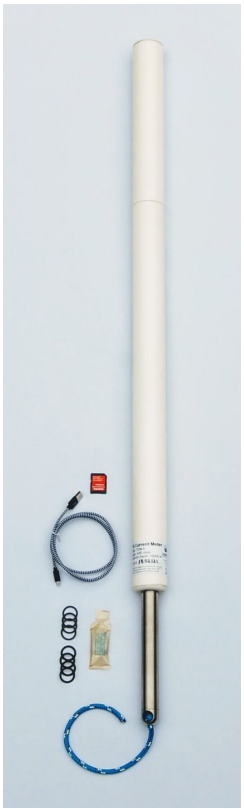
Call our friendly team on
+44 (0)1243 558270

Tempcon Instrumentation
Ford Lane Business Park
Ford
West Sussex
BN18 0UZ, UK
www.tempcon.co.uk

Lowell Instruments TCM-5 10Km Very Deep Ocean Tilt Current Meter

Product Images



Short Description

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.

Description

10,000 Meter Depth Rated Current Meter for the Very Deep Ocean

The Lowell Instruments TCM-5 Tilt Current Meter records water velocity in an affordable, easy-to-use package. The meter is designed for use beyond the edge of the continental shelf up to 10,000 meters depth. It is easy to deploy with a simple ground anchor from a remotely operated vehicle or attached to a benthic lander.

Key Features

Relatively Low Cost	Water velocity measurements for a fraction of the cost of an equivalent depth acoustic meter
10,000m Depth Rating	Operate almost everywhere in the deep ocean
Rugged Construction	Titanium pressure housing with toughened syntactic foam flotation
Long Battery Life	1-minute velocity sampling for more than 1 year
Large Memory	microSD memory card virtually eliminates memory concerns
Temperature Sensor	Includes an internal thermistor accurate to <0.1 °C with resolution of < 0.01 °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-5 for deployment and to process data. The TCM-5 is available at a fraction of the cost of similar depth capable 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. The core of the TCM-5 is the MAT-1 Data Logger. The MAT-1 data logger was designed for NOAA and is ideally suited as the "brains" of a tilt current meter. **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 Temperature: -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 Temperature: 1 Hz to 1 sample per hour **Mechanical** Depth Rating: 10,000 m, housing tested to 13,700m Dimensions: Flotation Diameter: 5.08 cm (2.00") Pressure Housing Diameter: 2.54 cm (1.00") Overall Length: 109 cm (43") Flotation Length: 91.4 cm (36.0") Weight: 1.86 Kg (4.09 lb) Construction: Flotation: Toughened Syntactic Foam Pressure Housing: Titanium TI-6AL-4V. Double Buna O-ring seal with backup 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-5 Tilt Current Meter • Lithium battery (installed in logger) • 8 GB microSD card (installed in data logger) • 1 m (3 ft) USB A to micro-B Cable • 2 spare set of O-rings, backup rings and lubricant • 30 cm (12") lanyard • microSD-to-SD card adapter
Brand	Lowell Instruments
Typical applications	Datalogging
Measurements	Water Flow