

TRAFFIC LIGHTS CONTROLLER WITH FADING TLC2A



Programmable LED Traffic Lights Controller with Fading

- Easy to wire and operate
- Realistic operation with fading between aspects to simulate filament lamps
- Can connect to a wide variety of supply voltages for easy powering
- UK and Continental switching sequences catered for
- Built-in presets to get you up and running immediately
- No external resistors required as they are built in to the module
- Timings and other settings can be adjusted if required

The BLOCKsignalling TLC2A Traffic Light Controller has been designed for railway modellers to make it very quick and easy to add traffic light signals to their layouts.

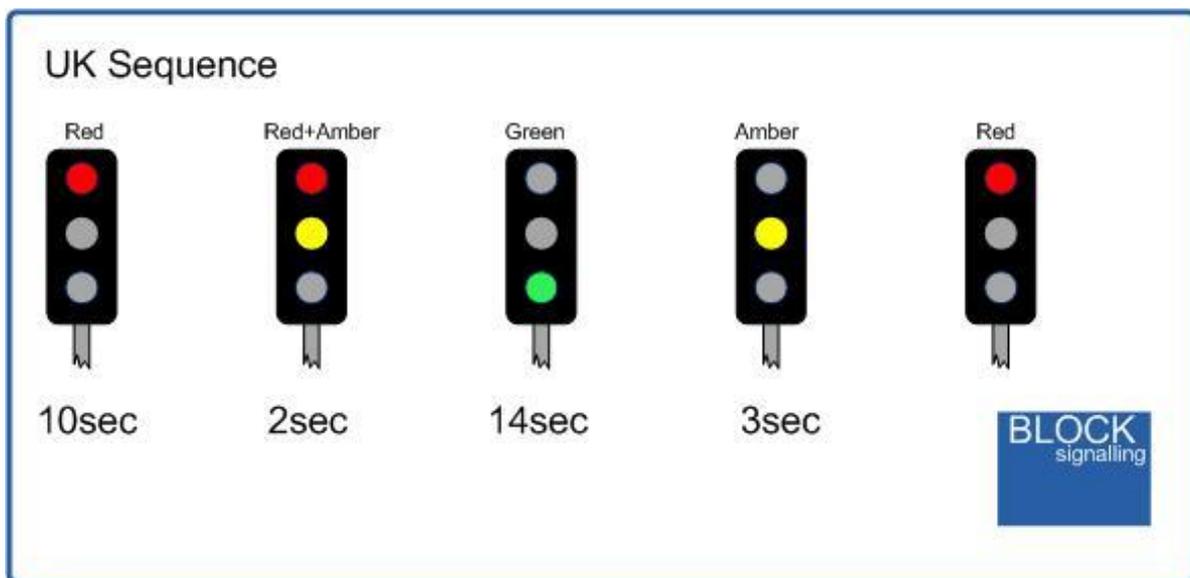
The unit can connect to AC, DC and DCC power supplies to make powering it as flexible as possible. Whichever voltage you connect, the module automatically reduces the supply voltage to provide a stable feed to the traffic lights. To simplify wiring, resistors are built-in, so it is not necessary to connect in or solder additional resistors to the traffic lights (any already installed can remain, but the leds may illuminate slightly dimmer).

The module is pre-programmed to replicate the standard UK sequence, but it is a simple matter to change this to follow a continental sequence to suit the model.

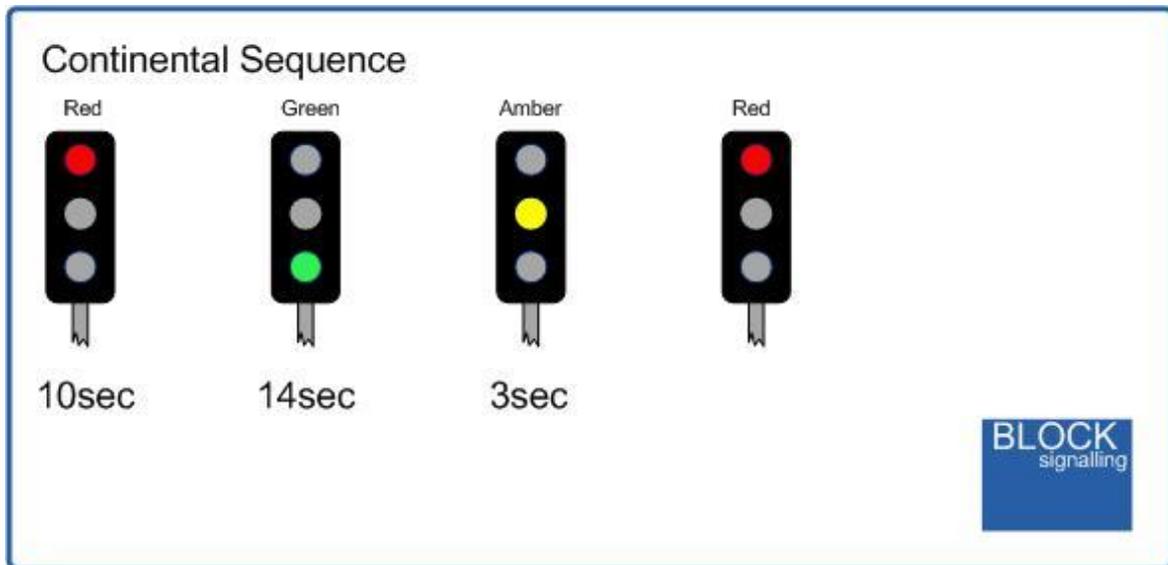
This model (TLC2A) is designed for traffic lights which have a common-anode connection, the positive (anodes) of each of the leds are connected together at each light. If you have traffic lights with common-cathode connections where the negative (cathodes) of the leds are wired together, then the complimentary BLOCKsignalling TLC1A should be used.

Sequences

The recommended UK sequence is shown below. The duration of each phase can be easily adjusted during the programming to suit (see later).



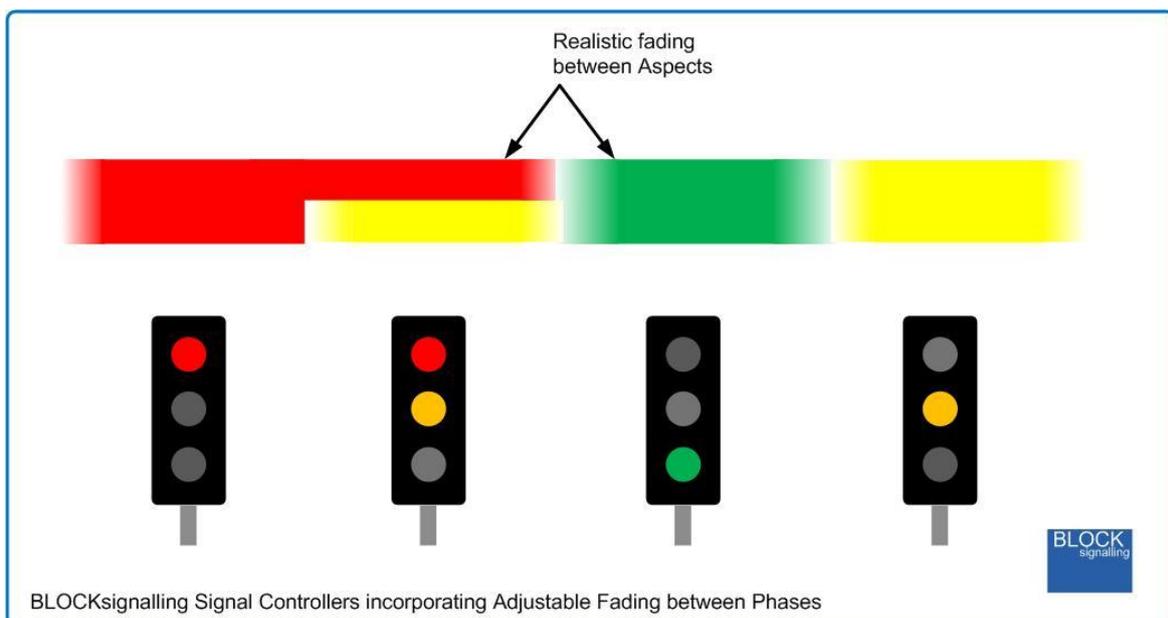
If you re-program the module to replicate the continental sequence, then the following timings are recommended:



Fading

We have spent many hours testing and adjusting settings to produce a fully realistic representation of how traffic lights (used to) operate.

Modern traffic lights almost exclusively use led technology, and so instantly switch between each colour. Up until about 10 years ago, filament lamps were used, and these turn-on and turn-off over a short time. The software in the BLOCKsignalling traffic light controllers provides a similar action when model led lights are connected. We have made the timings of the dimming adjustable if you wish to vary the settings, or you can turn the dimming off if you wish.



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.

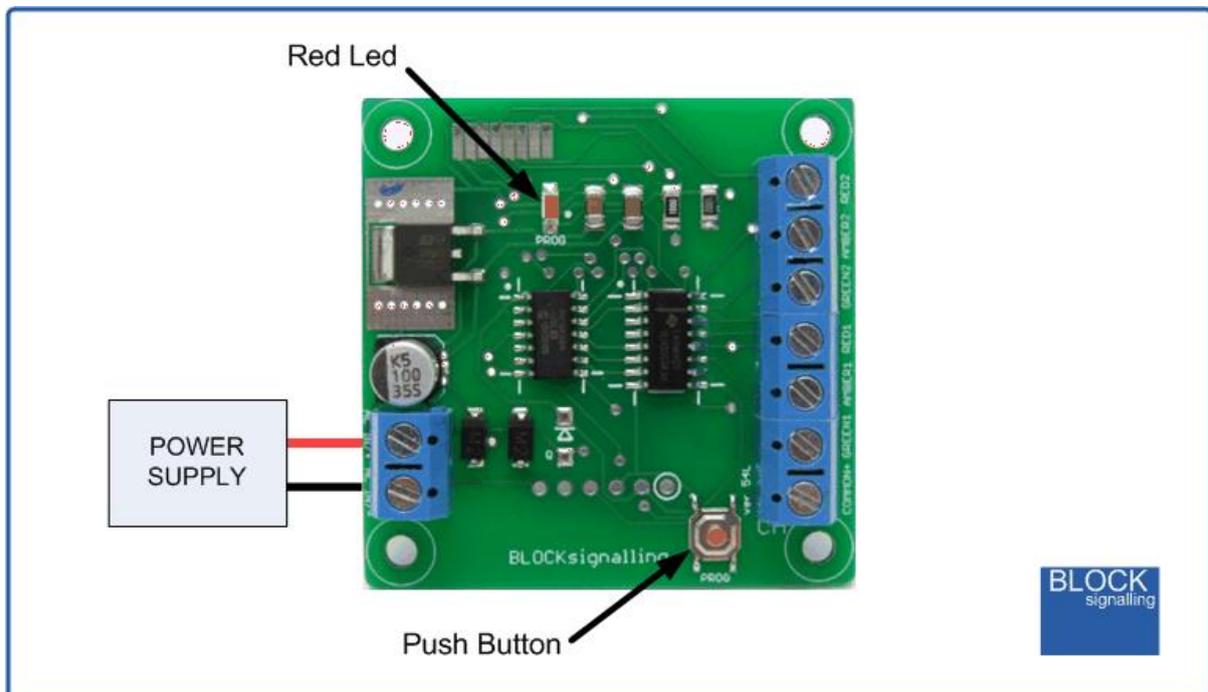
Where a choice is available, a 12V DC supply is recommended.

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

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.

Led Connection

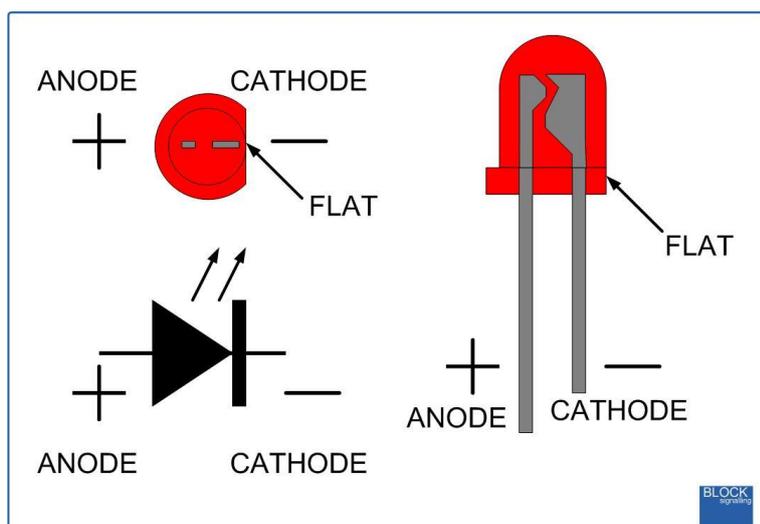
If you are wiring your own leds, then use the following information.

If you are using ready built traffic lights, then the TLC2A is designed to be connected to those with a common-anode connection and there are wiring diagrams for these further on.

When using leds it is important to connect them the correct way around to avoid damage to the leds.

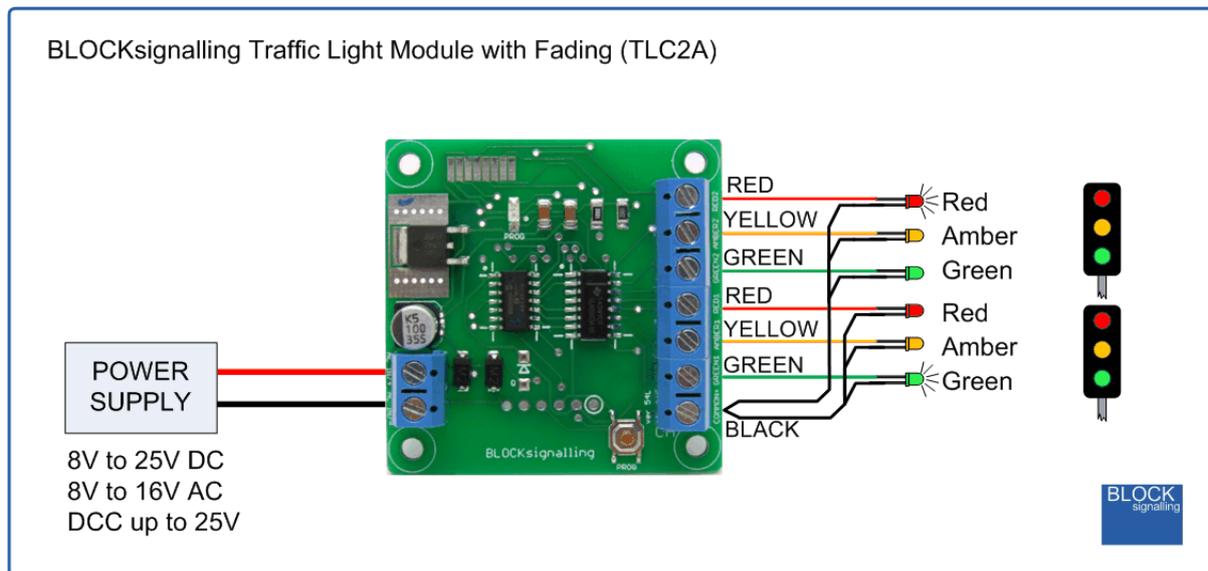
The negative lead (cathode) is identified by a flat on the side of the led body, and by having a shorter lead.

There is no need to wire resistors in circuit, as these are included on the module. Any already wired can remain if you wish.



Connecting the Module

The diagram below shows the connection to the individual traffic lights.



Ready built traffic lights often use a black wire for the common positive connection.

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.

Selecting UK Mode

To select this program, switch off the power to the module and hold down the Push Button. Apply the power and continue holding the push button until 2 flashes of the led are 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 2 flashes press the button. You will see a long flash of five seconds and then 10 rapid flashes. The programming is then complete and the will start running the program. If you make a mistake programming, simply repeat the process.

The sequence will now run, with each led on for 2 seconds. You can change the timings by using the procedure below.

Selecting Continental Mode

To select this program, switch off the power to the module and hold down the Push Button. Apply the power and continue holding the push button until 2 flashes of the led are 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 3 flashes press the button. You will see a long flash of five seconds and then 10 rapid flashes. The programming is then complete and the will start running the program. If you make a mistake programming, simply repeat the process.

The sequence will now run, with each led on for 2 seconds. You can change the timings by using the procedure below.

Adjusting the Timing for each Phase

This module has a number of preset built-in, to allow you to quickly customise the timings to suit.

The default UK mode has very short timings to allow you to quickly see if your traffic lights are operating correctly.

Program 2 – Default UK mode as supplied
red 2s, red & amber 2s, green 2s, amber 2s

Program 3 – Continental mode
red 2s, green 2s, amber 2s

Program 4 – UK Short to simulate filament lamps with the following timings:
red 10s, red & amber 2s, green 14s, amber 3s.

Program 5 – Continental Short to simulate filament lamps with the following timings:
red 10s, green 14s, amber 3s.

Program 6 – UK Long to simulate led lamps with the following timings:
red 10s, red & amber 2s, green 14s, amber 3s.

Program 7 – Continental Long to simulate led lamps with the following timings:
red 10s, green 14s, amber 3s.

To select the required program, switch off the power to the module and hold down the Push Button. Apply the power and continue holding the push button until 2 flashes of the led are 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 the number of flashes representing the program you want to select, press the button. You will see a long flash of five seconds and then 10 rapid flashes. The programming is then complete and the will start running the program. If you make a mistake programming, simply repeat the process.

Changing Individual Settings

To individually change the timing of each phase to suit, first refer to the programming diagram below to identify the individual parameter to change.

Each timing parameter can be set between 1 and 255 seconds.

Program Flow Diagram

The diagram below shows all the programming options.

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

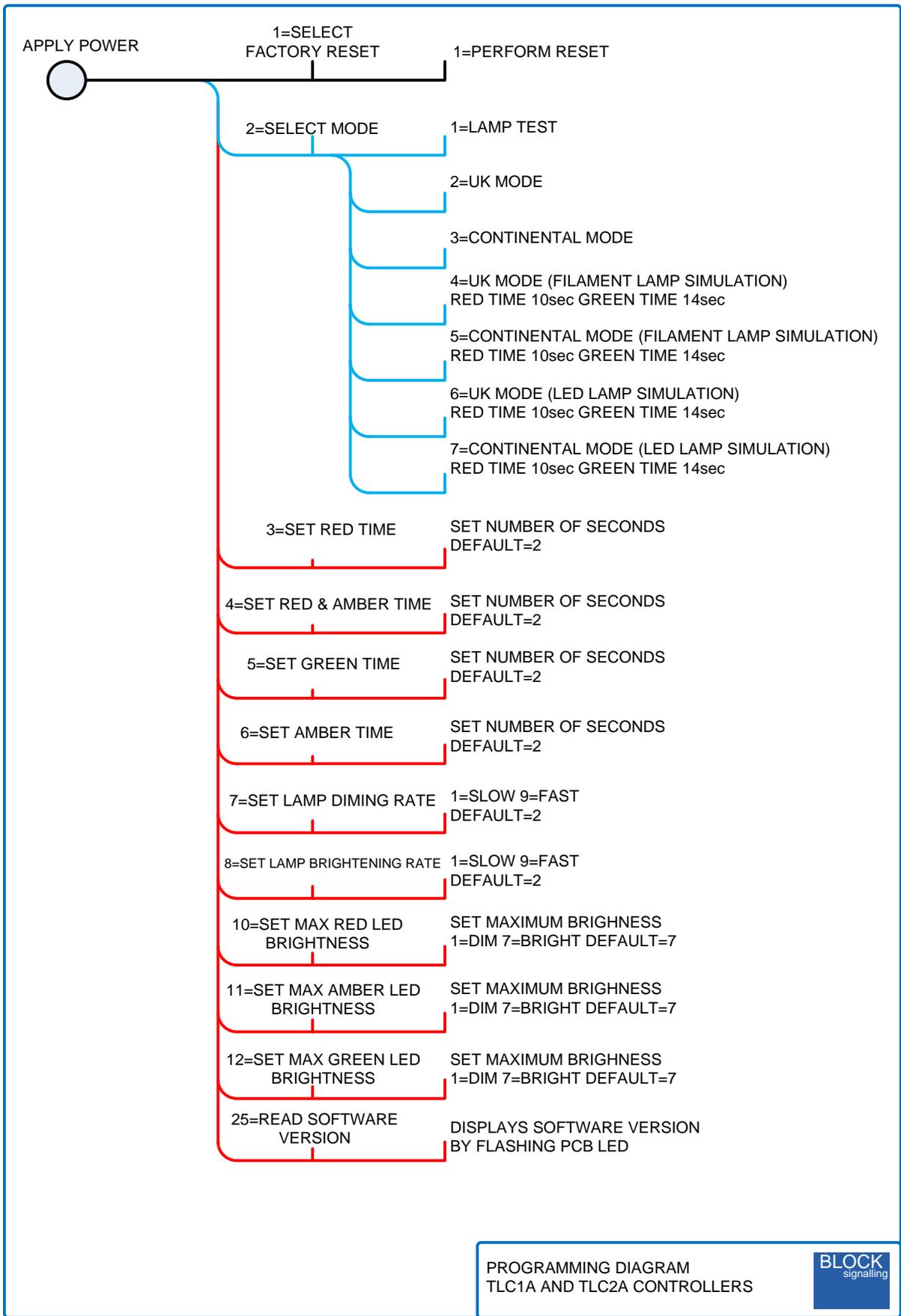
The red led on the PCB flashes at 1 second intervals. When the required number of flashes is seen (see later for the diagram for the possible choices) the button is released to store the first value. At this point the led comes on for five seconds to confirm the value is stored.

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.

Most values entered can range between 1 and 255 (see below for limits). If more are seen, or the programming is aborted by switching off, then the programming must be repeated.

Following the diagram is a detailed explanation of all the settings.



PROGRAMMING DIAGRAM
TLC1A AND TLC2A CONTROLLERS

