

## METERS

CO<sub>2</sub> °C

### CO<sub>2</sub>-1 SMA



This small CO<sub>2</sub> meter fits in any measurement set-up. CO<sub>2</sub>-1 SMA is compatible with dipping probes, flow-through cells and non-invasive CO<sub>2</sub> sensor spots of type CD1 (measurement range 1 - 25 % CO<sub>2</sub>). It has temperature compensation, so even in environments with changing temperatures precise CO<sub>2</sub> measurements can be performed. This USB-powered CO<sub>2</sub> meter is operated with the PreSens Measurement Studio 2 software, which enables simultaneous control of several devices and combination with PreSens O<sub>2</sub> and pH meters, so measurement networks can be set up. With numerous features and additional pressure compensation, the software makes the CO<sub>2</sub>-1 SMA applicable in many applications. Optionally, the CO<sub>2</sub>-1 SMA can be expanded with 4 - 20 mA analog output (via a converter box).

- For use with non-invasive sensors, dipping probes & flow-through cells
- Compact & lightweight (only 128 g)
- USB-powered
- Controlled by PreSens Measurement Studio 2
- Integrated temperature and pressure compensation
- Optional 4 - 20 mA analog output

## TECHNICAL

### Specifications

Carbon dioxide sensors	CD1 (optical SMA connector)
Temperature sensor	1 x Pt100 temperature connector (sensor not included)
Temperature performance	0 °C to + 50 °C, resolution ± 0.1 °C, accuracy ± 1.0 °C
Power supply	5 VDC (USB-2.0-Mini-B, cable included)
Temperature: operating/storage	0 °C to + 50 °C / - 10 °C to + 70 °C
Relative humidity	0 % to 80 % (non-condensing)
Dimensions	101 mm (with connectors) x 35 mm x 30 mm
Weight	128 g
Digital interface	USB interface cable to PC (cable included)

## ACCESSORIES

### Polymer Optical Fiber POF



A polymer optical fiber (POF) is needed to transfer excitation light to the sensor and the sensor response back to the meter. We offer different versions for different meters depending on their optical connector type. A POF enables non-invasive and non-destructive measurements to be made from the outside through the wall of a transparent or slightly colored container. The POF with SMA connector is compatible with meters of the Fibox, OXY-1 SMA, OXY-1 WM, OXY mini and pH-1 SMA series, as well as the CO<sub>2</sub>-1 SMA. The POF with ST connector is compatible with meters of the Microx 4 and OXY-1 ST series. Different standard lengths are offered, e. g. 2.5 m, and fibers with connectors on one or both ends are available, depending on your adapter or sensor application.

- Enables contactless measurement
- Versatile light guide
- Different lengths available

## TECHNICAL

Specifications	SMA	ST
Dimensions	Optical diameter: 2 mm Outer diameter (incl. black cladding): approx. 2.7 mm Min. bending radius: 40 mm	Optical diameter: 1 mm Outer diameter (incl. black cladding): 2.2 mm Min. bending radius: 17 mm
Connector type	SMA connectors on one or both ends available for use with SOA or ARC	ST connectors on one or both ends available for use with SOA or ARC-1 ST
Length of fiber	Available standard lengths 1.0, 2.5 and 5.0 m; for lengths of more than 5 m, please contact our service team	
Compatibility	All devices with SMA connector, e.g. Fibox, OXY-1 SMA, pH mini series, pCO <sub>2</sub> mini	All devices with ST connector, e.g. Microx 4 or OXY-1 ST series

## SENSORS

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### CO<sub>2</sub> Sensor Spot SP-CD1



The CO<sub>2</sub> sensor spots measure the partial pressure of dissolved carbon dioxide. The spots are fixed on the inner surface of glass or transparent plastic vessels. Measurements are then taken contactless from the outside through the transparent container material.

- Re-usable & disposable sensors
- Online monitoring
- Non-invasive & non-destructive measurement
- Measurement range from 10 - 250 hPa pCO<sub>2</sub> [8 ... 180 mmHg]
- No consumption of carbon dioxide
- Measures carbon dioxide in liquids
- Beta-irradiated and autoclavable sensors available




## TECHNICAL

Specifications*	
Measurement range	1 - 25 % CO <sub>2</sub> at atmospheric pressure (1013.15 hPa) 10 - 250 hPa pCO <sub>2</sub> 8 - 180 mmHg pCO <sub>2</sub>
Resolution at + 20 °C	± 0.06 % at 2 % CO <sub>2</sub> ± 0.15 % at 6 % CO <sub>2</sub> ± 0.5 mmHg at 15 mmHg pCO <sub>2</sub> ± 1.2 mmHg at 45 mmHg pCO <sub>2</sub>
Accuracy**	± 5 % of reading or 0.2 % (1.5 mmHg); whichever is higher
Drift at + 37 °C***	typically < 5 % of reading per week
Measurement temperature range	from + 15 to + 45 °C
Response time (t <sub>90</sub> ) at + 20 °C	< 3 min. for change from 2 % to 5 % (15 mmHg - 38 mmHg) pCO <sub>2</sub>
Properties	
Compatibility	Aqueous solutions, pH 4 - 9
Cross-sensitivity	Optical pCO <sub>2</sub> sensors display reduced cross-sensitivity to ionic strength (salinity); acetic acid, SO <sub>2</sub> , HCl vapours
Stability	pCO <sub>2</sub> sensors do not stand: organic solvents, pH above 10 or below 4
Cleaning procedure	Depends on the sensor type used - please ask our experts
Calibration	pCO <sub>2</sub> spots are pre-calibrated , re-calibration is possible Beta-irradiated or autoclavable pCO <sub>2</sub> sensors available
Storage stability	12 months provided the pCO <sub>2</sub> sensor is stored in its original package
* provided pCO <sub>2</sub> spots are used without further handling in physiological solutions	
**after multipoint calibration	
*** in a carbon dioxide incubator with 100 % rel. hum. at 5 % CO <sub>2</sub> ; measurement interval of 1 min.	



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## GET IN CONTACT

-  **Request more info**
-  **Request a quote**
-  **Rent-a-meter**

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