

## Submersible H<sub>2</sub>S/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 H<sub>2</sub>S, HS<sup>-</sup> and S<sup>2-</sup>) 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 H<sub>2</sub>S. H<sub>2</sub>S 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.

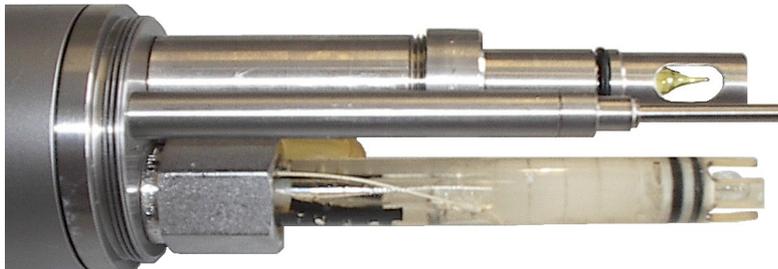
All these disadvantages could be avoided, if the new **Submersible H<sub>2</sub>S/Sulphide Probe** is used for accurate and reliable the *in-situ* determination in depths of up to 100 m.

#### Special Features:

- Sensors for H<sub>2</sub>S (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 (H<sub>2</sub>S 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

The **Submersible H<sub>2</sub>S/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 H<sub>2</sub>S, 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 <sub>2</sub> 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.