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Shallow Water Micro-sensor for Dissolved H₂O₂

For very fast depth profiling with probe systems

The amperometric micro-sensor for shallow water has been developed for the fast *in-situ* depth profiling of dissolved hydrogen peroxide with probe systems or as single OEM sensor in industrial plants. Because of the partial pressure of the gaseous H₂O₂, the analyte is separated by permeation through the membrane. Inside the sensor the hydrogen peroxide reacts electrochemically at the working electrode. This causes a current corresponding to the partial pressure of the dissolved hydrogen peroxide. The sensor has a very short response time of approx. 2 seconds for t_{90%} and streaming as it is well-known from all the other membrane covered electrochemical sensors is not necessary, so that profiling with very high local resolution is possible. Both turbid and coloured solutions do not interfere with the signal. For measuring the hydrogen peroxide concentration the sensor has to be combined with a temperature measurement. The hydrogen peroxide micro-sensor is available for *in-situ* measurements with pressures of up to 100 dbar and as laboratory version. All sensors are delivered with sensor slope, temperature compensation data and mathematical formulas for calculating the hydrogen peroxide concentration. The exchange of sensor tips is very easy and could be done by the customer himself. The alternative exchange tip for dissolved oxygen or hydrogen sulphide extends the sensors flexibility.



Technical data of the micro-sensor:

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|----------------------|---|
| measuring principle: | amperometry |
| power supply: | 9 ... 30 VDC (others on request) |
| output: | 0 ... + 3 VDC (others on request) |
| dimensions: | diameter: 24 mm, length: approx. 235 mm |
| connector: | SUBCONN BH-4-MP (others on request) |
| housing: | titanium, with integrated electronic device |
| measuring range: | 0,02 bis 10% H ₂ O ₂ or dissolved oxygen sensor tip or H ₂ S sensor tips |
| accuracy: | 2% (measuring value) |
| pressure range: | up to 10 bar or laboratory version |
| response time: | < 2 s for t _{90%} |
| average life time: | 5...10 months |