

OXYGEN AND TEMPERATURE ELECTRODE

Controllers

Sensors

Analysers

Samplers

Flow

Level

Pressure

Web remote control

Data logging

Accessories



General features

The oxygen content in liquids is measured with a system called Clark's cells. These cells generate an electrical current proportional to the oxygen partial pressure which can be evaluated with a suitable measurement converter.

In order to prevent interference effects on measuring, the Clark's cells are covered with a gas-permeable membrane. The membranes typically used are made from PTFE but, as this material is mechanically fragile, frequent changing is often necessary, along with the related "demanding" operations (interruption of measurement, electrolyte replacement, regeneration of the electrodes).

The **S423** solves this problem by using an OPTIFLOW™ membrane. This membrane is very mechanically stable, is manufactured as a laminate around a steel mesh and is very resistant to chemically aggressive environments as well as high pressures.

Thanks to the special construction of the measuring electrodes, this system also makes the sensor totally "maintenance free".

Applications

Surface waters, drinking water, biological treatment of waste water.

Technical specifications

Measuring range	0,4...40,0 mg/l
Measuring method	measure of the electric current influenced by the oxygen partial pressure
Sensitivity	40...80 nA a 25 °C in air
Stabilization time	typical 15 min., max. 1 h
Required flow rate	≥ 0.03 m/s
Temperature sensor	NTC 30 kOhm Oxysens W (NTC 22 kOhm Oxysens – optional)
Operating temperature	0...60 °C
Maximum pressure	4 bar
Body material	SS1.4435, PEEK, Silicon, NBR
Electrode material	Silver-Platinum combination
Membrane material	OPTIFLOW
Reference electrolyte	Alkaline solution
Electrical connector	Integral cable 5 mt
Connection to process	Pg 13.5 threaded
Polarisation current	-670 +/- 50 mV



OPTICAL OXYGEN AND TEMPERATURE PROBE

General features

S423 C OPT is an oxygen measuring sensor with integrated temperature probe. The measuring technique is based on the following optical principle: a diode emits a blue light towards a support on which a fluorescent substrate is applied. The substrate reacts by emitting initially a red light (luminescence), then returns to its initial state. The intensity of the produced red light and the return rate to the initial state are related to the present oxygen concentration. This innovative method allows reliable, accurate measurements with no drift over time, so that the system calibration is no longer necessary. No maintenance is required except for the replacement of the luminescent support about every two years. The system does not consume oxygen, therefore it is suitable for the most varied fields of application, including those in which the measuring liquid is almost stationary.



Applications

Surface waters, fish farms, drinking water, waste water, sea water

Available versions with PVC body, with 4...20mA outputs

Technical specifications

Measuring range	0.00...20.00 mg/l
Measuring method	Optical measure by luminescence
Accuracy	± 0,2 mg/l when < 5mg/L ± 0,3 mg/l when > 5mg/L
Response	90% of the value in less than 60 second
Refresh time	T ₉₀ < 60s
Temp. compensation	with internal NTC probe
Operating temperature	0...50 °C
Maximum pressure	5 bar
Body material	SS316 (PVC body optional)
Electrode material	Special optical glasses
O-Rings	NBR and Silicon
Mechanical protection	IP68 Sensor + cable
Power supply	12...24Vdc
Power consumption	max. 2W
Cable	10m integral with the sensor (other on request)
Signal interface	RS 485 Modbus RTU Protocol

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