

Servo Actuator - Quick Start Guide

This guide covers how to connect a 3rd party linear actuator with position feedback to the LAC board, thereby turning it into a Linear Servo. Caution, wire color can vary by manufacturer. To prevent damage, verify wire function matches before connection.

Required:

Linear Actuator with potentiometer feedback
LAC Circuit Board
Power Supply or Battery (*must meet the actuator's requirements and not exceed the LAC specification*)

Optional:

Control Potentiometer
USB Cable
Radio Controlled Receiver

Step 1 (Connect the Actuator): See diagrams on reverse

Connect the actuator to the LAC using the green screw terminals.

Wire Color	Wire Function	LAC Pin Label
White	Feedback Reference +	P+
Yellow	Feedback Wiper	P
Red	Motor +	M+
Black	Motor -	M-
Blue	Feedback Reference -	P-

Step 2 (Choose your control method):

Option A – Connect a potentiometer for manual control.

Potentiometer	Pin Label
Reference +	P+
Reference -	P-
Wiper	VC

Option B – Connect an RC Receiver for remote control. You can use either the receiver power or an external power supply, but not both, as it will damage the receiver. Cut the red wire from the receiver to prevent damage when using an external power supply or BEC.

RC Receiver	Pin Label
Black	-
Red	Not Connected
White	RC

Option C – Connect a USB cable for computer control. You will need to install the LAC driver from http://www.actuonix.com/category_s/1930.htm

For more control options, like PLC, PWM or DAQ control, see the LAC datasheet at the link above.

Step 3 (Reset the LAC board):

Set up the default configuration by turning all four of the blue potentiometers fully **clockwise**. Turn the one labeled “Accuracy” back 1/8 of a turn for quieter operation.

Step 4 (Connect power):

Connect your power supply or battery, and test for basic operation. If the actuator extends to one end and then stops responding, swap the white and blue actuator wires and test again.

Polarity	Pin Label
Positive	+
Negative	-

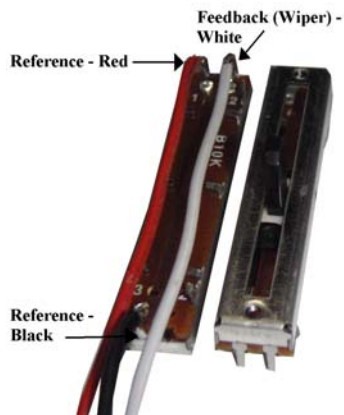
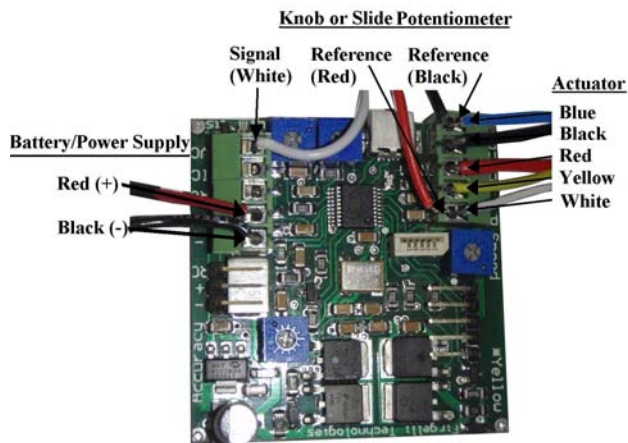
Step 5 (Optional: Adjust Performance):

Adjust the four blue potentiometers as desired. Load the new settings by turning the power off then on.

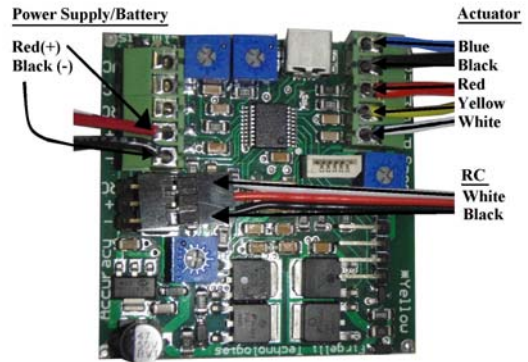
- Accuracy – This potentiometer controls how close the actuator has to be to the commanded position before the motor is turned off. Setting this to fully clockwise may significantly increase how loud the actuator is.
- Speed – This potentiometer controls how fast the actuator moves. Rotate counter clockwise to reduce the speed. Actuator noise will increase when speed is reduced.
- Limits – These two potentiometers are digital limit switches. They control the minimum and maximum actuator positions (How far in and how far out the shaft is allowed to move).

Wiring Diagrams:

Option A: Potentiometer Control



Option B: RC Control

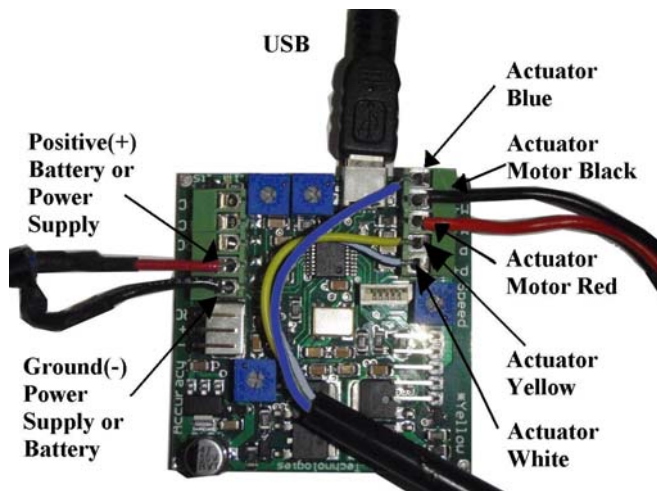


Do not connect the Red Wire

Cut the red wire before connecting your RC Receiver



Option C: USB Control



Step 5: Tuning

