



SOUNDNINE INC

*Helping build successful
monitoring systems*

Enduro APT Recorder with Inductive Modem (Sea-Bird Compatible)

The **Enduro APT** measures Acceleration, Pressure (optional) and Temperature, records internally, and transmits data in real time over plastic-jacketed wire rope. The inductive modem can be switched off by command for use on non-real time applications.

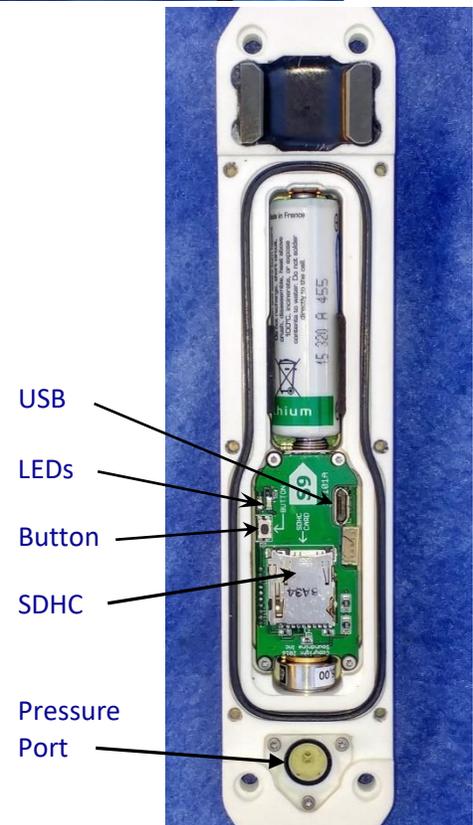
The Enduro solves deployment and handling problems commonly experienced using other moored sensors, and offers a new standard of performance, ease of use, and low cost. It is uniquely small, robust and power efficient, and is easily held in one hand during mooring assembly. The Enduro installs concentrically on the mooring wire in seconds using a small cordless driver. The shape reduces drag and fends off fishing lines or debris that might otherwise snag the instrument.

The Enduro can sample acceleration, pressure, and temperature every 3 minutes for three years on a typical real-time inductive mooring or every 90 seconds for three years if the inductive modem is not active.¹ The maximum sample rate of 1 Hz makes useful measurements of waves and mooring motion possible. Data are stored on both an 8MB internal flash memory and a removable memory card. Data capacity is limited only by battery endurance. The Enduro also includes a high-speed USB port as an alternative to exchanging the memory card.

Removable SDHC Memory Card

The removable micro SDHC memory card (4GB) provides unprecedented convenience for managing deployments of large numbers of sensors. It enables quick data retrieval and advance preparation with a setup file for the next deployment. For data retrieval, just open the housing, press the button and when the green light flashes, remove the memory card. Sensor serial number, calibration data, start time and card removal time are automatically saved with the measurement data on the card. To prepare for deployment, just install a prepared card and press a button next to the card socket. Enduro reads the configuration and flashes a green LED indicating the sensor is ready to go. Any setup problem is indicated by yellow flashes. The Enduro also includes a high-speed USB port for configuration setup and data download.

¹Based on preliminary power consumption data and 85% battery capacity.



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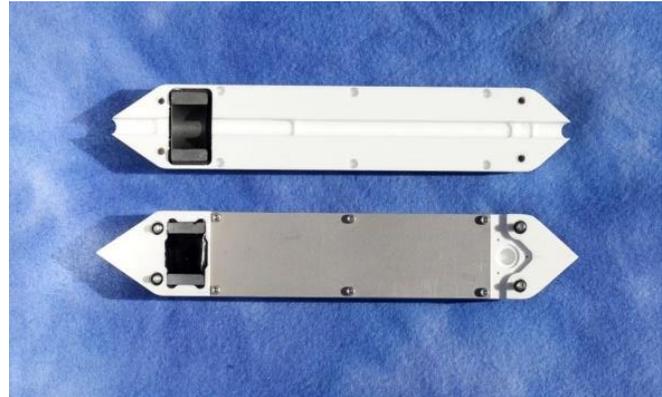
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The sensor has two halves. One is a pressure housing containing the electronics, the other serves as a clamp, sized at the time of order to match the jacket diameter of the wire rope. The sensor is clamped on the wire by joining the halves with four captive screws. The Enduro can be used on cables with jacket diameters ranging from 5/32 in. (4 mm) to 5/8 in. (16 mm). It can be re-configured for use on different cable diameters simply by changing the clamping half to one of a different size. Additional clamping halves are sold separately for about \$100 USD each.



Inductive Modem Features

The Enduro APT Recorder receives and transmits at 1200 baud and can be controlled by either an S9 Ultimec modem or Sea-Bird inductive modem (SIM or IMM). S9's advanced inductive technology can also measure and report inductive signal strength for all instruments on the mooring wire, and the amount of noise on the line. Inductive signal strength is a useful indicator of pending battery exhaustion. Line noise is correlated with strumming or snapping of the mooring line, providing useful insights about mooring design, sea state and possibly related data corruption events.

Specifications:		
Temperature		Battery: 3.6V AA Lithium cell (one); Saft LS- 14500 (or equivalent)
Range:	- 5 to +45°C	Size: 200 mm (L) x 35 mm x 40 mm
Initial Accuracy:	± 0.005°C (-5 to +35°C)	Housing: PET & Titanium, 1,000 meters depth rating (or pressure sensor range limit)
Stability:	0.00025°C/month	Weight: 308 grams (in air), 87 grams (in seawater)
Resolution:	0.0001°C	
Time constant:	800 milliseconds (still water)	
Pressure (optional)		
Ranges:	20, 100, 250, 500, 1000 dbar	
Accuracy (absolute)	± 0.4% (0 to 35°C)	
Resolution:	0.001% (FS)	
Tilt		
Range:	0-180° (+/- 2g acceleration)	
Accuracy:	± 2° (+/- 25 mg)	
Resolution:	0.1° (0.1mg / 0.15mg/rHz)	

