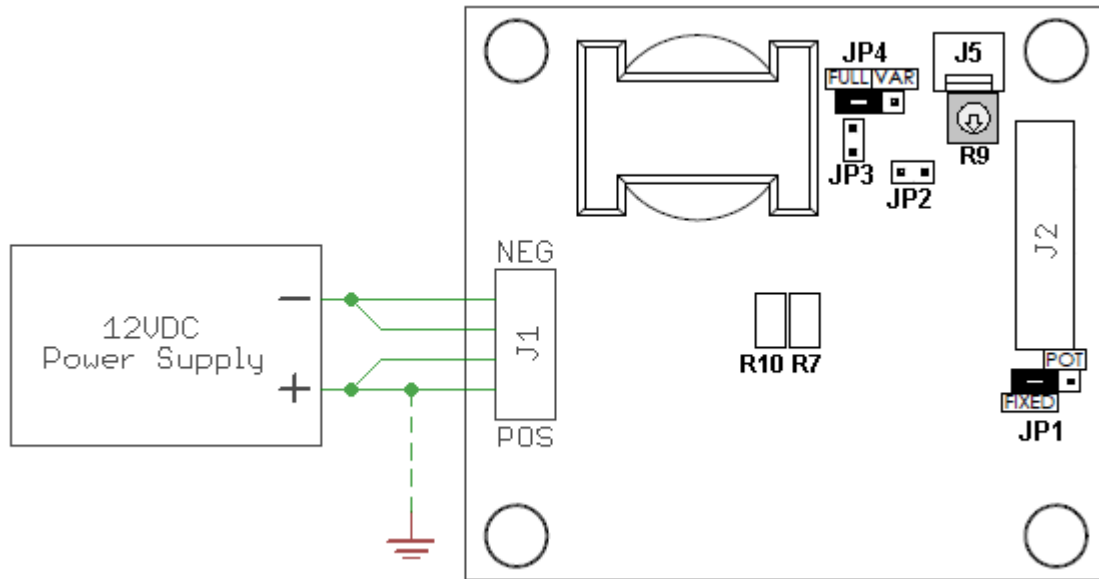


LE-3000 LED Engine Demonstration Connection Schemes

Connect a 12VDC power supply recommended minimum 100W to LE-3000 engine header J1 as shown in Figure 1. The power supply's output must be floating because the positive terminal may be ground referenced if a function generator is used to provide a PWM dimming signal. There are two ways to adjust the brightness of the LED; with a PWM signal which controls the on time of the LED and with an analogue signal which regulates the current going to the LED.

Figure 1: Power and connector layout

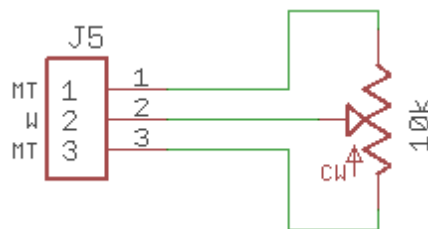


The LE-3000 engine will operate constantly at full brightness when its jumpers are configured as such:

JP1	JP2	JP3	JP4
Set to 'Fixed'	Shorted	Shorted	Set to 'Full'

An external potentiometer may be connected as shown in Figure 2 to allow dimming by changing the continuous current level through the LED. Dimming by this method will introduce a shift in CCT proportional to dimming level.

Figure 2: Potentiometer adjustable constant ON



LE-3000 LED Engine Demonstration Connection Schemes

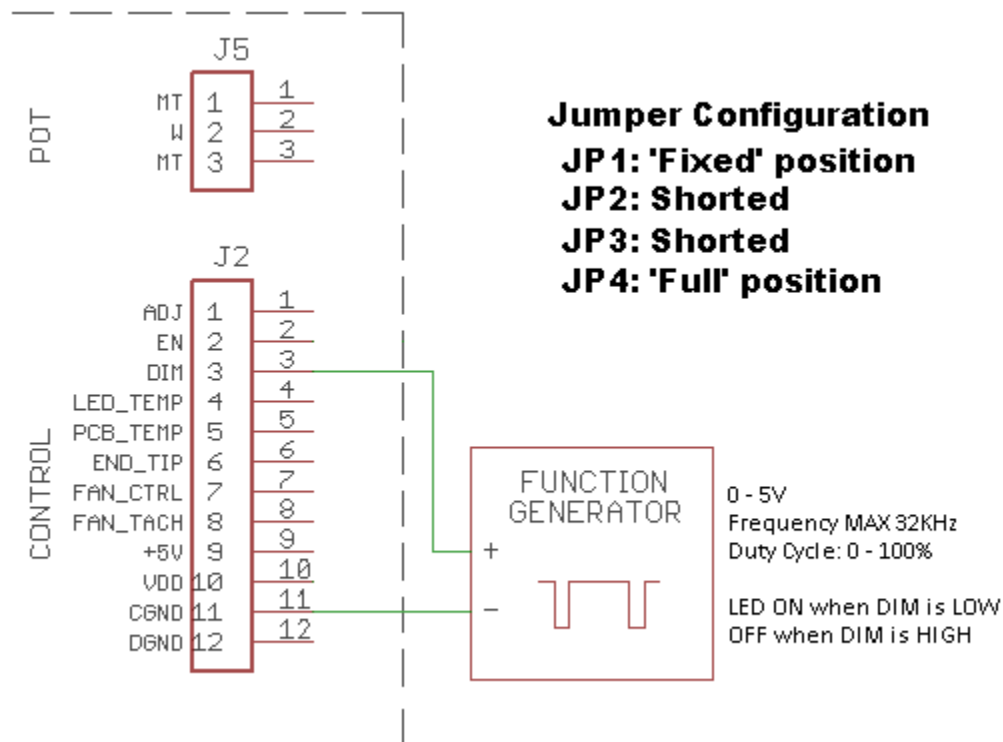
The manufacturing tolerance of the external potentiometer must be compensated to prevent driving the LED at a current higher than 18A. Make the connections shown in Figure 2 and compensate as follows:

- 1) Turn external pot fully clockwise (or such that the wiper terminal is at the pots maximum resistance)
- 2) Turn the on-board pot (R9) fully counterclockwise
- 3) Apply power to LE-3000
- 4) Set a DMM (Digital Multi Meter) to mV and measure voltage across R7
- 5) Turn R9 clockwise until DMM reads 90mV. Maintain R9's position.

A pulse width modulation (PWM) signal is the preferred method for dimming because it keeps the CCT of the LED constant throughout the dimming range and is easily generated by a microcontroller. For quick demonstration of PWM dimming a function generator may be connected as shown in Figure 3.

Note: CGND is at the power supply positive potential. Use a function generator with a floating output or with its positive terminal connected to ground to prevent a short circuit.

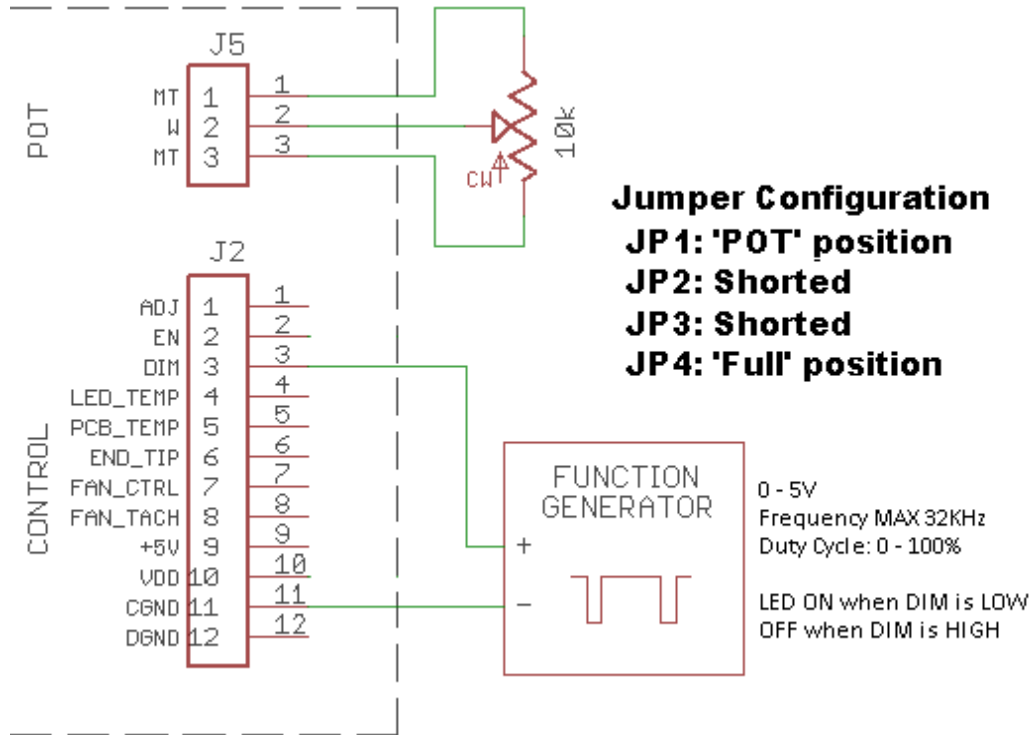
Figure 3: Fixed 18A current with PWM dimming



LE-3000 LED Engine Demonstration Connection Schemes

Both current regulation and PWM dimming can be used to control LED brightness as a combination. This method is shown in Figure 4.

Figure 4: Potentiometer adjustable current with PWM dimming



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