

Motor Controller Exploration

Linear actuators can be controlled in two different ways. The first way is simply using a switch. A switch can work fine for many different use cases, but for our purposes, it would be insufficient. The main reason is that we cannot interface the switch directly with an Arduino, therefore we would be unable to control the actuator with code. Secondly, a switch does not let the user control the speed of the actuator arm, which is quite an important part of both of the systems that will use an actuator. Therefore to be able to properly use the linear actuator we must use a motor controller or a motor driver. The motor driver serves as an intermediary between the actuator and the Arduino. The motor driver would allow us to control the speed and thrust of the actuator through the code of the Arduino. This satisfies all the parameters needed to properly operate both the braking system, as well as the steering system. Any of the Roboclaw Motor Controllers on Servocity should work, but they are currently out of stock. Therefore the High Current DC Motor Drive from Figurelli Automations can serve as a backup option.