## Track Tester

DC & DCC | O & G Gauge | 00 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 | 00 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 | 00 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

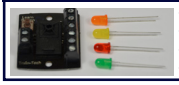
## One-Touch DCC™ Point Controllers

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 | 00 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 | 00 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 | 00 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 favoutires
- 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 | 00 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

**AL1 - Auto Tail Light**

5 060325 130818

## 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

1119

## Automatic Sensor Signals

WIRE FREE | DC & DCC | 00 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 | 00 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 | 00 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, swtiches, 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

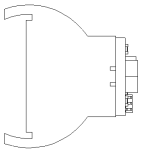
***SEE WWW.TRAIN-TECH.COM OR ASK FOR FREE COLOUR BROCHURE***

+

Train-Tech
Model Technology Made Easy

### AL1 Automatic Tail Light set
### Flashing red LED - modern image

- Detects movement and turns on automatically!
- Fits inside brake vans, coaches & wagons
- No pickups, wires or soldering - LED plugs in
- Runs for ages on standard button battery
- Fully assembled - drill holes for LED & fit inside
- 2 Lantern style LEDs and a battery included



## www.Train-Tech.com

See our website, your local model shop or contact us for a free colour brochure
Train-Tech, Gaugemaster House, Gaugemaster Way, Ford Road, Arundel, BN18 0BN
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# AL1 Automatic Flashing Tail Light module

***CAUTION - REMOVE THE BATTERY BEFORE PLUGGING IN OR REMOVING AN LED***

This Automatic Light controller is designed to fit inside models and detect small amounts of movement and control a lighting effect produced by a small LED light. Please read these instructions before using this product.

**Contents**

- AL1+ Flashing Tail Light module
- 1 Lantern Style transparent red LED
- 1 Lantern Style Red colour red LED
- BAT1 CR2032 lithium button battery

**Introduction**

The AL1 is fitted inside a wagon or coach and when it detects motion starts flashing a small lantern style LED simulating a modern image tail light, automatically switching off after no motion is detected for several minutes - no switch required!

Other modules have a flickering flame effect to simulate lanterns or fireboxes (which realistically flickers more when going over bumpy rails!), spark-arcs as seen on electrics, door open amber lights or constant output for lighting coaches, headlights, head codes etc. Dual function modules have both a constant output and an effect output.

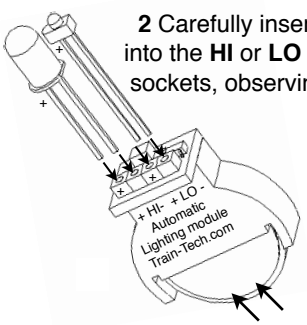
**How it works**

A low power microprocessor constantly monitors a tiny sensor which can detect small amounts of motion. When movement is detected it flashes LED until no motion is sensed for 4 minutes, then turns off the LED to save power and back to monitoring.

**Testing the module**

Before fitting we suggest you test it by plugging in the LEDs supplied to see how it operates & decide on the best location in your model. The AL+ modules have **HI** and **LO** brightness outputs & you can use either one or both at the same time in your model

**1** Trim longest LED pin to same length as other pin




**2** Carefully insert an LED into the **HI** or **LO** brightness sockets, observing polarity

**3** Slide in Battery **+** to **+**

As soon as you fit the battery the LED should light because you are moving the module - if the LED does not light try fitting the LED the other way.

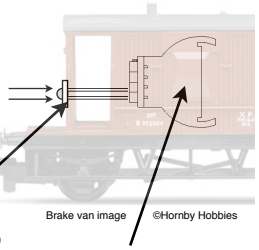
Place the module on a completely still surface & just over 4 minutes after the last motion the LED should switch off.

**Fitting the module inside a model**

The AL module is designed to be easy to fit into a model and we offer the following suggestions for fitting to a brake van - the same ideas can apply to fitting to coaches, locos or wagons.

**1** Paint the base and sides of lantern shape LEDs white or black to make it look like a realistic railway lantern

**2** Carefully drill two small holes approx 2.5mm apart all the way through inside




**3** Glue LED onto the end of wagon

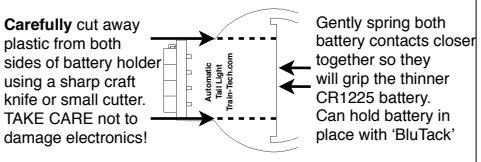
**4** Fit module inside, carefully sliding sockets over LED pins, holding module in place with foam or 'BluTack' etc

**Care**

- Fit battery polarity correctly, + to +
- Careful not to damage parts on PCB
- Never apply more than 3 volts
- Never short circuit battery terminals
- Dispose of used battery's properly

**Fitting AL module in N gauge models**

If you wish to fit the module into a smaller gauge than OO/HO you will either need to use large rolling stock such as a container wagon or coach, or use a smaller battery. We suggest the following modification for fitting the module into an N gauge wagon or coach, however please read the warning below before modifying anything. The CR1225 is a lithium 3 volt battery which is much smaller than the 2032 with a 12mm diameter. The electronics module is also 12mm wide and this will just fit into many N gauge wagons or coaches, but the battery holder will need to be trimmed:




Observe polarity when fitting battery;+ to +

Note that being smaller the CR1225 has a lower capacity than the CR2032 so will not last as long. Available as BAT2 from www.gaugemaster.com/train-tech

**Warning**

Please note any modification of the module will invalidate the warranty and should only be attempted by a confident modeller. Modelling suggestions are offered in good faith but anything you modify is at your own risk and Train-Tech cannot be held responsible for any injury, damage or loss however caused.

**Adjusting sensitivity**

The AL module incorporates a small sensor containing a tiny ball bearing with gold contacts to detect any movement. If you wish you can slightly adjust sensitivity of the motion sensing by moving the module to a different angle inside your model.

**Using other LEDs**

One of the reasons the small battery can last so long is because the LEDs supplied in this set have been especially selected for their efficient low voltage and power requirements. However you can experiment with other types of LED, but bear in mind they must be able to operate on very low currents and a voltage of around 2.5 volts.

**General information on LEDs**

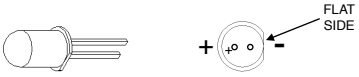
LED stands for *Light Emitting Diode* and a diode is an electronic component which only works electrically in one direction, so always need to be fitted the correct way round to work correctly and last.

Most standard miniature LEDs which a modeller will use must only have a maximum voltage of 2 to 3 volts applied, so current flowing through the LED needs to be reduced and this is usually done by a resistor in series (in between), typically 1000 ohms for a 12 V supply.

However to make wiring easier this AL module and most Train-Tech LFX and Signal LED controllers already have resistors built in so that LEDs can connect directly to the module without resistors.

**LED connections**

As explained previously most 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 very small LED we supply for some Train-Tech products looks like this:


There are many LEDs on the market and it is good to experiment, but check manufacturers data for specific connection information as there are no real standards. Remember to always use a resistor in series with the LED when using it on a standard DC power supply or battery.

Train-Tech offers packs of LEDs for modellers including special high brightness low power versions for AL modules like this.

Small tools, batteries and wire are also available from Train-Tech.

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