

Overflow Robotics Co.

Alexandria Egypt, Est.2021

Main Idea:

In this year we decided to create the vertical profiling float named "**Zeus**", simply we have it working by a thruster pilge pump one because we tried to create a buoyancy engine and it seemed that it didn't work well for us. Our float use a non-rechargeable battery and it have a 6 amp fuse 5 cm away from the battery. All the cabling done inside is done with manner and the battery is properly fixed. Our profiling method is using a T-200 thruster to complete vertical profiles.

Design:

Zeus is made of HDPE and is fabricated by a center lathe machine, our float is composed into 2 chambers electrical chamber and water chamber. The electrical chamber held all of the electrical components that **Zeus** needed, the water chamber was designed so it can hold the T-200 thruster allowing the water flow to flow in both directions easily.

Electrical System:

Zeus is operated using a 12v battery that has a 6 amp fuse connected to it to protect the circuit. We used Blue robotics ESC to control the T-200 in both directions and used an Arduino Nano to control the whole float. The Arduino supplied the driver with needed direction and speed whenever it was needed. We used HC-12 module to let **Zeus** communicate with the station. We chose Hc-12 module because it supplies us with a maximum range of 1000 meter so it gave us a blast with communicating to the station. Our communication system consist of 2 parts the transmitter and the receiver our transmitter and receiver are made up of Arduino Nano connected to a HC-12 module.