METERS

CO_2-1 SMA



This small CO_2 meter fits in any measurement set-up. CO_2-1 SMA is compatible with dipping probes, flow-through cells and non-invasive CO_2 sensor spots of type CD1 (measurement range 1 - 25 % CO_2). It has temperature compensation, so even in environments with changing temperatures precise CO_2 measurements can be performed. This USB-powered CO_2 meter is operated with the PreSens Measurement Studio 2 software, which enables simultaneous control of several devices and combination with PreSens O_2 and pH meters, so measurement networks can be set up. With numerous features and additional pressure compensation, the software makes the CO_2-1 SMA applicable in many applications. Optionally, the CO_2-1 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 CO2-1 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 conncetors 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_2 mini	All devices with ST connector, e.g. Microx 4 or OXY-1 ST series

SENSORS



Single-Use CO_2 Flow-Through Cell FTC-SU-CD1-09NaCl-S

A miniaturized optical CO_2 sensor, immobilized on the distal end of a color-coded polycarbonate Luer adapter, is inserted in a polycarbonate T-cell with 1/8" lumen (0.3 mL volume). The sensor stick can be transferred under laminar flow to alternative FTCs e.g. with larger lumen, if they carry at least one Luer connector. The FTC-SU-CD1-09NaCl-S is ideally suited for measurements in media with physiological osmolality, e.g. in perfusion bioreactors for tissue engineering, or other culture monitoring applications. A polymer optical fiber connects the sensor inside the FTC to the CO_2 meter. The cell is delivered beta-irradiated (> 25 kGy) in physiological saline solution to prevent the sensor to dry. The FTC-SU-CD1-09NaCl-S is compatible to the CO2-1 SMA. In combination with the PreSens Measurement Studio 2 software multiparameter monitoring together with single-use oxygen and pH flow-through cells can be performed.

- Measurement range of 1 - 25 % CO_2
- Ready-to-use
- Beta-irradiated
- Sensor stick compatible with other cells with Luer connector

TECHNICAL

Specifications*	
Measurement range	1 – 25 % CO_2 at atmospheric pressure (1013.5 hPa) 10 - 250 hPa pCO_2 8 – 190 mmHg pCO_2
Resolution at 37 °C	±0.06 % at 2 % CO_2, ±0.15 % at 5 % CO_2 ±0.5 mmHg at 15mmHg pCO_2, ±0.12 mmHg at 38 mmHg pCO_2
Accuracy	After multipoint-calibration and 1-point adjustment at 5 % CO_2: ± 5 % of reading or 0.2 %; whichever is higher After sensor batch-calibration and 1-point adjustment at 5% CO_2: ± 10 % of reading or 0.3 %; whichever is higher**
Drift at 37 °C	< 0.3 % pCO_2 per day (4 sec. measurement interval at 5 % pCO_2)
Measurement temperature range	From + 15 °C to + 45 °C
Response time (t_{90}) at 20 °C	< 6 min. for change from 5 % to 10 % (38 mmHg to 76 mmHg) pCO_2
Properties	
Compatibility	Aqueous solutions, pH 4 - 9
Cross-sensitivity	Optical pCO_2 sensors display cross-sensitivity to osmolality; acidic or alkaline gases (e.g. acetic acid, ammonia)
Stability	Optical pCO_2 sensors do not stand: organic solvents, pH above 10 or below 4
Cleaning procedure	No cleaning; single-use product
Calibration	Pre-calibrated for 20 °C, 37 °C and physiological osmolality; re-calibration is possible, 1-point adjustment is advised for accurate measurements (at ≥ 2 % CO_2 (for optimal results ≥ 5 % CO_2))
Storage stability	18 months provided the sensor is stored in the dark in its original package at room temperature
Irradiation	Beta-irradiated ≥ 25kGy
T-cell formats	1/8" Luer T-cell (delivered), inner diameter 4.1 mm, cell volume 0.3 mL Transfer of sensing element to alternative FTCs with Luer connector is possible

*provided the FTC-SU-CD1-09NaCl-S is used without further handling in aqueous solutions with physiologial osmolality

** ± 3 % (abs.) around the CO_2 value of 1-point adjustment

GET IN CONTACT

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

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