

# On Deck Data System - OTD Logger

Orientation - Temperature - Depth



### Applications

- Temperature and Depth Logging
- Underwater Vehicle Monitoring
- Equipment Orientation
- Tilt Current Meter

Feature	Benefit
3-axis Accelerometer	- Resolve static orientation to 1° - Record dynamic acceleration at 64 Hz
3-axis Magnetometer	- +/- 5° nominal compass bearing accuracy - Temperature compensated
Precision Temperature	- Accurate to +/-0.1 °C from -5 to 30 °C
Pressure Sensor	- Depth measurement to 250 meters
Large Memory	- 8 GB microSD flash card, upgradable to 32 GB
Rechargeable Battery	- Hundreds of millions of records per charge
Rugged Housing	- O-ring sealed PVC housing
USB 2.0 Interface	- Connect and recharge with standard USB cable
Bluetooth Wireless	- Fast, hands free, automated IoT data collection

### Description

The Orientation, Temperature & Depth (OTD) Logger is a Bluetooth Low Energy wireless enabled data logger that contains an integrated 3-axis magnetometer, 3-axis accelerometer, temperature sensor and pressure sensor. The logger includes a microSD flash memory card, a rechargeable lithium battery, an O-ring sealed waterproof housing and a USB communication interface. The logger is capable of recording magnetometer and accelerometer at up to 64 Hz, pressure at 8 Hz and temperature at 1 Hz.

The OTD Logger is ideal for multi-month temperature, depth and orientation analysis. A typical use case is to attach the logger to a lobster trap where it can record trap orientation, deployment depth and bottom temperature for an entire fishing season.

The OTD Logger is part of Lowell Instrument's *On Deck Data System*. Data can be automatically read via the Bluetooth radio to the *Deck Data Hub*, creating a fully automated data collection system for use by researchers, fishers and citizen scientists.

## Specifications

### Sensors

	<i><b>Magnetometer</b></i>	<i><b>Accelerometer</b></i>	<i><b>Thermistor</b></i>	<i><b>Pressure Transducer</b></i>
Type	3-axis magnetoresistive sensor with 12-bit A/D Converter	3-axis MEMS Accelerometer with 12-bit A/D Converter	NTC Thermistor with 16-bit A/D Converter	Ceramic Bridge with 16-bit A/D converter
Filtering	None	1600 Hz averaging: up to 32 values per measurement	Hardware: low-pass filter	None
Range	+/- 10 Gauss	+/- 2 g standard +/- 4 g optional	-20 to 50 °C	0-200 meters depth
Accuracy	+/- 5° compass bearing typical	0.01 g	+/-0.1 °C (-5 to 30 °C) +/-0.2 °C (-20 to -5, 30 to 50°C)	1%
Resolution	<0.001 Gauss	<0.001 g	<0.01 °C	<0.1 m
Maximum Rate	64 Hz	64 Hz	1 Hz	8 Hz

### Logger

#### ***Environmental***

Operating Temperature	-20 to 50 °C
Depth Rating	250 m

#### ***Electronics***

Memory	8 GB microSDHC flash card (upgradable to 32GB)
Communications	Full speed USB micro-B port 2.4 GHz Certified Bluetooth Smart 4.1
Battery Type	Rechargeable Lithium Ion
Battery Life	6-9 months typical depending on operating mode
Internal Clock	1 minute per month

#### ***Operating Modes***

Recording Rates	Accelerometer and Magnetometer to 64 Hz Temperature to 1 Hz Pressure to 8 Hz
Start and Stop	Start and Stop at user defined times
Burst Mode	Variable rate logging at user defined interval

#### ***Mechanical***

Dimensions	27 mm (1.05") diameter x 285 mm (11.25") length
Weight	190 g (6.7 oz)
Construction	Grey PVC

#### ***Other***

Software	Free Windows® Compatible Software Open source API available for data automation
USB	USB 2.0 compliant MSC and CDC Classes
Firmware	Field upgradable via USB cable



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