

# Servo Commander Startup Guide

(SKU: 3109-0004-0001)

The Servo Commander is a single channel servo controller that allows you to control the position of a servo by rotating a knob. Up to four preset positions can be saved and recalled using the buttons.

**Voltage Input:** The controller can be powered by a DC input voltage between 5 and 15V. Choose a voltage that is appropriate for the servo that you plan to plug into the controller. Sending a voltage higher than your servo is rated for will result in damage to the servo. The XT30 connector is the primary power input port, however if you are using a battery with a connector similar to what you find on a servo (TJC8), you may plug it into the + and - pins at the top of the board.

**Servo Connections:** Your servo is able to plug into one of the sets of pins on the top of the board. There are two sets of pins but it does not matter which set you plug your servo into - just make sure you orient the servo plug so that -, + and signal are properly connected.

The spare set of pins can be used to supply power (details in *Voltage Input* above) or plug in a second servo. If you choose to run a second servo, it will receive the same signal from the controller as the first servo. If the two servos are the same, they'll do the exact same thing. If the two servos are different, any difference in speed or rotation will become apparent.

**Signal Range:** Different manufacturers set up their servos for different PWM signal ranges. This controller has four preset ranges that you are able to choose from when booting up the board. Hold the button that corresponds to the range you wish to send when powering the board. The LED across from that button will blink rapidly, then remain illuminated once programming is complete.



1050 $\mu$ s - 1950 $\mu$ s  
(Default)

850 $\mu$ s - 2150 $\mu$ s

600 $\mu$ s - 2400 $\mu$ s

500 $\mu$ s - 2500 $\mu$ s

**1050 $\mu$ s-1950 $\mu$ s** is the default PWM range. This range allows most servos to rotate 90 degrees. Many servos are able to rotate further, given a wider range. If you purchased a goBILDA® Servo, reference the servo page for the maximum PWM range the servo is able to accept, and the corresponding rotation. This range is also used with goBILDA linear servos.

**850 $\mu$ s-2150 $\mu$ s** is a wider signal range that most servos can utilize for more rotation. This is the typical maximum signal range for Hitec and Savox digital servos.

**600 $\mu$ s-2400 $\mu$ s** will typically allow an analog servo to rotate 180 degrees. This range is too wide for some servos. If a servo does not recognize the signal while nearing the extremes, reduce the signal range to

one of the narrower options. Additionally, if the servo buzzes at either extreme, it is hitting the mechanical limit of the gear train and the PWM range needs to be decreased.

**500µs-2500µs** is the max PWM range of the servo commander and allows a goBILDA® servo to achieve a full 300 degrees of travel.

**Position Control:** You can rotate the knob to change the signal being sent to the servo, or you can use presets to recall specific signals. The four preset buttons (same buttons used on boot-up to set the signal range) work like presets for radio stations on a car stereo - push and hold the button you wish to program. The LED directly across from the button will blink rapidly and then illuminate solid when the position has been saved.

**Mounting:** The case has been installed using two M4 screws and locknuts. The remaining holes can be used to hold the controller to your goBILDA project.

