LFX1S - Level Crossing Sound & Light effects for DC and DCC model railways

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

This sound and 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.

CONNECTING LED's & SPEAKER

The LFX1S simulates the lights & sounds seen at modern level crossing barriers, first switching on an amber LED then flashing two red LEDs alternately, also sounding a warble warning from the supplied sounder. The effect sequence can be started and stopped using either DCC accessory commands or a regular DC switch. We suggest you try the LFX using the LEDs & speaker supplied before fitting into a model.
Switch off your power supply before connecting anything!

• Connect the Sounder plus Amber and Red 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 resistors when connecting LEDs to Train-Tech LFX or Signal Controllers.*

! **Do not connect more than 12 LED's to an LFX controller!**
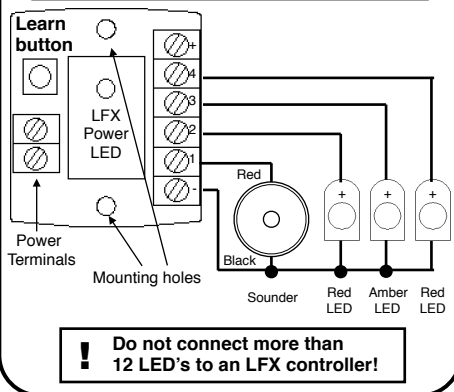
POWER AND CONTROL BY DCC

Every DCC accessory needs an 'address' assigned to it and with One-Touch™ DCC this is very quick and easy to set up.
Start by connecting the LEDs and sounder as shown on the left and then connect the LFX Power terminals to your DCC track output and switch on - the LFX Power LED should light. You now choose the DCC address for the effect and also select whether to have the warning sound on all the time the lights are on, or alternatively to automatically switch off the sound after the lights have been on for around 7 seconds.

Setting the address and sound options
Set your controller to control DCC **accessories** (ie not locomotives - refer to the instructions supplied with your controller).
Then set your DCC controller to the accessory address you choose to control the LFX (eg 71)

Choose:
• To silence the sound after 7 seconds of lights: Press the LFX 'Learn button' ONCE - the red crossing LEDs will flash quickly.
Then send either a ◄ or ► 'direction' command from your controller - the LEDs will stop flashing and the crossing LEDs and sound are are now set to be controlled by that address and the sound will stop after 7 seconds.

Or:
• To have sound all the time the lights are on: Press the LFX 'Learn button' TWICE - the amber crossing LED will flash quickly.
Then send either a ◄ or ► 'direction' command from your controller - the LED will stop flashing and the crossing LEDs and sound are are now set to be controlled by that address and the sound will stay on continuously with the lights.

POWER AND CONTROL BY DC

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 use a 9 volt battery. Connect the supply to the LFX Power terminals as shown in the diagram below (polarity not important) and the LFX power LED should light.
You can add a switch to power the LFX on / off.
If it does not light see Troubleshooting below
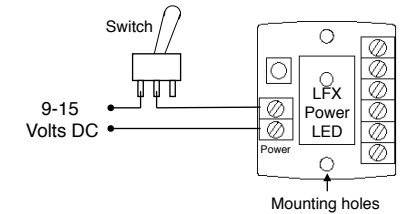
Continuous sound or 7 second sound
The speaker can be set to sound continuously until the lighting effect is switched off or alternatively to sound for just 7 seconds and then be silent, leaving the lights flashing.
To switch this feature on or off just press the button on the LFX while it is powered and it will alternate the automatic silence on and off.

Press this button while powered to alternate the automatic silence or continuous sound feature

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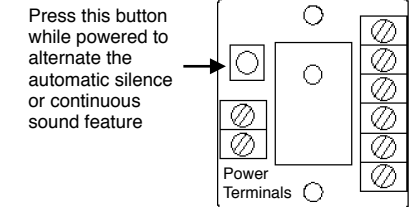
Fitting the Level Crossing Barrier LFX and LEDs
Once you have tried your LFX module you need to decide how and where best to fit them.
Mounting the LFX Module
We have made the LFX module as small and light as possible so that it can be easily hidden inside a building or scenery, though it can be mounted 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 it may be easier to set the address and sound options before mounting it in a building or hard to get place - see above.
Mounting the sounder
You can choose to mount this under the baseboard or hide in it a building etc depending on how loud you want it to be (a building can make it sound louder and richer). You can fix it by tape, pads or small screws.
Fitting the LEDs
You can use almost any amber and red LEDs but the small LEDs supplied are ideal for fitting into many of the commercial level crossing barrier sets on the market or into kits such as the Peco NB51(N) and LK51 (OO) which are supplied as a simple kit of parts and relatively easy to drill holes for these small LEDs. Before fitting the LEDs solder on your wires - we suggest you fit thin gauge wire such as 'Kynar' wire or enamelled copper wire (which can be bought on reels or salvaged from an old motor etc) as these can easily be hidden behind the models light post.
The lens diameter of the LEDs supplied is 1.8mm, so a clearance hole of 1.8 - 2mm needs to be drilled where the LEDs will be fitted. Unlike traditional filament lamps, LEDs do not get hot and so can quite safely be glued or taped onto card or plastic models. 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.

The following accessories for the LFX1S are available from your Train-Tech Dealer or www.dcpexpress.com

LED1: Level Crossing Barrier LED set (3 sets of 3)
Set of 6 more subminiature red and 3 subminiature amber LEDs as supplied with the LFX1S

LC1: Solderless LED clips
Pack of 5 clips with 200mm of wire which enable LEDs to be connected away from the LFX without soldering.

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 DCP 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.

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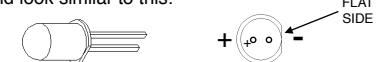
The best indication of polarity on this type of LED is to find the flat side on the round base. This side usually indicates the negative (Cathode) connection and the other wire the positive (Anode) connection to power.

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.

Track Tester

DC & DCC · **OO HO** · **N**

Only £5

- Quickly tests track for power faults
- Low cost and easy to use
- Works on N, TT, OO or HO Track
- Indicates the DC polarity, or DCC, or a fault
- Small enough to check point frogs
TT1 Track Tester

Track not included

Buffer Lights

DC & DCC · **WIRE FREE** · **OO HO** · **N**

- Add realistic stop light to any siding
- Simply clips onto track – No wires!
- Fits next to most buffer stops & kits
- Or at platform end or free standing
- On DCC both lights are on constantly
- On DC one light is on & varies with speed
BL1 OO/HO gauge Buffer Light
BL2 N gauge Buffer Light

Track and buffer stop not included

One-Touch DCC™ Digital Signals

DCC · **WIRE FREE** · **OO HO**

DS6/7

- Signal with DCC decoder built into base
- Can just plug direct into track – no wires!
- Easy to fit and use – no CV programming!
- Can sync to other signals & points
DS1 Home: Red Ⓡ and Green Ⓖ
DS2 Distant: Yellow Ⓨ and Green Ⓖ
DS3 Home Distant: Ⓡ Ⓨ Ⓖ
DS4 Distant: Ⓨ Ⓖ Ⓨ
DS5 Outer Distant: Ⓡ Ⓨ Ⓖ Ⓨ
DS5HS Outer Dist: Ⓡ Ⓨ Ⓖ Ⓨ (High Speed mainline)
DS6 Dual Head Home: Ⓡ Ⓖ
DS7 Dual Head Distant: Ⓨ Ⓖ
DS8 Stop-Caution: Red Ⓡ and Yellow Ⓨ

DS1/2

Track not included

One-Touch DCC™ Point Controllers

DCC · **OO HO** · **N** · **Z**

PC1

- Control points and uncouplers using DCC
- Easy to use – No CV programming!
- Work with most solenoid point motors
- Just connect 2 wires to nearby DCC rails
- Easy screw terminals – no soldering
- Built in CDU for efficient operation
- Can sync to other points and signals
PC1 DCC Single Point Controller
PC2 DCC Quad Points Controller

Point motor and track not included

PC2

LFX Lighting Effect Controllers

DC & DCC · **ANY GAUGE**

- Easily add lighting effects to your layout
- LEDs screw in – no resistors or soldering
- Powered by 9v battery, 12-16V DC or DCC
- On DC the effect is on when powered
- On DCC the effect can be controlled
- Effects LEDs are included

LFX1 Level Crossing Barrier
Lights a sequence of steady amber and then flashing red LEDs as seen at crossings
LFX2 Home & Shop Lighting
Randomly controls lights in houses, shops, stations, pubs
LFX3 Traffic Lights
Controls one pair of timed traffic lights (TL1 Traffic light kit also available)

LFX4 Log or Camp Fires
A realistic fire effect using amber, yellow, red LEDs
LFX5 Welding effects
Realistic electric arc welding effects with bright LEDs
LFX6 Quad LED Lighting Controller (DCC Only)
Controls 4 sets of LEDs on and off using separate DCC addresses. Directly powers 4 LEDs per output
LFX7 Flashing effects
Simulates four flashing effects ; belisha beacons, emergency services, camera flash, lightning, sparks

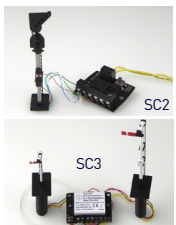## Self Assembly Colour Light Signal Kits

DC & DCC · **OO HO**

Every kit includes the signal head, aluminium post and base plus detailing kit inc ladder, handrails

- Low cost – adapt to your own design
- Control by switches or a signal controller
- LEDs are prefitted to a narrow PCB

General purpose signal kit - no LEDs:
SK1 Basic kit 2/3/4 aspect & dual heads
Signal kits with LEDs and resistors
SK2 Home 2 aspect kit Red Ⓡ Green Ⓖ
SK3 Distant 2 aspect kit Ⓨ Ⓖ
SK4 Home Distant 3 aspect kit Ⓡ Ⓨ Ⓖ
SK5 Distant 3 aspect kit Ⓨ Ⓖ Ⓨ
SK6 Outer Distant 4 aspect Ⓡ Ⓨ Ⓖ Ⓨ
SK7 Dual head Home 2 aspect Ⓡ Ⓖ
SK8 Dual head Distant 2 aspect Ⓨ Ⓖ

One-Touch DCC™ Signal Controllers

DCC · **ANY GAUGE**

- Control LED & Semaphore signals by DCC
- Easy to set up & use –No CV programming!
- Easy screw terminals – no soldering
- Can sync to other points & signals

SC2

SC1 Dual 2 aspect colour light signals controller
Controls one or two 2 aspect colour light signals.
SC2 3 or 4 aspect or 2 aspect + route signal control
Controls one 3 aspect or one 4 aspect or one 2 aspect + route.
SC3 Dual Dapol OO/N Sempahore signal controller
Controls one or two standard OO or N Dapol motorised semaphore signals by DCC. Signals connect direct to the SC3 - no modifications or power supply needed.

SC3

Signals not included

0114

Automatic Coach Lighting

DC & DCC · **Auto** · **WIRE FREE** · **OO HO**

- Easy to fit in seconds - no wiring!
- No switch - senses motion & turns on!
- Turns off automatically 4 minutes after stopping
- No pickups **so works on regular DC & DCC**
- Traditional warm white or modern cool white
- Also with tail light, sparks or door light effect
- Lights stay bright & constant with no flickering
- Fits most OO/HO coaches; strip is 220mm long

Rolling stock not included

Coach Lighting Strips (including LEDs and battery):
CL1 : Cool white for modern coaches with fluorescent or LED lighting
CL2 : Warm white for traditional coaches simulating oil lamps or bulbs
CL21 : Cool white plus modern flashing lantern LED tail light
CL22 : Warm white plus flickering flame lantern LED tail light
CL23 : Cool white plus bright electric spark arc effect LEDs
CL24 : Cool white plus amber door lights which light after train stops

Automatic Tail, Firebox & Loco Lights

DC & DCC · **Auto** · **WIRE FREE** · **ANY GAUGE**

- No switch - senses motion & turns on!
- Turns off automatically 4 minutes after stop
- No pickup, wires or soldering - LED plugs in
- Fit in brake vans, coaches, loco, wagons etc
- Runs for ages on small button battery

Fits in N scale upwards

Rolling stock not included

Single output modules:	Dual output modules:
AL1 Flashing Tail light	**AL21 Flashing + constant**
AL2 Flame Tail / Firebox	**AL22 Flame + constant**
AL3 Constant lighting	**AL23 Sparkarc + constant**
LEDs & battery included	**AL24 Doors open + constant**

Bring your railway to life

SEE WWW.TRAIN-TECH.COM OR CONTACT DCP FOR FREE COLOUR BROCHURE

Train-Tech
Model Technology Made Easy

LFX1 S Level Crossing
Sound and Lights effects set

- Add realistic sound & lights to a level crossing
- Lights amber LED then flashes two red LEDs
- Realistic warbler warning sound with lights on
- Works on both regular DC and DCC controllers
- On DC the effect runs when switched on
- On DCC the effect runs by accessory command
- Can be synced to other DCC signals, points etc

www.Train-Tech.com