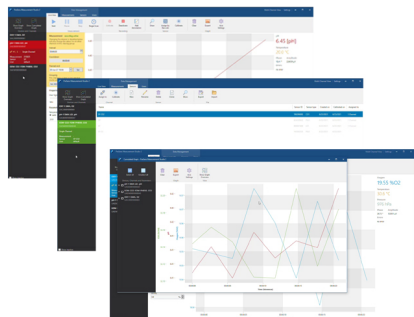PreSens
PRECISION SENSING

SOFTWARE

CO₂ pH O₂ °C

PreSens Measurement Studio 2

The PreSens Measurement Studio 2 has been developed and designed to control several PreSens devices connected to a PC / notebook with one software. Easy data management for sensors, measurement files, and users as well as export of files into .csv and .xslx format can be realized with just a few clicks. The intuitive measurement control eases performing precise oxygen, pH and CO_2 measurements with multiple devices simultaneously.

The software offers many additional features, like compensation of salinity, so most precise measurements can be conducted. You can also group measurement channels so the temperature and (for O_2 & CO_2 devices) pressure inputs from one single device can be shared with the rest of the grouped devices. Build your own measurement network and measure O_2, pH and CO_2 simultaneously, all controlled from one PC.

- Easy data management
- Simultaneous O_2, pH and CO_2 monitoring
- Grouping of measurement channels
- Control measurement networks from one PC

TECHNICAL

	Minimum System Requirements	Suggested Configuration
Operating system	Microsoft® Windows® 10 (32 or 64 Bit)	Microsoft® Windows® 10 (64 Bit)
Processor	2.4 GHz Single Core (one device) 2.4 GHz Multi Core (up to 10 devices)	3 GHz Multi Core
RAM	2 GB	4 GB or more
Hard disk	10 GB free memory	40 GB or more free memory
USB	USB 2.0	USB 2.0
Screen resolution	1200 x 800	1920 x 1080 (Full HD) or higher

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METERS

O₂ **℃**
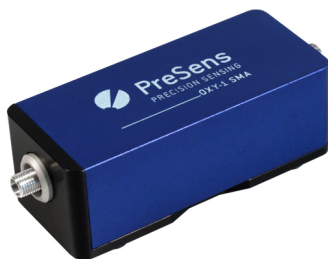
OXY-1 SMA

Due to its small outer dimensions OXY-1 SMA can be set up almost anywhere. It is compatible with non-invasive sensors, dipping probes and flow-through cells of type PSt3 (detection limit 15 ppb dissolved oxygen, 0 - 100 % oxygen). OXY-1 SMA has temperature compensation, so most precise measurements in environments with changing temperature can be taken. This USB-powered oxygen meter is operated with the PreSens Measurement Studio 2 software, which enables simultaneous control of several devices, so measurement networks can be set up. With numerous features and additional pressure and salinity compensation, the software makes the OXY-1 SMA suitable for almost any application where precise oxygen measurements are needed.

- Measurement range of 0 - 100 % oxygen
- Compact system with small outer dimensions
- Lightweight (only 128 g)
- USB-powered
- Controlled by PreSens Measurement Studio 2
- Compensation of temperature, pressure and salinity
- For use with non-invasive sensors, dipping probes and flow-through cells
- One calibration for a multitude of sensor spots

TECHNICAL

Specifications	
Oxygen sensor	PSt3 (optical SMA connector)
Temperature sensor	Pt100 temperature connector (sensor not included)
Temperature performance	from 0 ℃ to + 50 ℃ , resolution ± 0.1 ℃, accuracy ± 1.0 ℃
Power supply	5 VDC (USB-2.0-Mini-B, cable included)
Temperature: operating / storage	from 0 ℃ to + 50 ℃ / from - 20 ℃ to + 70 ℃
Relative humidity	0 % to 80 % (non-condensing)
Dimensions	ca. 101 mm (with connectors) x 35 mm x 30 mm
Weight	128 g
Digital Interface	USB interface cable to PC (cable included)

METERS

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O₂ ℃ # OXY-4 SMA (G3)

This multi-channel oxygen meter is ideally suited for benchtop applications. It is compatible with non-invasive sensors, dipping probes and flow-through cells of type PSt3 (detection limit 15 ppb dissolved oxygen, 0 – 100 % oxygen). Each channel of OXY-4 SMA has separate temperature compensation, so most precise measurements in environments with changing temperatures can be taken. The oxygen meter is USB-powered and operated with the PreSens Measurement Studio 2 software, which enables simultaneous control of several devices, so measurement networks can be set up. With numerous features and additional pressure and salinity compensation, the software makes the OXY-4 SMA applicable in almost any application.

- Measurement range of 0 - 100 % O_2
- Individual temperature compensation for each channel
- Pressure & salinity compensation
- For use with non-invasive sensors, dipping probes & flow-through cells

TECHNICAL

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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

ACCESSORIES

O₂ Vial Adapter VA-20mL

The Vial Adapter is used to attach the POF (polymer optical fiber) to a 20 mL SensorVial (special glass vial with integrated oxygen sensor foil) using a screw. It can be attached to the vial in different heights for measurement in the liquid phase and the headspace and can also be used in a water bath. The POF is available as a separate accessory.

- Non-invasive oxygen monitoring in glass vials
- Secure & exact positioning of the polymer optical fiber
- Precise sensor read-out

TECHNICAL

Specifications	
Dimensions	Outer ⌀ 41.0 mm x 11.0 mm, inner ⌀ 28.5 mm
Connector type	Slotted-head plastic screws
Compatibility	SensorVial SV-PSt3-20mL together with all oxygen meters with SMA connector (e. g. Fibox series)

SENSORS

O₂ SensorVial SV-PSt3-20mL-NST

A sensor stripe is integrated in this 20 mL glass vial. The sensor is read out with an optical fiber, which is held in place by the Vial Adapter. The Vial Adapter can be positioned in different heights. The SensorVial SV-PSt3-20mL-NST is autoclavable, and the ideal tool for respiration measurements. Since the sensor stripes are optically isolated with a black layer they are also very well suited for photosynthesis measurements. For stirred applications the SensorVial is also available with a sensor stripe that does not reach all the way to the bottom. Oxygen can be measured simultaneously in liquid and headspace.

- Non-invasive online oxygen measurements
- No consumption of oxygen
- Signal independent of flow velocity
- Oxygen measurements in liquids and gas phase
- Autoclavable

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TECHNICAL

Specifications	Gaseous & Dissolved O_2	Dissolved O_2
Measurement range	0 – 100 % O_2 0 – 1000 hPa	0 – 45 mg/L 0 – 1400 µmol/L
Limit of detection	0.03 % oxygen	15 ppb
Resolution	± 0.01 % O_2 at 0.21 % O_2 ± 0.1 % O_2 at 20.9 % O_2 ±0.1 hPa at 2 hPa ± 1 hPa at 207 hPa	± 0.004 mg/L at 0.091 mg/L ± 0.04 mg/L at 9.1 mg/L ± 0.14 µmol/L at 2.83 µmol/L ± 1.4 µmol/L at 283.1 µmol/L
Accuracy*	± 0.4 % O_2 at 20.9 % O_2 ± 0.05 % O_2 at 0.2 % O_2	
Drift	< 0.03 % O_2 within 30 days (sampling interval of 1 min. / at 0% oxygen)	
Measurement temperature range	from 0 to + 50 ℃	
Response time (t_{90})	< 6 sec.	< 40 sec.
Properties		
Compatibility	Aqueous solutions, ethanol, methanol	
No cross-sensitivity	pH 1 – 14 CO_2, H_2S, SO_2 Ionic species	
Cross-sensitivity	Organic solvents, such as acetone, toluene, chloroform or methylene chloride Chlorine gas	
Sterilization procedure	Steam sterilization Ethylene oxide (EtO) Gamma irradiation	
Cleaning procedure	Cleaning in place (CIP, 2 % NaOH, + 80 ℃, + 176 ℉) 3 % H_2O_2 Acidic agents (HCl, H_2SO_4), max. 4 – 5 %	
Calibration	Two-point calibration with oxygen-free environment (nitrogen, sodium sulfite) and air-saturated environment	
Storage stability	24 months provided the sensor material is stored in the dark	

*after two-point calibration as described in the manual

PRODUCT FINDER

PreSens
PRECISION SENSING

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