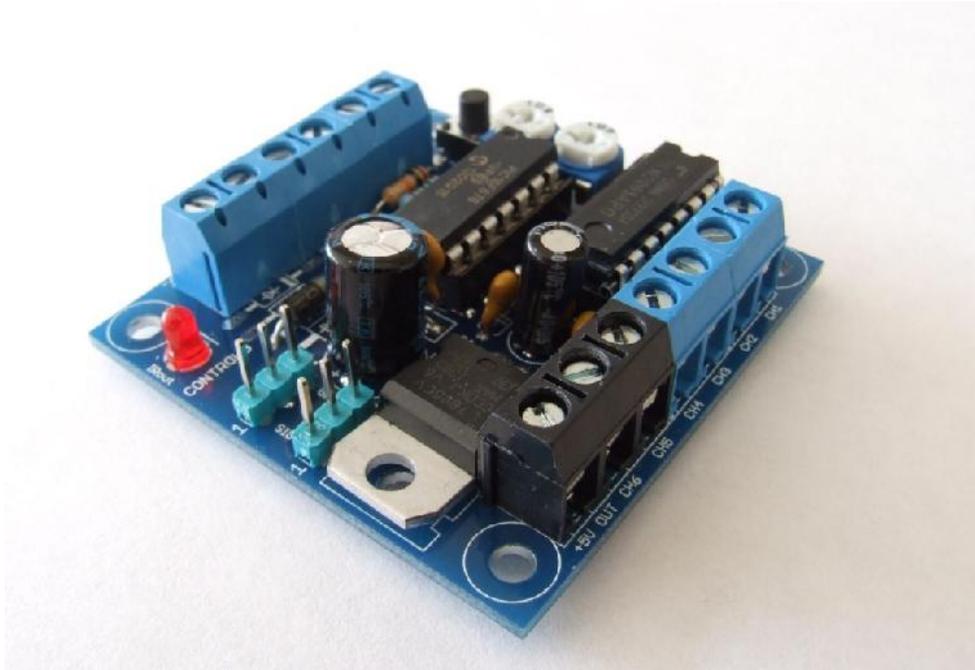


TRAFFIC LIGHT CONTROLLER FOR COMMON ANODE SIGNALS TLC2



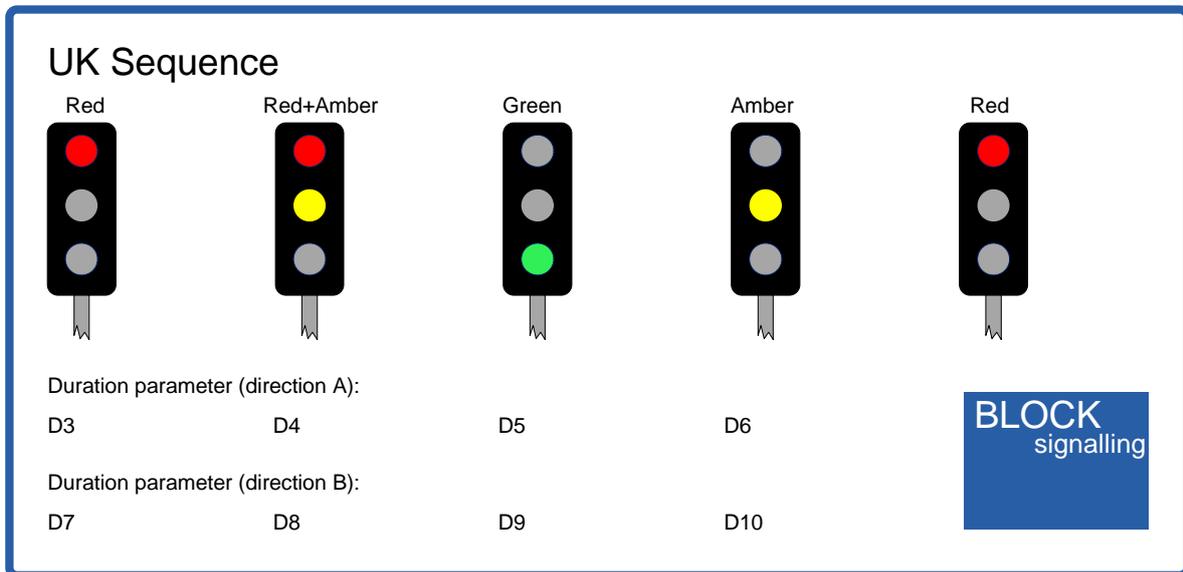
- Advanced traffic light controller
- Able to drive a number of traffic light installations across a layout
- UK and Continental switching sequences catered for
- Fully programmable timings to suit all layout requirements

The Traffic Light Controller (TLC2) has been designed to replicate the traffic light sequence as used in the UK and on the continent for junction control and road-works.

This model is designed for traffic lights which have a common anode connection that is the positive (anodes) of each of the leds are connected together at each light (see below for wiring diagrams).

Sequences

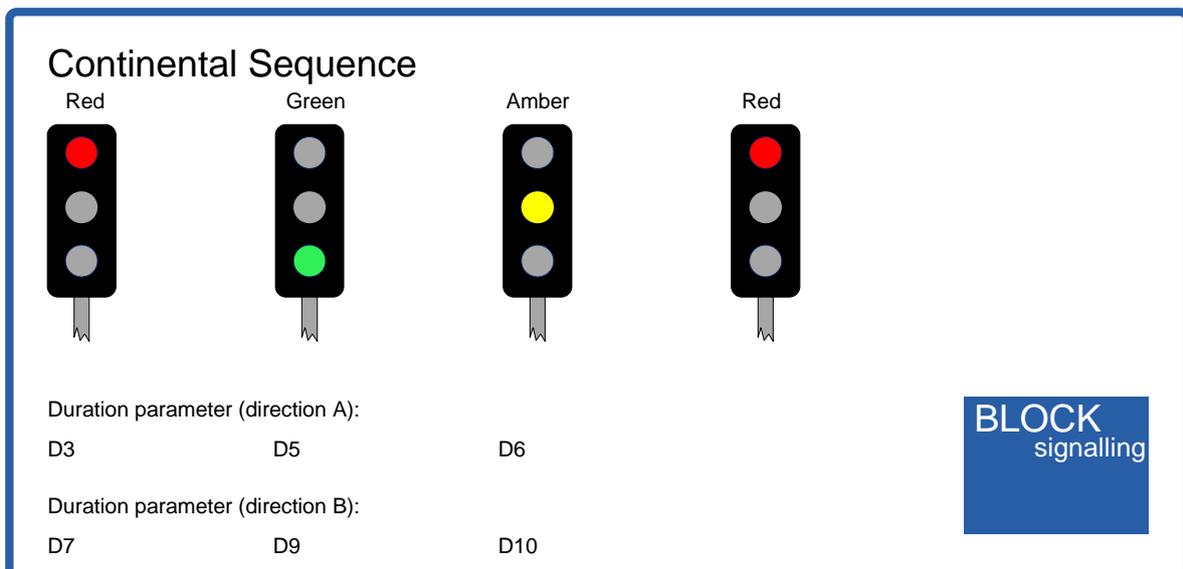
The UK sequence is shown below. The duration of each phase can be easily adjusted during the programming to suit.



As supplied, the durations are as follows:

D3=5sec, D4=7sec, D5=3sec, D6=3sec
D7=5sec, D8=7sec, D9=3sec, D10=3sec

The continental sequence is as follows:



As supplied, the durations are as follows:

D3=5sec, D5=7sec, D6=3sec
D7=5sec, D9=7sec, D10=3sec

The module can be used with a single pair of traffic lights for road-works on a stretch of road, or with two pairs of traffic lights for crossroads.

There are six output channels, which are able to switch to ground using a transistor.

Each channel operates in a similar way to a switch contact, with one side connected to ground. Normally, these outputs will be used to light one or more leds, with the other side of the led connected to a positive voltage. A resistor is used to limit the led current.

As soon as the supply voltage is applied, the microprocessor will start and the output sequence will begin.

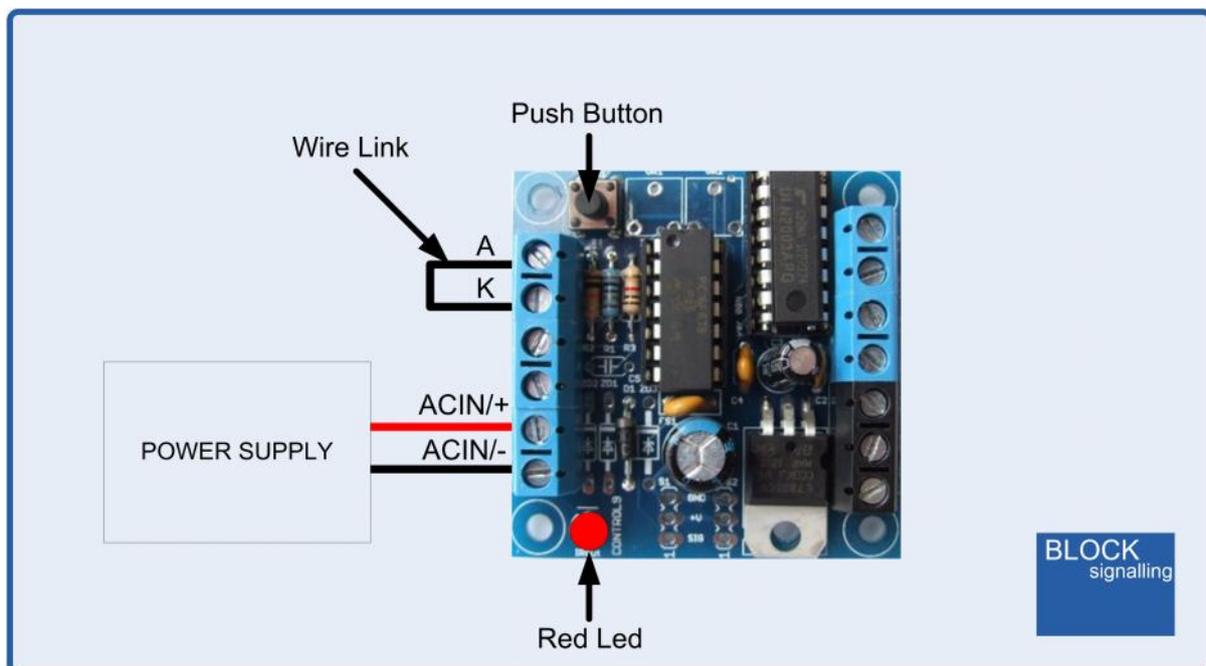
Power Supply

The module can be used with any 12V DC supply.

Please double check all wiring before applying power, as incorrect wiring can damage the unit.

Programming Procedure

Programming is performed by inserting a link between the A and K terminals and holding down the Push Button when switching on the power.



For each setting there are two values to be stored.

The red led on the PCB flashes at 1 second intervals. When the required number of flashes is seen (see later for the list of 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.

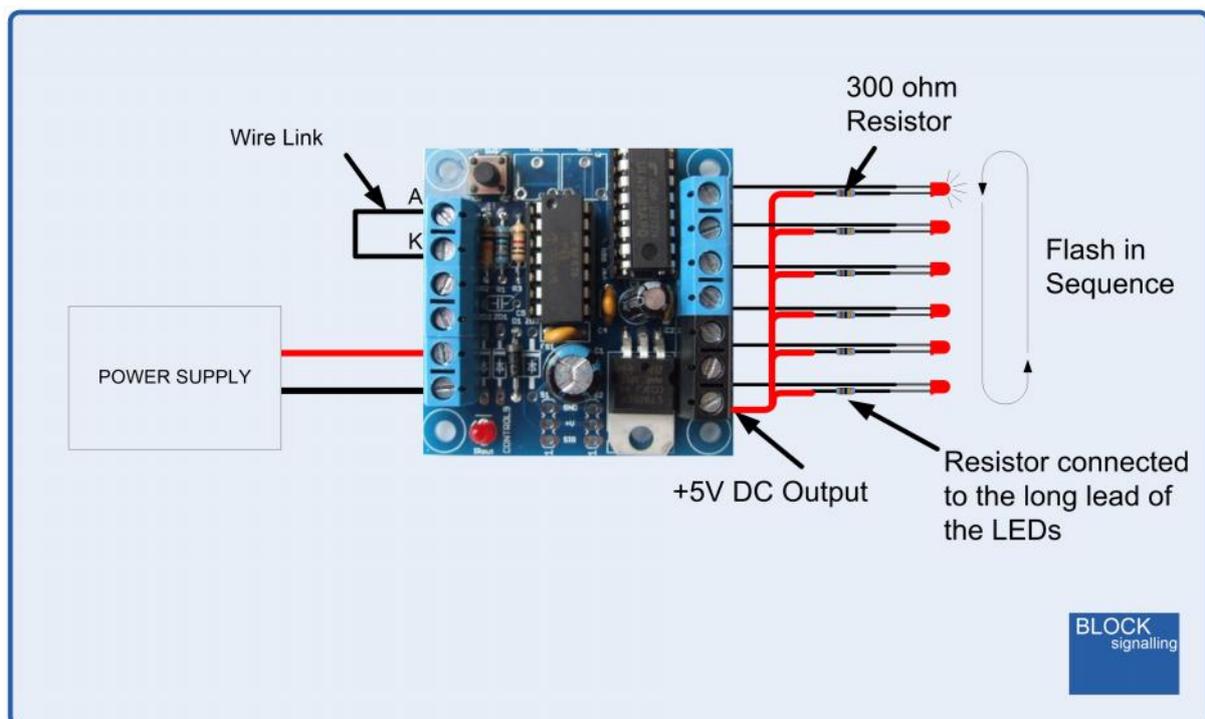
Once the two values to be stored are entered, the led flashes 10 times rapidly, and the module starts operating.

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

Testing Wiring

As supplied, the module is programmed to run a lamp test sequence.

First all outputs are switched on, then they all go off except ch1. Then ch1 is switched off and ch2 comes on. This sequence continues until ch6 is on and then all the outputs are switched off and the sequence is repeated. Each step takes 1 second. The led on the PCB switches on and off with each step (providing A and K are linked).



This test sequence is ideal for checking the system output wiring before programming for the actual requirement.

To select this program (if not already selected), 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 1 flash 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.

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 lamp test mode. 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.

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.

Adjusting the Timing for each Phase

To change the timing of each phase from the factory settings, first refer to the diagrams above to identify the individual parameter to change. For instance, to change the green duration for direction B you will need to change parameter D8.

Each parameter can be set between 1 and 255 seconds.

To change D8 to 10 seconds, we need to let the led flash 8 times (to select parameter 8) and then 10 times (to select 10 seconds). Other parameters are adjusted in a similar way.

The full procedure is as follows:

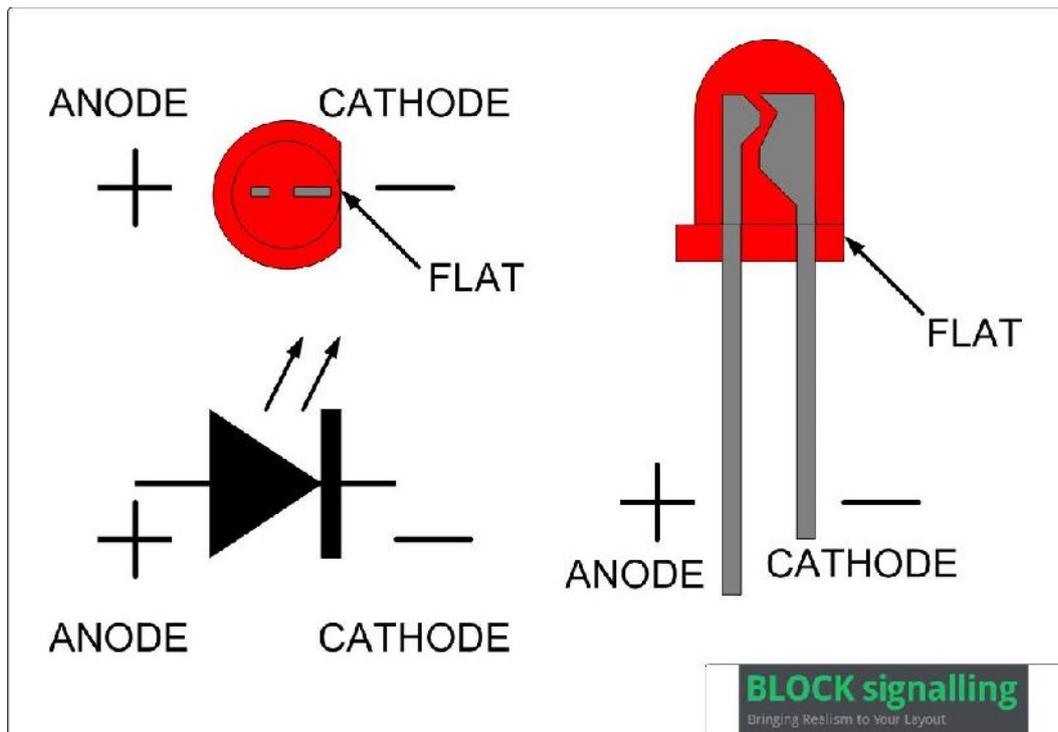
Switch off the power to the module and hold down the Push Button. Apply the power and continue holding the push button until 8 flashes of the led are seen. At this point, release the button. You will see a long flash of five seconds.

The led will begin flashing again. When you have seen 10 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.

Led Connection

When using leds it is important to connect them the right way around.

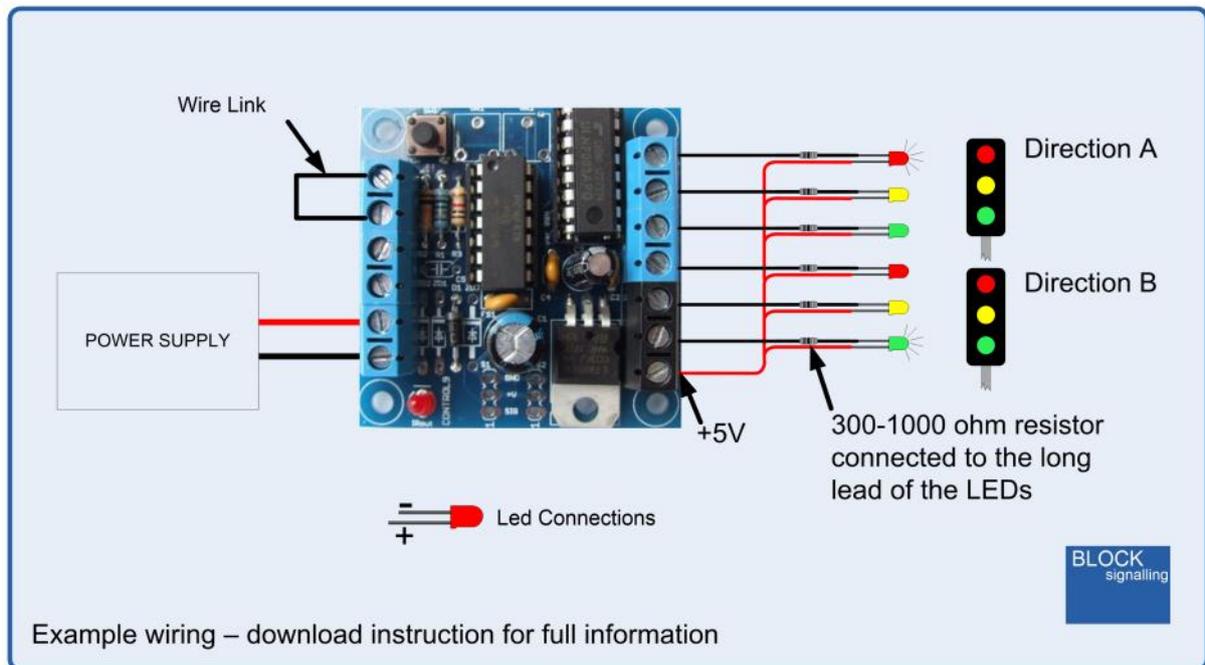
The negative lead (cathode) is identified by a flat on the side of the led body, and by having a shorter lead.



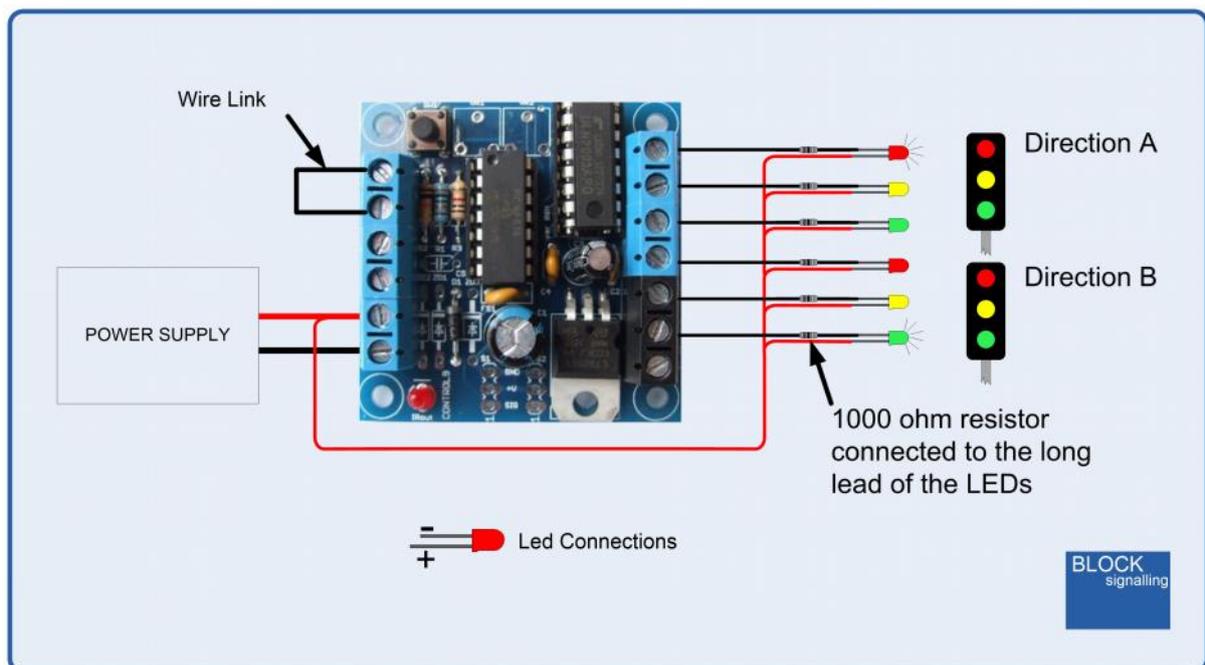
Connecting the Module

The diagram below shows the connection to the individual traffic lights for the roadworks model, each traffic light head contains three leds.

Here the anodes are connected together, and wired to the +5V positive supply. The cathodes are connected to the output channels of the controller, via 300ohm resistors.



If using traffic lights, pre-wired for 12V DC supplies, then the following connections can be used:



Programming Options

The following diagram shows the programming options available:

