

Ozone Sensors

series 51301

Very low detection limits

Response time 30 sec (90% at 25°C)

Low maintenance costs

Easy air calibration process



Applications

In-line or at-line

Dissolved and gaseous applications

Semiconductor, power-steam, pharmaceutical and chemical industries

Industry leading sensor with easy air calibration process

This electrochemical ozone 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 life cycle of about 8 years and low maintenance costs.

Benefits

- Detection limits < 0.1 PPB (dissolved) or 0 mbar (v/v) gaseous
- Low maintenance costs:
 - Interchangeable anode/electrode: can be changed in few minutes at low cost
 - 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 (only 1 point needed): 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
- Protection cap with special surface treatment: the sensor is very hygienic
- Stainless steel construction: ideal for harsh chemical conditions and high pressures



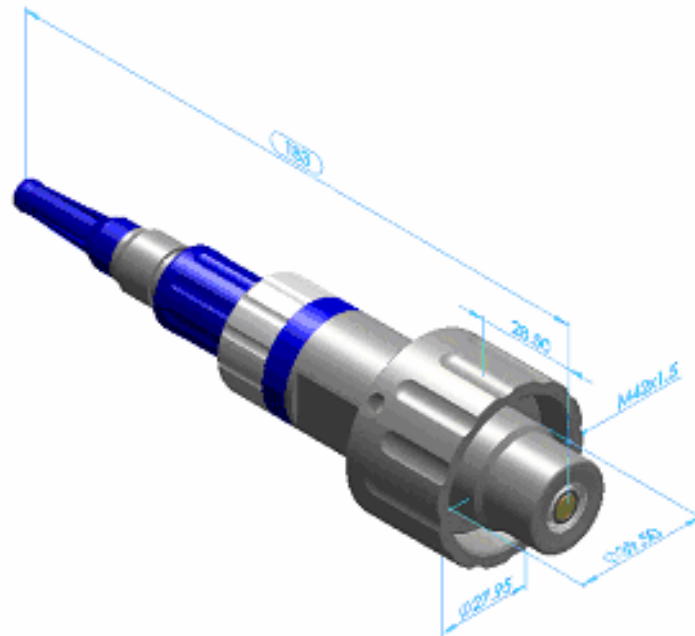
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Principle

This Ozone 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 platinum guard ring ensures the accuracy of reading by eliminating the effect of any ozone dissolved in the electrolyte contacting the cathode and therefore creating an additional signal. Only the ozone directly above the cathode permeates through the membrane and is measured.

Ozone 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. The current generated by reduction is directly proportional to the partial pressure of the ozone.



Technical Specifications

Membrane	Utilization of various membranes according to measuring range	
Membrane model number	82956	82952
Measuring range DO3	0.1ppb – 50ppm	20ppb – 400ppm
Measuring range PO3	0 - 100 mbar	0 - 400 mbar
Flow rate liquids	350 ml/min	100 ml/min
Flow rate linear flow	30 cm/sec	10 cm/sec
Flow rate Gaseous	0.01 – 3 l/min	0.01 – 3 l/min
Response time (90% at 25°C)	30 sec	6 min
Accuracy	1% of the measured value or lowest value whichever is greater Absolute zero and low drift	
Temperature compensation	-5°C to + 45°C / 23°F to 113°F	
Pressure rating	100 bars or 1450 Psi	
Weight	0.6 kg	
Enclosure protection	IP65	
Material in contact with sample	ANSI 316L, PFA or Tefzel	
Sensor model number	Model 51302: Ø25mm - Model 51301: Ø28mm	
Sensor cable	3m standard length / optional extension up to 1000 m	