

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



- 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

LFX3 - Traffic Lights



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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

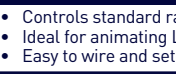
DC & DCC AUTO WIRE FREE OO HO N Gauge



- 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

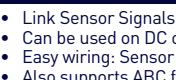
DC & DCC ANY GAUGE



- 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

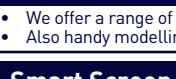
DC & DCC ANY GAUGE



- 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 OR ASK FOR FREE COLOUR BROCHURE



Train-Tech
Model Technology Made Easy

LFX3 Traffic Lights Lighting Effect Controller

- Realistic timed Traffic lights sequence
- Connect up to 4 sets of Traffic Lights to 1 LFX
- Use SK1 kit for realistic OO model Traffic Light
- Works on both DC and DCC systems
- Use second LFX3 for synced 2 way traffic lights
- Easy to use - LEDs fit directly with no resistors

www.Train-Tech.com

See our website, your local model shop or contact us for a free colour brochure
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LFX3 - Traffic Light LED controller for DC and DCC model railways

CAUTION - ALWAYS SWITCH OFF POWER TO YOUR LAYOUT BEFORE CONNECTING THIS CONTROLLER

This lighting effect incorporates a DCC decoder to enable it to be wired directly into the track and be operated by any controller which is able to control DCC accessories. It can also be controlled by 9-15V DC supply. Please read these instructions before fitting your controller.

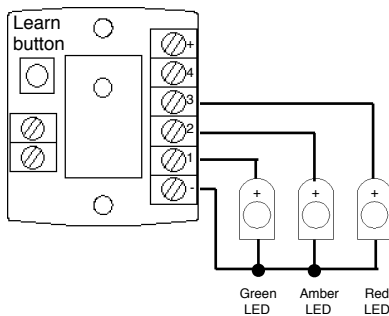
1 WIRING THE LED's

The LFX3 controls model traffic lights in the standard UK sequence of red, red and amber, green, then pause, then amber and back to red. The effect sequence is automatically timed by the LFX and will repeat as long as there is DC or DCC power applied, though you can use two LFX3 for dual junction Traffic Lights (see 3). We recommend you try the LFX using sample LEDs supplied before fitting into a model.

Switch off your power supply before connecting anything!

- Fit the Red, Amber and Green LEDs into the terminal block as below, carefully observing the correct polarity which, on this style of LED, is rounded at the + end.

LED's are small low power lights which **must** be connected the correct way round to light, so refer to drawing below when connecting - note you do not need a resistor when connecting LEDs to Train-Tech LFX or Signal Controllers.



Using the Traffic Lights LFX and LEDs

Once you have tried your LFX module you need to decide which LEDs to use and where to fit them. You can use almost any standard red, amber or green LEDs, but the small sample LEDs supplied (extras are available) are ideal for fitting into most traffic lights. For the traffic light model itself you could use a commercial model or scratch-built traffic light, but we can also recommend the Train-Tech Signal kit SK1. This was designed as a railway signal, but by painting a thin white line around the 3 way light head and fitting to the standard post supplied you can make a very convincing traffic light! The small sample LEDs supplied with this LFX3 will also fit inside this signal head held with a little glue and wires can be passed down the tubular post. Before fitting the LEDs into a traffic light solder on your wires - we suggest using thin gauge wire such as 'Kynar' wire wrapping wire or enameled copper wire (which can be bought on reels or salvaged from an old motor etc) as these can most easily be hidden in the tubular post included in the kit. You can fit up to 4 sets of 3 LEDs to one LFX, though note the more LEDs you fit, the slightly dimmer each LED will be as they will be sharing the same power.

We have made the LFX module as small and light as possible so that it can be easily hidden inside a building or scenery, though it can be mounted under the baseboard and held using a double sided sticky pad or small screws, but be careful not to overtighten. If using the LFX on DCC you can connect it directly to the nearest DCC rails - note if using two LFX3 to control two sets of lights it may be easier to set them up (see 3) before mounting them in a hard to get place.

The following accessories for your LFX3 are available from Train-Tech at www.gaugemaster.com/train-tech

LED3: Traffic Light LED set (3 sets of 3)

Set of 3 extra subminiature red, 3 amber and 3 green LEDs as per samples supplied with the LFX3

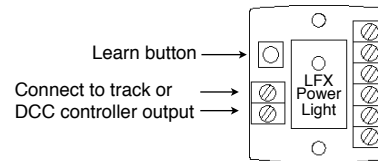
LEDCLIP1: Solderless LED clips

Pack of clips with 200mm of wire which enable LEDs to be connected away from the LFX without soldering

2 CONNECTING TO POWER

Connecting to a DCC digital layout

Connect the LFX to the nearest DCC track or controller output using wires from the screw terminals shown below - it does not matter which way round the wires are connected.



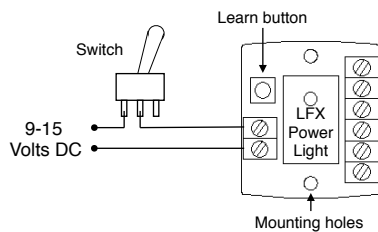
Once all connections have been made, switch on your DCC controller. The red Power light on the top of the LFX should illuminate.

If it does not light see *Troubleshooting below*

Connecting to a DC analogue layout

To use the LFX module with DC layouts, you need to supply it with 9-15 Volts DC. Most DC controllers have a DC accessory supply or you could even use a 9 volt battery. Connect the LFX to the supply using the two screw terminals as shown in the diagram below (polarity not important) and include a switch to control the effect easily - LFX power LED should light.

If it does not light see *Troubleshooting below*



Troubleshooting when using a DCC system

- Check that the power light on the LFX is on - if not and locos run correctly on the track check the connection wires between the LFX, DCC controller and track.
- If you have connected the LFX to track rails test it connected directly to the DCC controller output instead.
- If the LFX power light is on but the LED's connected to your LFX do not switch on or off, check that your DCC controller is in *accessory* address control mode - note that this is completely different to Locomotive address control and will be explained in your controller instructions.
- If some or all of the LED's connected to the LFX fail to light correctly, double check the wiring and if necessary reverse the connections of some LED's.

Troubleshooting when using a DC system

- If the red power light on the LFX does not come on, check that it is receiving power from a suitable 12 Volt DC supply - the polarity of connection is not important as this is corrected inside the LFX. You can also easily test the LFX by connecting it to a 9 volt PP3 battery - the LFX power light should light and connected LEDs should work normally, although as it is running on only 9 volts they will not be as bright.
- If some or all of the LED's connected to the LFX fail to light correctly, double check the wiring and if necessary reverse the connections of the LED's.

If these steps fail please contact your supplier or Train-Tech for advice and Technical support.

Notes

The LFX module may get slightly warm when used for long periods which is quite normal.

The original design of this LFX module had only 4 output terminals and LEDs were connected quite differently - if using one of these versions please refer to the instructions which were supplied with it.

3 RUNNING TWO SETS OF LIGHTS

As mentioned before the LFX3 Traffic Lights can be used on DC or DCC power and will continually repeat the same single traffic light sequence as long as any power is connected. You can also make a dual traffic light system for a junction or crossroads by using two LFX3 modules on DCC which together control 2 sets of lights, automatically setting one set at Stop while the other is Go and vice versa! This dual traffic light system only works on DCC systems because we use DCC to set up and continually synchronise the two modules together.

To set up Dual Traffic Lights using DCC

Here we show how to use DCC to set up two opposing traffic light sequences on two LFX3 connected to the same DCC controller:

- Set up your controller to control DCC *accessories* (refer to your controllers instructions) and set your controller to any unused accessory address, eg 85
- Touch the 'Learn' button on ONE of the LFX3's - its connected LED's will flash. Then send a left 'direction' ◀ command from your DCC controller. The LED's will stop flashing.
- Touch the 'Learn' button on the OTHER LFX3 - its connected LED's will flash. Then send a right 'direction' ▶ command from your DCC controller. The LED's will stop flashing.
- Switch off DCC power to the LFX modules or press emergency stop on your controller.

When you switch DCC back on the traffic lights should work in opposing directions automatically - they use the data on the DCC bus to keep in sync with each other! Please note the DCC address is only used to set them up and cannot control the sequence

General information on using LEDs with models

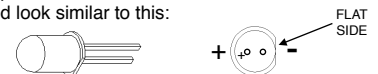
LEDs are really useful lights which, unlike their conventional filament bulb predecessors, are robust, low power and if used correctly can effectively last forever. But there are important considerations to using them. Firstly LED stands for *Light Emitting Diode* and a diode is an electronic component which only works electrically in one direction, so always need to be fitted the correct way round to work correctly and last. Whilst LED's will work on AC (alternating current) for a while, continuous use on AC or reverse connection will reduce the life.

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 for modellers all Train-Tech LFX or Signal LED controllers already have resistors built in so that LEDs can connect directly to the module without the need for any resistors.

Train-Tech also offer packs of various LEDs for modellers and these always come with instructions and also suitable resistors for using them on a standard Model Railway 12V DC supply.

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 on the market and it is good to experiment, but check manufacturers data for specific connection information as there are no real standards.