

SERVOMAX

USER'S MANUAL

The ServoMAX module is intended to change the behavior of a conventional R/C servo to work optimally with a camera mount. It's simply connected between the R/C receiver and the servo, like an extension. It has 2 operating modes, plus an "inactive" one.

Mode 1 will double the throw received from the transmitter. This allows using the servo's entire mechanical travel range without opening and modifying it. This feature is very useful when the servo is used to pan a camera, to maximize the field of view.

Mode 2 will convert the position command into a speed command. This means that the servo will stay at its position whenever the stick is centered. The more it is deflected, the faster the servo will move. It's useful when the camera is controlled by an operator, as he can keep a stable angle without having to maintain the stick in a fixed position. Precise travellings are easier to achieve as well. The end points can be easily programmed to allow usage of all the servo's capabilities.

Mode 3 simply repeats the receiver's signal, in order not to have to remove the module if normal operation is desired again.

The module can store the user's transmitter neutral position to avoid unnecessary trimming, and allows offsetting the servo's position. With the transmitter stick at neutral, some servos won't be at the center of their mechanical movement range, resulting in a greater throw on one side. This features allows moving the center to compensate for this issue.

Usage

Connect the module between the receiver and the servo. Turn the transmitter on, and turn the receiver on.

To change mode, press the switch for ~1 second. The current mode is stored until the next modification.

Programming

To enter programming mode, press the button while powering up the receiver. Be sure to have your transmitter powered up, with the stick and trim centered for the channel the module is on.

The menu provides several settings. Each parameter is stored with a button press, which leads to the next setting. The user can cut receiver power at any time to exit programming mode without changing the next settings.

1) R/C transmitter neutral position

Avoids unnecessary trimming to have the servo stay in position when the stick centered in mode 2, and ensures adding the module won't offset the servo in mode 1. Make sure the stick and trim are centered, and press the button. The center is stored until the next programming.

2) Servo neutral position

Allows compensating asymmetrical servo throws.

Move the servo slowly using the transmitter's stick until you reach the ends of the movement range (without letting the servo force!). Find the center, move to that position and press the button.

If you don't need this feature or want to restore defaults, simply leave the servo where it is and press the button.

3) Mode 2 end point restore

Allows restoring default values for the servo end points in mode 2. If you wish to keep those you had programmed earlier, turn power off now. To restore defaults, press the button.

4) Mode 2 end point programming

Move the servo with the stick until the first point is reached and press the button. Move to the second point and press again. The servo will move to the center point and exit programming mode.

The module is particularly sensitive to wrong R/C signals while in programming mode as there are no movement limits. If a bad pulse is received, it can go outside usable range. If this happens, restart the programming sequence.

Remarks

- Mode 2 can be used to control a retracting gear with a standard servo as well. However, it will always start at the middle of the movement range.
- Throw extension (mode 1, and mode 2 if the end points are set beyond normal limits), will not work with digital servos. They check the signal and discard pulses that are too far off the standard values. Throw and behavior will depend on the used servo. Standard analog ones usually offer between 160 and 200° throw.
- Please be careful not to stall the servo. When using mode 1, reduce the travel on the transmitter if needed. When setting the end points for mode 2, go back a little bit after having reached the limit before storing the point.

Specifications

Power supply: 3.5-7V, from receiver. Current draw: ~10mA. Input pulse width range: 768- 2304µs.