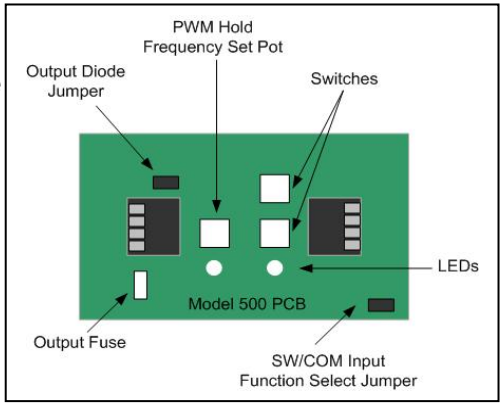
Additional Settings

The Model 500 also has an output fuse, a back emf protection diode and a variable PWM hold frequency.



Referring to the illustration at right, the cover may be removed to expose the top of the Model 500 circuit board. A replaceable cartridge type fuse (Littelfuse series R451) is used to protect the output MOSFET. For coils with built-in back emf diodes, the Model 500 output diode may be removed by removing the jumper. Lastly, the PWM hold frequency may be changed. The standard PWM frequency is 1,000 Hz and is suitable for most applications. The frequency may be changed from 500 to 1,500 Hz in 100 Hz steps by turning the pot counter-clockwise. (A DMM with frequency measurement capability may be used to measure the output frequency across the output.) Turning the pot to the full clock-wise position will result in the default 1,000 Hz operating frequency.

The SW/COM jumper is used to set the function of the SW/COM contact input. With the jumper removed (factory default), the input acts as another output trigger. With the jumper installed, the input acts as a PWM hold disable. When in PWM hold disable mode, the SW/COM input may be used to dynamically override the PWM hold function and force full-on at the output when required for high load conditions.

Support

Support for your application is available by contacting APM, Inc.
Web: www.appliedprocessor.com
Email: support@appliedprocessor.com
Phone: 716-741-1141 FAX: 716-741-1142

 Doc. No. 00140-06, rev A, 5/11

Applied Processor and Measurement, Inc.

NOTICE ! *Read This Before Proceeding*

INSTALLATION GUIDE

MODEL 500
PEAK AND HOLD PWM DRIVER

The purpose of this guide is to ensure proper usage and installation of the Model 500 (PWMC 500) for your application.

This guide will:
- describe what you need to control your device with the PWMC 500
- illustrate how to connect the PWMC 500

What you will need to set up your application with the PWMC 500:
- your device that is to be driven by the PWMC 500
- a power supply capable of providing the voltage and current necessary to drive your device and power the PWMC 500 unit
- wire – 18 or 16 AWG preferred

General Description

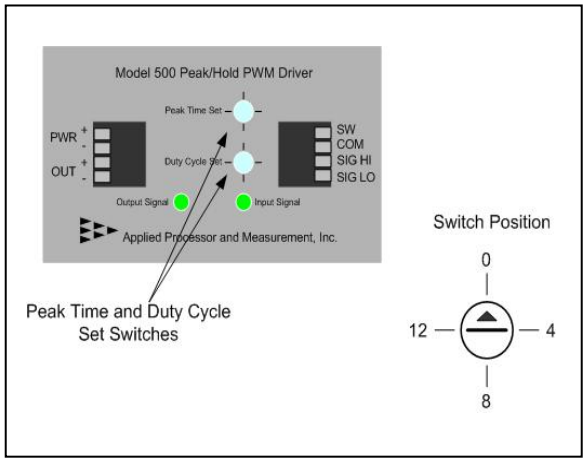
The PWMC 500 Peak and Hold PWM Driver is designed to drive solenoid based devices with an initial full-on pull-in pulse, then provide a reduced power hold-in current by pulse width modulating the output. The Model 500 can reduce overall current in existing on/off solenoid drive applications, reducing the operating solenoid coil heat, thereby extending coil life and protecting the coil from burn-out.

Connection

Typical installations using the PWMC 500 are shown at right. Note that in a single supply application an external connection MUST be made from the positive terminal of the PWMC 500 output (OUT+), and the positive terminal of the input (IN+). If the solenoid is to be operated outside of the range (9 to 28V) of the controller, then the dual supply connection can be used.

Settings

Use the rotary switches on the front of the Model 500 unit to set the peak time and the PWM hold duty cycle.



Peak Time and Hold PWM Duty Cycle Settings

switch position	peak time (msec)	duty cycle (%)
0	5000	90
1	2500	85
2	1000	80
3	800	75
4	500	70
5	400	65
6	200	60
7	150	55
8	100	50
9	80	45
10	50	40
11	40	35
12	30	30
13	20	25
14	10	20
15	5	15

Operation

The Model 500 output is inactive until a trigger signal is received on the input SIGHI/SIGLO or the SW/COM input. Either input will trigger the output sequence. (Note that the SW/COM input can be configured to act as an override input, forcing full-on during the PWM hold time.) On an input trigger the output will go full-on for the set peak time and then will PWM the output at the set duty cycle until the trigger is removed. The input LED will light with the input trigger and the output LED will light with the output signal, dimming with the duty cycle setting during the hold portion of the sequence. A standard DMM may be used to verify that the PWMC-500 is connected properly and the output is working as it provides an “average” voltage value that will change as the duty cycle is varied. In a 12V application, if the peak time is long enough, the voltage across the load will go to 12V for the peak time, then, switch to a lower voltage value during the hold time.