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Lowell Instruments TCM-4 Shallow Water Tilt Current Meter

Product Images

Short Description

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

The Lowell Instruments TCM-4 Tilt Current Meter is designed for use in shallow water locations such as coastal ponds, rivers 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.

Description

Key Features

Low Cost	Water velocity measurements for a fraction of the cost of an acoustic meter
Rugged Design	Carbon fibre housing with O-ring seals
Small Size	Operate in as little as 28 cm of water
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

Additional Information

Country of Manufacture	United States
Explanation	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 or tripod. 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 titanium pressure case with no external sensors. The floatation is derived from toughened syntactic foam. 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 (Low Range)	0-50 cm/s	3 cm/s + 3% of reading	0.1 cm/s
Speed (High Range)	0-75 cm/s	Not specified	0.1 cm/s
Direction	0-360°	5° (for speed >5 cm/s)	0.1°
Temperature	-5 to 30 °C	0.1 °C	<0.005 °C
	-20 to -5, 30 to 50°C	0.2 °C	<0.01 °C

Electronics	
Memory	8 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 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	
Depth Rating	30 m (100 ft)
Dimensions	Diameter: 2.54 cm (1.00")) Length: 25.4 cm (10.0")
Weight	1.29 kg (2.84 lb)
Construction	Housing: Carbon Fibre and Epoxy Laminate with PVC & PETG fittings, 316 Stainless Steel Screw and Buna and EPDM O-rings.
Software	
User Interface	Windows® Compatible Software Download
USB	USB 2.0 compliant MSC and CDC Classes
Firmware	Field upgradable via USB cable

Contents	• TCM-4 Shallow Water Current Meter • MAT-1 Data Logger (installed in meter) • Lithium battery (installed in logger) • 8 GB microSD card (installed in data logger) • microSD-to-SD card Adaptor • 1 m (3 ft) USB A to micro-B Cable • Spare Endcap O-ring (pre-lubricated) • 30 cm (12") lanyard
Brand	Lowell Instruments
Typical applications	Datalogging
Measurements	Water Flow