

# Solu-Blu™ CO<sub>2</sub>

## Features

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

## Applications

- Monitoring CO<sub>2</sub> in RAS systems for maintaining fish health
- Monitoring CO<sub>2</sub> in shellfish hatchery water intakes
- Measurements of CO<sub>2</sub> in lakes and rivers
- Shallow groundwater CO<sub>2</sub> studies
- CO<sub>2</sub> monitoring in live transport of fish
- Monitoring for shellfish growouts

## Solu-Blu™ Dissolved CO<sub>2</sub> 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 CO<sub>2</sub> 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 CO<sub>2</sub> and partial pressure of CO<sub>2</sub>, 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 CO<sub>2</sub> problems. Increased stocking densities, leaks in aeration pumps, biofilters, source water and more, can lead to elevated CO<sub>2</sub> levels. High free dissolved CO<sub>2</sub> 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 CO<sub>2</sub> continuously in RAS with the Solu-Blu™ dissolved CO<sub>2</sub> probe can provide useful and cost-effective feedback control for aeration so that optimal levels of CO<sub>2</sub> are consistently maintained.

## Shellfish

Elevated CO<sub>2</sub> 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.



# Solu-Blu™ CO<sub>2</sub>

## Sensor Specifications

### Sensor Performance

<b>CO<sub>2</sub> Measurement Ranges</b>	0-50 mg/L
*other ranges available	0-2000 µatm
	0-5000 µatm
	0-10,000 µatm

### Accuracy

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

### Equilibration rate (t63)

pCO <sub>2</sub>	4 minutes
TDGP	10 minutes

<b>Sensor warm up time</b>	3 minutes
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<b>Resolution pCO<sub>2</sub></b>	0.1% of max range
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### Physical

<b>Length</b>	19.68 cm (7.75 in) 25.68 cm with connector
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<b>Diameter</b>	4.76 cm (1.875 in)
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<b>Weight</b>	0.47 kg (1.04 lbs)
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<b>Housing Material</b>	Acetal Plastic
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<b>Depth Rating</b>	0 - 50 meters
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<b>Water Temperature</b>	0° to 35° C
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### Electrical

<b>Input voltage</b>	7 - 24 VDC
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<b>Power consumption</b>	RS232 with 0-5 V: 90 mW (7.5mA @ 12 VDC) RS232 with 4-20 mA: 300-600mW (25-50 mA @ 12VDC) Maximum 60 mA
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<b>Data output</b>	RS-232, ASCII format 0-5 V or 4-20 mA
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<b>Sample rate</b>	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

