TECXOTIC FLOAT-WASP

DESIGN

competition. The device has a maximum diameter of 18cm and a minimum diameter of 11cm in the body of the float. It has a height of 60cm.

To achieve vertical submersion, we concentrated the weight at the lower end of the float, while placing a PLA design at the upper end and adding two rings on it to facilitate the grip of the device by the ROV (Remotely Operated Vehicle).

BUOYANCY ENGINE

The float operates with a suction motor, a solenoid, and an air pump connected in the same system to manipulate a pressure bag with the objective of changing the device's buoyancy. This system is controlled by a series of sensors that determine the float's position in its environment.

If the sensors were to fail, WASP has an auxiliary system consisting of a touch button and a buoyancy sensor to determine whether it is on the surface or at the bottom of the sea to continue its main function.
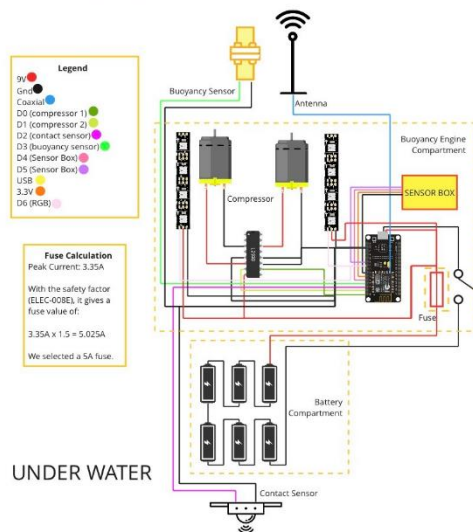
COMMUNICATION

The FLOAT communicates using a TCP/IP protocol using a NodeMCU. When it detects that it is on the surface, it maintains its position until it establishes communication with the ground to transmit the requested competition data. Afterward, it resumes its cycle to continue its task.

SAFETY FEATURES

It has a 5A fuse located 4 cm away from the battery terminals. As an additional measure to identify its operating mode, WASP implements a color-coding system using RGB (red, green, blue) LEDs. Blue indicates ascent, green indicates data transmission, orange indicates descent, and intermittent red indicates a malfunction in the code.