



SP200-SM High accuracy Submarine pH sensor



The SP200-SM is a rugged and extremely stable pH sensor for shallow waters, designed for oceanographic research. The design of the SP200-SM sensor allows reaching the same accuracy achievable in the lab, but autonomously deployed in the ocean, allowing long term measurements without human intervention.

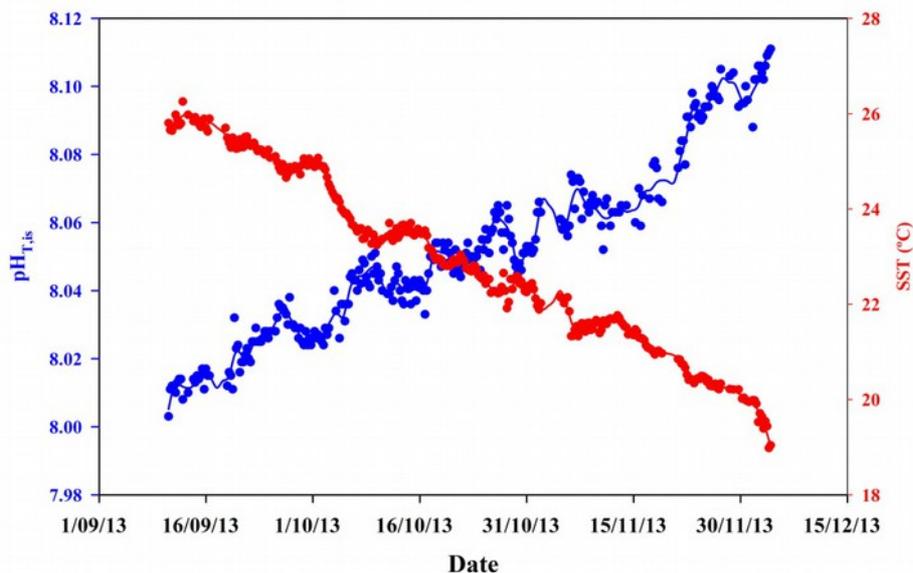
The SP200-SM uses colorimetric methods to measure pH removing dye effect in each determination, making it valid for long deployments taking thousands of measurements. Its construction guarantees precise and stable measurements in open waters with heavy swell.

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 system can be equipped with an internal rechargeable Li-ion battery allowing fully autonomous operation for periods as long as one full year.

The complete measurement process takes less than one minute.

The SP200-SM was designed with high accuracy, stability and reliability in mind. The system returns, with each measurement, the calculated system precision. This allows tracking the system measurement performance at any time.



The above data chart was captured by a SP101-SM installed in a buoy in Saronikos sea, Greece.
By courtesy of Dr. Melchor Gonzalez.

General Specifications

| | |
|---|-------------------------------------|
| pH Range: | 7 – 8,5 in sea water |
| Base measurement time: | 55 seconds |
| Precision: | ± 0.002 pH units |
| Accuracy: | ±0.005 pH units |
| Indicator life: | 5,000 measurements (with 250ml bag) |
| Indicator: | m-cressol purple |
| Operational pressure: | Up to 2 Bar |
| Temperature sensor accuracy: | Better than ±0.1°C (-5°C to +35°C) |
| Host interface: | RS232, USB |
| Auxiliary Interface with external sensor: | RS232 |
| Internal memory storage capacity: | >50000 measurements |

Electrical specifications

| | |
|---|----------------------------|
| Operating supply voltage: | 8 – 20 Vcc |
| Maximum cable serial loop resistance | 1Ω (for 8V operation) |
| Supply voltage absolute maximum rating | 22 Vcc |
| Hibernation power (when powered from internal battery): | 0.72 mW (60µA @ 12V) |
| Hibernation power (when powered from main connector): | 9 mW (750µA @ 12V) |
| Standby power: | 120 mW (10mA @ 12V) |
| Average Measurement power: | 1,8 W (0.150A @ 12V) |
| Transient Peak power (10ms < peak < 150ms): | 9 W (0.75 A @ 12V) |
| Supply to optional external sensor | Powered from Input, max 1A |

Battery

| | |
|---|----------|
| Nominal Voltage | 14,8V |
| Capacity: | 90Wh |
| Minimum supply voltage to enable charge : | 17,5V |
| Charge current | Up to 4A |
| Weight: | 0,7 Kg |

Mechanical specifications

| | |
|--------------------------------------|-------------------------------|
| Overall Size: | 520x150mm (height x diameter) |
| Housing Size: | 410x150mm (height x diameter) |
| Housing Material: | White POM |
| Weight (Without internal battery): | 5 Kg |
| Buoyancy (Without internal battery): | +1,8 Kg |

Distributors

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