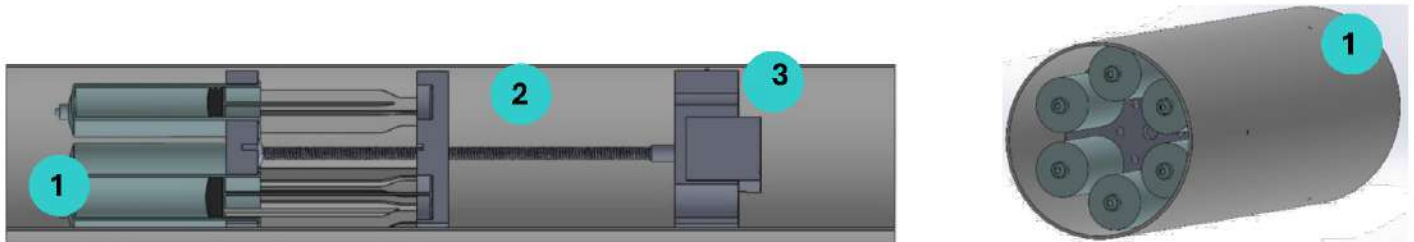


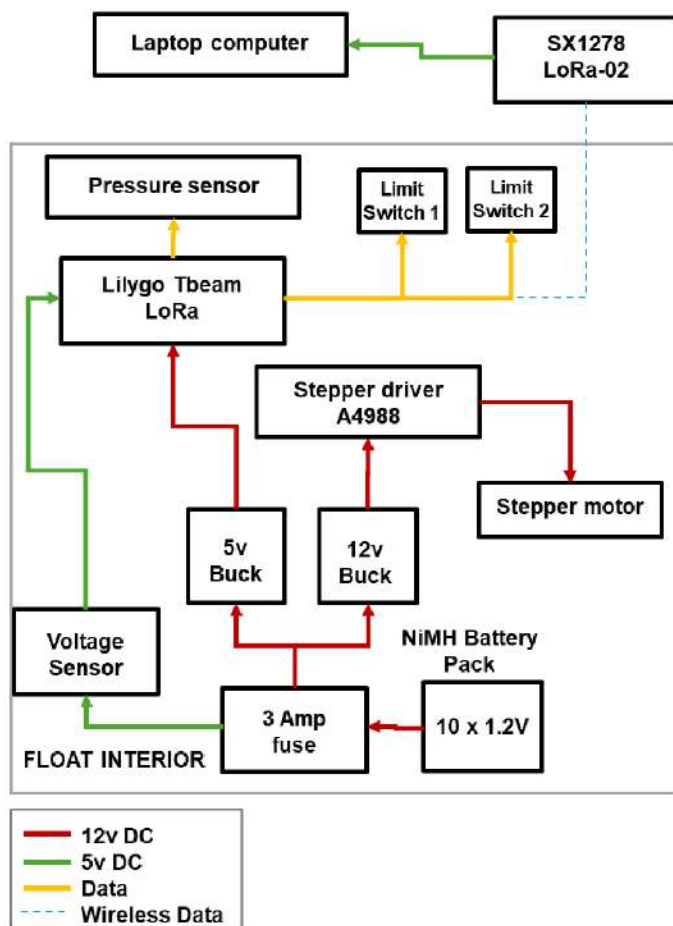


Non-ROV Device



This autonomous device has been designed to operate in aquatic environments without being connected to an ROV, with the goal of collecting key environmental data such as pressure and voltage for later analysis. Its modular design clearly separates the electrical systems, sensors, batteries, and mechanical components, optimizing both maintenance and safety during operation. The cylindrical housing, made of 3D-printed PVC, is optimized for vertical movement and is corrosion-resistant.

The active buoyancy system consists of six 60 ml syringes (1), a lead screw (2), and a NEMA 17 stepper motor (3), which together enable internal volume adjustments to control the device's ascent or descent in the water without the need for thrusters.



The core electronics include a low-power microcontroller responsible for gathering data from pressure and voltage sensors and transmitting it wirelessly using the LoRa protocol, known for its efficiency and resistance to interference.

The SID wirelessly connects to the float's surface unit, eliminating the need for cables and enhancing its deployment flexibility in remote or sensitive environments. Data is sent to a surface station upon surfacing, where it can be visualized on a screen or graphed from a computer.

The system is powered by an internal NiMH 12V battery pack, with buck converters supplying 5V and 12V to the various components, along with a 3-amp fuse for protection. Thanks to its compact, efficient, and autonomous design, this device is particularly useful for monitoring coastal areas, remote bodies of water, or any scientific mission requiring a lightweight, accurate, and resilient solution.