pyroscience
sensor technology

AquapHOx-L
Flexible Underwater Loggers

For Optical O_2, pH & Temperature Sensors

NEW TECHNOLOGY

- Stand-alone long-term logging
- Shallow water & down to 4000 m
- Exchangeable sensor heads
- New pH sensor technology
- Ultra-High Speed O_2 sensor
- New Ultra-Trace O_2 sensor
- Unprecedented flexibility

Stand-alone Long-term Logging

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INNOVATIVE UNDERWATER PLATFORM

PyroScience stands for innovative optical sensor technology: simple, compact & flexible sensor systems with expert customer support. The new all-in-one optical sensor platform AquapHOx is a cost-effective, flexible and easy-to-operate underwater optical sensor solution. It is available as long-term loggers and real-time data transmitters, and can be combined with a broad sensor portfolio for monitoring critical parameters and their dynamics in coastal ecosystems, open ocean and the deep sea.

AquapHOx Logger Devices

- **Flexible Deep Sea Logger APHOX-LX**
  Titanium housing (1.35 kg), down to 4000m
  1 port for optical O_2 or pH sensors
  Maximum flexibility (heads, ranges & analytes)
- **Shallow Water O_2 Logger APHOX-L-O_2**
  POM housing (0.45 kg)
  Variety of O_2 sensor heads & ranges
- **Shallow Water pH Logger APHOX-L-PH**
  POM housing (0.45 kg)
  Several pH sensor heads & ranges

New Optical O_2 & pH Sensors

Broad portfolio of different O_2 & pH sensor types:

O_2

Full Range for O_2 monitoring
Ultra-Trace O_2 sensor
Ultra-High Speed sensor

pH

Different ranges available
Dedicated sensors for pH total scale
Minimal influence of salinity

General Device Specifications

Dimension	63 x 300 mm
Compatible Optical Sensors	Optical sensors with underwater connector (-SUB) from PyroScience
Sensor Formats	Sensor caps, flow-through cells and probes for O_2 & pH, O_2 micro-& minisensors, T minisensors
Data Storage	4 GB (ca. 40 million data points)
Battery	Rechargeable LiPo battery, 1250 mAh
Stand-alone Logging Time	ca. 6 months with 1 min logging interval
Max. Sample Rate	1 s
Temperature Sensor	Integrated for automatic T compensation of optical sensors

Maximum Flexibility

O2 pH T

Many Applications with a new level of flexibility:

- Exchangeable sensor heads for various applications
- Sensor heads for different analytes (pH, O2, T)
- Variety of sensor formats and measuring ranges

Multiple Applications

Sensor Caps for O2 & pH

- Long-term deployments
- Water column profiling
- Flow-through systems
- In-situ incubations
- Monitoring

New Ultra-Trace O2 sensors

- Oxygen Minimum Zones
- De-oxygenation events

Micro- & Minisensors:

- Profiling over surface structures & in sediments

O2 Sensors: Full Range, (Ultra-)High Speed, Ultra-Trace

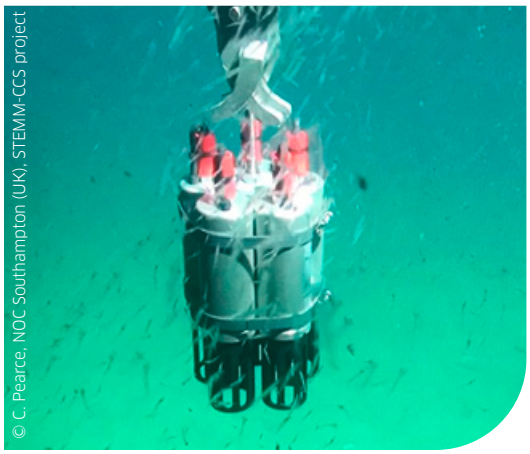
O2 Measuring Range Full Range/High Speed	• 0 – 23 mg/L • 0 – 720 µmol/L
O2 Measuring Range Ultra-Trace	• 0 – 0.09 mg/L • 0 – 2.7 µmol/L
Detection Limit Full Range/High Speed	• 0.01 mg/L • 0.3 µmol/L
Detection Limit Ultra-Trace	• 0.05 µg/L • 1.3 nmol/L
Response Time (t90)	• Ultra-High Speed: <0.3 s • High Speed: <0.8 s • Full range: <3 s • Ultra Trace: <10 s
Influence of Pressure	ca. 1% / 1000m
Salinity Range	0 to 50 PSU
Temperature Range	-2°C to 50°C

pH Sensors: different versions available

pH Ranges	• PK7: pH 6.0 – 8.0 • PK8: pH 7.0 – 9.0 • PK8T: total scale
Resolution	• PK7: 0.003 at pH 7 • PK8(T): 0.003 at pH 8
Precision	0.02
Response Time (t90)	<60 s
Salinity Range	10 to 40 PSU
Temperature Range	5°C to 40°C

Exemplary Applications

Measurement on the Great Barrier Reef



Deployment in the North Sea

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CONTACT AND SERVICE

Please contact us for more information
concerning our

- New AquapHOx Technology
- AquapHOx Loggers & Transmitters
- Optical pH, O_2 & T sensors
- Sensor formats and ranges
- Lab & portable sensor systems
- OEM solutions

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