SOUNDNINE INC

Helping build successful monitoring systems

XTP Sensor with Inductive Telemetry

Temperature, Pressure and Tilt

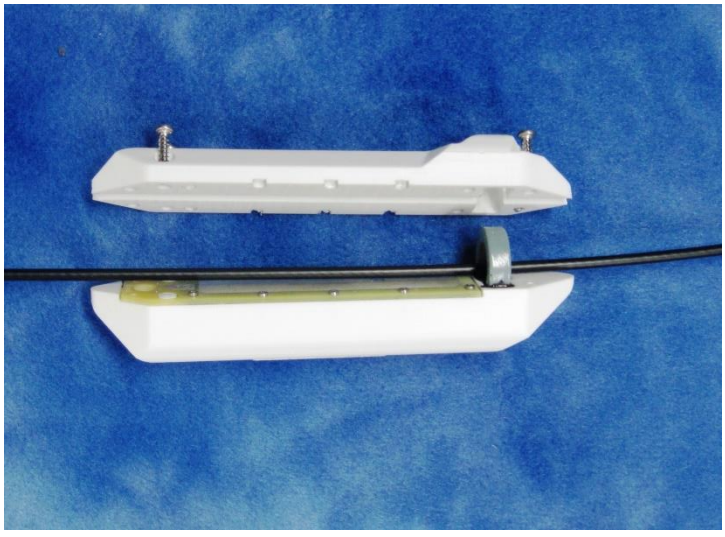
The XTP sensor is an e**X**pendible **T**emperature, **P**ressure (optional) and tilt sensor that transmits data in real time over plastic-jacketed wire rope via inductive telemetry. It communicates with S9's Ulti-modem (or Sea-Bird IMM).

Inductive telemetry uses the mooring wire as the data transmission medium, eliminating bulky, expensive and failure-prone underwater electrical cables and connectors. The XTP is small, lightweight, robust, and can be positioned at any point on the wire to optimize sensor spacing and users can easily reposition sensors to suit changing conditions.

In a system with ten sensors sampling every ten minutes the the internal battery lasts about three years.

The XTP sensor is ideal for expendable temperature profiling drifters and thermistor chain applications requiring high resolution profiles with high accuracy and stability. The internal battery allows sampling every 10 minutes for 1100 days when new, or 750 days after 4 years of storage. Initial accuracy is ± 5 millidegrees. The battery is not user serviceable, but can be replaced by S9 when the sensor is returned for calibration.

The XTP is concentric on the cable and tapered to reduce drag, snagging and fouling.



Slide sensor to desired position and secure with wire clamp. Clamps available for any cable size up to 10mm outer diameter.

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Specifications:

Temperature

Range:	- 5 to +45°C
Accuracy:	± 0.005°C (-5 to +35°C)
Stability:	0.0003°C/month typical
Resolution:	0.0001°C
Time constant:	800 milliseconds (still water)

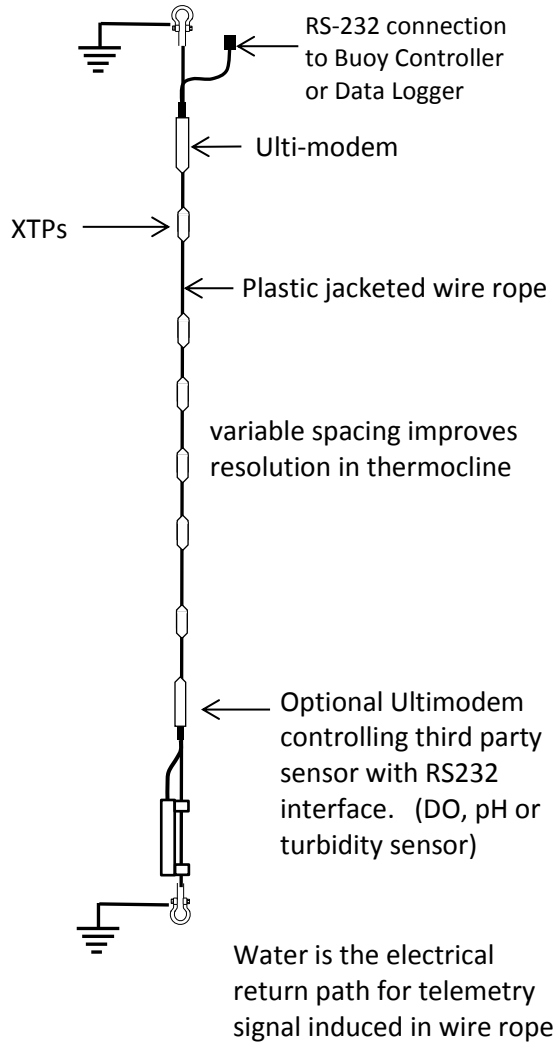
Pressure (optional)

Range:	**0-20 dbar**	or	**0-100 dbar**
Accuracy (absolute)	± 0.2 dbar		± 1.0 dbar
Resolution:	0.003 dbar		0.01 dbar

Tilt

Range:	+/- 180°	(+/- 2g acceleration)
Accuracy:	± 2°	(+/- 25 mg)
Resolution:	0.1°	(0.1mg / 0.15mg/rtHz)

Mechanical: 130 mm (L) x 33 mm x 28 mm
Housing: PET, 250 meters depth rating
Weight: 105 grams (in air), 35 grams (in seawater)



Data Retrieval and Format

With an Ultimodem, use FCL command followed by XTP command:

```
S>FCL
OK; 0 Events
S9>
S>XTP
.....................
#G0:SBP01:X010,24.922,1735.612,89.982,14.717,24.84,3.835,19,a,0,0
#G0:SBT02:X00Z,23.277,1922.478,88.212,3.963,23,c,0,0
OK; 0 Events
```

SBP format (with pressure):
#G0:SBPxx:temperature(C), thermistor resistance, tilt, pressure (psi), pressure temperature(C), battery voltage, wake-up count, sample count, 0,0
SBT format (no pressure):
#G0:SBTxx:temperature(C), thermistor resistance, tilt,battery voltage,wake-up count, sample count, 0,0

Soundnine Inc
11335 NE 122nd Way, Suite 105
Kirkland, WA 98034 USA

R010G

www.soundnine.com
Tel: 866-388-7277
info@soundnine.com