Water Rescue Robot
Torque Transducer

Industry: Maritime, Industrial Automation

Summary

Customer Challenge

Water rescue robots are deployed in situations that are too hazardous or unpredictable for human responders. As maritime robotics become more common in emergency and open-water environments, ensuring these systems are safe, functional, and reliable is critical. Before they can be trusted in real rescue operations, manufacturers must thoroughly test the thrust performance, durability, and response capabilities under realistic and often extreme conditions.

Interface Solution

Interface recommends the T2 Ultra Precision Shaft Style Rotary Torque Transducer paired with the SI-USB4 4-channel USB Interface Module. The T2 measures the torque of the water rescue robot's thrusters, especially in numerous water environments. The SI-USB4 4-channel USB Interface Module enabled real-time data acquisition, visualization, and recording directly on a laptop or desktop computer.

Results

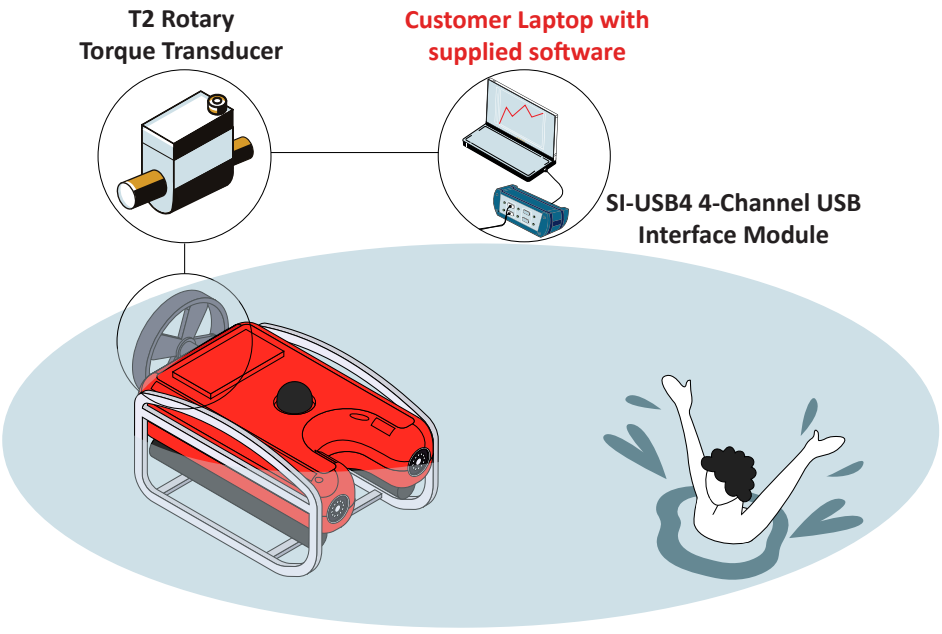
Interface's force measurement system successfully measured precise torque performance of the water rescue robot under different load conditions and variations.

Materials

- T2 Ultra Precision Shafty Style Rotary Torque Transducers
- SI-USB4 4-channel USB Interface Module
- Customer PC

How It Works

1. The T2 Ultra Precision Shaft Style Rotary Torque Transducer is installed inline between the water rescue robot's thruster motor and the propeller assembly. This allows the T2 to directly measure the torque output generated by the motor as it drives the propeller under test conditions.
2. The motor is powered on an tested through different extreme water environments. As the motor drives the propeller, the T2 continuously measures the torque being applied through the shaft.
3. When connected to a computer, the SI-USB4 4-channel USB Interface Module can monitor and display the results of the torque.



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interface
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