

AquapHOx

Underwater Logging Device



Flexible all-in-one optical
sensor solution for O₂ & pH

New Technology

- Autonomous & realtime logging
- Down to 4000 m
- Easy-to-use
- Exchangeable sensor caps & heads
- New pH sensor technology
- Fast & robust O₂ sensors
- New trace O₂ sensors
- Unprecedented flexibility

New Underwater Sensor System

PyroScience stands for innovative optical sensor technology: simple, compact & flexible sensor systems with expert customer support. With the new AquapHOx technology, we also offer a cost-effective and easy-to-operate underwater sensor platform for measurement of critical parameters (O₂, pH, T) with a single device.

AquapHOx Devices

This cutting-edge AquapHOx technology includes

- **AquapHOx Logger**
autonomous logging
- **AquapHOx Sensor**
without battery and data storage
(realtime data transmission)
- variety of **OEM-modules**
for custom integration

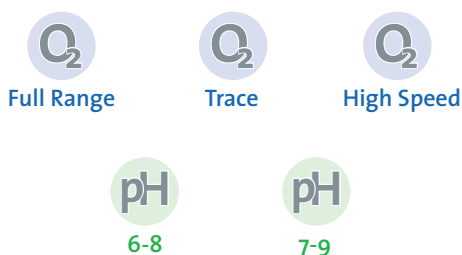


Specifications AquapHOx Logger

Weight in air/ water	1.35 kg / 0.85 kg
Dimensions	Ø 63 x 300 mm
Computer Interface	USB, UART (RS485/Modbus, analog out optional)
Battery	LiPo, 1250 mAh
Data Storage	2 GB
Temperature Sensor	Pt100, t ₉₀ <2 s
Maximal Depth	4000 m
Sensor Heads	optical O ₂ & pH sensors; different ranges & formats
Measuring Principle	Luminescence lifetime detection of REDFLASH indicators from PyroScience

New Optical O₂ & pH Sensors

Broad portfolio of different O₂ & pH sensor types:



O₂ Sensors: Full Range, Trace, High Speed

O ₂ Measuring Range Full Range / High Speed	<ul style="list-style-type: none"> • 0.05 –23 mg/L • 1-720 µmol/L • 0.5-250 % air sat.*
O ₂ Measuring Range Trace	<ul style="list-style-type: none"> • 0.0005 –2.3 mg/L • 0.15-70 µmol/L • 0.05-25 % air sat.*
Detection Limit Full Range / High Speed	<ul style="list-style-type: none"> • 0.005 mg/L • 0.15 µmol/L • 0.05 % air sat.
Detection Limit Trace	<ul style="list-style-type: none"> • 0.2 µg/L • 0.007 µmol/L • 0.002 % air sat.
Response Time (t ₉₀)	<ul style="list-style-type: none"> • Full Range: <15 s • Trace: <2 s • High Speed: <1 s
Temperature Range	-2 to 50°C
Salinity Range	0 to 50 PSU

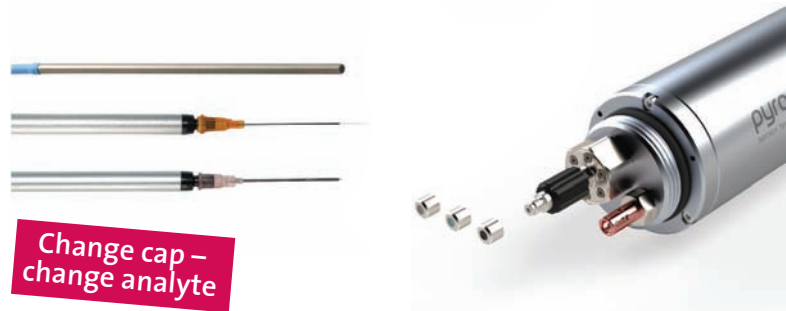
* air sat. = at 20°C and 1013 mbar absolute pressure

pH Sensors: pK7, pK8

pH Ranges	<ul style="list-style-type: none"> • PK7 Version: pH 6.0 –8.0 • PK8 Version: pH 7.0 –9.0
Resolution	<ul style="list-style-type: none"> • PK7 Version: 0.003 at pH 7 • PK8 Version: 0.003 at pH 8
Response Time (t ₉₀)	<60 s
Temperature Range	5°C to 40°C
Salinity Range	10 to 40 PSU

Maximum Flexibility

One Device – Many Application with a new level of flexibility: Simply exchange the sensor head, choose between different analytes (pH, O₂ or T) and sensor formats.

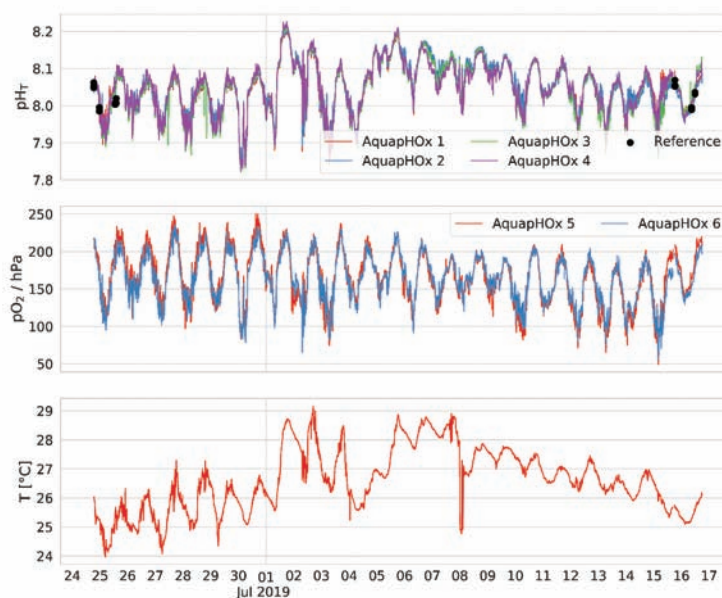


Multiple Applications

- Sensor caps & robust probes for monitoring/ **longterm deployment**
- High-speed needle sensors for **Eddy covariance**
- High-speed sensors for **water column profiling**
- **High spatial resolution & sediment profiling** with Micro- & Minisensors
- New Trace Oxygen Sensors for **Oxygen Minimum Zones**
- Robust probes for **in-situ incubations**
- **Flow-through cells**



Exemplary Application



Measurements at a pier in the Adriatic Sea (summer, biofouling conditions)

pH

O₂

T



© Photocredit: C. Pearce, NOC Southampton (UK), STEMM-CCS Project

Deployment in the North Sea (with shrimps)

Contact and Service

Please contact us for more information concerning our

- new AquapHOx Technology
- AquapHOx loggers & OEM
- optical pH, O₂, T sensors
- sensor formats and ranges
- lab & portable sensor systems



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