

METERS

O₂ °C

Microx 4



The Microx 4 is a completely stand-alone, portable fiber optic oxygen meter. It can be used with non-invasive sensors & probes (1 mm fiber), and oxygen microsensors (200 µm fiber) in different designs. This oxygen meter is compatible with the wide range of sensors type PSt7 (detection limit 15 ppb, 0 – 100 % oxygen). With its integrated barcode reader the Microx 4 can easily recognize and assign calibration data to sensors in just one scan. The implemented sensor management system allows storing data of up to 100 sensors. Microx 4 has 16 GB internal memory which allows prolonged computer-independent operation. It is delivered with the PreSens Datamanager software: sensor, user and measurement data is easily transferred between the PC and the oxygen meter. The data management and easy data export will facilitate and speed up your analysis.

- For use with non-invasive sensors, probes & microsensors
- Straightforward measurement due to unique sensor ID
- Simple calibration via barcode scan
- 16 GB internal memory
- Compensation of temperature, pressure and salinity
- Energy management for long term measurements
- Optional database supported software offers simultaneous control of multiple devices

TECHNICAL

Specifications	
Oxygen sensor	PSt7 (optical ST connector)
Temperature sensor	Pt100 temperature connector (sensor not included)
Temperature performance	from 0 °C to + 50 °C, Resolution ± 0.1 °C
Power supply	4 AA nickel-metal hybrid cells (min. 2,200 mAh) Use only AC Adapter (5 VDC / min. 1 A) supplied for recharging
Max. battery operating time	16 hrs. (3 sec. interval measurement, Default LED intensity, Display backlight OFF, at room temperature)
Temperature: operating / storage	from 0 °C to + 50 °C / from - 20 °C to + 70 °C
Relative humidity	up to 80 % (non condensing)
Dimensions	37 mm x 180 mm x 119 mm
Weight	0.65 kg (w/o batteries & protection kit) 0.78 kg (with batteries & protection kit)
Digital interface	USB Interface (cable included)
Display	3,5 " color TFT, 320 x 240 pixel
Internal memory	16 GB Memory (~ 40,000,000 data sets) Export via included software

SENSORS

Profiling Oxygen Microsensor PM-PSt7



The PM-PSt7 is one of the most robust oxygen microsensor PreSens offers – with a firmer fiber construction and a splash-proof metal housing. It is specifically designed for profiling applications and should be used whenever minimal invasive measurements need to be performed in semi-solid samples, e. g. in sediments, microbial mats or biofilms. The PM-PSt7 is compatible with the Microx 4 and OXY-1 / -4 ST series oxygen meters and has a measurement range of 0 – 100 % oxygen, with a detection limit of 0.03 % oxygen. Together with the Automated Micromanipulator and the software PreSens Profiling Studio boundary layers and gradients can be followed online, while the sensor is automatically moved inside the sample.

- High spatial resolution (< 50 μm)
- High temporal resolution ($t_{90} < 3 \text{ sec.}$)
- Penetration probe for insertion into semi-solids
- Mechanical interlock for precise vertical localization inside the sample
- Splash-proof metal housing
- No electrical interference due to optical measurements

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 1 % O ₂ ± 0.05 % O ₂ at 20.9 % O ₂	± 0.005 mg/L at 0.4mg/L ± 0.025 mg/L at 9.06 mg/L
Accuracy at + 20 °C**	± 0.05 % O ₂ or ± 3 % rel.	
Measurement temperature range	from 0 to + 50 °C	
Response time (t ₉₀)	< 3 sec. (gas)	< 10 sec. (liquid)
Properties		
Compatibility	Aqueous solutions, ethanol, methanol	
No cross-sensitivity	pH 1 – 14 CO ₂ , H ₂ S, SO ₂ Ionic species	
Cross-sensitivity	Organic solvents, such as acetone, toluene, chloroform or methylene chloride Chlorine gas	
Sterilization procedure	Ethylene oxide (EtO)	
Cleaning procedure	3 % H ₂ O ₂ Ethanol Soap solution	
Calibration	Two-point calibration with oxygen-free environment (nitrogen, sodium sulfite) and air-saturated environment	
Storage stability	60 months provided the sensor material is stored in the dark at room temperature	
*data for microsensor TF = flat-broken sensor tip with 230 µm diameter		
**after two-point calibration as described in the manual		

ACCESSORIES

Manual Micromanipulator MM



[microsensor not included]

The Manual Micromanipulator MM is specifically designed for PreSens needle-type microsensors (NTH). The system allows moving the microsensor vibration-free in 3 axes with μm reading accuracy. A solid base plate ensures a stable set-up of the micromanipulator and enables safely tilting the whole system up to 90° - so you can use it in any required position. With the safe-insert function the microsensor retracted in its steel needle can be securely inserted into your area of interest. The sensor tip can then be extended delicately and safely with μm reading accuracy, without risk of breaking the sensor fiber.

- Safe-insert function for retractable microsensors
- 90° tilting mechanism
- Specifically designed for PreSens microsensors
- Vibration-free micromanipulation in 3D
- Fine drive with μm reading accuracy
- Solid base plate for most stable set-up

TECHNICAL

Specifications	
Compatibility	Needle-type Housed (NTH), Profiling (PM) and Implantable (IMP) oxygen & pH microsensors
Dimensions	230 mm x 130 mm x 200 mm
Weight	Weight w/o base plate: 1,1 kg Weight with base plate: 3 kg
Travel range	x-axis: 37 mm, fine drive: 10 mm y-axis: 20 mm z-axis: 25 mm
Reading accuracy	Coarse adjustment: 0.1 mm Fine adjustment: 0.01 mm
Coarse positioning	x-axis: 70 mm
Rotability	360°
Material	Aluminum & steel



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