Product Data Sheet TCM-4 Tilt Current Meter



Affordable & Easy-to-Use Current Meter for Shallow Water



Feature	Benefit	
Low Cost	Water velocity measurements for a fraction of	
LOW COST	•	
	the cost of an acoustic meter	
Small Size	 Operate in as little as 28 cm of water 	
Rugged Design	 Carbon fiber housing with O-ring seals 	
Small and Light	 Easy to deploy by hand or from a small boat 	
Long Battery Life	 1-minute velocity sampling for more than 1 	
	year	
Large Memory	 microSD memory card virtually eliminates 	
	memory concerns	
Temperature Sensor	 Internal thermistor accurate to <0.1 °C 	
USB 2.0 Interface	 Connect with standard USB cables 	

Description

The TCM-4 Tilt Current Meter is designed for use in shallow water locations such as coastal ponds, river and streams and tidal flats. The TCM-4 needs only 28 cm of water depth to operate and is easy to deploy by hand or from a small boat.

Tilt Current Meters measure current using the *drag-tilt principle*. The physical design is simple; the meter is buoyant and is secured by a flexible tether to a fixed anchor. Moving water tilts the logger in the direction of flow. A 3-axis accelerometer and 3-axis magnetometer determine tilt and bearing. The meter also contains a thermistor for recording temperature.

The meter's electronics are housed in a carbon fiber case with no external sensors. The housing itself floats and the built-in data logger includes a USB communication interface, a microSD flash memory card, and a long-life lithium battery. Windows® software is used to configure the TCM-4 for deployment and to process data.

The TCM-4 is available at a fraction of the cost of acoustic meters and is simple to setup and deploy. The low total cost permits multiple current meters to be deployed in many locations simultaneously, thereby increasing spatial data density and reducing uncertainty.



Specifications

	Range	Accuracy	Resolution
Speed (Recommended Range)	0-50 cm/s	3 cm/s + 3% of reading	0.1 cm/s
Speed (Maximum Range)	0-75 cm/s	Not Specified	0.1 cm/s
Direction	0-360°	0-360° 5° (for speed >5 cm/s)	0.1°
-annovatura	-5 to 30 °C	0.1 °C	<0.005 °C
Temperature	-20 to -5, 30 to 50°C	0.2 °C	<0.01 °C

Electronics

Memory	4 GB microSDHC flash card (standard)
Communications	Full speed USB micro-B port
Battery Type	3.6 V, size "A", user replaceable lithium (from
	Lowell Instruments)
Battery Life	Months to years depending on recording
	rates
Internal Clock	< 1 minute of error per month

Operating Modes

Start and Stop	Start and Stop at user defined times
Burst Mode	Variable rate logging at user defined interval
Recording Rate	Current: 64 Hz to 1 sample per hour with
	typical settings of one 20 second burst @ 8 Hz
	per minute (12-month battery life)
	Temperature: 1 Hz to 1 sample per hour

Mechanical

30 m (100 ft)
Diameter: 2.54 cm (1.00")
Length: 25.4 cm (10.0")
98 g (3.5 oz)
Housing: Carbon Fiber and Epoxy Laminate
with PVC & PETG fittings, 316 Stainless Steel
Screw and Buna and EPDM O-rings.

Software

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User Interface	Windows® Compatible Software Download	
USB	USB 2.0 compliant MSC and CDC Classes	
Firmware	Field ungradable via USB cable	



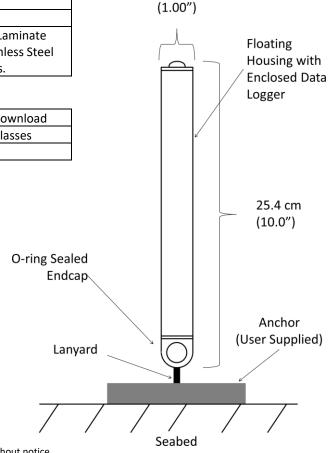
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2.54 cm