

Oxygen Sensors

series 51101



Industry leading sensor with longest service intervals and lowest maintenance costs

Applications

In-line, portable and package analysis

Dissolved and gaseous applications

Beverage production, semiconductor, power-steam, pharmaceutical and chemical industries

This electrochemical oxygen sensor is ideal for high-precision measurements under harsh conditions. The measurement range varies from trace to saturation level (0.1 ppb to 400 ppm). Its concept and precise mechanical assembly ensure an optimal performance, a long life cycle and low maintenance costs.

Benefits

- Measurement gases in both dissolved and gaseous phase
- Detection limits < 0.1 ppb (dissolved) or 0.5 ppm (v/v) gaseous
- Low maintenance costs:
 - Interchangeable anode/electrode
 - Minimal membrane surface in contact with the sample reduces maintenance frequency
 - Large anode surface: the anode is less quickly consumed by the electrochemical reaction and must thus be changed less frequently
- Easy calibration process: single point calibration due to absolute zero
- An Eeprom stores the calibration parameters and avoids recalibration process if the sensor is connected to another Dextens instrument
- Temperature sensor is integrated in the cathode assembly, enabling a faster temperature reading
- CO₂ insensitive configurations during oxygen measurement
- Protection cap with special surface treatment: the sensor is very hygienic
- Stainless steel construction: ideal for harsh chemical conditions and high pressures

< 0.1 ppb detection limits

Very fast response time

Low maintenance costs

Easy air calibration process



Dextens SA

Ch.des Aulx 18 – 1228 Plan-les-Ouates - Switzerland

Phone: ++41 22 884 83 06 – Fax : ++41 22 794 66 65

E-mail : info@dextens.ch

www.dextens.ch

Dextens

Oxygen Sensors

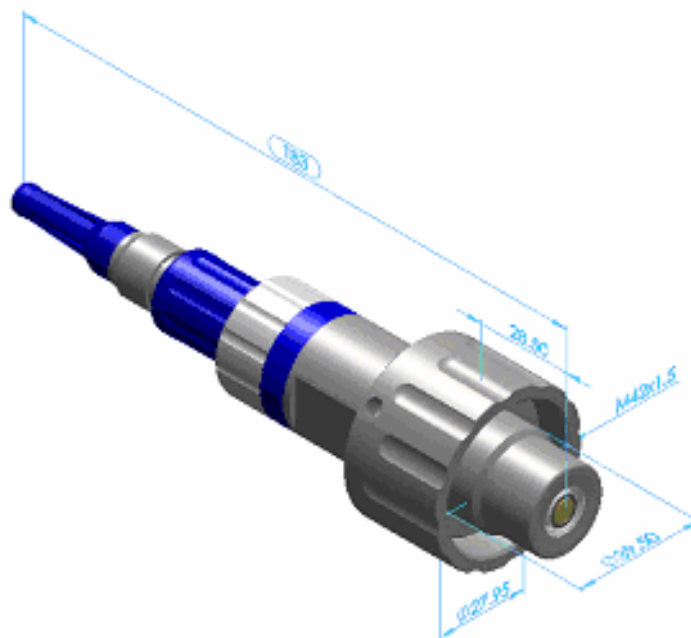
series 51101

Principle

This Oxygen sensor is based on a Clark Cell and consists of a semi-permeable membrane, gold and silver electrodes immersed in an electrolytic solution. The membrane houses the electrolyte and acts as the barrier to the sample allowing only small molecular gases to pass through to contact the gold cathode and react.

A silver guard ring ensures the accuracy of reading by eliminating the effect of any oxygen dissolved in the electrolyte contacting the cathode and therefore creating an additional signal.

Only the oxygen directly above the cathode permeates through the membrane and is measured. Oxygen molecules permeate through the membrane and enter the cell where it is reduced at the Gold cathode. The cathode reacts as a catalyst and therefore remains untarnished. Hydroxyl ions (OH-) are formed by the reduction of the O₂ molecule and a current is generated. The current is directly proportional to the partial pressure of the O₂ present. This current is then measured and displayed by the instrument.



Technical Specifications

Membrane	Utilization of various membranes according to measuring range		
Membrane model number	82956	82952	82935
Measuring range DO ₂	0.1ppb – 20ppm	1ppb – 100ppm	10ppb – 400ppm
Measuring range PO ₂	0 - 4 bars	0 – 2 bars	0 – 10 bars
Liquid flow rate	180 ml/min	50 ml/min	25 ml/min
Linear flow	200 cm/sec	30 cm/sec	20 cm/sec
Gaseous flow rate	0.005 – 3 l/min	0.005 – 3 l/min	0.005 – 3 l/min
Response time (90% at 25°C)	7.2 sec	38 sec	2.5 min
Accuracy	1% of the measured value or lowest value whichever is greater Absolute zero and low drift		
Temperature compensation	-5°C to + 60°C / 23°F to 140°F		
Temperature range	CIP or SIP resistant up to 120°C / 248°F		
Pressure rating	300 bars or 4350 Psi		
Weight	0.6 kg		
Enclosure protection	IP68/NEMA6P		
Material in contact with sample	Stainless steel (ANSI 316L), PFA or Tefzel		
Sensor model number	Model 51102: Ø25mm - Model 51101: Ø28mm		
Sensor cable	3m standard length / optional extension up to 1000 m		

Dextens SA
 Ch.des Aulx 18 – 1228 Plan-les-Ouates - Switzerland
 Phone: ++41 22 884 83 06 – Fax : ++41 22 794 66 65
 E-mail : info@dextens.ch www.dextens.ch

Dextens