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MicroRider-G

Microstructure Sensor Module

High-Resolution Turbulence Module for Autonomous Vehicles

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The **MicroRider-G** is a sensor package designed to be integrated into the nose of autonomous vehciles such as gliders and AUVs – providing for **persistent direct measurements of micro-scale turbulence** from remotely operated assets. When combined with Rockland's **In-Situ Data Processing (ISDP)**, such systems can deliver near real-time estimates of TKE dissipation and ocean mixing to inform researchers for mission critical decisions.

ε to 10^{-10} W/kg

Measure low epsilon

Proven results in peer-reviewed publications.

ISDP

In-Situ Data Processing

On-board processing enables satellite transmission of turbulence data.

512 Hz

Fast sample rate

Optional sample rates up to 2048 Hz available.

1 000 m

Depth rating

Optional 6 000 m depth rating available.

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APPLICATIONS

Turbulence measurements – including velocity shear and dissipation of TKE, from remote, autonomous vehicles improves the spatial and temporal resolution of ocean mixing dynamics. The short form-factor of the MicroRider-G is purpose-designed to integrate into the nose of autonomous vehicles for low-drag. Contact the Rockland sales team to discuss which configuration will meet your mission objectives.

GENERAL SPECIFICATIONS

Length (overall) **Diameter housing**	466 mm 132 mm
Weight in air (water)	4.1 kg (0.7 kg)
Depth rating	1 000 m (6 000 m as option)
Sampling rate	512 Hz microstructure sensors
Power	Supply 9 - 18 VDC Consumption ~1 W

CONFIGURATIONS

Standard Sensors	2x Shear probes 1x FP07 micro-temperature probe 1x Pressure sensor 1x Tilt sensor 2x Vibration sensors
Optional Sensors	Additional FP07 micro-temperature

SENSOR SPECIFICATIONS

All specifications subject to change without notice

	Range	Accuracy	Resolution
Velocity Shear Probe	0 - 10 s^{-1}	5%	10^{-3} s^{-1}
FP07 micro-temperature	-5 - 35 °C	0.005 °C	10^{-5} °C
Pressure	0 - 100 bar	0.1% FS	5×10^{-4} bar

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