Bild fehlt

Maritime research

Sensor

DO Deep Sea Oxygen

Dissolved Oxygen Sensor for Deep Sea Use – Monitoring and Slow Profiling 2000 m / 6000 m

This membrane-covered dissolved oxygen sensor has been developed above all for longterm monitoring but also for slow profiling. The O2-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.

Further technical details

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	± 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 ± 0.3 mm (2,000 m), 29.5 ± 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 ±10 nA at 12 V DC

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