

## INTRODUCTION

This DC motor control kit comes pre-assembled and utilizes pulse width modulation (PWM) to vary the speed of a DC motor from stop to maximum revolutions per motor specifications. PWM eliminates the need for gear boxes and can drive motors at low speeds with minimal torque loss. This kit outputs between 8 V and 30 V with 30 A max load. The output voltage will always match the input voltage. The GSK-806 grants operation at a fixed 100 Hz or variable frequency setting between 400 Hz and 3 kHz. The large heatsink and heavy duty MOSFET's ensure reliable performance in continuous use applications. Applications include DC motor speed control, LED and incandescent lamp dimming, and current control in hydroxyl or HHO generators.

## CIRCUIT DESCRIPTION

PWM controls the current output by regulating the duty cycle between 0 and 100%. As the variable resistor is adjusted and the positive portion of the duty is greater the motor will slow down. When the jumper is in place at point J1 (see Figure 1), the frequency is put into variable mode with a range from 400 Hz to 3 kHz. When the jumper is removed, the frequency is fixed at 100 Hz. VR PWM is used to adjust the DC motor speed 0 to 100% while VR FRQ is used to adjust the frequency.

## SPECIFICATIONS

- Input Voltage ..... 8 to 30 Vdc
- Output ..... 8 to 30 Vdc, 30 A Max
- Output frequency ..... 100 Hz, 400 Hz to 3 kHz
- Duty cycle.....0 to 100%
- PCB dimensions ..... 4.50 in x 2.63 in

If the connecting load is continuous and more than 20 A, it is recommended to install a mini fan at the heatsink to help dissipate heat and increase the longevity of the unit. For optimal conditions, this unit should be used at 100 Hz. Frequencies above 100 Hz can cause the MOSFETs to overheat. Use only 12 AWG wire or greater when connecting between the circuit and the load.

