Not used

5 To long leg of LED

6 To negative power supply and short leg of LED

The infrared emitter and detector are on the reverse side of the circuit board and therefore not visible.
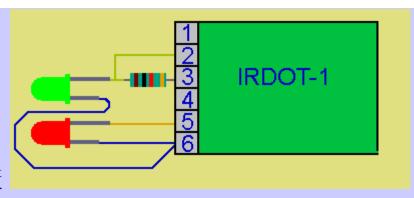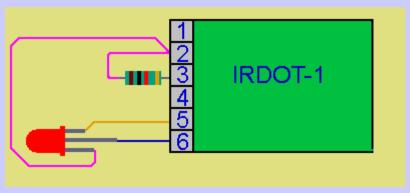
LED ILLUMINATION

To indicate when a train is detected a LED is connected to terminals 5 and 6. We supply the IRDOT-1 with a 5mm diameter red screwed to these terminals. The IRDOT-1 can also operate a seperate LED which lights when no train is detected (green in the diagram) or a bicolour LED. The Bicolour LED train is present and red when a train is detected. Note that if the IRDOT-1 is being used for an indication to out
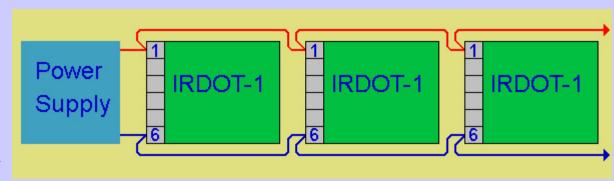
other boards terminal 2 will be used and so not available for a train not detected or a bicolour LED. If this is a problem the IRDOT-3 can be used.

POWER SUPPLY

The IRDOT-1 can be powered from 12 to 16 Volts either AC or DC. The diagram shows how 3 IRDOT-1s are powered from the same power supply.
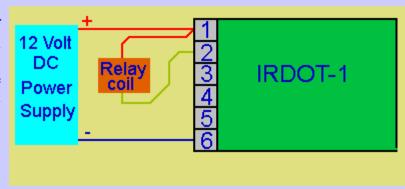
TRIGGER FOR OTHER MODULES

The IRDOT-1 is used to activate other units when it detects a train. Terminal 2 will trigger the Dual Timer, IRDASCs, latching relay board, alternate route selector and SA units. This is described in the pages about these boards.

RELAYS

The electronic switch output of the IRDOT-1 will operate many types of relay. A relay of any voltage can be switched subject to a maximum coil current of 100 ma. If the relays coil voltage is 12 volts, it can use the same supply as the IRDOT-1. When operating a relay this way the power supply must be smoothed 12 volt D.C.

Connection to Digitrax DS54 stationary decoder:

The Digitrax stationary decoder requires an input that changes from less than 6v DC to greater than 6v DC. This can be provided from terminal 5 of the IRDOT-1. Use a separate power supply for the IRDOTs. Connect the 0v DC of both the IRDOT and Digitrax power supply together. Remove the LED from the terminal and link terminal 5 to the Digitrax input. An LED train occupation indication can be provided by linking from terminal 2 to the short leg of the LED, then wiring a resistor from the long leg of the LED to terminal 3.

HOW THE IRDOT WORKS: See How infra red detection works

SPECIFICATION		
Voltage	12 to 16 volts, AC or DC	
Maximum current consumption	25 m A	
SIZE		
	Inches	Millimetres
Length x Width	3 .45 x 1.2	88 x 30
Height (Board to highest component)	0.7	17
Height of infrared components	0.9	22