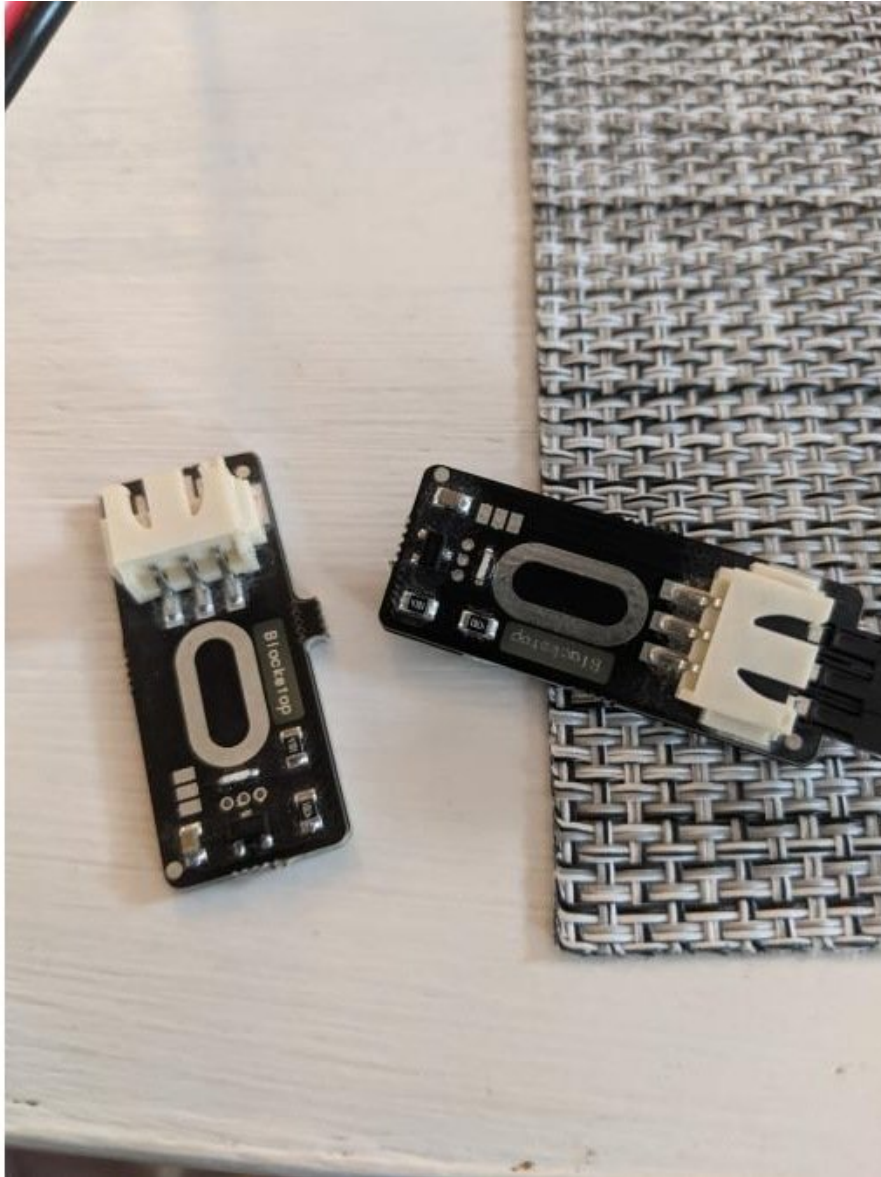


# Blackbox

## BlackStop Hall Effect End Stops

Operation and Installation of the BlackStop Magnetic Hall Effect Limit Switch.

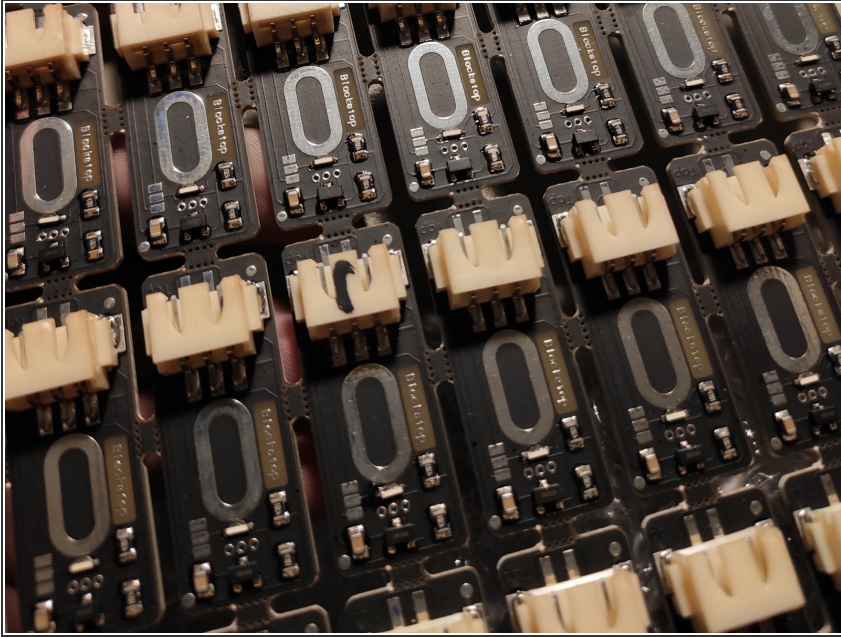
Written By: Kris Brickman



## INTRODUCTION

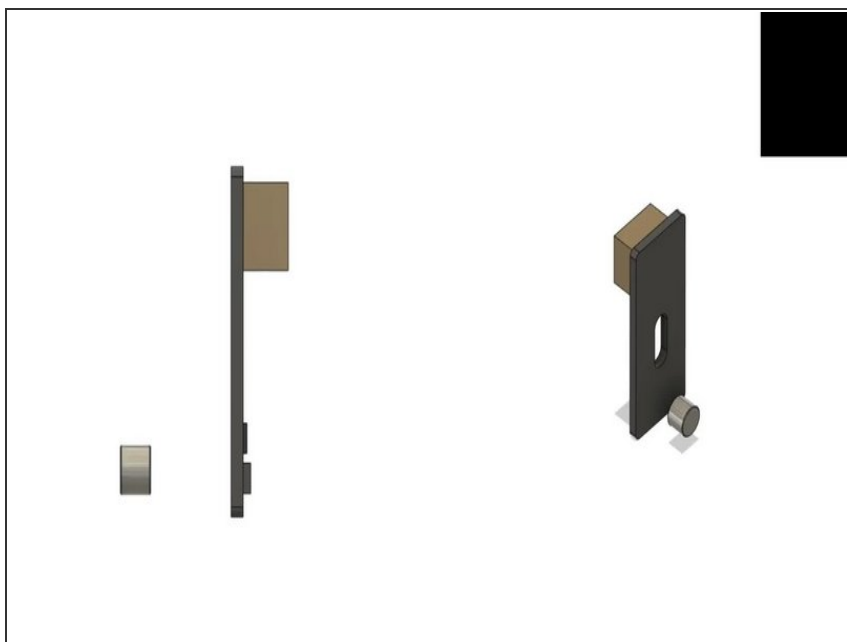
A guide covering the application, operation, and commissioning of the BlackStop digital hall-effect end stop (limit switch)

## Step 1 — What is BlackStop?



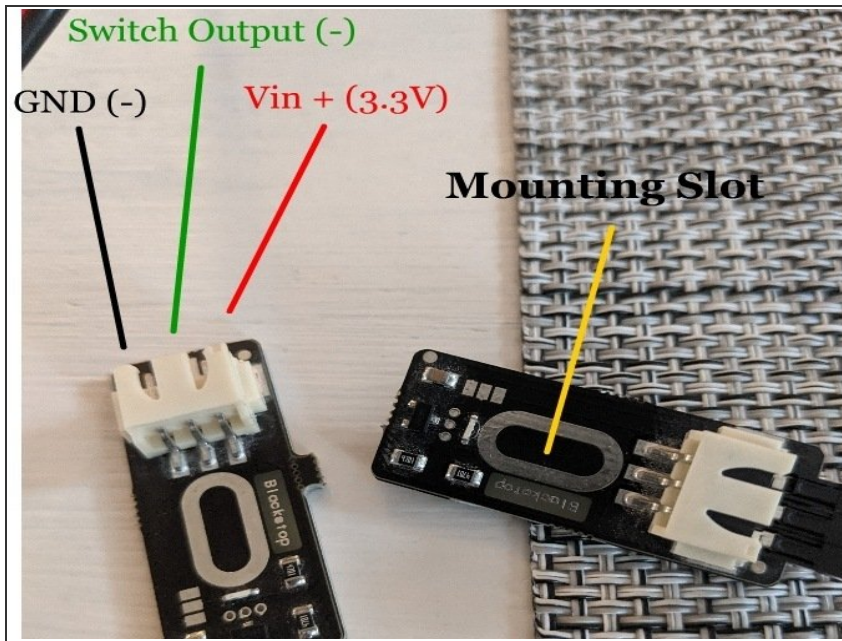
- BlackStop is a compact and resilient digital hall-effect sensor for use as a motion system axis limit switch.
- It's flexible in both its mounting options as well as integration.
- Serving the same function of both mechanical and optical switches, the hall-effect switch uses a magnet (and its resulting magnetic field) to locate an axis.
- Blackbox was designed to incorporate these switches on the X and Y axis as well as the rotational Tool Lock Axis.

## Step 2 — Operation



- BlackStop is a N/O (normally open) switch
- A magnetic field of a given strength digitally closes the switch, providing a low (ground) signal to the controller from the center "Signal" pin.
- As such, the magnet can approach and trigger the switch from many angles and orientations. The animation to the left shows how triggering can be performed from the back side of the PCB as well!
- Hall effect end stops are contact less with no moving parts (aside from the permanently mounted trigger magnet).

## Step 3 — Wiring



- This guide is in progress.