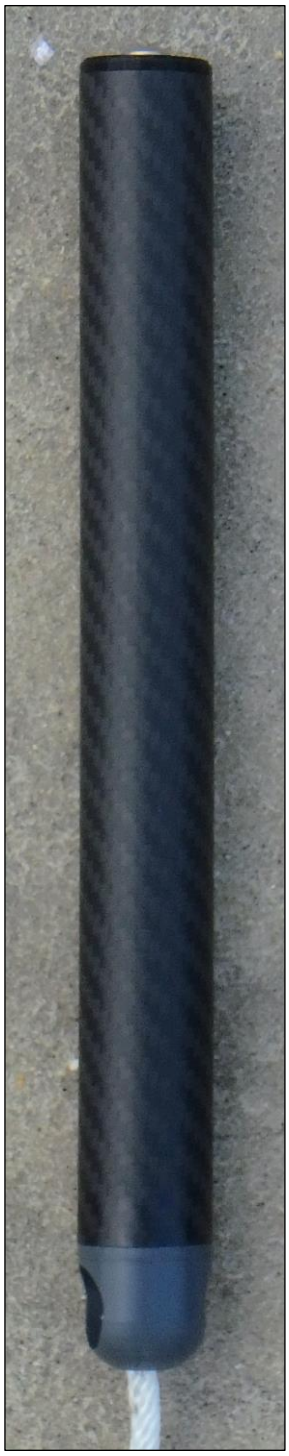
Product Data Sheet

TCM-4 Tilt Current Meter

LOWELL INSTRUMENTS LLC

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



Feature	Benefit
Low Cost	– Water velocity measurements for a fraction of 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, 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.

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°	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	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

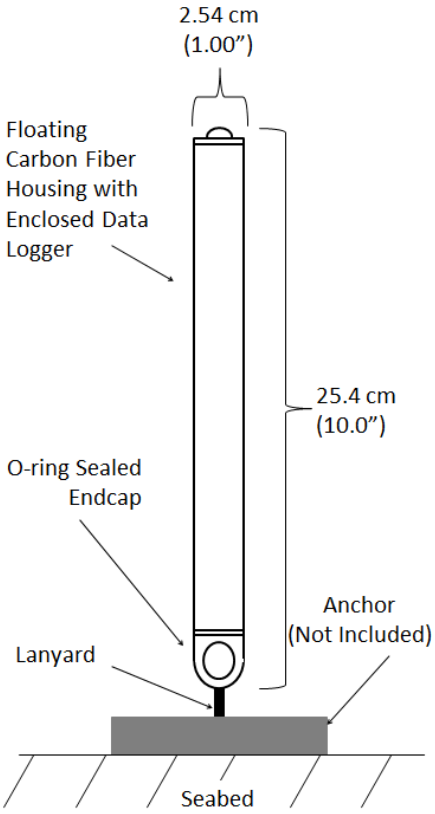
Start and Stop	Start and Stop at user defined times
Burst Mode	Variable rate logging at user defined interval
Recording Rate	Current: 64 Hz to 1 sample per hour with typical settings of one 20 second burst @ 8 Hz per minute (12-month battery life) Temperature: 1 Hz to 1 sample per hour

Mechanical

Depth Rating	30 m (100 ft)
Dimensions	Diameter: 2.54 cm (1.00") Length: 25.4 cm (10.0")
Weight	98 g (3.5 oz)
Construction	Housing: Carbon Fiber 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



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