Aqua pHOX-L
Flexible Underwater Loggers
For Optical O₂, 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 O₂ sensor
• New Ultra-Trace O₂ sensor
• Unprecedented flexibility

Stand-alone Long-term Logging

www.pyroscience.com
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

- **Multi-Analyte Deep Sea Logger APHOX-LX**
  Titanium housing (1.35 kg), down to 4000m
  1 port for O2, pH and optical T sensors
  Maximum flexibility (heads, ranges & analytes)

- **Shallow Water O2 Logger APHOX-L-O2**
  POM housing (0.45 kg)
  Variety of O2 sensor heads & ranges

- **Shallow Water pH Logger APHOX-L-PH**
  POM housing (0.45 kg)
  Several pH sensor heads & ranges

New Optical O2 & pH Sensors

Broad portfolio of different O2 & pH sensor types:

- **O2**
  Full Range for O2 monitoring
  Ultra-Trace O2 sensor
  Ultra-High Speed sensor

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

General Device Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimension</td>
<td>63 x 300 mm</td>
</tr>
<tr>
<td>Compatible Optical Sensors</td>
<td>Optical sensors with underwater connector (-SUB) from PyroScience</td>
</tr>
<tr>
<td>Sensor Formats</td>
<td>Sensor caps, flow-through cells and probes for O2 &amp; pH, O2 micro- &amp; minisensors, T minisensors</td>
</tr>
<tr>
<td>Data Storage</td>
<td>4 GB (ca. 40 million data points)</td>
</tr>
<tr>
<td>Battery</td>
<td>Rechargeable LiPo battery, 1250 mAh</td>
</tr>
<tr>
<td>Stand-alone Logging Time</td>
<td>ca. 6 months with 1 min logging interval</td>
</tr>
<tr>
<td>Max. Sample Rate</td>
<td>1 s</td>
</tr>
<tr>
<td>Temperature Sensor</td>
<td>Integrated for automatic T compensation of optical sensors</td>
</tr>
</tbody>
</table>
Maximum Flexibility

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Full Range/High Speed</th>
<th>Ultra-Trace</th>
</tr>
</thead>
<tbody>
<tr>
<td>O₂ Measuring Range</td>
<td>0 – 23 mg/L</td>
<td>0 – 0.09 mg/L</td>
</tr>
<tr>
<td>Detection Limit</td>
<td>0.01 mg/L</td>
<td>0.05 µg/L</td>
</tr>
<tr>
<td>Response Time (t90)</td>
<td>Ultra-High Speed: &lt;0.3 s</td>
<td>High Speed: &lt;0.8 s</td>
</tr>
<tr>
<td>Influence of Pressure</td>
<td>ca. 1% / 1000m</td>
<td></td>
</tr>
<tr>
<td>Salinity Range</td>
<td>0 to 50 PSU</td>
<td></td>
</tr>
<tr>
<td>Temperature Range</td>
<td>-2°C to 50°C</td>
<td></td>
</tr>
</tbody>
</table>

pH Sensors: different versions available

<table>
<thead>
<tr>
<th>Parameter</th>
<th>PK7: pH 6.0 – 8.0</th>
<th>PK8: pH 7.0 – 9.0</th>
<th>PK8(T): total scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH Ranges</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>PK7: 0.003 at pH 7</td>
<td>PK8(T): 0.003 at pH 8</td>
<td></td>
</tr>
<tr>
<td>Precision</td>
<td>0.02</td>
<td></td>
<td></td>
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<tr>
<td>Response Time (t90)</td>
<td>&lt;60 s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salinity Range</td>
<td>10 to 40 PSU</td>
<td></td>
<td></td>
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<tr>
<td>Temperature Range</td>
<td>5°C to 40°C</td>
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Exemplary Applications

Measurement on the Great Barrier Reef

Deployment in the North Sea
CONTACT AND SERVICE

Please contact us for more information concerning our

- New AquapHOx Technology
- AquapHOx Loggers & Transmitters
- Optical pH, O2 & T sensors
- Sensor formats and ranges
- Lab & portable sensor systems
- OEM solutions

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