ClearWater SENSORS

Chemical Sensor Series

Precision submersible chemical sensors

pH sensor

Based on advanced lab-on-chip technology, this precision spectrophotometric pH sensor performs highly accurate and stable pH measurements from coastal surface waters to the bottom of the ocean.

- **High performance** - Sensitive wet-chemical analysis
- **High-resolution data** - up to every 15 minutes
- **User friendly** - Easily swappable reagents
- **Long endurance** - Up to 1500 readings per waste bag; up to 4000 readings with larger waste bag or vented waste
- **Highly stable** - Measurement method compensates for drift
- **Environmentally friendly** - Contained onboard waste storage
- **Deep sea** - Deployable to 6000 m depth

Specifications

Temperature range:	1-28 ˚C *
Power consumption:	~1.8 W
pH Range:	7.5 - 8.5
Precision:	<0.001

Combined uncertainty:	~0.006
Max depth:	6000 m
Comms:	USB/serial
Total height:	56 cm

Applications: ocean acidification studies, coastal monitoring, ocean science

*8-35 ˚C version on request

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Detailed Specifications

Analytical

Temperature range:	1 - 28 °C *
Measurement range:	7.5 - 8.5
Combined Uncertainty:	< +/- 0.009 **
Typical precision:	<0.001 pH units
Sample matrix:	Seawater or freshwater
Measurement interval:	15 minutes

Physical

Sample volume:	0.7 mL
Max depth:	6000 m
Filter pore size:	0.45 µm
Weight in air:	7.5 kg
Weight in water:	0.8 kg
Max. diameter:	16 cm
Total height:	56 cm

Electrical

Comms:	USB/serial
Supply voltage:	10—16 V
Average current draw:	150 mA
Max current draw:	300 mA
Average measurement power consumption:	1.8 W
Sleep current draw:	0.5 mA
Connector:	
SubConn Micro-circular 8-way	

Two available configurations

Cartridge configuration: The sensor consists of two parts - the sensor housing (bottom) and the reagent housing (top). Sample fluid is drawn in for analysis via a 0.45 µm pore-size filter. All chemical waste is stored onboard the reagent housing, which contains onboard calibration fluids.

Vehicle configuration: The sensor can be configured (on request) with individual fluid storage bags rather than a reagent housing. This configuration is suitable for underwater vehicles or other applications where the reagent housing does not easily fit. Custom integrations available on request.

* 8-35 °C version on request

** < +/- 0.009 pH units at pH 8.5,
< +/- 0.010 pH units at pH 8.0,
< +/- 0.014 pH units at pH 7.5

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