

## Track Tester

DC & DCC O & G Gauge OO HO N Gauge



- Quickly checks track for power faults
- Small & Larger Versions - for N gauge to G gauge!
- Multicolour LED Indicates the DC polarity, or DCC, or a fault

## Buffer Lights

WIRE FREE DC & DCC O Gauge OO HO N Gauge



- Realistic stop light for any siding - fits most buffer stops
- Simply clips onto track - No wires!
- On DCC both lights are on constantly
- On DC one light is on & varies with speed

## DCC Fitted Digital Signals

DCC WIRE FREE OO HO



- Signal with DCC decoder built in - No CV programming
- Easy to fit and use - can just plug direct into track - no wires!
- Wide range available - also available with Feathers and Theatres

## One-Touch DCC™ Point Controllers

DCC ANY GAUGE



- Control points and uncouplers using DCC
- Work with most solenoid point motors - Built in CDU
- Just connect 2 wires to DCC rails - No CV Programming!
- Easy screw terminals - no soldering

## LFX Lighting Effect Controllers

DC & DCC ANY GAUGE



- Easy way to add lighting effects to your layout
- Wires screw in - no resistors or soldering - LEDs included
- Powered by 9v battery, 8-16V DC or DCC
- On DC the effect is on when powered - On DCC it can be controlled

## Level Crossing - Ready Assembled

DC & DCC OO HO N Gauge



- Power from 9-16v DC, DCC or a 9v battery - available in single & pairs
- Light and sound - all connections easy push fit
- Includes 2 x Peco static level crossing barriers
- Can be turned on automatically using a Track Sensor

## Traffic Lights - Ready Assembled

DC & DCC OO HO



- Power from 9-16v DC, DCC or 9v battery - 2 Wire connection
- Realistic standard UK sequence and timing varies randomly
- Fully assembled - drill hole in baseboard & connect to power

## Track Sensor

DC & DCC OO HO N Gauge



- Trigger level crossings and change semaphore signals
- Power from 12-16v smooth DC or DCC
- Can be used to trigger Sound Track, Smart Screen, Relays
- Four outputs for direct connection to LEDs for occupancy, FX

## Mimic Switches & Lights

DC & DCC ANY GAUGE

- Make a mimic panel to control Layout Link items - Single wire to control
- Link to Track Sensors or Sensor Signals and LEDs show occupancy & signal status
- Link to Sensor Signals to manually override and switch route indicators on/off

## Smart Lights - Easy to fit Lighting Effects

DC & DCC ANY GAUGE



- Small - Just 1cm x 1cm x 0.3cm with 2 wires
- Power by 9-16v DC, 9v battery, or direct to DCC which can control some effects
- Just connect and go - no setting up required
- Disco / Emergency / Real Fire / TV / Welding / Random / Programmable

## Automatic Tail, Firebox & Loco Lights

DC & DCC AUTO WIRE FREE ANY GAUGE



- No switch - senses motion & turns on!
- Turns off automatically 4 minutes after stopping
- No pickups, wires or soldering - LED just plugs in
- Fit in brake vans, coaches, loco, wagons etc
- Runs for ages on 2032 button battery - LEDs & battery included

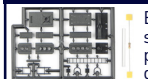
## Sound for your layout

DC & DCC AUTO WIRE FREE ANY GAUGE

- SFX Sound**
- Sound capsule with no wires - runs from a battery - built in speaker
  - No connections to track so work with both DC & DCC
  - Motion activated - switches on when train moves! Real Sounds!
  - Tiny - 25mm x 20mm x 12mm - N gauge fitting guide available
- Sound Track**
- Record your own sounds and play them back on your layout!
  - Record 4 tracks upto 35 seconds each - Lock to protect favourites
  - Portable - use with 9v battery to take out & record sounds
  - Power from DC or DCC - Use Track Sensors or DCC to trigger sounds
- Scenic Sounds**
- Background sounds for your layout - built in speaker & volume
  - Power from DC or DCC - on DCC sounds can be triggered
  - Lineside • Station Steam • Station Modern • Urban • Rural

## Signal Kits

DC & DCC OO HO



Every kit includes the signal head, aluminium post & base plus detailing kit

- Low cost - adapt to your own design
- Control by switches or signal controller
- LEDs are prefitted to a narrow PCB
- Ground signals - modern & original
- Feather & Theatre kits available
- Signal Head only for gantries etc

### TK1 Theatre kit



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## Signal Controllers

DC & DCC AUTO ANY GAUGE

- **DCC Signal Controllers** - Wire in any LED signals to control from DCC accessory address
- **Automatic Signal Controllers** - Make any LED signal kit into an Automatic Signal!
- **Dapol Semaphore Controllers** - Control Dapol Semaphores by DCC or automatically

## Automatic Sensor Signals

WIRE FREE DC & DCC OO HO



- Detects train and changes signal automatically to red
- Used own & signal changes back to green after train short time
- Or link to other Sensor Signals for fully automatic block signalling
- Can be used on both DC & DCC - Feather & Theatre versions

## Automatic Coach Lighting

DC & DCC AUTO WIRE FREE OO HO N Gauge



- Easy to fit - no wiring or switch - senses motion & turns on!
- Turns off automatically - fits most coaches - may be cut down
- No pickups or wires so works on regular DC & DCC
- Traditional warm white or modern cool white
- Also with tail light, sparking, door beeps and door light effects

## Servo Controller

DC & DCC ANY GAUGE

- Controls standard radio control servo from DCC, Track Sensor or Mimic switch
- Ideal for animating Level Crossing barriers / gates, Slow points or signals, Coal hopper
- Easy to wire and set up - connects directly to DCC or 8-16 volts smooth DC supply

## Relay Controller

DC & DCC ANY GAUGE

- Two channel Relay unit which can be controlled by Track Sensor, Sensor Signal or DCC
- Enables remote control of motors, solenoids, lamps etc
- Incorporates two heavy duty relays with changeover contacts rated at 8-24 volts at 3 A

## Automatic Train Control

DC & DCC ANY GAUGE

- Link Sensor Signals to Relay Controller for automatic trains which stop at red lights!
- Can be used on DC or DCC Layouts
- Easy wiring: Sensor Signal link with one wire and Isolated braking section two wires.
- Also supports ABC fitted DCC Loco's for gradual slow down and speed up with sound

## Tools, LEDs & Accessories

ANY GAUGE

- We offer a range of LED packs, battery holders, wire, switches & terminals
- Also handy modelling tools including precision cutters, drill bits & spare batteries

## Smart Screen

DC & DCC OO HO



- Real working animated screen - customise with your messages
- Use DCC to program - then can be run on DC or DCC
- Trigger messages with DCC, switches, track sensors or just cycle
- Message can change with direction of train on both DC & DCC
- Display upto 10 different messages - can also show real time clock
- Range of enclosure available - Programming service available
- Small - w 31mm x h 9.5mm x d 4.5mm
- Stationary top line - bottom line automatically scrolls

SEE [WWW.TRAIN-TECH.COM](http://WWW.TRAIN-TECH.COM) OR ASK FOR FREE COLOUR BROCHURE



**Train-Tech**  
Model Technology Made Easy

### TK1: Theatre indicator add-on kit

- Add Theatre to an existing OO/HO gauge signal
- Lights one user defined character (5x5 matrix)
- Includes hood and base ABS plastic covers
- Complete with 1K resistor for 12-16V DC
- Control by switch, point switch or DCC decoder
- Note that this kit requires gluing and soldering
- Signals with fitted theatres also available

[www.Train-Tech.com](http://www.Train-Tech.com)

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# TK1 Theatre route indicator add-on kit

**CAUTION - ALWAYS SWITCH OFF POWER TO YOUR LAYOUT BEFORE CONNECTING OR DISCONNECTING ANY ACCESSORIES**

This kit contains the components to retrospectively add a Theatre Route Indicator to a OO/HO gauge colour light signal or gantry, post etc - reasonable craft skills including gluing and soldering will be required.

## 1 Introduction

- Contents**
- 1 Theatre dot matrix PCB with projection LED
  - 1 Theatre base plate
  - 1 Slide-on Theatre hood
  - 1 1kΩ resistor (Colour: Black Brown Red Gold)
  - 1 Instruction leaflet

- You will need**
- Soldering iron with small tip
  - Flux cored solder
  - Plastic Adhesive
  - Pair of fine wires to connect the feather
  - Magnifier
  - Cutting mat

A Theatre is a type of route indicator sometimes fitted to the top of colour light signals and usually located near a point and which lights with a number or character to tell the driver where he is being routed, for example a Platform number.

DC, DCC and Automatic signals are available in the Train-Tech range with route indicators pre-fitted and wired, but this kit allows a Theatre to be added retrospectively to many makes of signal. Note that reasonable modelling skills will be required to mount and connect this route indicator to existing signals.

You can either control the Route indicator using conventional switches or connect it to a DCC decoder (eg Train-Tech SC2) to control it from a Digital controller or computer. You can also connect the feather to the switch fitted to some points so that it lights automatically when the point is in the same direction.

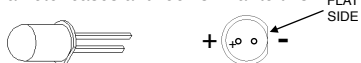
**! Take extra care when using tools and adhesives.**

## Using LEDs with model railways

You can use various types of lights for your signal, but we recommend LEDs as the best choice for models. LEDs are really useful lights which, unlike their conventional filament predecessors, are robust, low power and if used correctly run cool and can effectively last forever. But there are some important considerations when using LEDs. Firstly LED stands for Light Emitting Diode and a diode is an electronic component which only works in when power is applied in one specific direction, so they always need to be fitted the correct way round to work correctly. Also most standard miniature LEDs a modeller will use only need a very small amount of power, so the current flowing through the LED must be limited and this is usually done by a resistor. On the usual 12-16 volts DC supply a railway modeller uses a 1kΩ (one thousand ohms) will limit the current to around 10-14mA (mA is thousandths of an amp) which is ideal for most LEDs. Note you should only ever use LEDs on a DC (direct current) supply and never an AC (alternating current) supply because although the LED may appear to work properly constant reversal of voltage using AC will eventually damage or shorten its life.

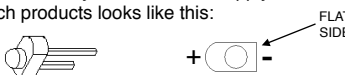
## Connecting LEDs

As explained previously LEDs have a polarity and must be connected the correct way round to light. The most popular LEDs come in 3mm and 5mm diameter cases and look similar to this:



The best indication of polarity on this type of LED is to find the flat side on the round base. This side usually indicates the negative (Cathode) connection and the other wire the positive (Anode) connection to power.

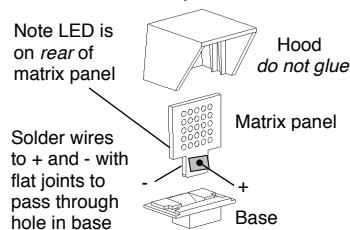
Another really small LED we supply for some Train-Tech products looks like this:



There are many LEDs available and it is good to experiment, but check data for specific connection information as there are no real standards.

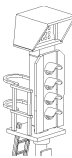
## 2 Wiring the Theatre

The diagram below shows the 3 main parts which go to make up the Theatre indicator. Before assembly trim any flash off the two mouldings. The matrix panel has 25 holes and a white LED mounted on the back which projects light onto the rear of the hood, which reflects the light forwards through the matrix holes to displays the character. Note correct orientation of the matrix panel - the LED is on the rear facing the back of the hood. Note LED's only light when connected correctly and there are two silver solder 'pads' to make the connections, one on the front (+) and one on the rear (-) as shown below. Thin insulated wires are best for these, but before soldering them onto the PCB contacts pre-tin the wires first, *being careful not to apply too much solder to keep the connections flat* so that the wires and joints will fit through the hole in the base. Also be careful not to let any solder touch or dislodge the small LED on the back of the matrix panel.



After soldering the two wires on and fitting the base, you can test the Theatre light using a 12 V DC supply or a 9 volt battery - but do not forget to use the resistor in series with one of the wires! After testing the Theatre can be fixed in location with glue and wires may be passed down some signal posts or hidden behind posts or rails. (see below for how to create your own character).

## Using Signals with Train-Tech DCC controllers



Train-Tech signals are also available in DC, DCC and Automatic Signal versions with 'Theatre' or 'Feather' type route indicators already fitted and wired.

Train Tech manufactures various LED controllers including the SC1 and SC2 DCC colour light signal controllers which allow signals with LEDs to quickly and easily connect to DCC layouts for control by Digital controller or computer. The SC1 is a dual 2 aspect controller and the SC2 is a 3 or 4 aspect plus route indicator controller.

Like all of our One Touch™ DCC products they are quick to connect needing no resistors or soldering and set up in seconds with no programming of CV codes. Assembled Digital Signals with DCC decoders built into the base are also available which just clip into the track with no wires or you can connect to the nearest piece of track using 2 wires.

As well as DCC signals and controllers, Train-Tech also makes a range of LFX LED lighting controllers which work on both DC and DCC and offer effects to simulate level crossings, welding, traffic lights etc - again resistors are built into all of the LFX units and so LEDs connect directly to them.

Train-Tech offers packs of various LEDs for modellers and these come with both instructions and suitable resistors for using them on a standard DC supply or non Train-Tech DCC controllers.

See [www.train-tech.com](http://www.train-tech.com) for full details of our range or ask for the latest free Train-Tech brochure.

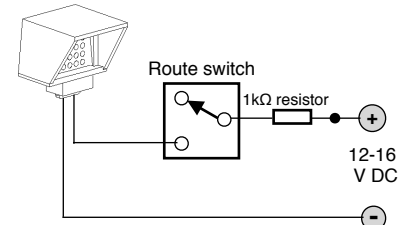
## 3 Controlling the Theatre

This Theatre indicator can be wired and controlled in 3 main ways:

- 1) Using a switch on a control panel
- 2) Using a switch as fitted on some points
- 3) From a suitable DCC decoder (eg SC2)

### Wiring example for switches

The wiring diagram below shows how to connect a switch and this example is suitable for either a control panel switch or a point switch.



Theatres are usually located near a point, so if a point switch is included on the point motor or you can add a point switch to the motor (eg Peco PL13) and the advantage is that the route indicator will automatically light when the point is in that position. Remember to always use a resistor when wired to a DC voltage supply in this way.

### Controlling from a DCC decoder

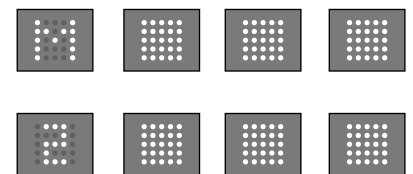
If your layout points are electrically controlled using DCC, then a decoder can be set up to light the route indicator when the point is set to a particular direction. Check the decoder instructions to see if you need to fit a resistor in series with the LED (note that Train-Tech decoders have a built in resistor).

## Theatre Indicator - creating your own character

This Theatre route indicator can be set to display almost any character or symbol of your choice; if you lift the Theatre hood you will see the matrix plate with 25 (5 x 5) small holes which are lit from behind using an LED projecting onto the rear hood.

You can create your own character by carefully masking the holes you do not want to light from behind using narrow strips of insulating tape or BluTack, Black Tack etc and then replace the hood.

When the Theatre is activated light will shine through the unmasked holes and display your character. You can use a pencil on the blank templates below to decide on which holes you need to block to create your own character or symbol.



This type of display is called a 'dot matrix' and is how many theatre and other signs are made on the real railway as they are versatile and can be made to display virtually any number, letter or symbol.