

### 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

### SH2 Signal Head 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

### SH2: 2 aspect Red • Green Home colour light signal head

- OO Signal head with prefitted LED lights
- Ideal for Gantries, Platforms, Posts etc
- Soldering is required for wiring to head
- Kit includes wire, resistors, instructions

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

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# SH2 Home Red-Green self assembly signal head kit

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

This Self assembly signal head kit contains an LED Light circuit board, head casing and resistor to make a Colour Light signal designed for use on OO/HO gauge model railways - please read these instructions before assembly and connecting to power.

### 1 Introduction

#### Contents

- 1 Signal Head LED PCB (printed circuit board)
- 1 2 aspect front light head
- 1 2 aspect rear cover for standard signal
- 1 2 aspect rear cover with feather / theatre slot
- 1 1K $\Omega$  resistor (Colour:Black Brown Red Gold)
- 3 Fine coloured wires for the connections
- 1 Instruction leaflet

#### Recommended tools (not included)

- Fine tip soldering iron: 18 - 25 watt, solder
- Sharp craft knife or cutters to trim mouldings
- Adhesives to suit plastic (eg liquid poly)
- Magnifier

Thank you for purchasing one of our Colour Light Signal heads. They are ideal for mounting on gantries or on your own signal posts and will match the standard Train-Tech signals which are available as kits, DCC fitted or Automatic Sensor signals.

You can either control this signal head using conventional lever frame or toggle type switches or connect it to a DCC decoder to control it from a digital controller or computer.

Or you can connect it to the SC100 Automatic signal controller which has a built in sensor and controls an LED signal wired to it, either on its own or as part of a block signal system.

Full details in the free Train-Tech brochure or online at [www.train-tech.com](http://www.train-tech.com).

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

#### Construction advice

The plastic front and back covers in this kit is made of a blend of mainly ABS which is slightly more forgiving and less brittle than the polystyrene often used for plastic kits. However it can be glued together using most general model kit adhesives such as Humbrol or Revell Liquid Poly - be sure to follow instructions for application and safety supplied with the adhesive.

You can use cyanoacrylate 'superglue' but be careful to ensure it has plenty of air while it cures otherwise it can leave a cloudy white 'plume' around the joints.

#### Mounting the signal head

The signal head can be fixed to a gantry, post, bridge etc using a suitable adhesive.

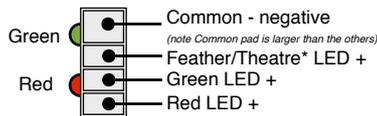
Before fixing the head in position, plan where you can go to run and conceal the connecting wires - it may help to paint the wires before fitting to help disguise them in areas which can be seen.

### 2 Wiring the signal head

The LEDs are presoldered to the head PCB and connection to them is made via the solder 'pads' on the back of the PCB. Your signal head is supplied with fine coloured wires which we suggest using for the connections, however be careful to only apply a small amount of solder to the joint to keep it slim, otherwise the rear cover may not fit flush.

**Important:** Make the solder joints quickly as excessive heat can damage or remove the LEDs

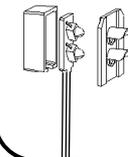
#### 2 aspect head rear PCB connections



The large pad is the common negative (-) terminal and the other pads are terminals for the colours. \*There is also an extra pad for an optional feather or theatre which may be fitted to the signal head. This should be soldered to the larger common pad on the back and the small square solder pad on the LED side - be careful NOT to touch the nearby LED connection! (Train-Tech Part No LK1, RK1, TK1)

#### Fitting the casing around the head

Before gluing the front and rear head cases together around the PCB, decide which way up the signal is going to be mounted so that you fit the cable exit slot of the rear cover in the right position. If you have also fitted a theatre or feather route indicator use the rear casing with slots at both ends.



#### Wiring advice

Electrical connection to the signal is via copper 'pads' on the back of the LED signal head PCB. These pads are made from thin copper bonded to the fibreglass and then 'tinned' to ensure reliable and easy connection.

The best method of connection is by soldering wires onto these pads using a small tip soldering iron of 18-25 watts, taking care not to apply heat for too long. Note that if you pre-tin the wires before soldering them onto the pads you will find that the solder will flow much more easily to make a secure joint quickly. Make sure you only put a small amount of solder on the pads as the rear cover of the signal head comes quite close.

Finally do not forget to fit a resistor in series with the signal head as shown before powering up your new signal!

#### Location board labels

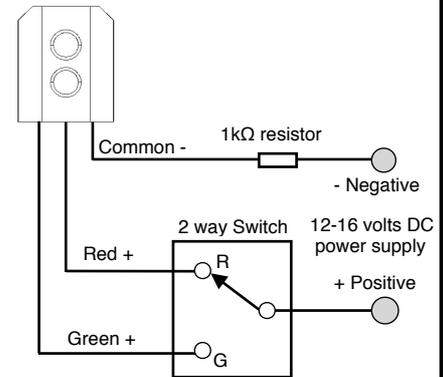
These legends can be cut out and located near to the signal. If using DCC to control your signal head we suggest you use the address you have programmed into your signal decoder which will make the signal easier to identify and operate.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
AD	CA	DA	ES	EN	GE	GY	MY	PN	NW
ABC	DEF	GHI	JKL	MNO	PQR	STU	VWX	YZ	
ABC	DEF	GHI	JKL	MNO	PQR	STU	VWX	YZ	

### 3 Controlling the signal

Before connecting the signal head to power, it is important to note that the LEDs are only rated at low voltages of around 2 volts, so you *must* always use a resistor in series with the signal head and 12-16 v supply unless using it with a Train-Tech Signal Controller with built in resistors.

#### Control from DC using a switch



Wiring suggestion for switch

#### Control from Signal Controllers

Signal heads can also be connected and controlled by DCC Signal Controllers like the Train-Tech SC1. The SC100 is an Automatic signal controller which has a built in train sensor and controls 2, 3 or 4 aspect LED colour light signal wired to it, either on its own or as part of a block signal system with other automatic signals.

#### Using LEDs with model railways

The lights used on this signal head are called LEDs. 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 very small amounts of power, so the current flowing through the LED must be limited and this is usually done by a resistor as supplied in this kit. On the usual 12-16 volts DC supply a railway modeller uses a 1k $\Omega$  (one thousand ohms) will limit the current to around 10-14mA (mA is thousandths of an amp) which is ideal for most LED's.

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.

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

#### Using Signals with Train-Tech DCC controllers

Train Tech offer various LED controllers including the SC1 and SC2 DCC signal controllers which allow signals such as this to quickly and easily connect to DCC layouts for control by Digital controller or computer. They are quick to connect needing no resistors or soldering and set up in seconds with no programming of CV codes.

As well as Signal 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.

See [www.train-tech.com](http://www.train-tech.com) for full details.