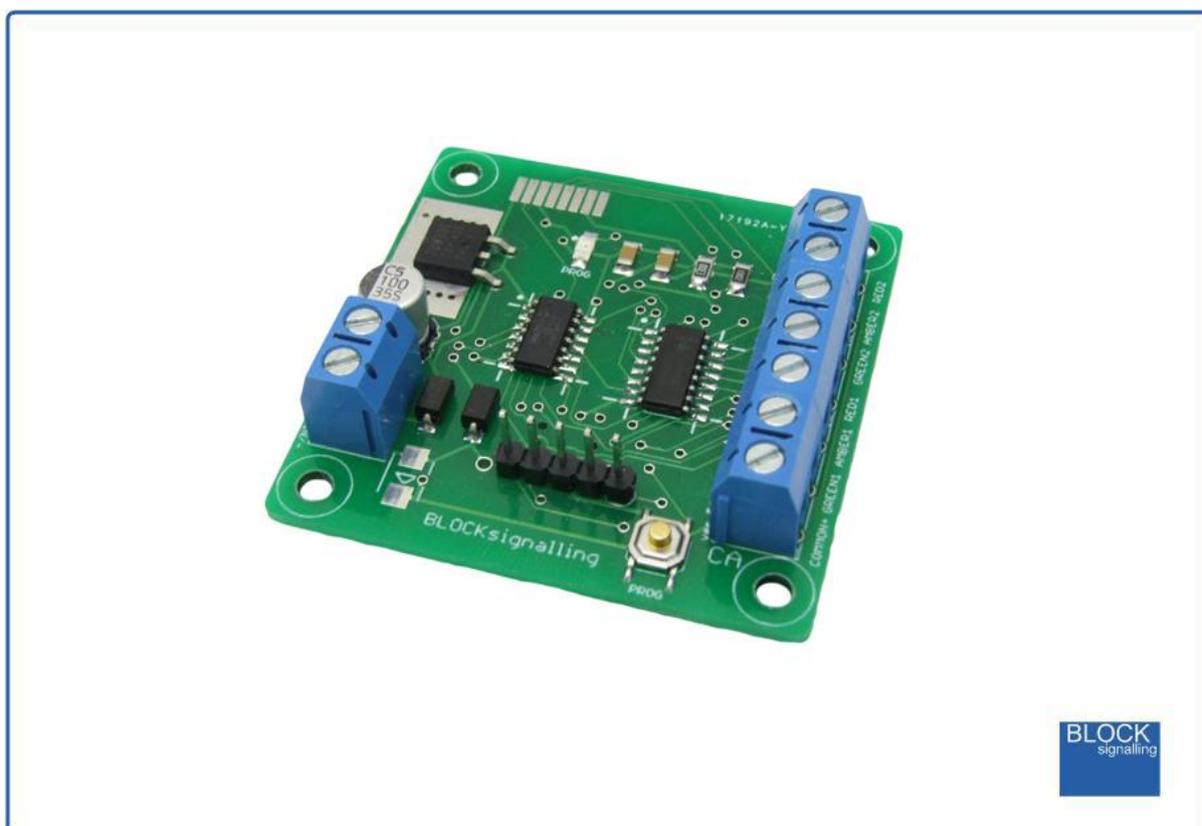


SEQUENCE TIMER FOR LED EFFECTS SEQ1



Programmable Sequence Controller for Led Effects

- Easy to wire and operate
- Five outputs with independent timings
- Can connect to a wide variety of supply voltages for easy powering
- Each output can supply up to 100mA to power led effects
- Separate permanently on output for permanently running effects
- Timings and other settings can be adjusted if required

The Sequence Controller is designed to operate a number of model railway scenic features at timed intervals to provide a more random and so realistic operation.

There are five separate outputs which are switched individually. Please see below for default timings.

One or more accessories can be connected to each channel and they will then switch on together.

Channel 1 is permanently on, so the module can be used to reduce the power supply voltage to feed effects which would normally be battery powered.

The output voltage is 3.5V and can power effects which would normally be supplied by two or three AA cells, or by two or three coin cells.

The timings for each channel are slightly randomised, so that channels will not change at exactly the same time.

Sequences

The module has a number of built-in presets, which can be used to define the timings for all five output channels in one go.

It is also possible to individually change the timings for any channel.

As supplied, Preset A is loaded:

channel 6: ON 10 seconds, OFF 10 seconds

channel 5: ON 5 seconds, OFF 20 seconds

channel 4: ON 5 seconds, OFF 10 seconds

channel 3: ON 5 seconds, OFF 5 seconds

channel 2: ON 3 seconds, OFF 5 seconds

channel 1: permanently ON

The following alternative presets can be selected:

Preset B

channel 6: ON 5 seconds, OFF 10 seconds

channel 5: ON 5 seconds, OFF 5 seconds

channel 4: ON 1 seconds, OFF 2 seconds

channel 3: ON 1 seconds, OFF 2 seconds

channel 2: ON 1 seconds, OFF 2 seconds

channel 1: permanently ON

Preset C

channel 6: ON 5 seconds, OFF 40 seconds
channel 5: ON 5 seconds, OFF 35 seconds
channel 4: ON 5 seconds, OFF 30 seconds
channel 3: ON 5 seconds, OFF 25 seconds
channel 2: ON 5 seconds, OFF 20 seconds
channel 1: permanently ON

Preset D

channel 6: ON 5 seconds, OFF 240 seconds
channel 5: ON 5 seconds, OFF 210 seconds
channel 4: ON 5 seconds, OFF 180 seconds
channel 3: ON 5 seconds, OFF 150 seconds
channel 2: ON 5 seconds, OFF 120 seconds
channel 1: permanently ON

The timings for each channel can be changed separately if required (see Programming section below).

Power Supply

The module operates from AC, DC or DCC (track bus) supplies.

You can use a DC power supply between 12V and 25V DC, or any AC power supply between 12V and 16V AC.

If using DCC, the feed can be between 12V and 25V, which covers all normal DCC layouts.

Where a choice is available, a 12V DC supply is recommended.

Please check the wiring carefully before turning on the power to prevent damage to the module.

Testing the Outputs

If the push button on the module is pressed, this starts a test sequence.

The led on the module lights.

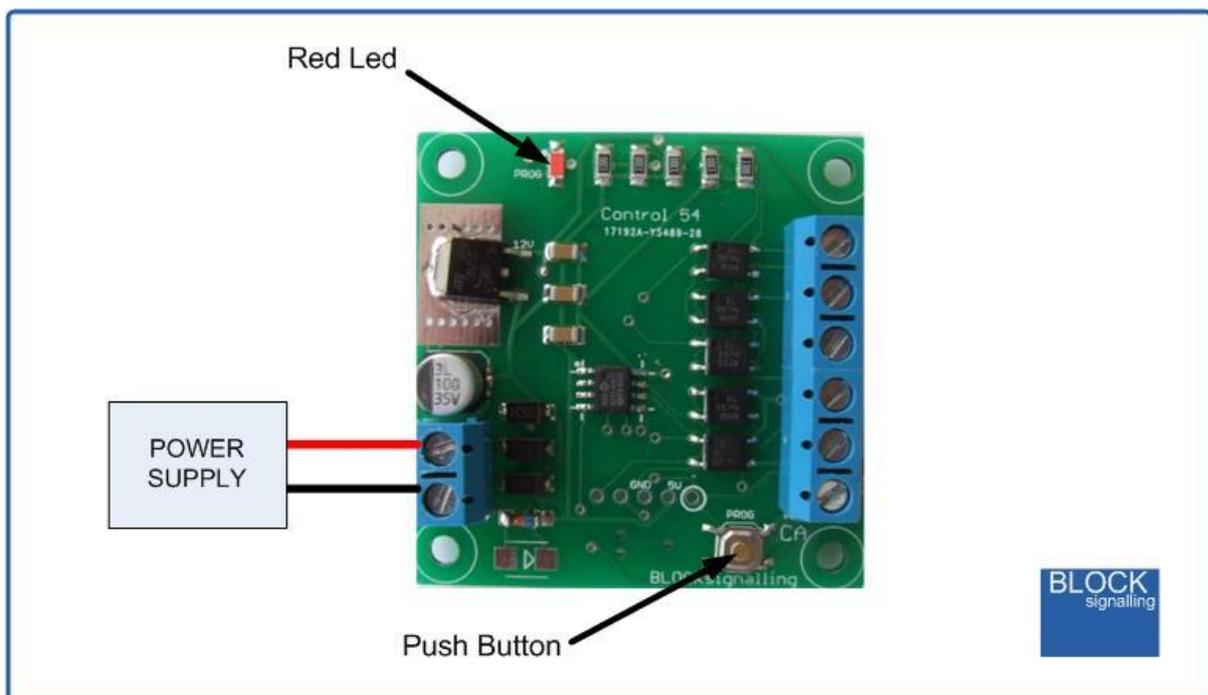
Then each output is switched on for 5 seconds starting with channel 1.

After channel 6 is switched off, the module continues running its timing sequences from where it left off.

Programming Procedure

A number of settings can be changed by programming the module.

Programming is performed by holding down the Push Button when switching on the power.



For each setting there are two values to be stored (see later).

The red led on the PCB flashes at 1 second intervals. When the required number of flashes is seen the button is released to store the first value. At this point the led comes on for five seconds to confirm the value is stored.

The led then starts flashing again, and this time the button needs to be pressed to store the second value.

Once the two values to be stored have been entered, the led flashes 10 times rapidly, and the module starts operating.

Each value entered can range between 1 and 255. If more flashes are seen, or the programming is aborted by switching off, then the programming must be repeated.

If you make a mistake, there is a factory reset option which will reset any changes made.

Connecting the Module

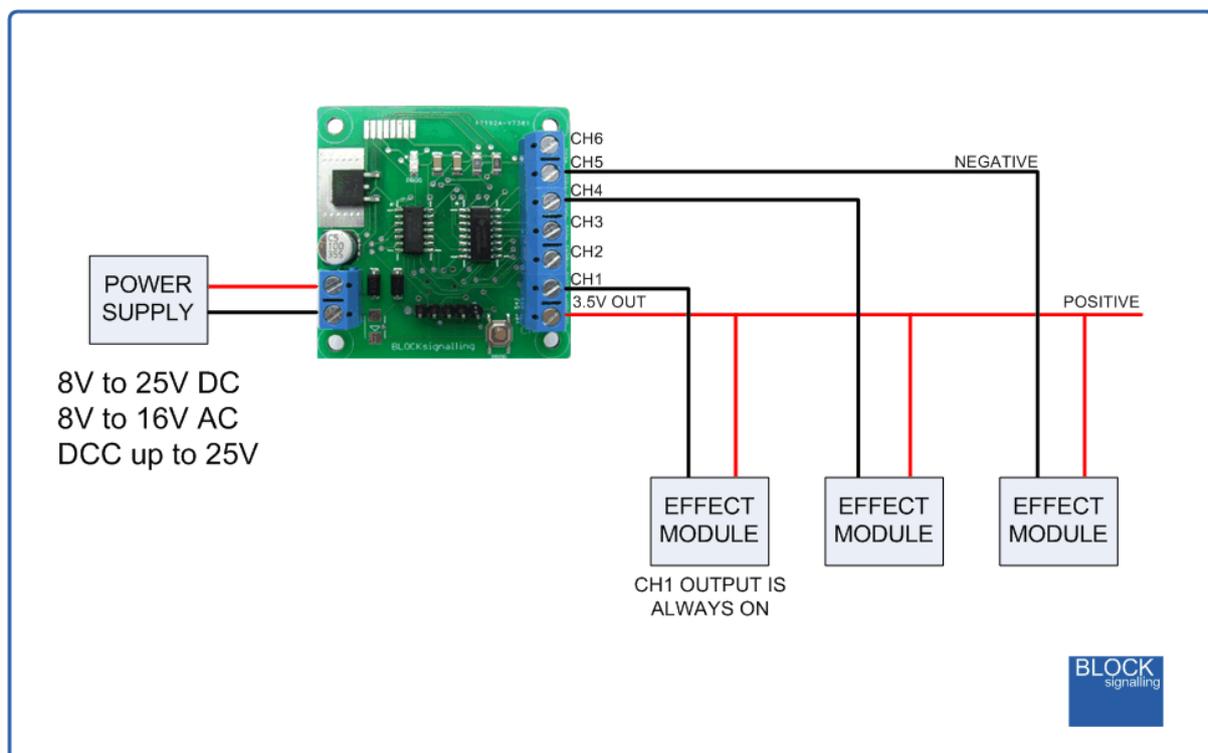
The diagram below shows the connection to individual effects modules.

More than one module can be connected to each output. Those modules will then operate together.

The maximum load for each output is 100mA.

The CH1 channel is permanently on.

The outputs are switched on the negative side, so each led effect has a positive feed permanently connected, and the negative feed is then switched by the module to turn the effect on.



Factory Reset

To reset the module back to factory settings, switch off the power to the module and hold down the Push Button. Apply the power and continue holding the push button until 1 flash of the led is seen. At this point, release the button. You will see a long flash of five seconds.

The led will begin flashing again. When you have seen one flash press the button. You will see a long flash of five seconds and then 10 rapid flashes. The reset procedure is then complete and the module will restart with factory settings, and run the default UK sequence. If you make a mistake programming, simply repeat the process.

Program Flow Diagram

The diagram below shows all the programming options.

Most values entered can range between 1 and 255 (see below for limits).

All settings are retained after the power is removed.

