

AndyMark, Inc.

Thrifty Throttle[™]

Simple PWM generator for testing speed controllers



User Manual
Version 1.0

OVERVIEW

As the son of the AndyMark Handheld [Motor Meter](#), the Thrifty Throttle is a low cost, no-frills alternative that allows teams to test their electro-mechanical systems before their control software is complete. It generates a PWM that can be used to drive motor controllers such as the [Talon](#).

FEATURES

- PWM generation
 - Standard servo range - 1000ms-2000ms
 - Arduino extended range - ~540ms~2300ms
- Handheld
 - Comfortable form factor – one hand operation
 - 9V battery operation (battery not included)
 - Uses ATtiny85, an Arduino compatible microcontroller running custom Arduino firmware

GETTING STARTED

- Install 9V battery (not included)
- Connect the PWM cable to the PWM output on the Thrifty Throttle – black wire toward the BLK indicator on the printed circuit board
- Connect the other end of the PWM cable to your speed controller's PWM input – observe correct polarity
- Switch the unit on with the power switch on the left side
 - You should now see a heartbeat blink pattern on the green LED indicating that the unit is powered and ready

BASIC OPERATION

The **green** button enables and disables the PWM output

- From the neutral mode (heartbeat blink)
 - If you press the **green** button for a second or so then let go you will be in the standard PWM range (1000us – 2000us)
 - Otherwise, if you hold the **green** button until the LED begins flashing rapidly you will be in the Arduino extended range (~540ms~2300ms)
 - Now you can adjust the speed and direction by moving the orange throttle lever forward or back with your thumb
 - The blink speed will now change with the PWM speed
 - To exit and return to neutral simply press the **green** button again

NOTE: This unit produces a PWM signal only; it does not supply power to devices. Devices such as servos, speed controllers etc. need a separate power supply.

