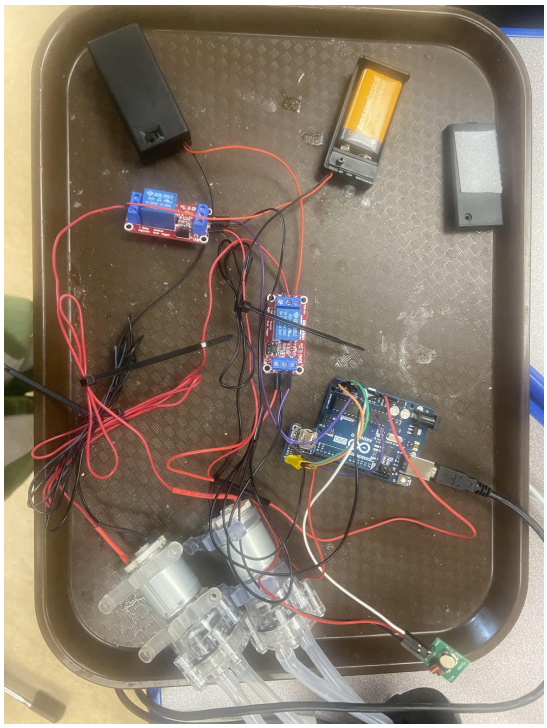
Mate Float Description

In operation, the MATE float system utilizes the arduino's programming capabilities to monitor the real-time clock module and receive commands from the transmitter. The ardiuno triggers the appropriate motor relay to activate the water pumps at specific intervals or in response to user commands. By controlling the flow of water in and out of the ROV, the system can achieve the desired buoyancy, allowing the ROV to float, sink, or maintain a neutral buoyancy based on the application's requirements.



BREAK DOWN OF COMPONENTS

1. The Arduino Microcontroller
    a. At the heart of the MATE float system lies the arduino microcontroller. This versatile device serves as the central control unit, processing input signals and executing commands. It interfaces with other system components to regulate buoyancy based on real-time data and user instructions. The arduino's programing capabilities make it adaptable to various buoyancy control strategies.
2. Power supply with 9V Alkaline batteries
    a. To ensure uninterrupted operation, the MATE float system relies on two 9V alkaline batteries. These batteries supply the necessary voltage to power all components, including the arduino, moto relays, and transmitter. With reliable power sources, the system can maintain consistent functionality throughout underwater operations.
3. Motor relays for water pump control
    a. Achieving precise buoyancy control requires controlling the flow of water in and out of the ROV. The MATE float system employs two motor relays to act as switches, enabling the arduino motor relay the system adjusts the water flows, regulating the buoyancy level of the ROV.
4. Real-time clock module for time based control
    a. To automate buoyancy adjustments over time, the real time clock sends signals to the serial monitor about whether the pump is turned on or off and also the times which the pump is underwater.
5. Wireless control with a transmitter
    a. The MATE float system features a transmitter that enables wireless communication between the control station and the underaTer vehicle. Operators can remotely monitor and control buoyancy levels, enhancing operational convenience and safety. The transmitter sends commands to the arduino, instructing it to adjust buoyancy based on real-time observations or user input.