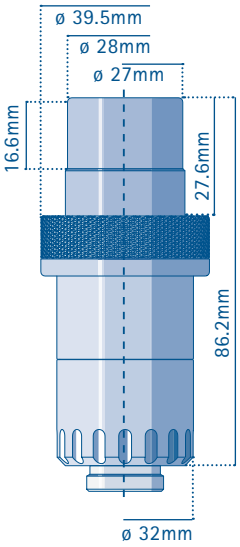
PRODUCT INFORMATION
PROCESS ANALYSIS
OXYGEN SENSOR
ORBISPHERE A1100



Highly Accurate: ORBISPHERE A1100 Oxygen Sensor

- **Fast detection of process change**
- **Sensor refurbishment in three minutes with pre-filled recharge cartridge**
- **Unique design allows for extended period between recharges**
- **ATEX certified sensor for harsh environments available**

Applications

The ORBISPHERE A1100 oxygen sensor is designed for process monitoring as well as laboratory analysis in the liquid or gas phases across a wide range of applications where oxygen measurement is critical. With its large measuring possibilities, this sensor can be used in beer or soft drinks production, in chip manufacturing plants for rinsing of semiconductor wafers and in reactor coolant systems within nuclear power plants.

Reliable, quick and accurate

A small residual signal with unrivalled accuracy (±0.1 ppb) is made possible by the exclusive sensor design. The very fast response time is achieved through a unique membrane installation and is improved through the use of an auxiliary guard ring electrode to shield against the influence of other gases and improve stability.
The ORBISPHERE A1100 provides a quick reaction to sample changes for highly effective process monitoring.

Application dependent membrane / Sensor specification

Cartridge Model	2935A-A	2952A-A	2956A-A	2958A-A	29521A-A	29552A-A	2995A-A
Recommended applications	Saturated to super saturated levels	Corrosion control; in-line beverage; deaerated water			In-line wort; (max. 70 °C)	In-line wort; air / O_2 injection; sewage treatment	Saturated to super saturated levels
Material	Halar	Tefzel	PFA	Tefzel	Tefzel	PTFE	Tedlar
Thickness	25 µm	25 µm	25 µm	12.5 µm	125 µm	50 µm	12.5 µm
Integrated radiation dose limit	N/A	10 MGy	200 Gy	10 MGy	10 MGy	N/A	10 MGy
Current in air at 25 °C	1 µA	5 µA	25 µA	8 µA	0.75 µA	5 µA	0.2 µA
Dissolved O_2 measurement range	10 ppb to 400 ppm	1 ppb to 80 ppm	0.1 ppb to 20 ppm	1 ppb to 40 ppm	10 ppb to 400 ppm	2 ppb to 80 ppm	50 ppb to 2000 ppm
Gaseous O_2 measurement range	20 Pa to 1000 kPa	5 Pa to 200 kPa	0.25 Pa to 50 kPa	2 Pa to 100 kPa	20 Pa to 1000 kPa	5 Pa to 200 kPa	100 Pa to 5000 kPa
Accuracy	±1% of reading, or ±lower range, whichever is greater						
Optimised temperature compensated range	-5 to 60 °C						
Response time (t90 from air)	2.5 min	38 sec	7.2 sec	9.5 sec	18 min	90 sec	80 sec
Recommended liquid flow rate*, in 32001 flow chamber	25 mL/min	50 mL/min	180 mL/min	120 mL/min	25 mL/min	50 mL/min	5 mL/min
Recommended linear liquid flow rate*	20 cm/sec	30 cm/sec	200 cm/sec	100 cm/sec	60 cm/sec	30 cm/sec	5 cm/sec
Recommended gaseous flow rate	0.1 to 3 L/min						
Hazard code	C: Corrosive						

*Flow rates for Model 32001 flow chamber are valid for sensor configured with no grille on protection cap. Use of a protection cap with grille will require approximately 50% faster flow. Intrinsically Safe A1100 sensor: Available in 4 combinations of Hastelloy + Stainless Steel to maximise chemical resistance + with Viton or Kalrez O-Rings. A110E-XYS: X = S (Stainless Steel) or H (Hastelloy), Y= V (Viton) or K (Kalrez), 2956A-AY or 29552A-AY membrane recharge kits available: Y= V (Viton) or K (Kalrez)

Easy handling

The new sensor head design allows for very quick cleaning with tap water. With the pre-mounted cartridge the sensor is ready to use in three minutes without the risk of incorrect membrane mounting. Each sensor includes a Smart chip that stores serial number and calibration parameters. Sensors can be serviced and calibrated in the lab and made available as “Plug & Play” devices for process operators. The same sensor can be installed inline with an appropriate access device, online with a flow chamber and offline in a portable system for laboratory use or spot check measurements.

Sensor characteristics

Weight	300 g
Pressure resistance (mechanical and during measurement)	Up to 100 bar (1450 psia)
Temperature range (during measurement)	-5 to 60 °C (without grill) ; -5 to 95 °C (with a grill)
Temperature range (mechanical)	-15 to 110 °C (due to electrolyte, but sensor will not be damaged up to 200 °C)
Protection class	Sensor + cable connection: IP68
Materials in contact with the sample	Stainless Steel 1.4404 (AISI 316L), surface finish: N5, Ra <0.4 µm; Membrane: see specification table; no O-rings are in contact with the sample
Smart capability; stored data	Smart Memory chip with RS485 communication up to 500 m; Sensor model, serial number; Calibration parameters of last 10 calibrations
Accessories and spare parts	Pre-filled recharge cartridges including electrolyte are supplied in 4 cartridges packs and can be ordered for each type of membrane as shown in the specifications table
Compatibility	The ORBISPHERE A1100 sensor is 100% compatible with ORBISPHERE 36XX and 410/510 series instruments and 100% retrofit to all ORBISPHERE sampling devices.

Subject to change without notice.

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