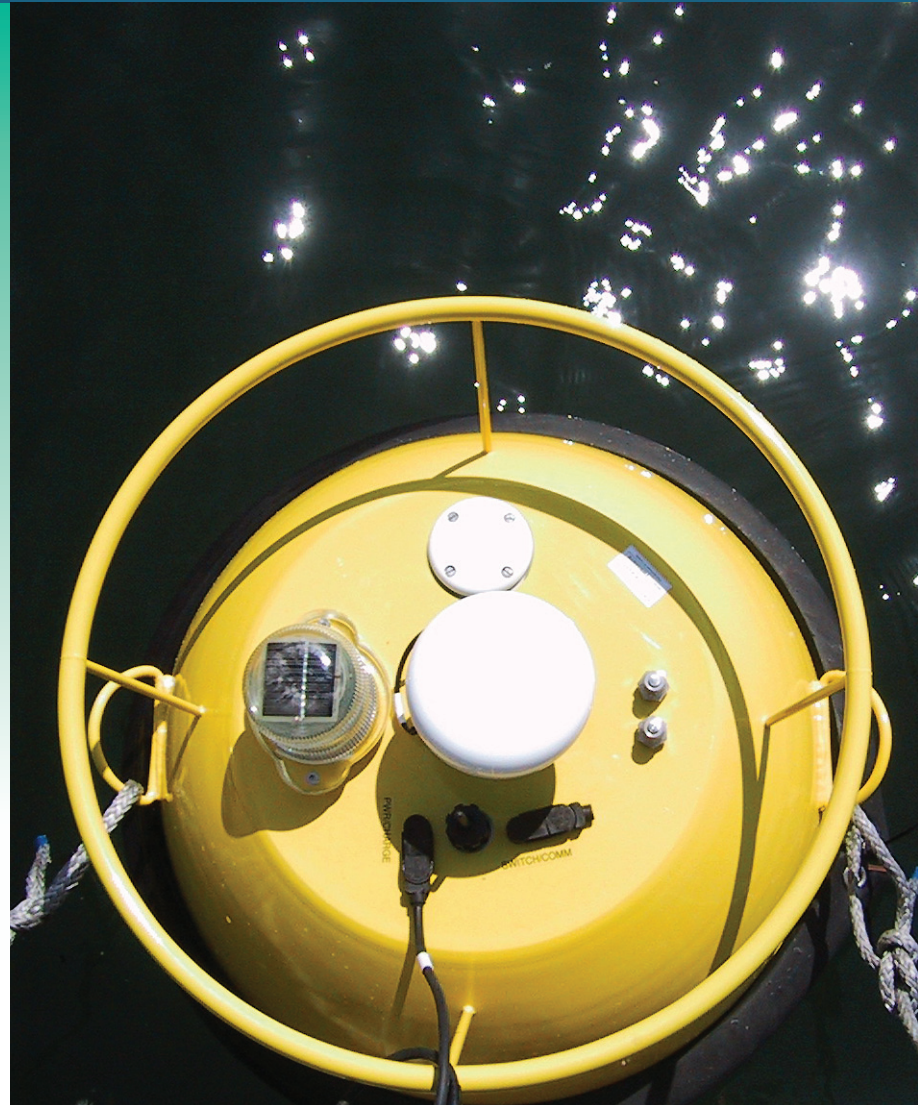


HYDROLEVEL™

Water Level Buoy

FEATURES & BENEFITS:

- Advanced water level measurements using GPS, RTK and GSBAS technology
- Better than 10cm real time mode, 1mm accuracy with post-processing
- Fully user configurable with wireless interface
- Low operating and deployment costs
- Easy deployment and recovery
- Solar powered option available
- Choice of data logging and telemetry options



The HydroLevel™ buoy was developed to meet the demand for a highly accurate water level measuring device that avoids the limitations inherent to onshore or bottom-mounted tide gauges.

HYDROLEVEL™ BUOY

A Revolution in Accurate Offshore Water-Level Measurements



HydroLevel™

The AXYS HydroLevel™ buoy accurately monitors water level elevation in any body of water where a surface following buoy can be deployed. HydroLevel™ is a precision instrument, which incorporates the latest GPS RTK and motion sensing technologies, making the HydroLevel™ the leading solution for an accurate, easy to use, rugged economical product for the measurement of water elevation.

The HydroLevel™ buoy uses the NCT-2050G StarFire GPS receiver to provide real time accurate three dimensional position by the Global Differential Global Positioning System (GDGPS), which, when used during hydrographic surveys will enable the depth & contours of the seabed to be corrected for the true water surface elevation changes as measured on the absolute three dimensional WGS 84 earth centered, earth fixed (ECEF) reference frame using GPS real time kinematic (RTK) or post-processed (PPK) techniques. GDGPS measurements provide solid earth tide corrections and the HydroLevel™ buoy GPS receiver incorporates these real-time correctors at the position and time measured by the GPS receiver.

In addition to position measurement, a motion sensor on the buoy measures the pitch, roll and heading of the buoy in real-time. Along with the position of the GPS antennae, the pitch, roll and heading are used to calculate the true position GPS antenna, and therefore of the water level in which the buoy is floating. The earth tide corrections, pitch, roll and heading data are all supplied to the buoy processor, which performs the necessary tilt corrections, averaging and filtering. GPS data observation intervals, logging, filtering and average are fully user configurable allowing for an optimum water level position solution

in real time via short range or satellite telemetry or after recovery by post processing the logged raw data stored on the buoy.

The HydroLevel™ GPS Processor was developed from the successful low-power WatchMan500™ payload processor, specifically designed by AXYS for the marine environment. The processor integrates sensor systems and provides onboard data processing, data logging, telemetry and diagnostic/set up routines. The HydroLevel™ buoy can be used as a self contained data logging system or can be configured with a variety of telemetry mechanisms. The buoy is also capable of monitoring its moored location through the use of the onboard GPS receiver and a buoy mooring WatchCircle™ algorithm. If the buoy drifts from its defined location, the WatchCircle™ Alarm is activated at the shore base station.

Data transmitted from the buoy via Iridium, VHF or cellular telemetry includes buoy configuration, status data, position and WatchCircle™ Alarm messages. Data is also stored on the buoy's internal data logger. AXYS Data Management Software (DMS), can be installed on a PC to automatically receive, decode and display data transmitted from the buoy. Decoded data is auto-archived in both file and database formats for further use.

The buoy's spun stainless steel corrosion resistant hull has a high strength to weight ratio and provides secure mooring and lifting points.

Set up and communication with the HydroLevel™ buoy takes place through a waterproof connector on the buoy hull and alternatively, via a Bluetooth wireless connection built into the buoy. All of the buoy set-up parameters can be adjusted and monitored using Bluetooth, enabling easy field configuration and testing.

Due to its high rugged design and solid state electronics, HydroLevel™ can withstand the rigors of deployment and recovery operations, including impact, shock, spinning and temporary submergence.

Specifications

- **Physical Description**
 - Hull Diameter:** 0.6 m (25.5 in.)
 - Bumper Diameter:** .72 m (29.5 in.)
 - Weight excl. batteries:** 43 kg (95 lb.)
 - Weight w/ 2 batteries:** 58 kg (128 lb.)
 - Weight w/ 4 batteries:** 71 kg (156 lb.)
 - Obstruction Light:**
 - Programmable Amber LED with three miles visibility (optional).
- **Materials**
 - Hull:** Stainless steel 316
 - Lifting Handles:** Welded stainless steel
- **Sensors/Processor**
 - Microprocessor:** AXYS WatchMan500™
 - GPS:** 12 channel, RTK Dual Band GSBAS
- **Resolution/Accuracy**
 - Elevation:** Resolution 1 cm
 - Accuracy:** <10 cm, ±3 cm with post processing
- **Power System**
 - Operational system voltage:** 9.0 to 20 VDC
 - Batteries:** Up to 4 Thionyl Lithium Chloride battery packs (approx. 7 – 10 day duration per pack)
- **Telemetry Options**
 - Iridium (standard)
 - Optional Telemetry:** VHF, Inmarsat D+, CDMA, GPRS
- **Software**
 - DMS Suite: Designed for use with one or more buoys for easy communications and messaging management (optional).
- **Mooring**
 - Inverse catenary, chain, semi-taut, or false bottom.



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