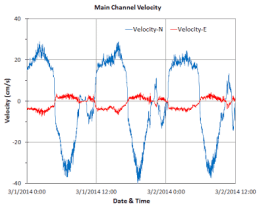
ENVIROMONITORS

Call our friendly team on
01243 558280

EnviroMonitors
Ford Lane Business Park
Ford
West Sussex
BN18 0UZ, UK
www.enviromonitors.co.uk

Lowell Instruments TCM-1 General Purpose Tilt Current Meter

Product Images



Short Description

The TCM-1 measures current using the drag-tilt principle. The logger is buoyant and is secured by a flexible tether to an anchor, stake 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.

Key Features & Benefits

- Water velocity for a fraction of the cost of an acoustic meter
- Tilt compensated compass for bearing measurements
- Simple, rugged, low maintenance design
- Seaweed snag-resistant
- Change range in the field without software
- Temperature sensor accurate to +/-0.1C
- 8 GB memory card eliminates memory concerns
- Lithium battery allows continuous 4Hz sampling for more than 1 year
- USB 2.0 with standard cable and drag and drop data file offload

Description

Affordable & Easy-to-Use Current Meter

The Lowell Instruments Tilt Current Meter Model 1 (TCM-1) records water velocity in an affordable, easy-to-use package. The TCM-1 is ideal for measuring water currents in a variety of coastal environments including tidal estuaries and reefs out to the edge of the continental shelf. The low cost of the TCM-1 makes it affordable to deploy meters in many locations simultaneously, thereby increasing spatial data density.

Key Features

Low Cost	Water velocity measurements for a fraction of the cost of an acoustic meter
Rugged Design	Compact, low maintenance instrument
Long Battery Life	1-minute velocity sampling for more than 1 year
Large Memory	8 GB memory card virtually eliminates memory concerns
Two Flow Ranges	Two field selectable ranges in one instrument
Temperature Sensor	Includes an internal thermistor accurate to 0.1 °C
USB 2.0 Interface	Connect with standard USB cable

Additional Information

Explanation	The TCM-1 measures current using the drag-tilt principle. The logger is buoyant and is secured by a flexible tether to an anchor, stake 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 resulting orientation data is converted to current by applying calibration coefficients. The meter also contains a thermistor for recording temperature. The TCM-1 is field configurable for either low or high current range. The electronics are housed in a rugged PVC case with no external sensors. The TCM-1 is very easy to deploy and recover, even from small boats. 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-1 for deployment and to process data saved as text file (.csv). The core of the TCM-1 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.
Contents	• MAT-1 Data Logger • 46 cm (18") current meter housing • Bronze "low-range" ballast washer and bolt • Lithium battery (installed in logger) • 8 GB microSD card (installed in data logger) • 1 m (3 ft) USB A to micro-B Cable • Spare O-ring (pre-lubricated) • 30 cm (12") lanyard
Brand	Lowell Instruments
Typical applications	Datalogging
Measurements	Water Flow

Specifications

	Range	Accuracy	Resolution
Speed (Low Range)	0-40 cm/s	2 cm/s + 3% of reading	0.1 cm/s
Speed (High Range)	0-80 cm/s	3 cm/s + 3% of reading	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 Temperature: 1 Hz to 1 sample per hour
Mechanical	
Minimum Depth	76 cm (30")
Depth Rating	300 m (1000 ft)
Dimensions	Diameter: 2.7 cm (1.05") Length: 73 cm (28.75") not including lanyard
Weight	340 g (12 oz)
Construction	Grey PVC housing with EPDM O-ring
Software	
User Interface	Windows® Compatible Software Download
USB	USB 2.0 compliant MSC and CDC Classes
Firmware	Field upgradable via USB cable

Anti-Fouling Paint Option

Depending on the deployment duration and fouling intensity of where you are working, we recommend applying anti-fouling paint to the meters. For a small additional fee, the meter can be ordered with it already applied.