



Hydrogen Peroxide Probe System

In situ measurements and profiling in shallow water



Accurate - Reliable - Small Dimensions - Easy Handling



The determination of **Hydrogen Peroxide** is one of the most important parameters for the online control in **industry**. Furthermore, the observation of the **oxidation processes** in industry or in **waste water** (e.g. to oxidise H_2S) is of high interest. Because H_2O_2 is an expensive raw material, there is a permanent demand to save money of course. This new probe system may help here, if the hydrogen peroxide concentration is determined continuously and *insitu*.

Due to *high chemical reactivity of hydrogen peroxide*, the determination of H_2O_2 was difficult until now. Another fact is, that analytical methods based on *sampling lead mostly to wrong results*, even though the sampling and the determination have been done very carefully. Another point is, that the *alternative volumetric titration is very time consuming* and there are *permanent costs for chemicals*. A sensor or a probe system could allow the *continuous reading* of the hydrogen peroxide concentration. Titrations can only deliver average concentrations of a well-defined volume. Fast changes of the concentration or local concentration gradients are only visible with *in-situ* sensors or probe systems.

All these disadvantages could be avoided, if the new **Submersible H_2O_2 Probe** is used for the accurate and reliable *insitu* determination in depths of up to 100 m (10 bar).

Special Features:

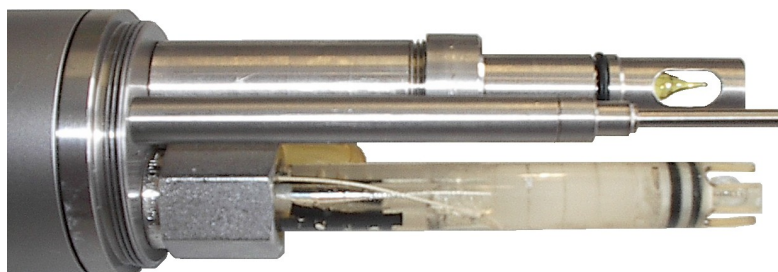
- Sensors for H_2O_2 (amperometric micro-sensor), temperature and depth
- Very easy sensor exchange
- Windows based software for display of chemical/physical units and diagrams
- Free selection of displayed parameters (H_2O_2 , temperature, depth/pressure)
- Titanium made housing and protection cage
- Subconn titanium connector
- Very small dimensions (48 mm diameter, 440 mm total length)
- Low weight of approx. 1.1 kg
- Low running costs for chemical sensor replacement

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The **Submersible H₂O₂ Probe** is equipped with a precision microprocessor-controlled 4-channel 16 bit analogue to digital converter. The data are available as RS-232 signal (multi-conductor polyurethane covered cable) and optional as FSK signal modulated on constant current (single-conductor cable).

The probe can be powered by battery or DC power supply (9 to 30 V DC) when using the RS-232 output or by constant current with FSK telemetry output (coaxial connection) for longer distances. An interface for constant current supply is available.



Probe with removed protection cage. Sensors for H₂O₂, pH, temperature and depth.

Standard Sensor Equipment

Sensors	Principle	Range	Accuracy	Resolution	Response time
Pressure	piezo-resistive full bridge	10 bar	± 0,1 % FS	0,002 % FS.	150 ms
Temperature	Pt 100	- 2 ... + 36 °C	± 0,05 °C	0,0006 °C	1 s
pH	single rod electrode	0 ... 14 pH	± 0,02 pH	0,0002 pH	1 s
H ₂ O ₂	Amperometric micro-sensor	0,02...10% or	2% of reading	0,02 % H ₂ O ₂	< 2s

Technical data of the probe system

Feature	Online Probe	Memory Probe
Dimensions:	Ø 48, length: 400 mm	Ø 48, length: 440 mm
Weight on air:	1,1 kg	1,3 kg
Material:	Titanium	Titanium
Connector:	Subconn MCBH4M	Subconn MCBH5M
Power Supply:	External 9...30 Volt DC	External: 7...16 V DC Internal Battery: 1...5 V DC
Current consumption:	12 mA at 12 V DC	External power supply: 15 mA Li-battery (3,6 V): approx. 20...35 mA Alk.-battery (1,5 V): approx. 50...90 mA
Data output	Serial port RS232, option: FSK-telemetry	Serial port RS232
Memory capacity:	none	8 MB (approx. 350.000 data sets)

In view of our policy of continual improvement, the design and specifications of our products may vary from those illustrated in this brochure.

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