



SP101-SM High accuracy Submarine pH sensor

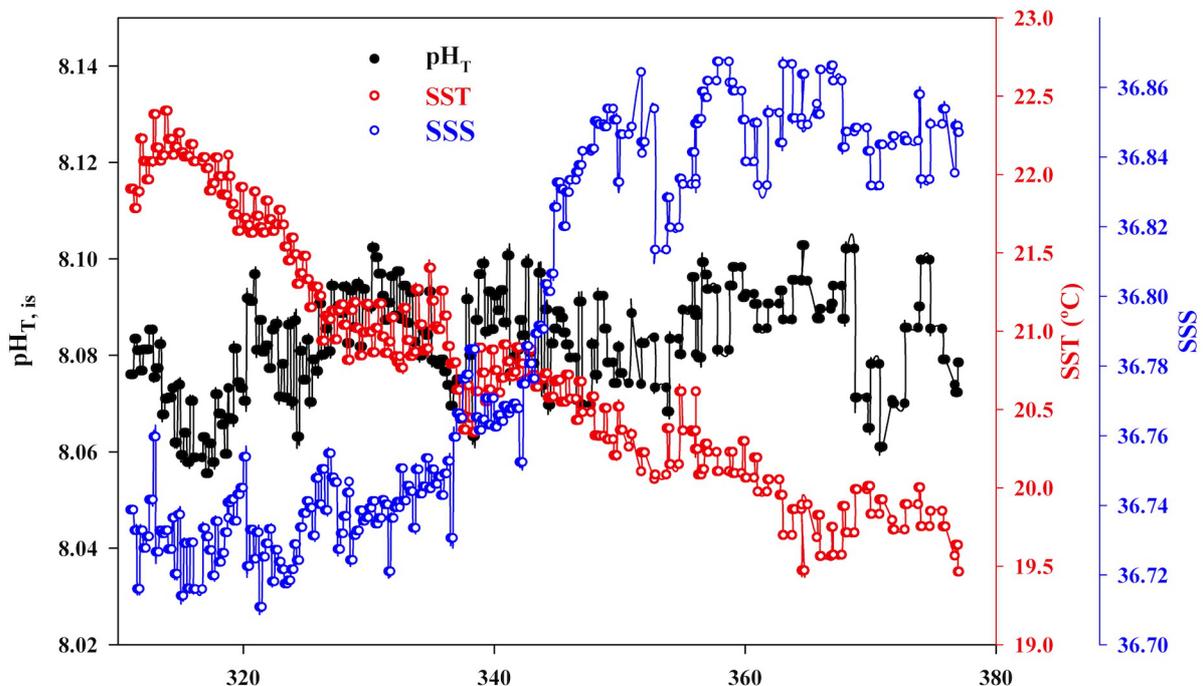


The SP101-SM is a rugged and extremely stable pH sensor for shallow waters, designed for oceanographic research. The design of the SP101-SM sensor allows reaching the same accuracy achievable in the lab, but autonomously deployed in the ocean, allowing long term measurements without human intervention.

The SP101-SM uses spectrophotometric based methods to measure pH removing dye effect in each determination, making it valid for long deployments taking thousands of measurements. Its construction guarantees precise and stable measurements in open waters with heavy swell. The system includes a real time clock allowing autonomous operation, as well as a high accuracy internal temperature sensor. It can be connected to an external conductivity / temperature sensor for deployments where high salinity variations occur.

The spectrophotometric light source used is a Sensorlab SL001, a compact, high stability, low settling time and low power LED, that does not degrade and do not require bulb replacements as traditional halogen lamps do.

The SP101-SM was designed with high accuracy, stability and reliability in mind. The system returns, with each measurement, the calculated precision. This allows tracking the system measurement performance at any time.



The above data chart was captured by a SP100-SM installed in a buoy in the north of the Canary Islands (ESTOC site). The x-axis represents days. By courtesy of Dr. Melchor Gonzalez.

General Specifications

pH Range:	6.8 – 9 in sea water
Typical measurement time:	< 3 minutes (including heating, purge, measurement, post cleaning)
Precision:	< 0.002 pH units
Accuracy:	±0.005 pH units
Indicator life:	10,000 measurements (with 250ml bag)
Indicator:	m-cressol purple
Operational pressure:	< 2 Bar
Temperature sensor accuracy:	±0.1°C (-5°C to +35°C)
Full range temperature sensor accuracy:	±0.2°C (-20°C to +50°C)
Host interface:	RS232
Auxiliary Interface with external sensor:	RS232
Internal memory storage capacity:	19000 measurements

Electrical specifications

Operating supply voltage:	9 – 18 Vcc
Maximum cable serial loop resistance	500mΩ
Supply voltage absolute maximum rating	20 Vcc
Standby power:	0.3 W (0.025A @ 12V)
Average Measurement power:	4,8 W (0.4A @ 12V)
Transient Peak power (< 20msec):	16,8 W (1.4A @ 12V)
Supply to optional external sensor	12V (500mA max)

Mechanical specifications

Overall Size:	480x240mm (height x diameter)
Housing Size:	405x240mm (height x diameter)
Housing Material:	Hard anodized 6060 aluminum
Housing Finishing:	Epoxy coating + Polyurethane finishing
Weight:	15,2Kg

Distributors

Spain



www.dcserviciosambientales.es
C/ Emilio Calzadilla, 5 2-A.
38002, Santa Cruz de Tenerife.
España. (Spain)
Tel: (+34) 822 600 026

SENSORLAB SL.

Edificio Polivalente II, Parque Científico Tecnológico, Campus de Tafira, 35017, Las Palmas de Gran Canaria, Canary Islands, Spain.
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