NOSS *sensor*

Water quality monitoring: Measurement and profile of density, absolute salinity, refractive index, pressure and temperature

Sensors

The thermodynamic properties of seawater, such as density and enthalpy, are now correctly expressed as functions of Absolute Salinity rather than being functions of the conductivity of seawater. Spatial variations of the composition of seawater mean that Absolute Salinity is not simply proportional to Practical Salinity.

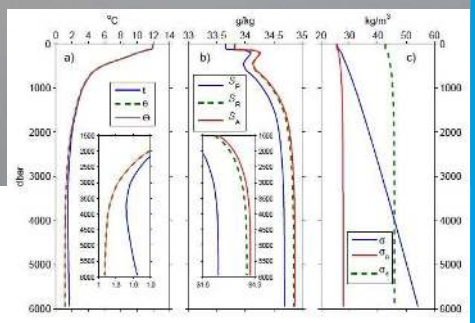
NOSS sensor is a unique underwater sensor for *in situ* refractive index measurement and capable to detect salinity anomalies of seawater. NOSS sensor has been designed for an use even in harsh environments, down to 2000 meters.

Possible use

- Embedding on CTD probes, buoys, gliders, AUV, drifting-profiling floats for operational oceanography
- Alternative solution to classical CTD

Advantages

- Fast sensor configuration (sampling, resolution) and data transfer using serial link.
- Optimize and compact design
- Optimal sensors protection for vibration and pressure resistance (NF X10-812 standard)
- Measured in real-time up to 3 Hz
- Not need calibration after deployment



Pawlowicz, R. (2013) Key Physical Variables in the Ocean: Temperature, Salinity, and Density. *Nature Education Knowledge* 4(4):13

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*European patent and funded by FUI and Pole Mer Bretagne

Sensors

NOSS *sensor*

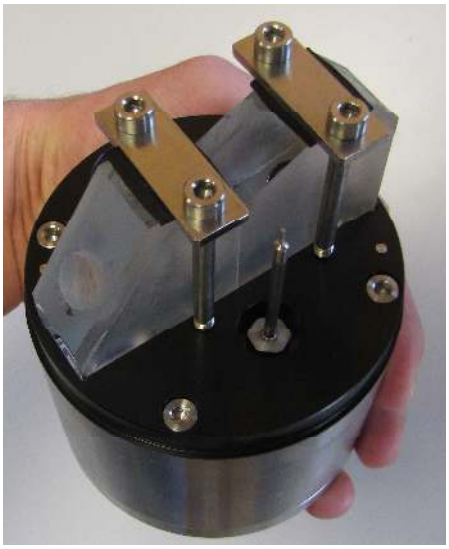
Absolute salinity and density monitoring in deepwater environment

DESIGNATION		NOSS
Refractive Index	Range	1.3353 to 1.3458
	Initial accuracy	< 1.10^{-6}
Temperature	Range	-2 to +35 °C
	Initial accuracy	± 0.006 °C
	Response time (at 63%)	< 150 msec
Operational Depth	Range	0 to 2100 dbar
	Initial Accuracy	±1 dbar
Absolute Salinity (According to TEOS-10) (Seaver&Millard 1990)	Range	15 to 42 g/kg
	Initial accuracy	± 0.005 g/kg
Density	Range	1020 to 1030 kg/m^3
	Initial accuracy	± 0.003 kg/m^3
Data output		RS232 Serial Output
		Data format ASCII
Data storage		No
Sampling rate		Programmable from 1 Hz to 3 Hz
Power supply	Range	6 to 18 Vdc
Power consumption		Approx. 0.065 A at 10.8 Vdc
Dimensions		Length × Diameter: 185.2 mm x Φ100 mm
Weight		2.4 kg in air; 1.7 kg in water
Housing Material		Titanium (with protective guard)
Connector		Connector SUBCONN MCDLSF 8-pin

< **NOSS Tool software** is a PC-based program available for interfacing with NOSS sensor. It acquires, converts, and displays real-time or archived raw data from NOSS sensor.

NOSS Tool software can configure NOSS sensor to provide status display, data acquisition setup, data retrieval and calibration setup.

NOSS Tool software is designed to work with a PC running Win 98/2000/XP/VISTA/Windows 7.



< Noss sensor

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