



Submersible H₂S/Sulphide Probe

In-situ measurements and profiling in shallow water



Accurate - Reliable - Small Dimensions - Easy Handling



The determination of **total dissolved sulphide** (sum of dissolved H₂S, HS⁻ and S²⁻) is one of the most important parameters for the analysis of **natural waters** and **waste water** in industry.

It is necessary to observe the total sulphide concentration, dissolved in water, to avoid any danger because of the evaporation of the very toxic H₂S. H₂S is able to block oxygen transporting enzymes leading to the death because of inner suffocation. On the other hand, the total dissolved sulphide concentration is an interesting parameter for scientists of several scientific departments. They use this parameter for the assessment of natural lakes, but also for instance to understand volcanic activities.

But due to a lot of the hydrogen sulphide's inconvenient chemical properties, like high chemical reactivity, very fast oxidation in the presence of oxygen and the fast concentration exchange between the liquid sample and the gaseous phase above (mostly air), the determination is difficult. Even though the sampling and the determination have been done very carefully, the results are uncertain and mostly disappointing.

All these disadvantages could be avoided, if the new **Submersible H₂S/Sulphide Probe** is used for accurate and reliable the *in-situ* determination in depths of up to 100 m.

Special Features:

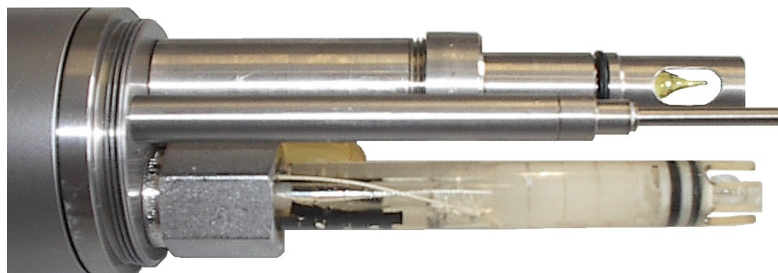
- Sensors for H₂S (amperometric micro-sensor), temperature, pH and depth
- Very easy sensor exchange
- Windows based software for display of chemical/physical units and diagrams
- Free selection of displayed parameters (H₂S or total dissolved sulphide, T, pH)
- Titanium made housing and protection cage
- Subconn titanium connector
- Very small dimensions (48 mm diameter, 440 mm total length)
- Low weight of 1 kg
- Small and low-weight cable (6 mm diameter)
- Low running costs for chemical sensor replacement

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The **Submersible H₂S/Sulphide 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 or 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 H₂S, 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 S | Amperometric micro-sensor | 10µg/l...3mg/l 50µg/l..10mg/l 500µg/l..50mg/l | 2% of reading | < 0,1% | < 1s |

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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