Dissolved Oxygen Sensor for Deep Sea Use
For Monitoring and Slow Profiling 2,000/6,000 m

This membrane-covered dissolved oxygen sensor has been developed above all for long-term monitoring but also for slow profiling. The O_2-sensor follows the amperometric principle. The anode is formed by a silver tube in contact with a halogen containing electrolyte within the sensor. The cathode comprises a glass body in which a platinum wire is arranged as the cathode. At the rounded end of the sensor a removable hood is situated by which a gas-permeable membrane is held in place. The sensor can be used in salt water, lakes and rivers (fresh or charged water). A multi-core 4-wire sea-cable is used for power supply and data acquisition. A power supply of 9…18 VDC is used as current source for the sensor. The sensor consists of a titanium made pressure tube, oxygen sensor head with exchangeable electrolyte and membrane (for several applications), sensor cap and titanium/neoprene underwater-connector (optional with locking sleeves). A pressure resistance of 2000 or 6000 dbar is warranted. When the sensor is connected to an external power supply, than the continuous polarisation of the sensor is disconnected by an integrated switch. The oxygen sensor has been designed to give different performances depending on the membranes used. The sensor normally uses two membranes, the inner membrane for measurement and the outer membrane for protection.

Technical data of the Sensor:

measuring principle:	amperometric, membrane-covered sensor
measuring range:	0 ... 150% saturation, 0…20 mg/l
pressure range:	2,000 dbar or 6,000 dbar
accuracy:	$\pm$ 2% sat., drift: 0.1 to 0.3 ppm/week
response time:	10 s $t_{63\%}$
resolution:	0.1% saturation
power supply:	9 ... 18 VDC (others on request)
output:	0 ... + 5 VDC (others on request)
dimensions:	diameter: 25 $\pm$ 0.3 mm (2,000 m), 29.5 $\pm$ 0.3 mm (6,000 m)
weight in air:	260 g
connector:	Subconn BH-4-M Titanium (others on request)
housing:	titanium, POM
current uptake:	55 $\pm$10 nA at 12 V DC

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