CO_2-Pro™ CV Atmosphere

AIR-WATER pCO_2 SENSOR

The CO_2-Pro™ CV Atmosphere is a dual-purpose instrument for measuring the partial pressure of CO_2 gas in both surface water and air. The design allows for surface water and air CO_2 measurements, or with a simple user-enabled modification, the sensor becomes a fully submersible sensor rated to 600 m depth for subsurface pCO_2 measurements

Designed for multiple systems and platforms, the sensor provides maximum flexibility for a broad range of applications. This rugged unit is comprised of a CO_2-Pro™ CV sensor that resides under water for real time pCO_2 measurements and an air intake that is used to take in air from above. Alternating measurements of pCO_2 in air and water provide accurate data for reliable surface flux calculations.

The instrument is well-suited for integration into autonomous surface platforms and shipboard flow-through systems. The simple user interface makes integration easy and optional accessories include mounting brackets to support integration on any platform.

An internal zeroing feature provides drift correction for stable and accurate long-term measurements. Sensors are calibrated using WMO traceable standards. Measurement of gas pressure and humidity along with stabilized detector temperature provides accuracy unparalleled by small submersible pCO_2 sensors.

FEATURES

- Measurement of pCO_2 in both air and surface water simultaneously
- Compact design for integration on small platforms
- High accuracy, long-term stability
- Dual capability for fully submersible measurements or surface air-sea data
- Real-time data output; no post-processing
- Internal data logger and controller with 2GB flash memory

pCO_2 SENSOR APPLICATIONS

- Surface CO_2 flux studies
- Long-term ocean pCO_2 monitoring
- Open ocean studies
- Coastal zone CO_2 fluxes

PRO OCEANUS

Dissolved Gas Sensors

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CO_2-Pro™ CV Atmosphere

SENSOR SPECIFICATIONS

Sensor Performance

Accuracy	±0.5%
Resolution	0.01 ppm
Zero drift	automatic zero compensation
Equilibration time (t_{63})	Water: 60 seconds Air: 5 seconds
Standard range	0-600 µatm 0 - 1000 µatm 0 - 2000 µatm *other ranges available

Physical

CO_2-Pro CV™ Submersible:	
Length	38 cm (15 in)
Diameter	10 cm (4 in)
Weight	Air: 2.8 kg (6.2 lbs) Water: 0 kg
Housing	Acetal Plastic or Titanium
Depth	0-600 meters (Plastic) 0-2000 meters 0-4000 meters 0-6000 meters (Titanium)
Water Temperature	0° to 30° C (Standard) -2° to 20° C (Arctic) 15° to 40° C (Tropical)
Air-side Intake:	
Size	2m high mast, 10 cm diameter intake
5 m of tubing for connection to water-side instrument	

Electrical

Input voltage	10 - 18 VDC
Power consumption	3 W (9 W during warmup)
w/Optional Water Pump	4 W (10 W during warmup)
Data output	RS-232, ASCII format, 0-5 V or 4-20mA optional
Sample rate	1 second (variable rate with logger/controller)

Optional Accessories

Water-Pumped Interface Head
Reduces biofouling and improves response rate

Internal Battery Power

External Battery Pack
76, 134, or 247 Amp-hour capacity

Seabird Water Pump with cable
5P (Plastic) or 5T (Titanium)

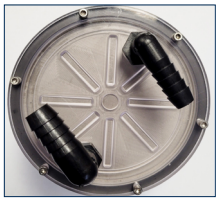
Mooring cage or frame with instrument brackets

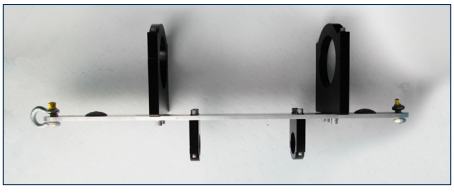
Modified air intake mounting

Pigtail Cables with Locking Sleeve
5, 10, 25, or 50 meters


SBE 5T Water Pump


Pigtail Cable with Locking Sleeve


CO_2-Pro™ CV water pumped head


Instrument and Battery Mooring Bracket

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