

Affordable & Easy-to-Use Current Meter



| Feature | Benefit |
|-------------------|---|
| Low Cost | – Water velocity measurements for a fraction of the cost of an acoustic meter |
| Rugged Design | – Compact, low maintenance instrument |
| Small and Light | – Easy to deploy from a small boat or with a diver |
| Large Memory | – microSD memory card virtually eliminates memory concerns |
| Long Battery Life | – 1 minute velocity sampling for more than 1 year |
| Two Flow Ranges | – Two field selectable ranges in one instrument |
| Temperature | – Internal thermistor accurate to 0.1 °C |
| USB 2.0 Interface | – Connect with standard USB cable |

Description

The 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.

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.

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.



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 (Standard Range) | -5 to 30 °C | 0.1 °C | 0.01 °C |
| Temperature (Extended Range) | -20 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, 3.5 Ah, size "A", user replaceable lithium (from Lowell Instruments) |
| Battery Life | Months to years depending on recording rates |
| Internal Clock | < 1 minute per month |

Operating Modes

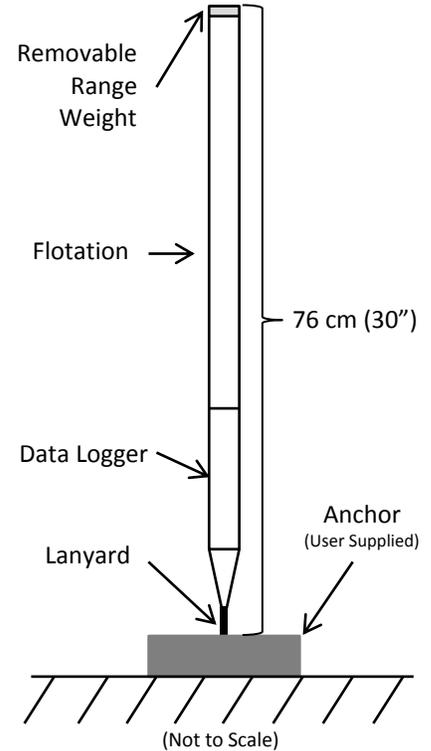
| | |
|----------------|---|
| Start and Stop | Start and Stop at user defined times |
| Burst Mode | Variable rate logging at user defined interval |
| Recording Rate | Current: 64 Hz to 1 sample per hour Temperature: 1 Hz to 1 sample per hour |

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 | Gray PVC |

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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