Shallow Water H_2S Probe

Amperometry

Submarine connector and analog output

Support probe and H_2S micro sensor

The H_2S probe has been developed for in situ measurement of the evolution of dissolved hydrogen sulfide concentrations in natural, industrial water and wastewater.

Mounted on multi-parameter systems such as CTD probes, this sensor is composed of a sealed connector, the probe housing incorporate an electronic signal transformation board and a micro sensor H_2S installed in a peak.

Measurement by amperometry allows precise and fast measurements, approximately 2 seconds for 90% of the measurement even for very low concentration with a few micrograms, moreover turbidity and color of the water do not have any influences on measurement.

For the determination of dissolved H_2S concentrations, output signal value must be associated with the sample temperature measurement.

Applications

- Monitoring and protection of wastewater networks
- Control of H_2S reagent injections
- Industrial process control
- Aquaculture tanks monitoring
- Control of winemaking processes

Advantages

- Measurement without sampling directly in the field
- No interference with thurbidity or colors
- Immersion depth max. 100 meters
- Analog output signal without external controller
- Submarine connector

Add the sensor to your installations

This equipment is delivered with the electrode calibration slope, and temperature compensation data with calculation formulas to obtain the H_2S concentration in mg/l. The exchange of the micro-sensor tip is very easy and can be done by users.

The H_2S shallow water probe is also able to integrate an O_2 micro sensor for dissolved oxygen measurements, by replacing the micro H_2S tip.

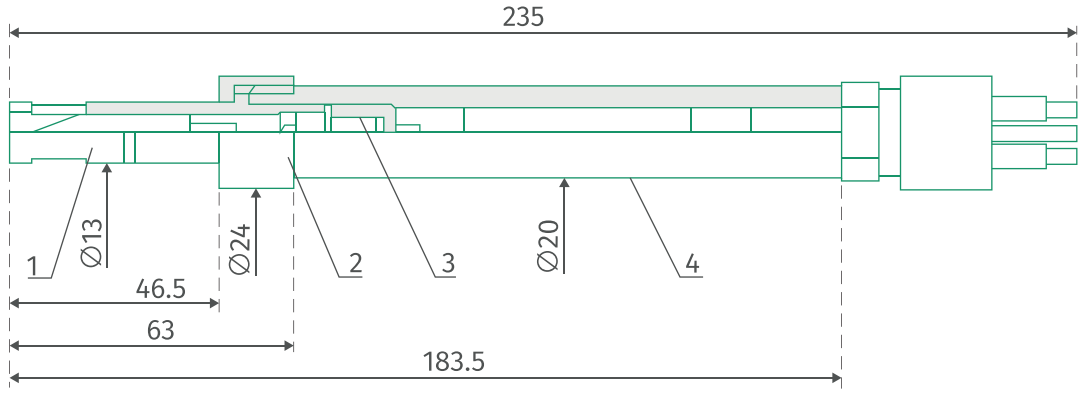
The dissolved H2S passes through the gas permeable membrane. It diffuses to the working electrode where an electrochemical oxidation reaction operates. The current generated, proportional to the hydrogen sulphide concentration, is measured by the probe.

This current of 0 to 400 pico-amperes is then converted by the electronic card of the probe into an analog signal from 0 to 5 VDC.

H_2S Probe
Shallow water

Technical specifications

Measuring principle		Amperometric measurement
Technology		Membrane micro-sensor with redox catalyst
Temperature compensation		Required - not included
Electrical polarization		Automatic approx. 15-20 min wait at first use, lower for short stops
Measurement ranges	Type I	0,05 ... 10 mg/l H_2S
	Type II	0,5 ... 50 mg/l H_2S
	Type III	0,01 ... 3 mg/l H_2S
	Type SL	0,003 ... 1,5 mg/l H_2S - Special Low
	Type L	0 ... 150 mg/l H_2S - Large
Response time		T 90% 2 seconds
Measurement accuracy		2 % of the measured value
H_2S comsumption		Negligible
Material		Titanium (housing), silicone (membrane), glass (electrode), epoxy resin
Dimensions (d x L)		24 mm x 235 mm
Power supply		9 ... 30 VDC
Consumption		approx. 0,5 mA with 12 VDC, approx. 0,25 mA with 24 VDC
Output signal		analog 0 ... 3 VDC
Connector		SubConn BH-4-MP
Micro-sensor H_2S lifetime		6 months in portable use, 10 in continuous (depends on stress leads by pH variations)
Interferences on measurement		No interference in salt water up to 40 g/l of salt
		No interference in presence of: carbon dioxide (up to 25.38 vol.%), Methane (up to 5.78 vol.%), Hydrogen (up to 0.544 vol.%), Ammonia (up to at 1000 ppm (v)), carbon monoxide (up to 92 ppm (v)), CS2 (up to 5 vol%), organic solvents (up to 20% vol.), acetic acid (up to at 1 mol / l), dimethyl sulfide
Maintenance		Distilled water cleaning of the measuring diaphragm after every use
Temperature of the medium / sample		0 ... + 30 °C (40 ° C possible with a specific calibration on request)
Ambient temperature		0 ... + 40 °C
Storage temperature		0 ... + 40 °C
Maximum operating pressure		100 dbar



H_2S Sensor