



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	<p>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.</p> <p>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.</p> <p>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.</p> <p>Specifications</p> <table border="1"> <thead> <tr> <th></th> <th>Range</th> <th>Accuracy</th> <th>Resolution</th> </tr> </thead> <tbody> <tr> <td>Speed (Low Range)</td> <td>0-50 cm/s</td> <td>3 cm/s + 3% of reading</td> <td>0.1 cm/s</td> </tr> <tr> <td>Speed (High Range)</td> <td>0-75 cm/s</td> <td>Not specified</td> <td>0.1 cm/s</td> </tr> <tr> <td rowspan="2">Direction</td> <td>0-360°</td> <td>5° (for speed >5 cm/s)</td> <td>0.1°</td> </tr> <tr> <td>-5 to 30 °C</td> <td>0.1 °C</td> <td><0.005 °C</td> </tr> <tr> <td rowspan="2">Temperature</td> <td>-20 to -5, 30 to 50°C</td> <td>0.2 °C</td> <td><0.01 °C</td> </tr> </tbody> </table> <p>Electronics</p> <table border="1"> <tbody> <tr> <td>Memory</td> <td>8 GB microSDHC flash card (standard)</td> </tr> <tr> <td>Communications</td> <td>Full speed USB micro-B port</td> </tr> <tr> <td>Battery Type</td> <td>3.6 V, size A, user replaceable lithium (from Lowell Instruments)</td> </tr> <tr> <td>Battery Life</td> <td>Months to years depending on recording rates</td> </tr> <tr> <td>Internal Clock</td> <td>< 1 minute of per month</td> </tr> </tbody> </table> <p>Operating Modes</p> <table border="1"> <tbody> <tr> <td>Start and Stop</td> <td>Start and Stop at user defined times</td> </tr> <tr> <td>Burst Mode</td> <td>Variable rate logging at user defined interval</td> </tr> <tr> <td>Recording Rate</td> <td>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</td> </tr> </tbody> </table> <p>Mechanical</p> <table border="1"> <tbody> <tr> <td>Depth Rating</td> <td>30 m (100 ft)</td> </tr> <tr> <td>Dimensions</td> <td>Diameter: 2.54 cm (1.00") Length: 25.4 cm (10.0")</td> </tr> <tr> <td>Weight</td> <td>1.29 kg (2.84 lb)</td> </tr> <tr> <td>Construction</td> <td>Housing: Carbon Fibre and Epoxy Laminate with PVC & PETG fittings, 316 Stainless Steel Screw and Buna and EPDM O-rings.</td> </tr> </tbody> </table> <p>Software</p> <table border="1"> <tbody> <tr> <td>User Interface</td> <td>Windows® Compatible Software Download</td> </tr> <tr> <td>USB</td> <td>USB 2.0 compliant MSC and CDC Classes</td> </tr> <tr> <td>Firmware</td> <td>Field upgradable via USB cable</td> </tr> </tbody> </table>		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°	-5 to 30 °C	0.1 °C	<0.005 °C	Temperature	-20 to -5, 30 to 50°C	0.2 °C	<0.01 °C	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	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	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.	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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Contents	<ul style="list-style-type: none"> • 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																																																					