FLOAT-ROCKET

The FLOAT, known as Rocket, is manufactured separately from the ROV and is tasked with sinking down and rising from the bottom of the pool to collect data. When the FLOAT makes contact with the surface, this information is transmitted to the control station.

ABOUT ROCKET

Rocket plays a crucial role in underwater operations by providing buoyancy, stability, and positioning assistance for various structures and equipment. Its use ensures that underwater tasks can be carried out efficiently and safely, maintaining the correct orientation and location of critical components.

DESIGN

This innovative FLOAT Rocket boasts a cylindrical body crafted from lightweight PVC pipe, ensuring natural buoyancy. The main focus is the buoyancy engine. This mechanism actively controls the float's density, allowing it to navigate underwater with precision.

The descent is initiated through a unique "syringe" design. Water is drawn into the cylindrical body and tube, increasing the FLOAT's overall weight. As the buoyant force can no longer counteract this added weight, the float gracefully sinks. Throughout the descent, the float meticulously monitors its depth.

Once the FLOAT reaches the bottom and the depth sensor detects no further change, a built-in linear actuator springs into action. Just like a plunger, it pushes the water back out of the cylinder, effectively reducing the weight. With its buoyancy restored, the FLOAT effortlessly ascends back to the surface.
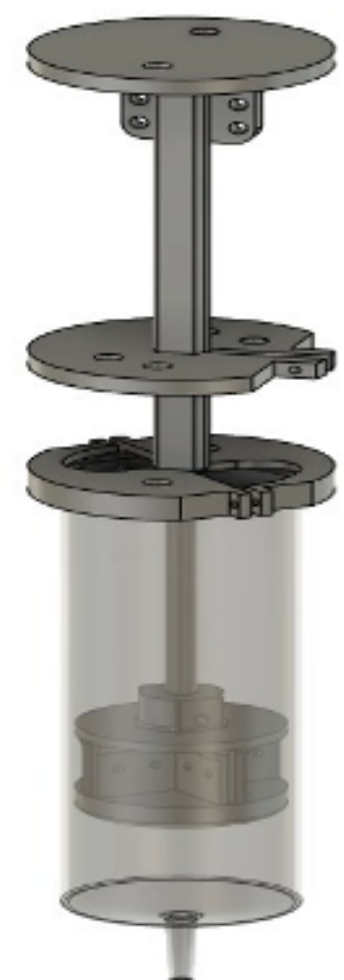
The engine consists of a single huge 500mL syringe, whose motion is triggered by a linear actuator.The system is powered by a 9 V battery pack, attached to a 5 A fuse
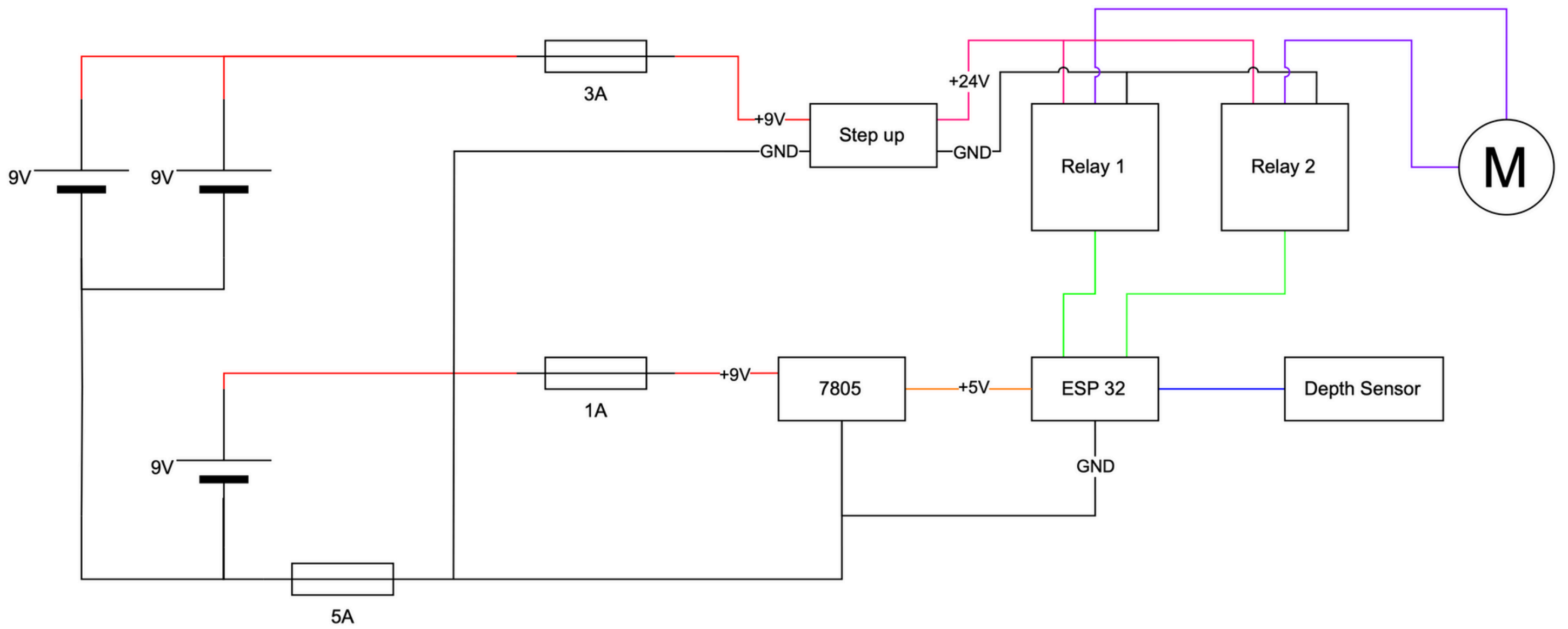
CONTROL SYSTEMS

Rocket communicates with the control station via wireless Communication using High Gain antennas with ESP32 .

POWER

Untethered
Battery 9V
Fuse: 5A

ROCKET'S SID

power calculations:

Components	Quantity	Voltage (V)	Current (A)	Total Power (W)
Linear Actuator	1	24	0.5	12
Depth Sensor	1	3.3	0.3	0.99
ESP 32	1	12	0.05	0.6
Total Power Consumed (W)				**13.59**