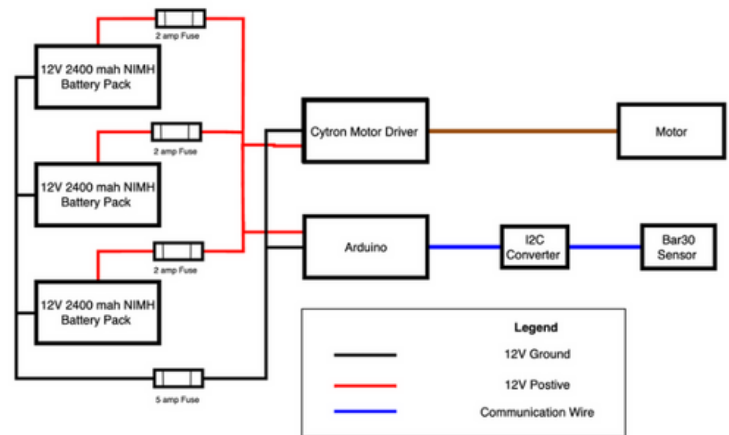




Shark Tech Float Document

Shark-fin first starts its mission at the surface by initially collecting the surface pressure and depth via a BAR30 pressure sensor connected to UNO R4 WIFI Arduino. once this data has been transferred to the surface via WIFI to a sister Arduino. The operator then presses a button which sends command to the float to begin its descent using a motor blade to move downward once commenced a built in timer will make the motor spin for 45 seconds which will get it to the bottom of the pool



Float Full Load Amps (FLA) in water = 4.9 Amps

A Fuse size selected based on FLA = 5 Amp

The onboard Arduino is connected to a Cytron motor driver, which controls a 12V 1250 GPH bilge pump motor. Upon receiving a descent command from the surface unit, the motor activates to initiate the profiler's descent. During this process, a Blue Robotics Bar30 pressure sensor continuously sends real-time depth data to the Arduino. This data is stored on an onboard SD card and is also used to maintain a target depth of 2.5 meters. The Arduino dynamically adjusts the motor's operation, either pushing or pulling, based on the profiler's position, relative to the desired depth. Once the first profile is complete and the surface Arduino has successfully received the stored data, the operator can transmit a command to begin the next descent cycle. All electrical components of the *Shark Fin* are powered by three 12V NiMH 24000mah batteries wired in parallel and all have a 2 amp fuse on the positive wire and a 5 amp fuse on a common ground . All internal components of the *Shark Fin* are securely housed in a 40 cm acrylic waterproof enclosure. A prebuilt container was selected for this purpose to ensure reliable protection of sensitive electronics during operation. To see the logic of the system

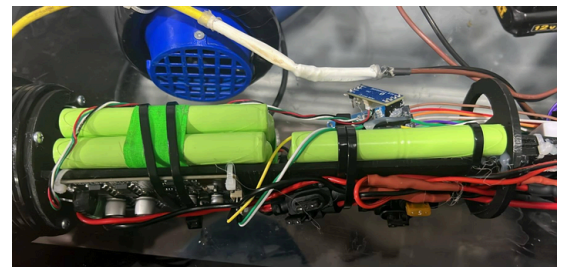
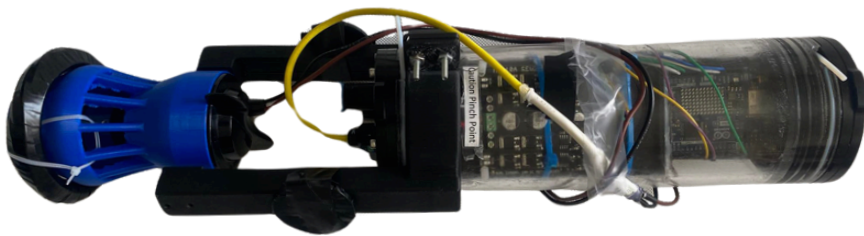


Figure 1: SharkFin and its internal components, Image By Finlay Jones