SC2 - Signal Controller for a 3, 4 aspect or 2 aspect + route indicator LED signal using DCC

**Connections**

The SC2 is a Signal Controller designed to control a 3 or 4 aspect LED signal or a 2 aspect plus route indicator LED signal using DCC. **Switch off power before connecting!**

- **Connecting the SC2 to DCC**
  - Connect the SC2 DCC input terminals to nearby rails or the DCC controller output.

- **Connecting the signal LEDs**
  - There are a wide range of LED Colour Light signals available and they are usually supplied with LEDs already preconnected. LEDs are polarised and so only light when connected one way. Either the + or - pin of every LED needs to be connected together as a 'common' wire connection - this is often prewired by the signal manufacturer and the instructions for the signal should show the polarity connections.
  - The SC2 works with either common + or - connected LEDs, just connect the common wire to + or - as marked under the SC2.
  - The example below shows common negative.

  Note: that you should NOT use resistors with the LEDs as they are built into the controller.

**Example 1:**

3 or 4 aspect signal

**Example 2:**

2 aspect signal + route indicator

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**Setting the Signal Address**

You need to choose a DCC address for your signal. Because a DCC address can only have 2 or 4 directions or 'states' you must check the multi aspect signal needs two addresses and so will use the address you choose and the next consecutive address, so ensure both addresses are unused for other accessories before programming.

- **Set up your controller to control DCC accessories** (your controllers instructions will show how to do this) and set your controller to the address you choose for this signal.

To program the signal controller address briefly press the 'Learn' button until the signal lights flash, then send either the 'D' or 'direction' command from your controller which you want to signal green. The signal will stop flashing, light up green and your signal is now programmed to the address you chose and also the next consecutive address.

**Troubleshooting**

Step 2 above is the 'One Touch' DCC stage which programs the Signal address into the controller.

If it does not work:

- Check that one of the signal LEDs is lit - if not and DCC locos etc run correctly check the connections between your DCC Controller and between the LEDs and the controller.

- If a Signal LED is lit double check that your DCC controller is in addressing mode - note that these are completely different to Locomotive addresses and should be explained in your controller instructions. If not check carefully that your controller will control DCC accessories - most do but some of the low cost starter controllers such as the Bachmann E-Z command and Prolong Express models do not.

- Try fitting the signal to another section of track (or use pieces of wire to temporarily connect it to another track)

If these steps fail please contact your supplier or DCP for advice and Technical support.

**Note**

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

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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 powered 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 TrainTech FX or Signal LED controllers already have resistors built in so that LEDs can connect directly to the module without the need for any resistors.

TrainTech 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:

Flat side

The best indication of polarity on this type of LED is to find the flat side. 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 TrainTech products looks like this:

+ -

There are many LEDs on the market and it is good to experiment, but check manufacturer data for specific connection information as there are no real standards.
One-Touch DCC™ Digital Signals

- 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, DS6 Outer Dist (High Speed mainline)
DS7 Dual Head Home, DS8 Dual Head Distant
DS9 Stop - Caution: Red and Yellow

One-Touch DCC™ Point Controllers

- Control points and uncouplings 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 Dual Points Controller
Point motor and track not included

LFX Lighting Effect Controllers

- Add lighting effects to your layout
- LEDs screw in – no resistors or soldering
- Powered by either 12-16V DC or DCC:
  - LED plugs in
  - Runs for ages on small button battery

LFX1 shows with supplied LEDs fitted to a Peco barrier kit - not included
LFX1 Level Crossing Barrier
Controls Amber and Red LED’s as seen at level crossings. Can power up to 4 sets of steady amber and flashing red LEDs

LFX2 Home & Shop Lighting
Randomly controls lights in houses, shops, stations, pubs
LFX2 Traffic Lights
Controls one pair of timed traffic lights. (Tip: You can adapt one of our Signal kits to make traffic lights)
LFX3 Log or Camp Fires
Controls amber, yellow, red LEDs for a realistic fire effect
LFX5 Welding effects
Realistic electric arc welding effects with bright LEDs
LFX4 Quad LED Lighting Controller
Controls 4 sets of LEDs in an off using separate DCC addresses. Directly powers 4 LEDs per output (DCC only)

SC2 DCC Signal Controller
3 or 4 aspect or 2 aspect with route

- Control your Signals by DCC controller or PC
- Easy One-Touch DCC™ - no CV programming!
- Works with most LED colour light signals
- Just 2 wires to nearest track - reduces wiring
- Connect Signal LEDs direct - no resistors!
- LEDs fade as they change - just like real thing!
- Can synchronise to other Signals and points

Track Tester

- 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

One-Touch DCC™ Signalling Controls

- 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

SC1 Dual 2 aspect colour light signal controller
Controls one or two 2 aspect colour light signals. Compatible with Train-Tech SK2, SK3, SK7, SK8 and most other manufacturer’s LED 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 signal. Compatible with Train-Tech SK4, SK5, SK6 and most other manufacturer’s LED signals

SC3 Dual Dapol OO/N Semaphore 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.

Self Assembly Colour Light Signal Kits

- Every kit includes the head, post and base plus detailing kit inc ladder, handrails, etc
- Aluminium ‘post’ included with each kit
- Low cost – adapt to your own design
- Control by switches or a signal controller
- General purpose signal kit:
  - SK1 Basic kit 2/3/4 aspect & dual heads - no LEDs
  - SK2 Home 2 aspect kit with Red, Green LEDs
  - SK3 Distant 2 aspect kit with LEDs
  - SK4 Home Distant 3 aspect kit with LEDs
  - SK5 Distant 3 aspect kit with LEDs
  - SK6 Outer Distant 4 aspect kit with LEDs
  - SK7 Dual Head Home 2 aspect with LEDs
  - SK8 Dual Head Distant 2 aspect with LEDs

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Model Technology Made Easy

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