AXYS TECHNOLOGIES INC.

TRIAXYS™ DIRECTIONAL WAVE BUOY

FEATURES & BENEFITS:

- Spin and impact resistant
- Reliable operation in extreme weather or geographical locations
- 5 year rechargeable battery life
- Supports any telemetry
- >5 years of data storage capacity
- Continuous wave sampling
- Solar powered

The TRIAXYS™ Directional Wave Buoy uses the TRIAXYS™ Next Wave II Sensor for continuous wave sampling and accurate wave data.

TRIAXYS™

A Revolution in Wave Measurement

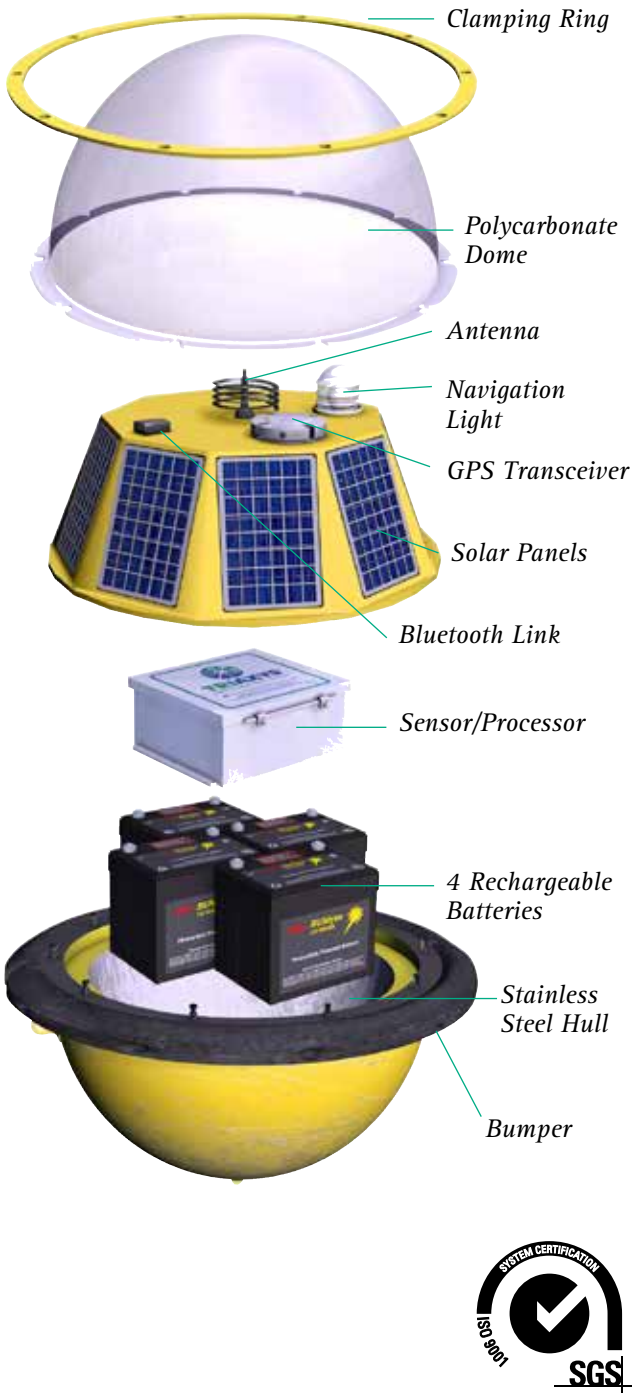
TRIAXYS™
Directional Wave Buoy

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, the TRIAXYS™ Directional Wave Buoy can withstand the rigours associated with deployment and recovery operations, specifically: impact shock, spinning, and temporary submergence. 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 buoy's modular components are easily accessed by removing the polycarbonate dome. 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.

The heart of the TRIAXYS™ Directional Wave Buoy is developed from the AXYS WatchMan500™ controller, 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 Bluetooth, mitigating the need to remove the dome. All the set-up parameters and buoy activity can be adjusted and monitored using this connection; enabling easy field configuration and testing.

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.



Specifications

- **Physical Description**
  Diameter: 1.10m (43.5 inches) outside bumper
  0.91m (36 inches) hull
  Weight (including four batteries): 230 kg (505 lbs)
  Obstruction Light: Amber LED. Programmable IALA ODAS flash sequence with three miles visibility.

- **Materials**
  Hull: Stainless steel
  Dome: Impact resistant polycarbonate
  Solar Panel Assembly: Fibreglass over foam
  Clamping ring: Stainless steel

- **Sensors/Processor**
  Processor: WatchMan500™
  Water temperature: Thermilinear composite network
  Accelerometers: ±2g
  Rate: ±160°/s
  GPS: 12 channel

- **Power System**
  Operational system voltage: 11.0 to 19.6 VDC
  Batteries: 4 @ 12 Volt,100 Amp hr/battery
  Solar Panels: 10 @ 6 Watt
  Smart Charger: Sunsaver-6
  External On/Off Switch: Turns buoy on when Magnetic Key is removed.

- **Telemetry Options**
  - VHF/UHF
  - IsatData Pro
  - INMARSAT M2M
  - IRIDIUM
  - CDMA, GPRS, HSPA, LTE (cellular)

Resolution/Accuracy

	Range	Resolution	Accuracy
Heave	±20 m	0.01 m	Better than 1%
Period	1.5 to 33 seconds	0.1 sec	Better than 1%
Direction	0 to 360°	1°	3°
Water Temp.	-5 to +50°C	0.1°C	±0.5°C

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