

TRIAXYS™ DIRECTIONAL WAVE BUOY with currents

The TRIAXYS™ Directional Wave Buoy is the result of a collaborative development and testing program between AXYS Technologies Inc. and the Canadian Hydraulics Centre (CHC) of the National Research Council of Canada.

Features:

- Easy handling
- Lower operating and deployment costs
- User configurable
- Rugged and reliable wave sensor
- Advanced motion and directional wave analysis
- Available with integral ADCP for current speed & direction profiles.



Description:

The TRIAXYS™ Directional Wave Buoy precisely measures directional waves and is easy to use. The sensor unit is comprised of three accelerometers, three rate gyros, a fluxgate compass and the proprietary TRIAXYS™ Processor. Economical and rugged TRIAXYS™ Directional Wave Buoy can withstand the rigors associated with deployment and recovery operations, specifically: impact shock, spinning, and temporary submergence.

The buoy's modular components are easily accessed by removing the polycarbonate dome. The buoy's spun stainless steel hull has a high strength to weight ratio and corrosion resistance, and provides secure mooring and lifting points. The clear dome allows sunlight to reach the solar panels, while maintaining a low profile and impact resistance. The buoy is solar powered with rechargeable batteries to reduce annual operating costs. The buoy can operate for years before the batteries need replacement.

Ask for details about Triaxys Mini & Watchkeeper

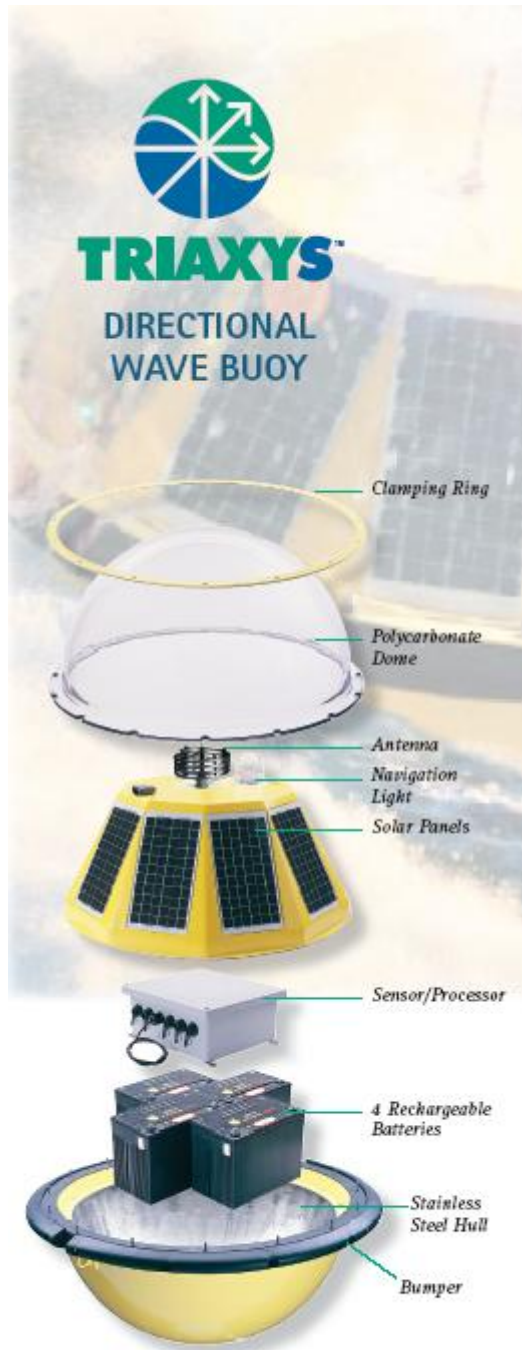
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Description (cont):

The heart of the TRIAXYS™ Directional Wave Buoy is developed from the AXYS WATCHMAN™ DCP, which integrates sensor systems and provides onboard data processing, data logging, telemetry, and diagnostic/set-up routines. Full directional wave spectra is computed by the CHC maximum entropy method. Mean wave direction and spreading width are computed as functions of frequency. The software also performs a zero-crossing analysis to compute various time-domain wave parameters. The onboard computer uses an iterative algorithm based on Fast Fourier Transform analysis to solve the full non-linear equations of motion in six degrees of freedom, as measured by accelerometers and angular rate gyros. The buoy is capable of accurate motion data for roll and pitch angles up to 60 degrees. Surge and sway velocities measure wave kinematics that define directional wave properties.

The removal of an external magnetic key activates the buoy. Set-up and communication with the TRIAXYS™ Directional Wave Buoy takes place through the dome via the infrared port, mitigating the need to remove the dome. All the set-up parameters and buoy activity can be adjusted and monitored using this port; enabling easy field configuration and testing. Several telemetry options are available, including VHF radio, Inmarsat D+, Iridium, GSM, CDMA and ARGOS. The data transmitted from the buoy can include wave statistics, HNE (Heave, North and East Displacements), MeanDir (Wave Direction and energy as a function of frequency), directional and non-directional wave spectra, buoy configuration, status data, position and Watchcircle™ alarm messages. All data is stored on the internal data logger.

Triaxys may be fitted with a through hull Aquadopp ADCP to provide seamless current speed & direction profiles.



Specifications:

• Physical Description

Diameter: 1.10m (43.5 inches) outside bumper
0.91m (36 inches) hull
Weight (including four batteries): 197 kg (435 lb)
Weight (excluding batteries): 90 kg (199 lb)
Obstruction Light: Amber LED source. Programmable flash sequence with three miles visibility.

• Materials

Hull: Stainless steel
Dome: Impact resistant polycarbonate
Solar Panel Assembly: Fiberglass over foam
Clamping ring: Stainless steel

• Sensors/Processor

Water temperature:
Thermilinear composite network
Accelerometers: Flexure suspension servo (Range $\pm 2g$)
Rate: Piezoelectric vibrating gyroscope (Maximum angular velocity $\pm 80^\circ/s$)
Compass: Microprocessor controlled fluxgate (Accuracy $\pm 0.5^\circ$)
A/D and sampling frequency: 8 channel 14 bit at 4 Hz
Microprocessor: PC104 and 80C552
GPS: 12 channel

• Power System

Operational system voltage: 11.0 to 14.1 VDC
Batteries: 4 @ GNB SunLyte 5000X 12 Volt, 100 AH battery
Solar Panels: 10 @ 6 Watt
Siemens SM6
Smart Charger: SunSaver-6
External On/off Switch: Turns buoy on when Magnetic Key is removed.

• Telemetry Options

- VHF
- INMARSAT D+
- ARGOS
- IRIDIUM
- CDMA, GSM