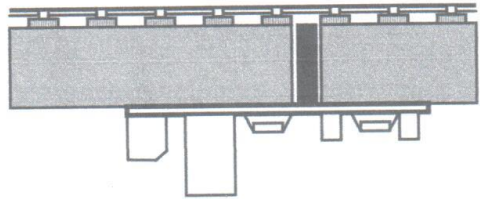


INSTRUCTIONS FOR IRDOT-1

Reminder – to prevent accidental damage please make sure the power is not connected when you are making or altering any of the wiring connections

INSTALLATION: The unit is screwed to the underside of the baseboard with the infra red emitter and detector located in a hole between the sleepers.



It is easiest to install the units after the track is laid. Drill a small pilot hole between the sleepers. Fit an 8mm drill bit marked with tape for slightly less than the base board thickness. Drill from underneath the baseboard following the pilot hole. Cut or file the small amount of baseboard material left between the sleepers. Install the unit, and then fill the remainder of the hole with modelling material. Blue tack will hold the units in place temporarily.

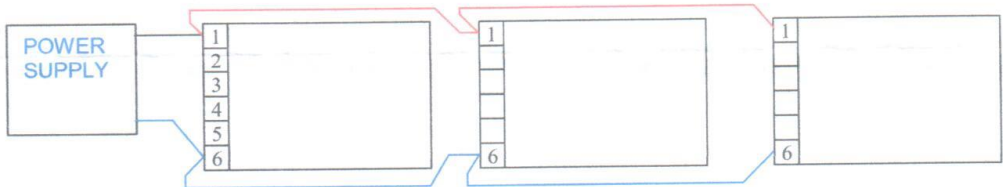
When fitted to Z or N gauge track the gap between sleepers will be less than the diameter of the infra red detector and emitter. However, the modules work well provided they are adjusted to touch the underside of the sleepers. If there is a gap the infra red may reflect of the sleepers causing continual detection.

The modules will also operate on their side placed alongside the track. For thick baseboards and restricted space we can supply units with the emitter and detector fixed to wires 18 inches long.

OPERATION: When the IRDOT-1 detects a train it lights an LED and operates an electronic switch (open collector transistor). The IRDOT is supplied with a 5mm diameter red LED connected to the correct screw terminals. This provides an aid while installing the IRDOT to check for reflections off obstructions.

After installation the LED is wired to the control panel. Ensure that the long leg is wired to terminal 5.

To Power supply +	1
Electronic switch	2
11 volts	3
Not used	4
Long leg of LED	5
To Power supply - and short leg of LED	6



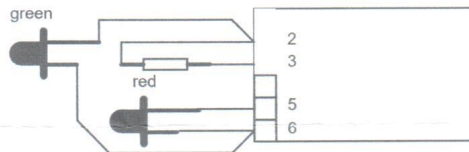
The diagram shows how to connect a number of IRDOTs to the same power supply. As the current consumption is low many units can be powered by the same supply. The supply must be from 12 to 16 volts. The units work with either AC or DC. If DC is used the positive connection of the power should connect to every terminal 1. If AC is used it is important to be consistent and connect all the terminal 1s to the same power supply terminal.

HIDDEN SIDINGS AND LOOPS: The infra red may reflect off low tunnel ceilings causing a permanent detection. The sensitivity of the unit can be lowered in the following ways. Paint the tunnel ceiling matt black to reduce the reflected infrared. Bend apart the infra red emitter and detector. Restrict the amount of infra red transmitted and received by fitting longer pieces of heat shrink over the top of the rubber covering of the emitter and detector.]

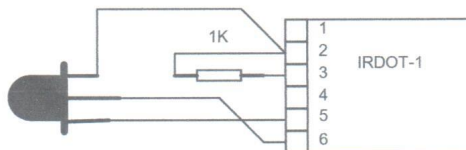
If any rolling stock is not detected by the units white self adhesive labels can be stuck to the underside of the rolling stock to increase the infra red reflected.

INCREASING INFRA RED RANGE: The rubber heat shrink covering the emitter and detector may be trimmed back to increase the range. Do not expose both the infra red emitter and detector as this will allow the infra red to travel straight from emitter to detector giving false detection. However the range may be increased by removing the rubber tubing (heat shrink) from the emitter (component nearest edge of circuit board).

GREEN "NOT OCCUPIED" LED: The electronic switch of the IRDOT-1 will light an additional green "not occupied" LED. A 1K resistor is used to limit the current through the green LED.



BI-COLOUR LED:



Resistor value should be 1K. Note how the 3 legs of the LED are distinguished by being different lengths. The shortest leg connects to terminal 2. The longest to terminal 6.

EXTENDED LEAD VERSION: Units attached to the emitter and detector with wires are used in the same way. Both emitter and detector are fitted into a single hole between the sleepers. A small piece of foam can be used to wedge them in place from the underside of the hole. Some people also find it helpful to fix the emitter and detector together with a piece of insulation tape or sellotape. The emitter and detector may also be used at the side of the track.

Alternatively they can be used to form a beam pointing at one another. The train breaks the beam thus reversing the LED indication. The operation becomes no train = beam across track = red LED lit. Train blocking beam = red LED unlit. If you require the red LED to light when the train is present fit it in the position shown above for the green LED. The emitter wire may be extended and this blocking method of operation will work with a gap of up to 5 or 6 feet between the emitter and detector.

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