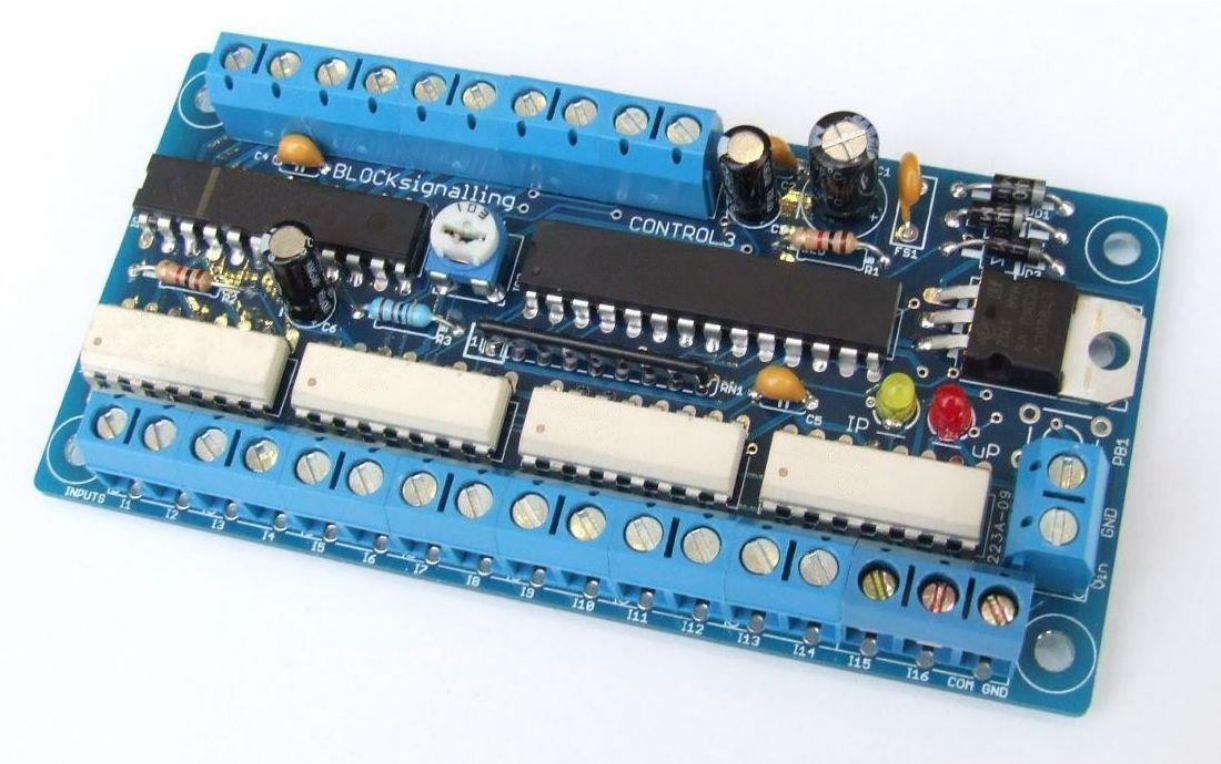
BLOCKsignalling

www.blocksignalling.co.uk

POINTS POSITION INDICATOR PPI4



Advanced PPI with Adjustable Brightness & Simplified Wiring

- Monitors the brief positive operating voltage across points motors when they are switched
- Lights a corresponding led on a control panel to show the last operation of each set of points
- Saves all settings automatically to memory when the power is switched off
- Monitors up to 8 sets of points
- Opto-isolated inputs accept voltages from +5V to +60V

The Points Position Indicator (PPI) monitors the brief switching voltage to either of the two coils of a points motor, and displays the last operation using coloured leds which can be mounted on a route mimic.

Manual methods to switch points include simple spring-loaded switches, push buttons, probe and stud, etc and the points coils have a common connection to the ground of the supply.

When points are driven from DCC Accessory decoders, the decoders most often provide a +12V supply to the common of the points coil, and then switch the other connections of the coils to ground to switch the points (use PPI2-DCC with these).

This PPI is designed for operation on systems where the coil common is GROUND.

The microprocessor controls the led brightness and so no resistors are required, simplifying wiring up.

Power Supply

The controller is designed for use with a DC power supply of between 10V and 25V, or an AC power supply of between 10V and 16V.

Where there is a choice, the recommended power supply is 12V DC.

Operation

The PPI has 8 channels, each channel with two inputs able to drive two leds on the output.

The inputs cause the associated output to switch when the input voltage rises above around 3V. Also, at this moment the other associated output is switched off.

In this way, only one of the output leds is lit at any one time, that being the one with the most recent positive input voltage pulse. This means that only one of the route leds for each channel will be lit at any one time.

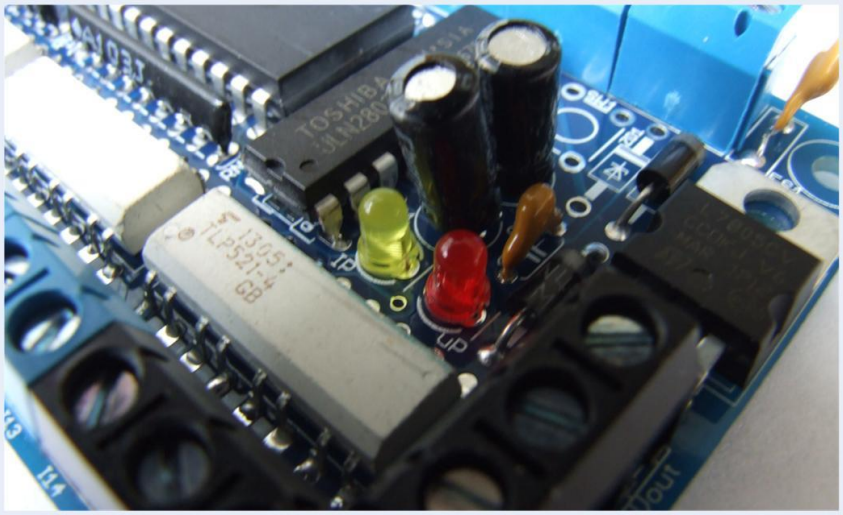
Each time an input change occurs, it is stored in memory, so that when the power is switched off and on again, the led outputs are set automatically to their last recorded condition.

Connecting the Unit

Simply connect one of the PPI input terminals to one end of one of the points motor coils, the other input to the end of the other coil, and the common of the coils to the COM GND input to the PPI.

Only one connection from a coil common to the COM GND input of the PPI is required. This allows the coil voltages to be recognised by the PPI correctly against the ground reference.

Each time the points are operated the yellow led on the pcb will briefly light.



YELLOW LED (IP)– flashes when points change appears on any input terminal

RED LED (uP) – flashes when microprocessor records change in any points position from that held in memory

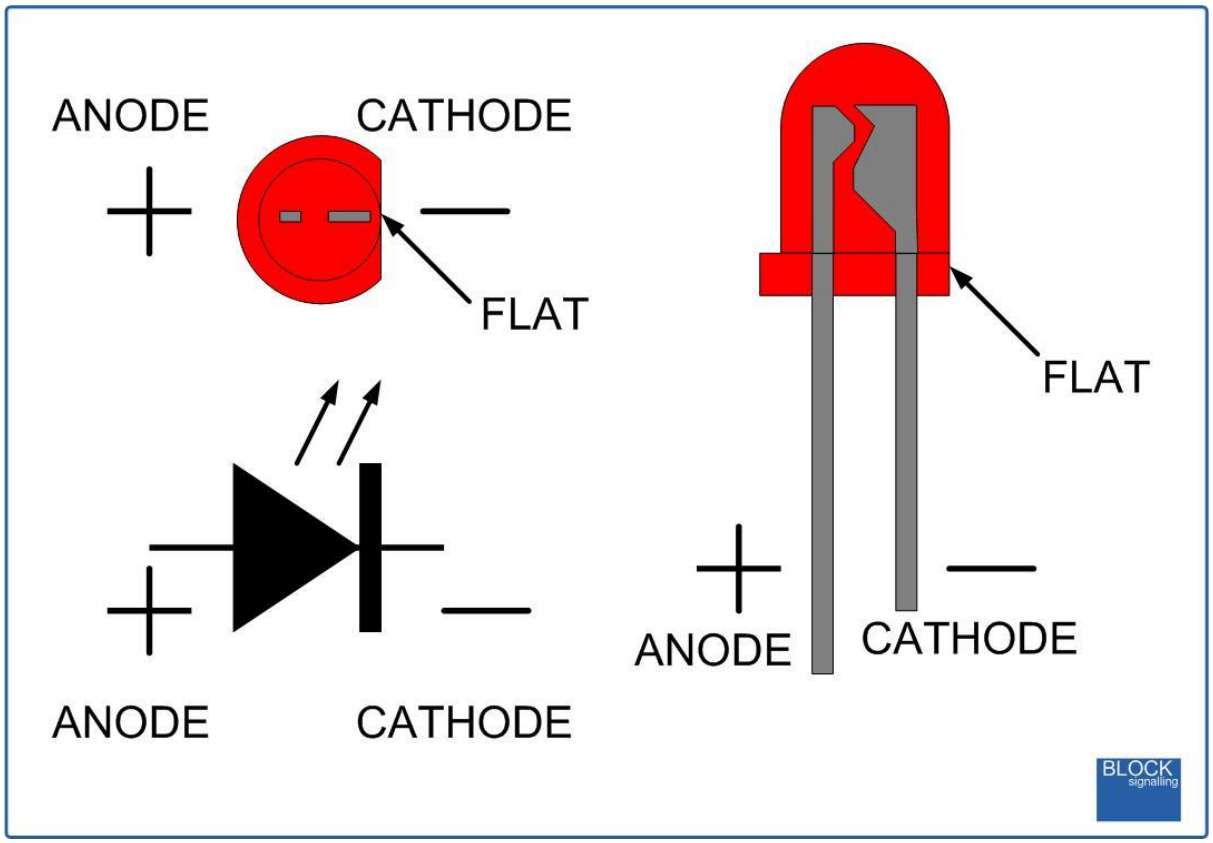
The PPI also requires a power supply to operate the leds. The supply can be AC or DC, and must be in the range of 9V to 16V for correct operation. If using a DC supply, take care to connect the positive and negative leads correctly. No harm will be done to the PPI if they are connected in reverse, but the PPI will not function. If your points operate from a supply above 16V, the PPI can be powered from a separate supply (12V DC recommended).

When powering up, the uP (red) led on the pcb will light when the microprocessor is running. Each time a point is operated, the IP (yellow) led flashes to confirm the input signal. If the points position has changed, the (red) uP led on the flashes to indicate that the updated status has been stored in memory.

Led Connection

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

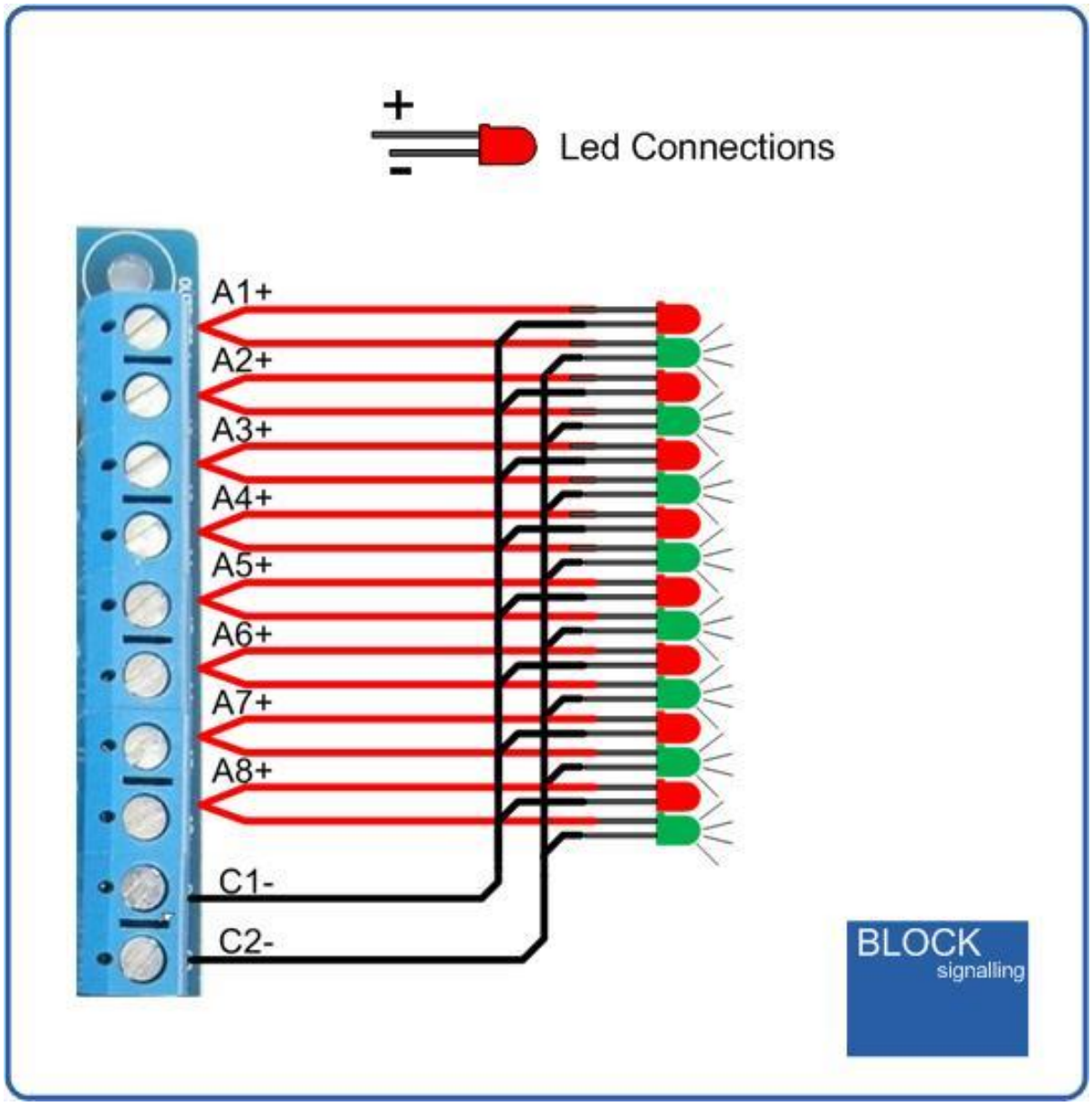
The negative lead (cathode) is identified by a flat on the side of the led body, and by having a shorter lead.



The red and green leds share the same output, so for instance, the first set of points are represented by a red and green led with their anodes connected to terminal A1+.

All the green led cathode connections are wired to the C1- terminal.

All the red led cathode connections are wired to the C2- terminal.



Following factory testing, sometimes more than one led will be lit. This will clear as soon as each set of points is first operated.

System Wiring

The diagram below shows the connections to one set of points. In practice, connections to the PPI will normally be made at the control panel so that the wiring length can be kept to a minimum.