

# AquapHOx-T Flexible Underwater Transmitters

For Optical O<sub>2</sub>, pH & Temperature Sensors

O<sub>2</sub>

pH

T



**Real-time  
Data Transmission**

## NEW TECHNOLOGY

- Real-time Data Transmitter
- Shallow water & down to 4000 m
- Exchangeable sensor heads
- New pH sensor technology
- Ultra-High Speed O<sub>2</sub> sensor
- New Ultra-Trace O<sub>2</sub> sensors
- Unprecedented flexibility

## 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 Transmitter Devices

- Flexible Deep Sea Transmitter APHOX-TX**  
 Titanium housing, down to 4000m  
 1 port for optical O<sub>2</sub> or pH sensors  
 Maximum flexibility (heads, ranges & analytes)
- Shallow Water O<sub>2</sub> Transmitter APHOX-T-O<sub>2</sub>**  
 POM housing  
 Variety of O<sub>2</sub> sensor heads and ranges
- Shallow Water pH Transmitter APHOX-T-PH**  
 POM housing  
 Several pH sensor heads & ranges



### General Device Specifications

Dimension	63 x 300 mm
Housing Material/Weight	
Deep Sea Version	Titanium / 1.31 kg
Shallow Water Version	POM / 0.406 kg
Compatible Optical Sensors	Optical sensors with underwater connector (-SUB) from PyroScience
Data Storage	No internal data storage
Max. Sample Rate	40 Hz (0.025 s interval)
Digital interface	RS485 (USB 2.0 adapter cable included)
Power Supply	5-15VDC (only RS485 / USB) 10-15 VDC (Analog Outputs)
Power Consumption	max. 30mA (+ currents used by analog current outputs)
Analog Output	2x 0-5V, 2x 4-20mA (16 bit each)
Digital Protocols	Modbus RTU or PyroScience protocol (switchable)
Temperature Sensor	Integrated for automatic T compensation of optical sensors

# New State-of-the-art Optical O<sub>2</sub> & pH Sensors

## Sensor Caps

- pH (total scale) \_\_\_\_\_
- Ultra-Trace O<sub>2</sub> \_\_\_\_\_
- (Ultra-) High Speed O<sub>2</sub> \_\_\_\_\_



## AquapHOx Transmitter

## Fiber-optic Sensors



## Maximum Flexibility

- Exchangeable sensor heads for pH, O<sub>2</sub> & T
- Variety of sensor formats and measuring ranges
- Fiber-optic sensors & sensor caps

## O<sub>2</sub> Sensors: Full Range, (Ultra-)High Speed, Ultra-Trace

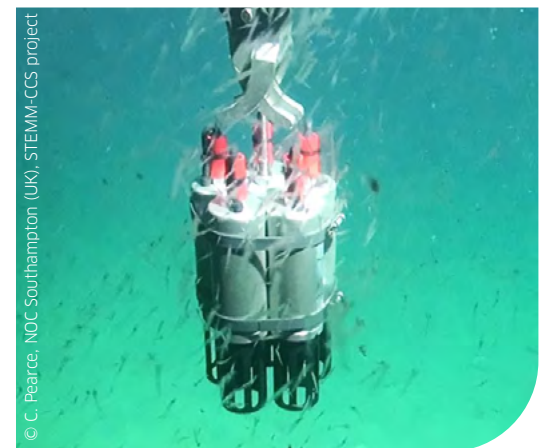
O <sub>2</sub> Measuring Range	• 0 - 23 mg/L
Full Range/High Speed	• 0 - 720 µmol/L
O <sub>2</sub> Measuring Range	• 0 - 0.09 mg/L
Ultra-Trace	• 0 - 2.7 µmol/L
Detection Limit	• 0.01 mg/L
Full Range/High Speed	• 0.3 µmol/L
Detection Limit	• 0.05 µg/L
Ultra-Trace	• 1.3 nmol/L
Response Time (t <sub>90</sub> )	• 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

## Multiple Applications

- Fast water column profiling
- Eddy covariance measurements
- Trace O<sub>2</sub> detection in oxygen minimum zones or during de-oxygenation events
- Ocean pH monitoring on the pH total scale
- Contactless read-out of incubation chambers
- Profiling over surface structures & in sediments at high spatial resolution

## 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 (t <sub>90</sub> )	<60 s
Salinity Range	10 to 40 PSU
Temperature Range	-1°C to 50°C



Deployment in the North Sea

## CONTACT AND SERVICE

**Please contact us for more information**  
concerning our

- New AquapHOx Technology
- AquapHOx Transmitters & Loggers
- Optical pH, O<sub>2</sub> & T sensors
- Sensor formats and ranges
- Lab & portable sensor systems
- OEM solutions



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