

Solu-Blu™ CO₂

Features

- Provides continuous 24-7 monitoring
- Compact size
- Easily integrated
- Rugged design
- Plug and play sensor

Applications

- Monitoring CO₂ in RAS systems for maintaining fish health
- Monitoring CO₂ in shellfish hatchery water intakes
- Measurements of CO₂ in lakes and rivers
- Shallow groundwater CO₂ studies
- CO₂ monitoring in live transport of fish
- Monitoring for shellfish growouts

Solu-Blu™ Dissolved CO₂ Probe

The Solu-Blu™ series of instruments combine rugged design, ease of use and versatility, all in a single sensor package. The measurement of a gas dissolved in a liquid is facilitated by a semi-permeable membrane that allows gases to transfer from water into a gas head space where the measurement is made.

The Solu-Blu™ dissolved CO₂ probe can be used for long-term continuous in-situ monitoring to provide reliable free dissolved carbon dioxide data. The probe provides a fully temperature and pressure compensated free dissolved CO₂ and partial pressure of CO₂, and user-input salinity values allow for automatic salinity correction. Flow-through and in-line adapters are also available for simple and effective industrial solutions.



Fish

Intensive water re-use systems and well-boats are particularly susceptible to CO₂ problems. Increased stocking densities, leaks in aeration pumps, biofilters, source water and more, can lead to elevated CO₂ levels. High free dissolved CO₂ levels have been associated with formation of mineralized deposits in the kidneys, slowed growth, reduced efficiencies in feed conversion, increased susceptibility to pathogens, and interference with sense of smell leading to erratic swimming. Measurement of dissolved CO₂ continuously in RAS with the Solu-Blu™ dissolved CO₂ probe can provide useful and cost-effective feedback control for aeration so that optimal levels of CO₂ are consistently maintained.

Shellfish

Elevated CO₂ levels alter the delicate balance of the carbonate system in the ocean. These changes make ocean water more corrosive to shellfish shells. Earliest larval stages are particularly sensitive to these changes and often have to divert too much energy to shell building from eating and swimming and this can lead to increased mortality. Intake of ocean water during acidification events has been linked to collapse of oyster seed production at hatcheries. In-situ monitoring is the best method to ensure timely knowledge of changes in carbonate chemistry to allow for protection of shellfish stock.



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Sensor Specifications

Sensor Performance

CO₂ Measurement Ranges	0-50 mg/L
*other ranges available	0-2000 µatm
	0-5000 µatm
	0-10,000 µatm

Accuracy

CO ₂	± 3% of max range
TDGP	± 0.1% (0-2 bar range)
Temperature	± 0.5° C

Equilibration rate (t63)

pCO ₂	4 minutes
TDGP	10 minutes

Sensor warm up time	3 minutes
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Resolution pCO₂	0.1% of max range
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Physical

Length	20 cm (8 in) 26 cm with connector
Diameter	5 cm (2 in)
Weight	0.3 kg (0.6 lbs)
Housing Material	Acetal Plastic
Depth Rating	0 - 50 meters
Water Temperature	-2° to 40° C

Electrical

Input voltage	7 - 24 VDC
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Power consumption	RS232 with 0-5V output: 90 mW (7.5 mA @12VDC) RS232 with 4-20mA output: 300-600 mW (25-50 mA @ 12VDC)
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Data output	RS-232, ASCII format 0-5 V or 4-20 mA
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Sample rate	2 seconds
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Standard Product

Includes sensor with 3 meters (10 feet) of cable



Optional Accessories

Power / Communications Box

Allows for direct connection to computer and wall power outlet for plug and play operation

Water-pumped head

Reduce biofouling and improve response rate

