



Subsea Static Heading Sensor

Compact, Cost-Effective & ROV-Ready

The Subsea Static Heading Sensor is a compact, self-contained device for measuring subsea structure orientation. It provides real-time pitch, roll, and heading readings on an onboard display without requiring external communications or acoustic links. Designed for rapid ROV deployment, it can be placed onto a structure and read immediately from up to 3+ meters away.

At its core is a MEMS Inertial Measurement Unit (IMU) in a titanium housing rated to 4,000 meters. Optional motorized rotation enables quadrant-based gyrocompassing, delivering heading performance approaching that of high-end inertial navigation systems, but without the associated cost. Continuous onboard accelerometers provide pitch and roll readings with <0.1° accuracy, while heading achieves up to ±1°, depending on the chosen IMU.

Durable, compact, and ROV-ready, the Subsea Static Heading Sensor delivers reliable orientation measurements to support efficient subsea operations.

Real-time subsea orientation made simple,

durable and ROV-ready.

Zupt is a global leader in offshore survey solutions. We develop all core technologies in-house to deliver accurate subsea positioning, modeling, and monitoring for oil and gas, renewables, and marine construction projects worldwide.

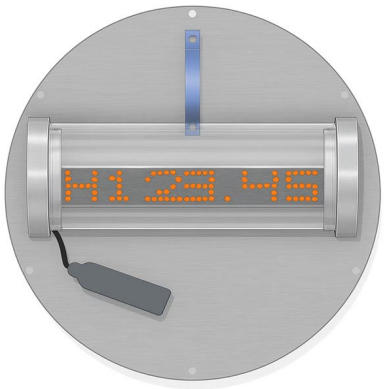
The LED display is optimized for seawater visibility and can be read clearly by ROV cameras without requiring data out. Colors are customizable, and the display angle adjusts to suit the deployment environment. A rechargeable internal battery provides at least 8 hours of operation, with automatic activation on deployment and power conservation until the device is rotated or moved. Its modular design supports future upgrades without replacing the housing, ensuring long-term flexibility and value.



Three versions of the device accommodate a range of requirements:

IMU A (Tactical Grade): Static Orientation Performance
- Heading Accuracy: <1.0° Sec Lat. RMS after 8-min alignment
- Pitch/Roll Accuracy: <0.05° RMS (0-45° tilt)

IMU B (Mid-Grade): Static Orientation Performance
- Heading Accuracy: <5.0° Sec Lat. RMS after 8-min alignment
- Pitch/Roll Accuracy: <0.1° RMS (0-45° tilt)



IMU C (Cost-Optimized): Static Orientation Performance with No Internal Rotation
- Heading Accuracy: N/A
- Pitch/Roll Accuracy: <0.1° RMS (0-45° tilt)

Subsea Static Heading Sensor Key Features:

- LED display with large matrix segments (~230 mm wide) for clear ROV visibility
- Available in blue, green, or red for optimized underwater contrast
- Oil-filled, pressure-balanced acrylic display housing, durable and inexpensive to replace if scratched or damaged
- Housing adjustable to vertical, angled, or horizontal positions for flexible ROV viewing
- Three-foot base spaced 120° on a 225 mm circle for stable contact and accurate pitch/roll reflection on structures
- Optional protective rods across end cap reduce dropped-object damage risk while maintaining full visibility
- Pad eye for attaching a monkey's fist to simplify ROV deployment and recovery
- Instrument North marked by a machined, yellow-filled V on the housing
- Single SubConn bulkhead connector for charging, configuration, and testing, minimizing offshore complexity
- Weighs approximately 7.5 kg in air and 4 kg in water for manageable ROV handling
- Diameter approximately 215.5 mm (8.5"); height approx. 144.6 mm (5.7")