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Shallow Water Dissolved Oxygen Micro-sensor

For very fast vertical and horizontal profiling

The galvanic dissolved oxygen micro-sensor has been developed above all for the very fast *in situ* depth profiling with CTD probes and for horizontal profiling with towed undulating vehicles, ROV's or AUV's in rivers, lakes and oceans. Because of the partial pressure of the gaseous O₂, the analyte is separated by permeation through the membrane. Inside the sensor the oxygen reacts electrochemically at the cathode. This causes a current corresponding to the partial pressure of the dissolved oxygen. The sensor has a very short response time of down to 200 milliseconds and streaming as with all other Clark-type oxygen 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 oxygen saturation the sensor has to be combined with a temperature measurement. The DO micro-sensor is useful for *in situ* measurements for depths of up to 120 m. All sensors are delivered with temperature compensation data.



Technical data of the micro-sensor:

measuring principle:	galvanic, membrane covered sensor
power supply:	9 ... 30 VDC (others on request)
output:	0 ... + 5 VDC (others on request)
dimensions:	diameter: 24 mm length: 235 mm
connector:	wet con BH-4-MP (others on request)
housing:	titanium
measuring range:	0 ... 200% saturation
resolution:	e.g. 100% saturation/Volt (depends on sensor and requested signal resolution)
accuracy:	2% (measuring value)
pressure range:	up to 12 bar
response time:	t _{90%} : down to 200 milliseconds
average life time:	1800 measuring hours (100% O ₂ saturation); exchange of sensor head is possible