CO_2-Pro™ Atmosphere

PRO OCEANUS Stability in a sea of change.

CO_2-Pro Atmosphere pCO_2 Sensor

The CO_2-Pro Atmosphere instrument measures the partial pressure of CO_2 gas in both the surface water and in air above the surface. Designed for use on buoys, the unit is comprised of a CO_2-Pro that mounts under a buoy for water measurement connected to a NEMA box that is used to take in air from above a buoy. Alternating measurements of pCO_2 in air and water provide reliable data for accurate surface flux estimations.

Features

- Measurement of pCO2 in both air and surface water
- Patented tubular interface provides unmatched biofouling resistance
- High accuracy, long-term stability
- Easily integrated into buoy systems

An internal zeroing feature provides a stable and accurate long-term baseline measurement.

For optimal accuracy, sensors are factory calibrated using WMO standard gases. Measurement of gas stream pressure and humidity and stablized detector temperature provide accuracy unmatched by small submersible pCO_2 sensors.

pCO_2 Sensor Applications

- Near-surface flux studies
- Long-term ocean pCO_2 monitoring
- Ocean acidification
- Open ocean studies
- Coastal zone CO_2 fluxes

The CO_2-Pro Atmosphere was recently chosen as the air-sea instrumentation for pCO_2 data collection for the Coastal and Global Scale Nodes component of the US OOI, Ocean Observatories Initiative.

Right: The CO_2-Pro Atm mounted to a surface buoy tower constructed by RDSEA International. Signal integration was completed by Down East Instrumentation. Photo courtesy of Rick Cole, RDSEA.

CO_2-Pro™ Atmosphere

PRO OCEANUS *Stability in a sea of change.*

Sensor Specifications

CO_2 Detector Performance

Accuracy:	
CO_2 concentration	± 2 ppm
Gas stream humidity	± 1 mbar
Gas stream pressure	± 2 mbar
Resolution:	
CO_2 concentration	0.01 ppm
Gas stream humidity	1 mbar
Gas stream pressure	1 mbar
Zero drift:	automatic zero compensation
Equilibration time (t_{63})	water: 2.5 min air: 5 sec
Standard range (alternate ranges available)	0–600 ppm

Physical

Length	33 cm (13 in)
Diameter	19 cm (7.5 in)
Weight	5.5 kg in air (12.1 lbs) 0.4 kg in water (0.9 lbs)
Housing	Delrin®
Depth	0-110 meters (0-360 ft)
Temperature	-2 to 30 degrees C (Standard) -2 to 40 degrees C (Optional)
Air-side NEMA Enclosure	30 x 30 x 10 cm
5 m tubing for connection to water-side CO_2-Pro	

Electrical

Input voltage	12-18 VDC
Power consumption	0.4 A (includes water pump) 1.2 A during warmup
Data output:	RS-232, ASCII format
Optional analog	0-5 V or 4-20mA
Sample rate	1.6 seconds (user selectable with datalogger / controller)

Options and Accessories

- Datalogger and controller
  Complete with 2 GB flash memory and terminal program for self-contained measurement and logging.

- SBE Water pump included
  Reduces biofouling and improves response rate.

- Optional housing for depths to 1000 m

- External battery pack

- Integration into mooring instrument packages

Contact Us

Email: sales@pro-oceanus.com
Tel: +1 902 530-3550
Fax +1 902 530-3551
Toll-Free (US/CAN): 1-855-350-3550
www.pro-oceanus.com

Mailing address:
80 Pleasant Street
Bridgewater, NS, B4V 1N1
Canada