

pH / O.R.P. (Redox) Sensor



SUMMARY

- Voltage output pH and O.R.P. measurements
- Compatible with Sea-Bird profiling CTDs
- Depth rating 1200 meters

DESCRIPTION

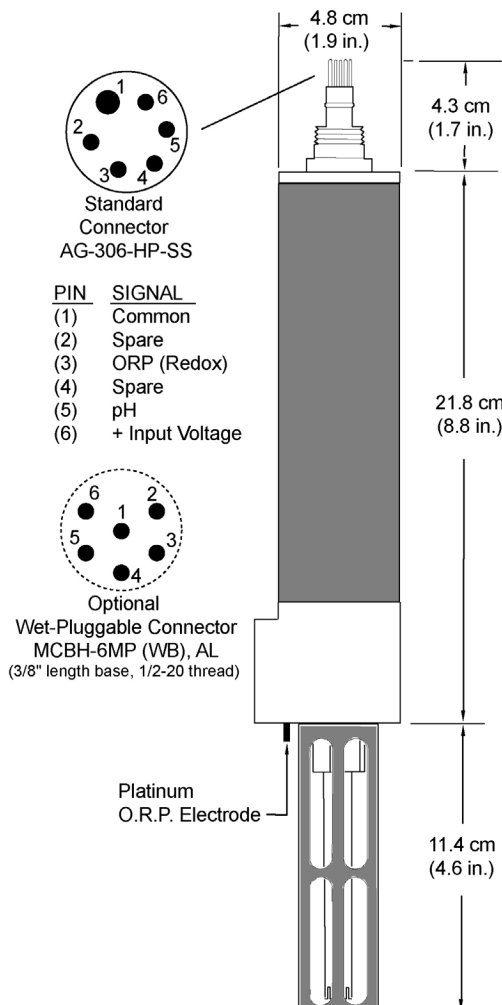
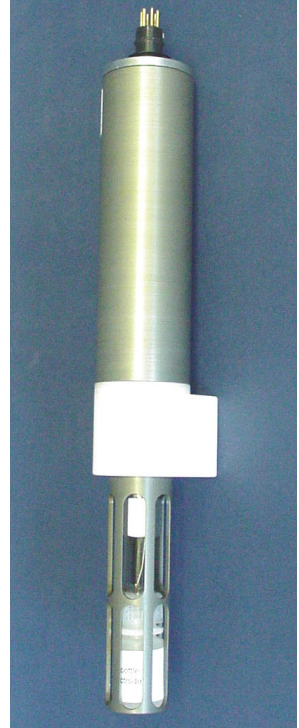
The SBE 27 pH and O.R.P. (Redox) sensor combines a pressure-balanced, glass-electrode, Ag/AgCl reference probe and platinum O.R.P. electrode to provide *in-situ* measurements up to 1200 meters deep. The replaceable pH probe is permanently sealed and is supplied with a soaker bottle attachment to prevent the reference electrode from drying out during storage.

The sensor elements and interface electronics are modular and self-contained, providing easy installation, service, and calibration. The SBE 27 is intended for use as an add-on auxiliary sensor for profiling CTDs (SBE 9*plus*; SBE 19, 19*plus*, and 19*plus* V2 SeaCAT; and SBE 25 and 25*plus* Sealogger). Power / signal interface cables and mounting hardware are available separately.

The SBE 27 interface electronics buffer and offset the differential voltages of the pH reference junction and the electrode potential (in water) between the O.R.P. electrode and pH reference junction to produce pH and O.R.P. dependent output voltages. Computation of pH and O.R.P. in engineering units is typically done using our Seasoft[®] software.

Sea-Bird calibrates the pH sensor against precision buffer solutions (4, 7, 10 pH ± 0.02 pH). The extremely stable O.R.P. circuitry is calibrated at the factory and does not require subsequent calibrations. Calibration results are tabulated on a certificate furnished with each sensor.

Deploy with pH probe in vertical orientation, as shown



CONFIGURATION OPTIONS

A standard SBE 27 is supplied with an XSG connector, plastic soaker bottle, and KCl soaker solution. Options include:

- Right angle probe, required for applications where the SBE 27 is mounted to a CTD that is deployed horizontally (for example, in an extension stand below an SBE 32 Carousel Water Sampler).
- Wet-pluggable MCBH connector in place of XSG connector

SPECIFICATIONS

	pH	O.R.P.
Measurement range	0 - 14 pH	± 1250 mV
Accuracy ¹	± 0.1 pH	± 1.0 mV
Time response ²	1 second	10 ms

¹ Stated accuracy is achievable with frequent field calibrations.

² Time to reach 63% of final value following step change in measured parameter.

Power required 6 - 24 VDC, 10 mA

Signal outputs 0 to +5 V

Operating depth 1200 meters (3900 ft)

Weight 0.7 kg (1.6 lbs) in air; 0.3 kg (0.7 lbs) in water
Materials Anodized aluminum (6061-T6), stainless steel, plastic (acetal copolymer)

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Sea-Bird Electronics, Inc.

13431 NE 20th Street, Bellevue, Washington 98005 USA
 www.seabird.com

seabird@seabird.com
 Telephone: +1 425-643-9866
 Fax: +1 425-643-9954