

# GK1/GK2 - Ground Position Light Signal kit - Red and White

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

This signal kit contains a Ground Position Light Signal kit designed for use on OO/HO gauge model railways - please read these instructions before assembly and connecting to power.

## 1 Introduction

**Contents**

- 1 Signal LED lights printed circuit board 'PCB'
- 1 Ground Position signal front and back cover
- 1 Mounting cap (two halves)
- 2 1KΩ resistor (Colour: Black Brown Red Gold)
- 1 Instruction leaflet

**Recommended tools** (not included)

- Plastic Adhesive
- Craft knife (for trimming 'flash' off mouldings)
- Soldering iron and solder for connections

Thank you for purchasing one of our Ground Position Light Signal (GPLS) kits. This is a White and Red light version - note GK1 and GK2 are now identical kits as we have combined both light combinations into the same signal head. There is also a White and Yellow light version GK3/GK4.

Below we have given a basic introduction to the use of Ground Position signals but more details can be found in signalling books and online.

In this kit we have utilised the latest LEDs for the lights but unlike most signal kits we have presoldered them onto narrow printed circuit boards which makes them easy to connect. You can either control this signal using conventional Lever frame or Toggle type switches or connect it to a DCC decoder to control it from a Digital controller or computer. Note that Train-Tech also offers another version of this signal (GS1/GS2) which has electronics built in with inputs for a Train-Tech track sensor to allow the signal to change automatically (powered from DC or DCC) and a decoder so that you can control it from a DCC controller.

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

## 2 Assembling and mounting the signal

The exploded diagram below shows you the components which make up the signal. It is easy to assemble, with just the front and back covers needing to be fixed together over the head. Firstly, check and trim the mouldings for any 'flash'. There are tiny LED lights mounted on the signal head circuit board which you must not damage. **We strongly recommend** that you apply a tiny amount of plastic kit glue to the edge of the back cover **first**, lay it on a flat surface, then fit the signal light head into the rear cover (so that no glue gets near the LED lights). Finally align the front cover onto the rear cover & hold in position until glue sets.

## 3 Connecting the signal

The LED lights are presoldered onto a PCB which has large contacts at the bottom to connect your wires to. You can control it using a conventional switch or a DCC decoder (eg Train-Tech SC1). We have wired the 4 LED lights to separate terminals so that you can wire them in whichever combination you wish, either as the original single red / dual white or current double red / dual white configurations - see below for more details.

**You MUST fit a resistor as shown below and power from a DC supply or DCC decoder or you will cause permanent damage to the LEDs** (Note Train-Tech DCC SC have resistors inside)

### Ground Position Light Signals & mounting

Position light signals enable a train to move into a section under caution, but the driver needs to consider that the line ahead may be occupied so they must drive at a speed enabling them to easily stop ahead of an obstruction. Ground position signals are commonly located around marshalling yards and sidings for shunting and are so called because they are mounted close to the ground. They are always lit and two diagonal white lights lit means that the driver can proceed with caution at a speed they are able to safely stop if needed:



Proceed with caution

Two horizontal red lights or a horizontal red & white light means stop & the driver may not pass.



Stop

There are two different Stop light configurations and both are valid. The red plus white version represents the original GPLS, where only one coloured light is fitted behind a lens, whereas the current style has two red lights but the bottom right light has the ability to display red or white. Full details shown in signalling books or online.

This kit is designed so that you can wire your signal to show either style. If you decide to show the original style then wire the bottom right white LED to be powered all of the time using the extra resistor supplied, then switch between the top white and bottom left red LED. Shunt ahead signals have white & yellow lights and these are also available from Train-Tech.

### Mounting the signal on your baseboard

You can drill a 10mm hole in your baseboard to accept the mounting cap, or alternatively you can make a smaller hole and use filler to hold in place.

### Wiring advice

Electrical connection to the signal is via metal 'pads' at the bottom of the LED light 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 by pre-tinning wires before soldering onto the pads you will find that the solder will flow much more easily to make a secure joint quickly. If you prefer not to solder then you can wrap thin stranded wire around the pads by stripping off insulation, twisting strands tightly together and wrapping them round the signal base and tightly binding insulation tape around each joint. However soldering is the preferred and most reliable method. Whichever method you use take care not to let the wires short circuit to each other and do not forget to fit a resistor in series as shown before powering up your new signal!

As well as Signal Controllers, Train-Tech also makes a range of other control, lighting and sound effects. Ask for brochure or see [www.train-tech.com](http://www.train-tech.com)

### Signal Identification Plates

Every signal on the real railway has an identification plate and the legends below can be cut out and glued onto a small piece of plastic or card and mounted just below the signal head. The mounting cap enables the signal head to be mounted in two positions and the higher position allows space for the location board. If using DCC 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
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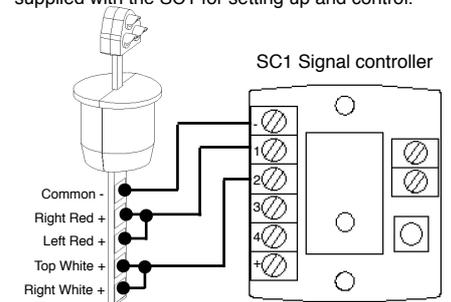
### Using Signals with Train-Tech DCC controllers

Train Tech offer various LED controllers including the SC 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.

Note that Train-Tech also offer Ground signals fully assembled with built in DCC decoders, GS1 & GS2

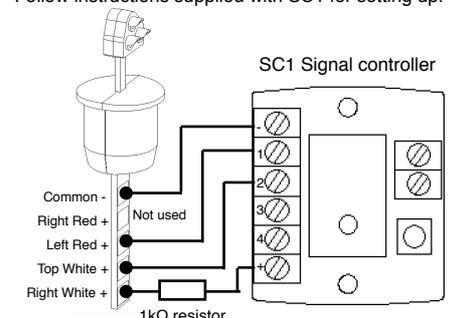
### Wiring to SC1 - Double Red or Double White

This wiring enables DCC control between double white or double red lights. Follow instructions supplied with the SC1 for setting up and control.



### Wiring to SC1 DCC - White & single red or white

This wiring is DCC control between single top white or single left red with a constantly lit right white. Follow instructions supplied with SC1 for setting up.



**Track Tester** DC & DCC OO HO N

**Only £5**



Track not included

- 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

**Buffer Lights** DC & DCC WIRE FREE OO HO N

**Only £5**



Track and buffer stop not included

- 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

**DCC Fitted Digital Signals** DCC WIRE FREE OO HO



- 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
- Available with Feathers & Theatres

**One-Touch DCC™ Point Controllers** DCC OO HO N Z



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

**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, 9-16V DC or DCC
- On DC the effect is on when powered
- On DCC the effect can be controlled
- Effects LEDs are included

**Level Crossing - Ready Assembled** DC & DCC OO HO N



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

**Track Sensor** DC & DCC OO HO



- Change Semaphore Signals automatically (with SC300)
- Trigger Level crossing when train approaches
- Power from 12-16v smooth DC or DCC
- Links to a Mimic Switch to show occupancy
- Links to a Sensor Signal to change block section

**Automatic Tail, Firebox & Loco Lights** DC & DCC Auto WIRE FREE ANY GAUGE

Rolling stock not included



Fits in N scale upwards

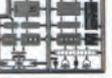
- No switch - senses motion & turns on!
- Turns off automatically 4 minutes after stop
- No pickup, wires or soldering - LED plugs in
- Fit in brake vans, coaches, loco, wagons etc
- Runs for ages on small button battery
- LEDs and battery included

**Mimic Switches & Lights** DC & DCC ANY GAUGE



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

**Signal Kits** DC & DCC OO HO



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

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

**GK1 / 2 - Signal Kit**

**One-Touch DCC™ Signal Controllers** DCC ANY GAUGE

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

**Automatic Sensor Signals** DC & DCC WIRE FREE OO HO



- Detects train and changes signal automatically
- Use on its own & signal changes back to green after time
- Or link to other SS for automatic block signalling
- Can be used on both DC & DCC
- Also available with Feathers & Theatres

**Automatic Coach Lighting** DC & DCC Auto WIRE FREE OO HO



Rolling stock not included

- 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 and maybe cut down

**SFX Sounds for Trains** WIRE FREE DC & DCC Auto



- Easy low cost sound that works on *any* railway
- **Easy to fit in seconds** - no connections
- No switch - senses motion & turns on!
- No pickups **so works on regular DC & DCC**
- Self contained - built in speaker & battery (included)
- Tiny capsule: 25mm x 20mm x 12mm approx
- Fit capsule into loco, tender, wagon, coach...
- **Real recorded sounds** - Steam & Diesel etc

**Smart Lights - Easy to fit Lighting Effects** DC & DCC ANY GAUGE



- Small - Just 1cm x 1cm x 0.3cm with 2 wire connections
- Power by standard 9-16v DC or a 9v battery
- Or by DCC which can also control some effects
- Just connect and go - no setting up required
- Disco / Emergency / Real Fire / TV / Welding / Random effects

**Traffic Lights - Ready Assembled** DC & DCC OO HO



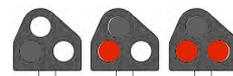
- Power from 9-16v DC, DCC or 9v battery - 2 Wire connection
- Realistic standard UK sequence and timing varies randomly
- Fully assembled - drill hole in baseboard & connect to power

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



**GK1 / 2 - Red and White Ground Position Light Signal Kit**

- Power & control using 9-16 Volts DC
- Or control by DCC via optional decoder (DCC fitted version GS1 also available)



(Note: GK1 & GK2 are now the same product)

**www.Train-Tech.com**

See our website, your local model shop or contact us for a free colour brochure  
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