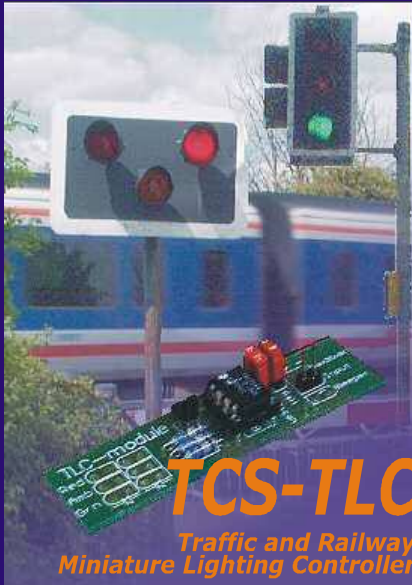


TC MINIATURE LIGHTING SYSTEMS



TCS-TLC
Traffic and Railway
Miniature Lighting Controller

USER MANUAL

Triple function
Pedestrian Crossing
Traffic Lights
Train Barrier Crossing Signals

What everything does...

6 Channel Outputs... LED Connection Points

This unit ONLY drives light-emitting-diodes (LED's)

You will need to be able to solder in order to connect your LEDs to the unit.

The diagrams over page show that two sets of traffic lights can be connected using just 4 wires!

Beeper Output

The unit can drive a small beeper* for use with the pedestrian crossing OR the railway barrier crossing.

*available from TC Systems Technology Limited

Triple function

Select your desired function using the shorting tags (see wiring diag.)

Power Input

5V to 30V DC input

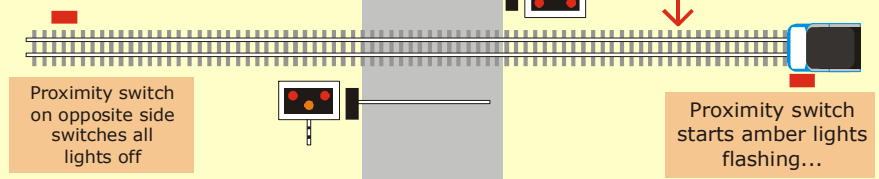


Proximity Switch Input

Optional trigger - Just short this input to trigger the unit.
Can be almost any type of switch that has normally open contacts, closing the contacts to trigger.

Using proximity switches

If using magnetic reed switches, then put one magnet on the leading engine and one on the opposite side of the last carriage lights will flash until the train has passed!



Once triggered, the unit will automatically switch from flashing amber to alternating red, but will require triggering a second time to switch off and reset.

You decide the best position for your proximity switches

TC Miniature Lighting Systems - controllers designed by enthusiasts for enthusiasts...

THE TCS-TLC MODULE

The most versatile traffic lighting system available...

The unit is specifically designed for the UK (although units for international traffic and train signals can also be supplied), and has three modes of operation:

- **Traffic Lights**
The TCS-TLC-Module will emulate a pair of UK traffic lights which could be wired in quad formation for crossroads.
- **Pedestrian Crossing**
With 'wait' lights and output for a TCSTL Beeper.
- **Train Barrier Crossing**
Flashing red and amber beacons, with optional output for beeper.

The mode is selected with a simple pair of miniature shorting plugs (tags)

The unit can be externally triggered using a switch - this could be a reed (hall-effect), mechanical trip, photo-beam... In fact virtually any switch that has normally open contacts that close the circuit when activated.

The trigger switch causes the unit to run through a sequence, triggering again causes the unit to complete the sequence cycle...

Example.
One set of traffic lights red, the other green when tripped will run through the UK sequence to green and red respectively - trigger again and it sequences back to red and green again.



Using with other TC Systems Controllers:

The unit can be operated using a single output from other TC Systems miniature sequencers and controllers such as the TCS840X series.

Specification: TCS-TLC

Outputs	7
Inputs	2 Power 1 Trigger
Connections	Flying leads
Emulation Modes	Traffic lights Pedestrian crossing with 'wait' lights and output for beeper Train barrier crossing beacons with output for beeper
Mode Switching	Shorting tags
Output Drive	Light Emitting Diodes 5V TCSTL Beeper
Input Supply	5 to 30V DC
Sequence Control	Switch
Fixings	Free
Size	63mm x 17mm x 5mm



TC Systems Technology Limited

email: info@tcstl.com

Web: www.tcstl.com

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Connections...

There are two connections on the circuit board, for each of your LEDs, but because some of the connections are common you can reduce the wiring as shown in the diagrams below.

Two shorting tags are used to select which emulation mode you want.



There are two connections for an optional beeper. (Pedestrian use)

Two power connections are connected here... **Observe the polarity!**

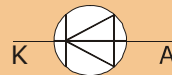
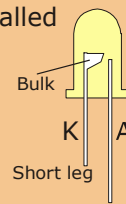
Two connections for an optional proximity switch trigger.

When closed from power up the unit will free run, When open on power up, the unit will wait to be triggered during the chosen emulation mode.

How to wire an LED

You MUST be careful to wire your LEDs the correct way around.

LEDs have two connections called ANODE and CATHODE often marked in circuits with an A and K.



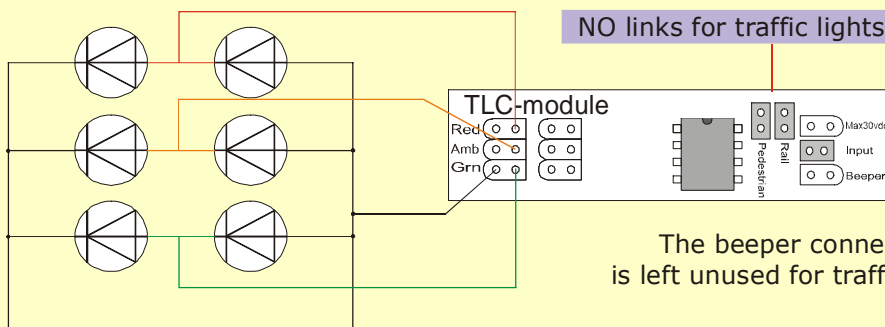
The circuit symbol

An LED

UK Traffic Lights



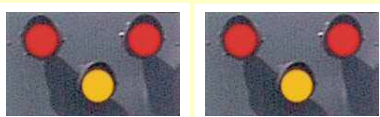
You can of course wire each LED to it's respective points on the circuit board if you choose.



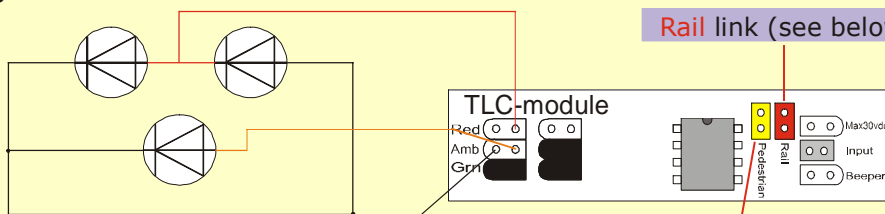
The beeper connector is left unused for traffic lights

For roadworks you only need two sets of lights of course, but you could wire another two sets the same, so that they are in parallel for crossroads.

Railway Barrier Crossing



You can of course wire each LED to it's respective points on the circuit board if you choose.



ONLY ONE SET OF LEDs SHOWN Both sets of lights wired the same

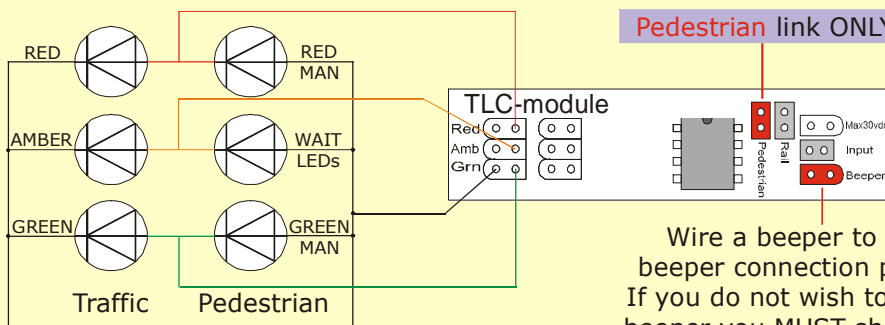
You can use a beeper with the railway barrier crossing, but you will need to use the 'pedestrian' link as well as the 'rail' link. Wire the beeper to the beeper connection points

You need two sets of lights, but you wire them the same, in parallel. Note that the blacked out connections are unused.

UK Pedestrian Crossing



You can of course wire each LED to it's respective points on the circuit board if you choose.



ONLY ONE SET OF LEDs SHOWN Both sets of lights wired the same

Wire a beeper to the beeper connection points If you do not wish to use a beeper you MUST short the beeper connector with a link

You need two sets of lights, but you wire them the same, in parallel. They are wired very similar to standard traffic lights but the left-hand outputs on the TLC connect to the traffic signals, and the right-hand outputs to the pedestrian signals

