

MicroPod-EM

Electromagnetic Flow Sensor



DESCRIPTION

The **MicroPod-EM** electromagnetic flow sensor is designed for use as a stand-alone sensor or for integration on gliders and other autonomous vehicles. The **MicroPod-EM** works on the principles of electromagnetic induction and measures directly the axial speed of the vehicle, U , through the water.

The **MicroPod-EM** can also be used in laboratory flume settings to measure flow speed independently of the presence of acoustic scatterers, eliminating the need for seeding of the flume installation.

The **MicroPod-EM** is available as a stand-alone sensor package or as a modular unit integrated in Rockland's MicroRider turbulence payload system.

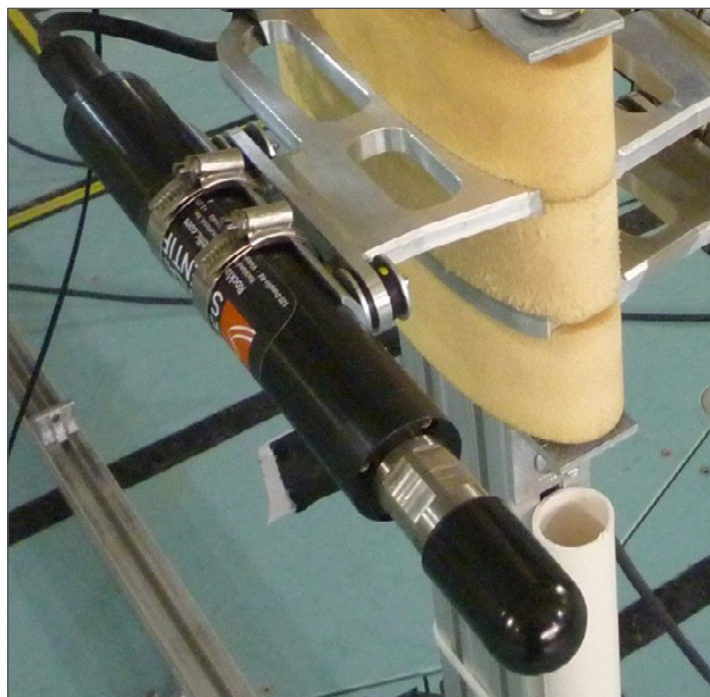
GLIDER APPLICATIONS

The axial speed of the glider is an important quantity, which affects the flight dynamics of the glider as well as the accuracy of certain oceanographic observations. For example, accurate knowledge of U is required when converting measurement points from time-domain spacing to spatial-domain spacing.

Some sensors, e.g. turbulence shear probes, require U for proper scaling of the measured signal. While U can be estimated from hydrodynamic models, a direct measurement of the axial speed is useful and preferred in many applications.



MicroRider With Electromagnetic Flow Sensor



MicroPod-EM Stand-Alone Sensor Installed in Laboratory

SENSOR SPECIFICATIONS

Measurement Principle	Electromagnetic induction (Hall Effect)
Measurement Direction/Range	1-D axial / 0 to 5ms ⁻¹
Data output	Analog (0-5V) or RS-232C
Accuracy, Analog Out	Larger value of $\pm 0.025\text{ms}^{-1}$ or $\pm 5\%$
Accuracy, Digital Out	Larger value of $\pm 0.005\text{ms}^{-1}$ or $\pm 2\%$
Frequency Resolution	5Hz
Measurement Resolution (A/D)	0.001ms ⁻¹
Sensor Head Dimensions	$\Phi 30\text{mm}$, L 85.5mm
Power Input (V)	4.85V - 5.15V
Power Consumption	85mA with 200mA surge current
Depth rating	1000m

All specifications subject to change without notice.

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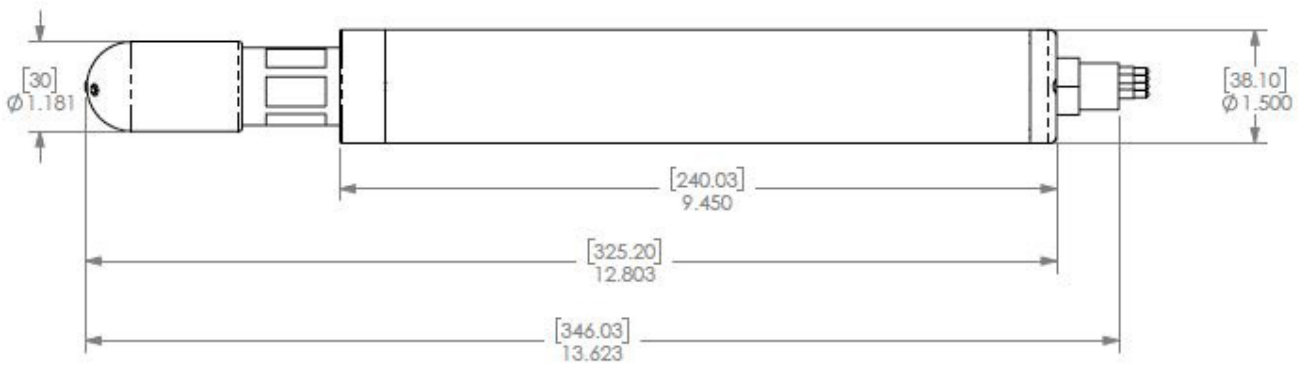


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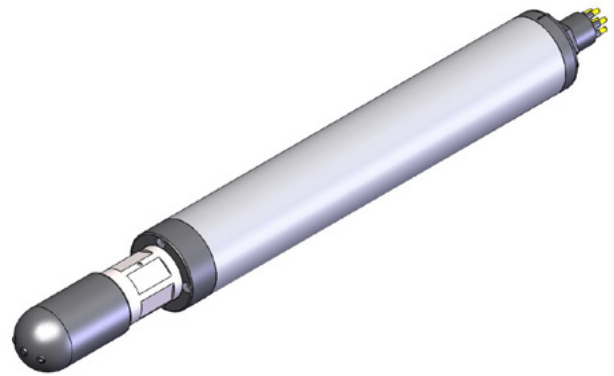
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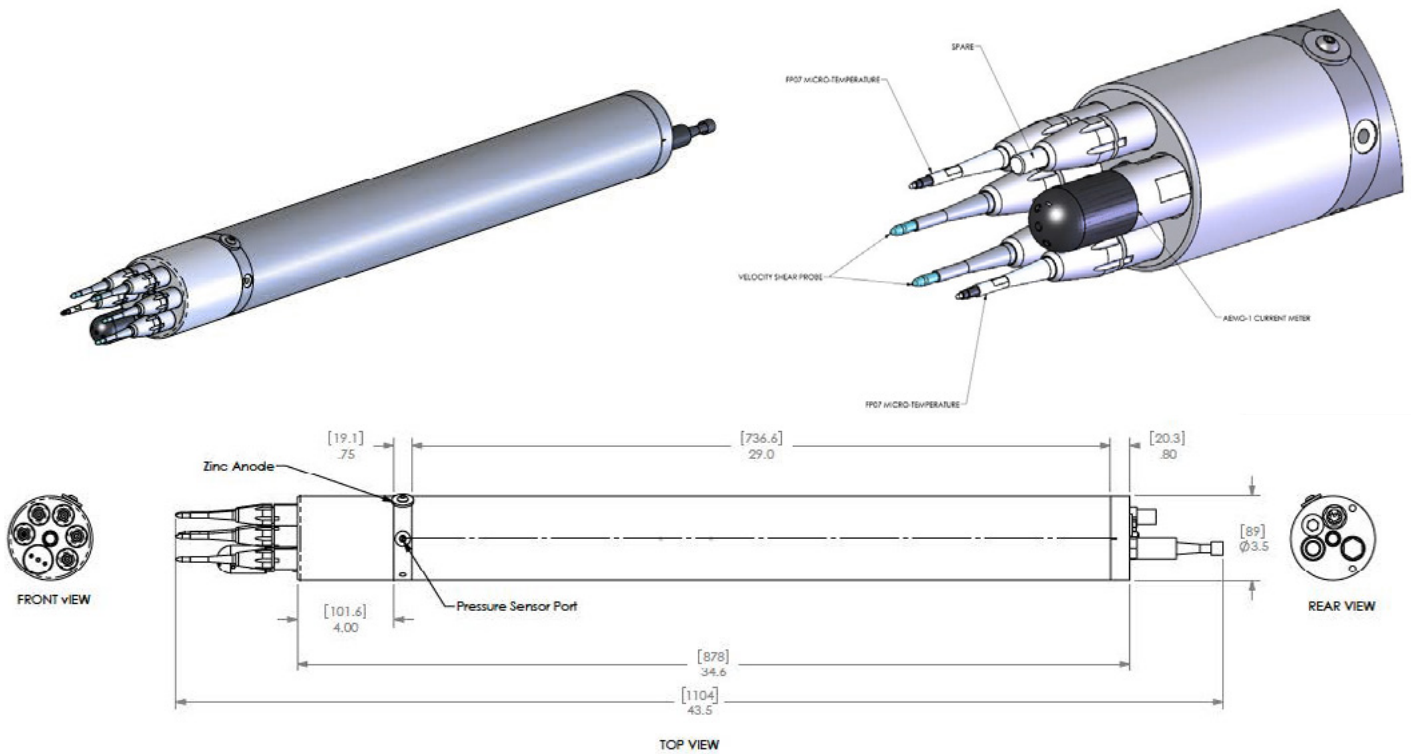
MicroPod-EM CONFIGURATION



Dimensions	$\phi 38.10\text{mm}$, L 240mm
Weight	540g (in air), 310g (in sea water)



MicroRider CONFIGURATION



dimensions in [millimeters] inches

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