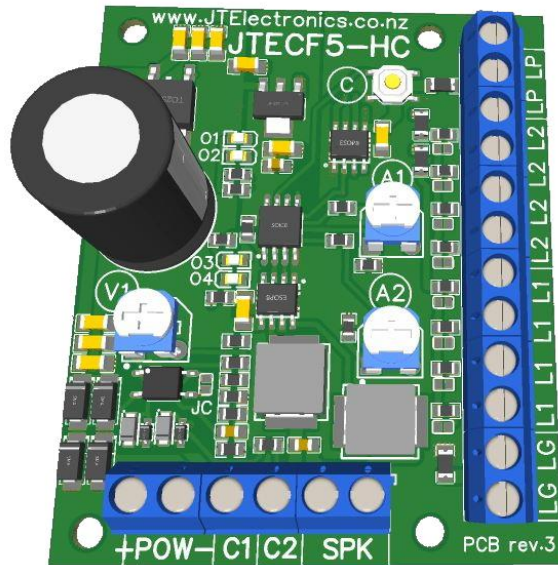


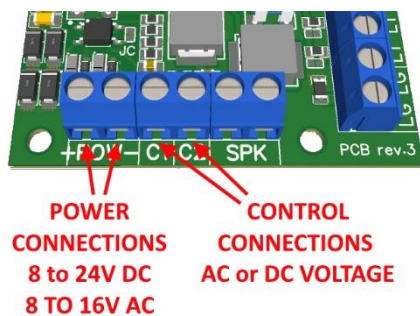
JTElectronics Crossing Flasher

Model: JTECF5-HC



The JTECF5-HC Crossing Flasher will flash alternate lamps, or LEDs with an appropriate series current limiting resistor, at a fixed rate suitable for level crossing signals. The JTECF5 can be powered from 8 to 24 volts DC, or 8 to 16 volts AC. It will power lamps, or LEDs, with an adjustable output voltage of approximately 6 to 14 volts DC and up to 500 milliamps per lamp output – the maximum voltage is dependent on the power supply voltage. This adjustable voltage will allow you some control over the voltage rating and brightness of lamps/LEDs. The JTECF5-HC can supply up to 500 milliamps output current combined over all of the “L1” or all “L2” output terminals. There is an “Output Delay” adjustment to allow the flasher to continue operating for a time after the Control input has been removed – to assist with dirty tracks causing the Control input to fluctuate, or to let the train pass by the crossing sensor with the crossing lights still activated. Apart from the DC power supply and lamps/LEDs, you will need to supply a Control signal from a sensor or switch. Suitable sensors are the JTEILD infra-red sensor, or the JTEDB1 block detector, or reed switches & magnets etc.

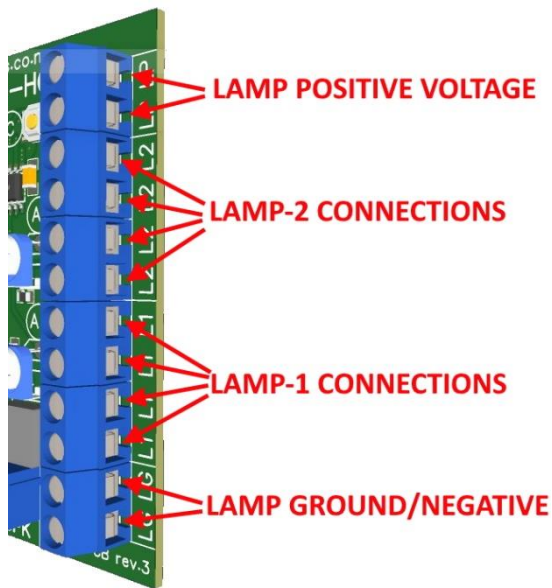
POWER and CONTROL terminal connections



Connect your AC or DC power supply to the power terminal connections as shown in the picture. The power supply can be from 8 to 24 volts DC, or 8 to 16 volts AC and the output voltage fed to the lamps/LEDs is regulated to between 6 and 14 volts DC to suit your lamp voltage rating, or LED current/voltage rating. You can see how to adjust the lamp/LED voltage later in this document.


To activate (turn on) the crossing flasher lamps you need to apply a DC or AC voltage to the C1 and C2 Control input terminals via a switch, or sensor, or another switch type device. For testing purposes, you can just connect the C1 and C2 terminals to the power input terminals, and you will see your lamps/LED's start to flash as soon as the JTECF5-HC is powered up. Also, you will see two red LEDs on the JTECF5-HC board start to flash alternately as well when the Control inputs are powered.

Lamp / LED terminal connections

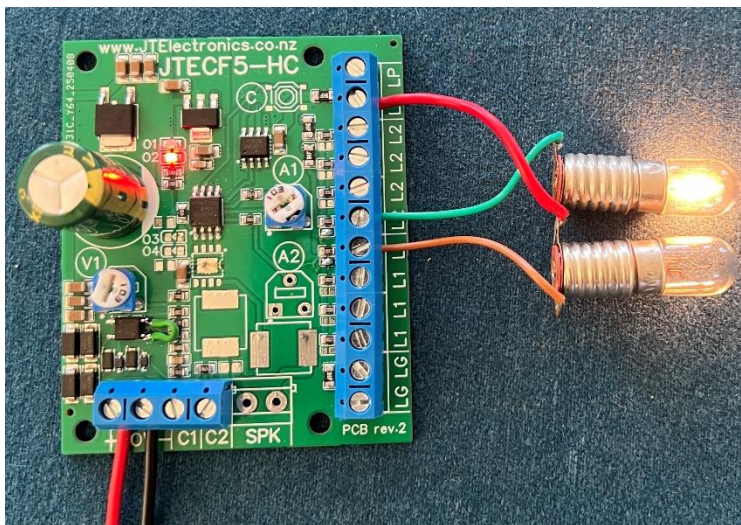


You can connect lamps or LEDs to the “L1” Lamp-1 or “L2” Lamp-2 terminals and connect the other lamp wire to either the “LP” Lamp Positive, **or** the “LG” Lamp Ground terminals. The LP or LG terminals can be used to suit various LED wiring configurations – including common anode/positive (LP) or common cathode/negative (LG). Lamps won’t care which polarity they are connected...

Connect your first lamp/LED to L1 and either the LP or LG terminal.
Connect your second lamp/LED to L2 and either the LP or LG terminal.

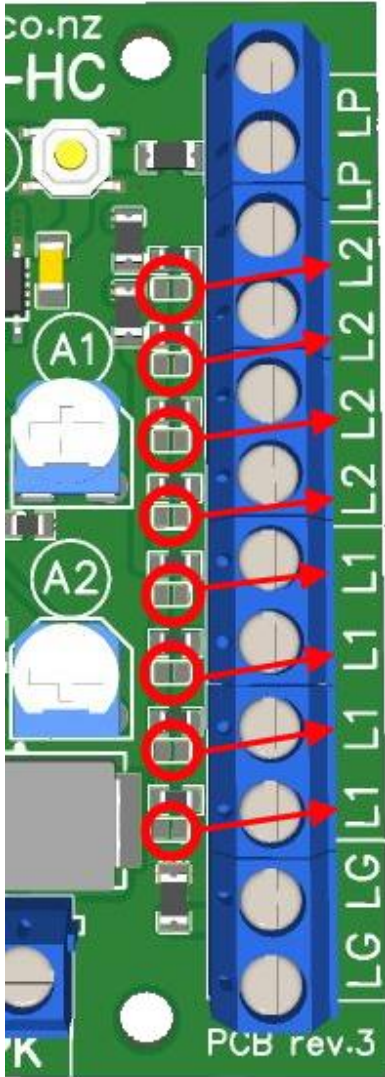


There are multiple L1 and L2 output terminals and each of the four L1 terminals, and each of the four L2 terminals have an individual on-board 220-ohm series current limiting resistor to help prevent destroying LEDs due to excessive current. The value of an external resistor (if required) will depend on the output voltage setting. It is suggested to set the output voltage to the minimum of approximately 6 volts (the “V1” adjustment control fully anticlockwise) to minimise damage to external LEDs until you are familiar with additional external LED current limiting resistor requirements. You will need to “Disable” these current limiting resistors if you want to use lamps or high current LEDs etc. - details are later in this document.



This picture shows lamps connected to the middle L1 and L2 terminals with the common lamp wire connected to the LP terminal. If you look closely, you can see the solder bridges that disable the corresponding current limiting resistors.

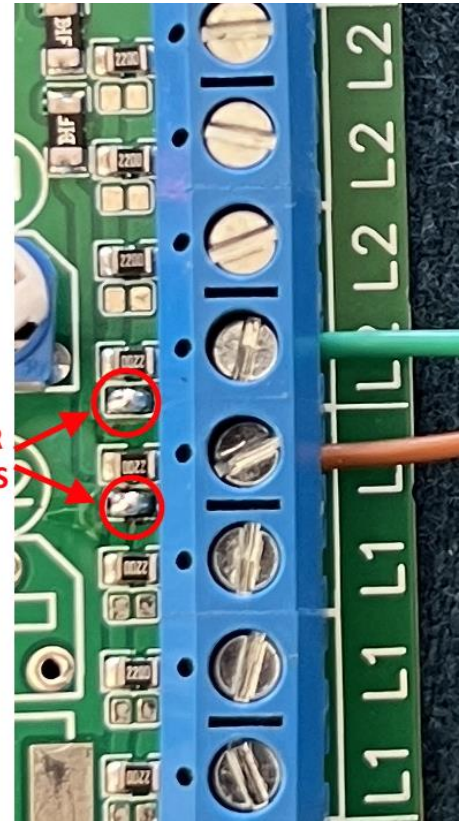
!!NOTE: To use lamps or other high current devices on the lamp terminal connections **you must disable (short out) the on-board current limiting resistor**, or it is very likely the lamp won't get enough current to light up properly. You can disable the current limiting resistor for the corresponding lamp terminal by carefully soldering a solder bridge (blob of solder) as shown in the following pictures. There are 8 solder bridge positions corresponding to each of the four L1 and four L2 terminals. You can use any combination of solder bridges, or not, on the L1 or L2 terminals to disable the current limiting resistor as required on each individual L1 or L2 terminal to allow the possibility of both lamp and LED connections at the same time but to different L1 and L2 terminals.



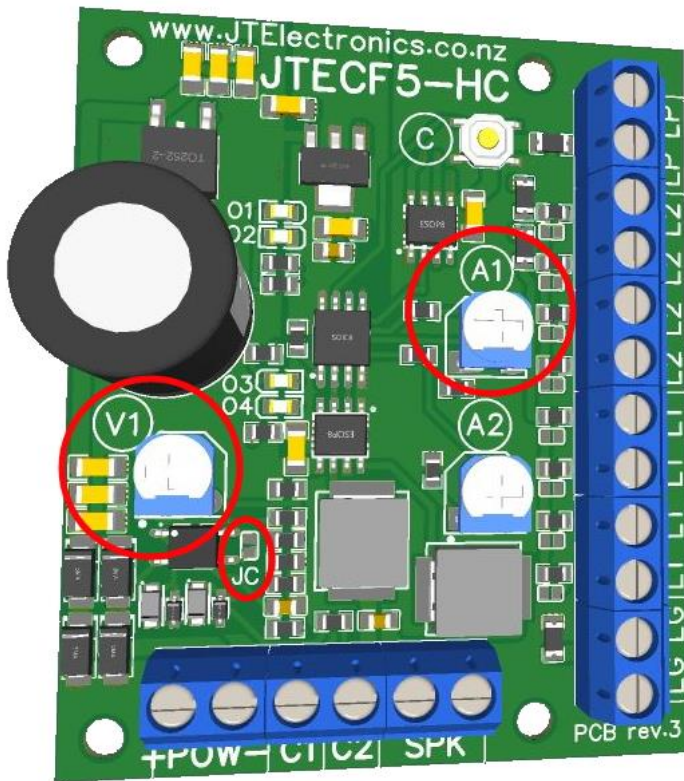
The picture on the left shows the location of the solder bridge locations and the corresponding L1 and L2 terminal

The picture on the right shows solder bridges in place for the middle L1 and L2 terminals for connection of lamps the corresponding L1 and L2 terminals

SOLDER BRIDGES



Adjustments



The JTECF5-HC has come configuration adjustments to suit your requirements:

V1: The “V1” adjustment sets the output voltage to the lamps/LEDs so you can use a lower lamp or LED voltage specification with a higher supply voltage. The output voltage is adjustable via the “V1” adjuster from about 6 volts to about 14 volts. When setting the output voltage, measure it by putting your DC voltmeter between the LP and LG terminals and set the required output voltage.

A1: The “A1” adjustment sets the output delay time which can be used to keep your crossing lights flashing for a time after the control input power has been removed. This can be used to assist with dirty tracks causing the Control input signal to fluctuate, or to let the train pass by the crossing sensor, with the crossing lights still activated for a while.

JC: You can carefully put a solder bridge (blob of solder) across the JC pads to “turn on” the crossing flasher lights without any voltage applied to the C1 or C2 control input terminals. This allows the lights to flash as soon as power is applied to the power terminals.