PWM to Analog Converter
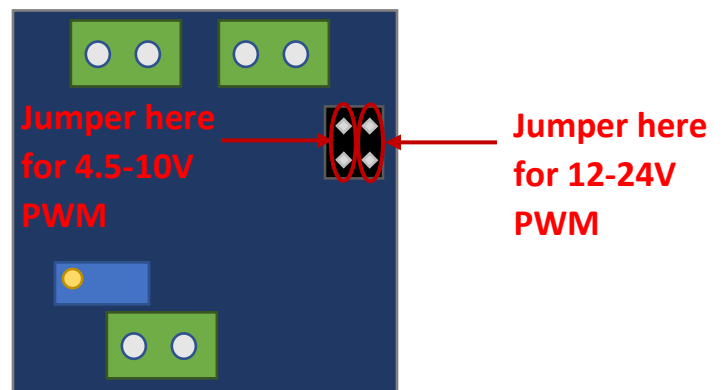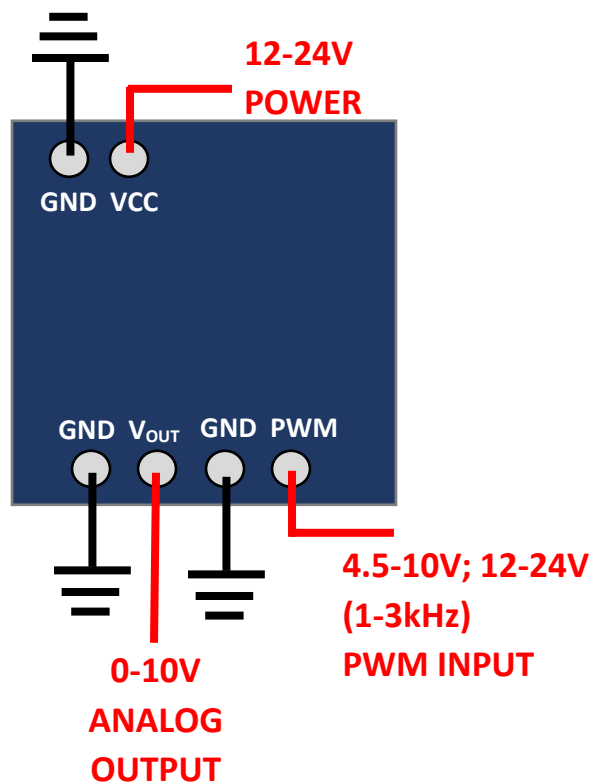
SPECS	
Allowable PWM Peaks	4.5-10V; 12-24V
Allowable PWM Frequencies	1 – 3kHz*
Output Analog Voltage	0 – 10V
Required VCC Input	12 – 24V*

*490Hz PWM (Arduino) seems to work fine
*Can be powered with 9V, but Output becomes 0-6V.

Purpose: acts as a digital to analog converter via a low-pass filter. Adjusting the duty cycle of the PWM input determines the magnitude of the filter's voltage output. As the duty cycle increases, the average voltage output increases, and vice-versa. (i.e. 40% DC = 4V & 75% DC = 7.5V).

12-24V POWER

GND VCC

GND V$_{OUT}$ GND PWM

4.5-10V; 12-24V (1-3kHz) PWM INPUT

0-10V ANALOG OUTPUT

Jumper here for 4.5-10V PWM

Jumper here for 12-24V PWM

Converter will not work without jumper. Place jumper on either left or right pins based on PWM peak voltage.

Calibration: to calibrate the PWM to Analog converter, set the PWM duty cycle to 50%. Power the converter and measure the output voltage using a multimeter. Adjust the potentiometer until the output voltage measures 5.0 volts (may take several rotations).