ELECTROCHEMICAL OXYGEN SENSOR

OXYTRANS EC

Extremely precise · robust · low maintenance

An electrochemical Clark-cell sensor for high-precision O_2 measurement in dissolved and gaseous phases. OXYTRANS EC covers trace concentrations through high oxygen levels, with configuration-dependent ranges, fast temperature response and a rugged stainless-steel design for demanding process conditions.



OXYTRANS EC · 316L STAINLESS

0.1 ppb-400 ppm	0-10 bar	300 bar	IP68 / NEMA 6P
DISSOLVED RANGE*	PARTIAL PRESSURE*	PRESSURE RATING	ENCLOSURE

Features & Benefits

Very low detection limits

- Dissolved O_2 measurement down to 0.1 ppb, depending on configuration.
- Absolute zero and low drift.

Low maintenance

- Interchangeable anode/electrode.
- Small membrane contact area and large anode surface reduce service frequency.

Easy calibration

- Single-point calibration due to absolute zero.
- Sensor parameters can be stored for consistent use between instruments.

Fast temperature reading

- Temperature sensor integrated in the cathode assembly.
- Configuration-dependent 90% response from 7.2 s.

CO_2-insensitive option

- Configurations are available for oxygen measurement with reduced CO_2 influence.

Hygienic & robust

- 316L stainless-steel construction.
- IP68 / NEMA 6P and pressure rating up to 300 bar.

Applications

BEVERAGE · SEMICONDUCTOR · POWER & STEAM · PHARMA & CHEMICAL

In-line, portable & package analysis | Dissolved & gaseous applications | Beverage production | Semiconductor industry | Power-steam industry | Pharmaceutical & chemical

Key Technical Data

WEIGHT	PRESSURE RATING	TEMP. COMP.	CIP/SIP	ENCLOSURE
0.6 kg	300 bar	-5 to +60 °C	120 °C	IP68 / NEMA 6P

Technical Specifications

Dissolved O_2 range	**0.1 ppb-400 ppm***	Drift	**Absolute zero, low**
O_2 partial-pressure range	**0-10 bar***	Temperature compensation	**-5 to +60 °C**
Liquid flow rate	**25-180 ml/min***	Temperature resistance	**CIP/SIP 120 °C**
Linear flow	**20-200 cm/s***	Pressure rating	**300 bar**
Gaseous flow rate	**0.005-3 l/min**	Weight	**0.6 kg**
Response (90% @25°C)	**7.2 s-2.5 min***	Enclosure	**IP68 / NEMA 6P**
Accuracy	**± 1% of reading****	Wetted materials	**316L stainless steel, PFA or Tefzel**
		Sensor cable	**3 m standard; optional extension up to 1000 m**

* Depending on the selected sensor/membrane configuration. ** 1% of the measured value or lowest value, whichever is greater.

Measurement Principle & Use

OXYTRANS EC is based on a Clark cell with a semi-permeable membrane and gold and silver electrodes in an electrolyte. Oxygen passes through the membrane to the gold cathode, where it is reduced. The resulting electrical current is directly proportional to the O_2 partial pressure and is measured by the instrument.

A guard ring minimizes interference from oxygen already dissolved in the electrolyte. The integrated temperature sensor supports fast temperature compensation. Depending on the selected configuration, OXYTRANS EC covers dissolved ranges from 0.1 ppb to 400 ppm and gaseous partial pressures up to 10 bar, for beverage, semiconductor, power-steam and pharmaceutical/chemical applications.

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