

pH/O.R.P (Redox) Sensor

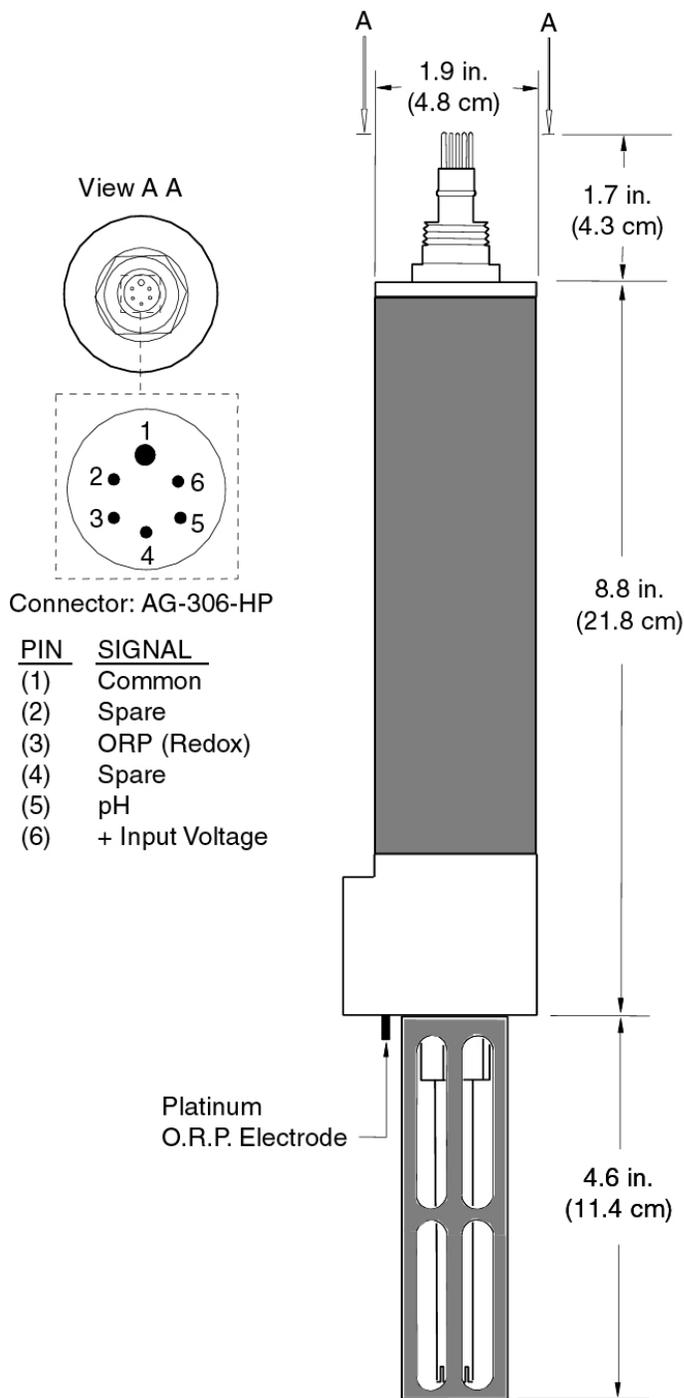


The **SBE 27** pH and O.R.P. (Redox) sensor combines a pressure-balanced, glass-electrode, Ag/AgCl reference probe and platinum O.R.P. electrode to provide in-situ measurements up to 1200 meters deep. The replaceable pH probe is permanently sealed and is supplied with a soaker bottle attachment to prevent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

The sensor elements and their interface electronics are modular and self-contained, providing easy installation, service, and calibration. The SBE 27 is primarily intended as a "bolt-on" auxiliary sensor for Sea-Bird's SBE 9 CTD Underwater Unit and SEACAT or SEALOGGER systems, but it is also well suited to many custom instrumentation applications. 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 the pH reference junction to produce pH and O.R.P. dependant output voltages. Computation of pH and O.R.P. in engineering units is typically done with Sea-Bird's 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. These calibration results are tabulated on a certificate furnished with each sensor.



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
Power Required	6 - 24 VDC, 10 ma	
Signal Outputs	0 to +5 V	
Operating Depth	1200 meters	

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)

¹Stated accuracy is achievable with frequent field calibrations.

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