Orbisphere A1100 Electro-Chemical (EC) Sensor



The Orbisphere A1100 oxygen sensor is the latest development of the well-known and proven Orbisphere Electro-Chemical (EC) sensors.

Features and Benefits

Sensor refurbishment in 3 minutes with pre-filled recharge cartridge*

Sensor cleaning and preparation require no technical skills. The new sensor head design allows for very quick cleaning with nothing more than tap water. The pre-mounted membrane cartridge includes electrolyte, so the sensor is ready to use in 3 minutes without the risk of incorrect membrane mounting.

**Patent-pending*

Unrivaled accuracy and response time for fast detection of process change

A negligibly small residual signal and an unrivaled accuracy (±0.1 ppb) are made possible by the exclusive Orbisphere design. The very fast response time (down to t90 = 7.2 s) 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. All these features provide a reliable and accurate sensor with fast reaction to sample changes for highly effective process monitoring.

Smart chip stores calibration parameters in the sensor, making it plug and play for the process operator

Each sensor includes a Smart chip that stores the sensor serial number and the calibration parameters. Sensors can be serviced and calibrated in the lab and made available as “Plug and Play” devices for process operators, thus limiting potential manipulation errors and improving the availability and reliability of the oxygen measurement.

In-line, On-line, Portable or Spot

The same sensor can be installed directly in-line with an appropriate access device in a flow chamber for on-line analysis or in a portable system for laboratory use or spot check measurements.

This sensor is designed for process monitoring as well as laboratory analysis in the liquid or gas phases across a wide range of applications from beer and soft-drink production to rinsing semiconductor wafers in chip-manufacturing plants, reactor coolant systems in nuclear power plants, or any place where oxygen measurement is critical.

ATEX Certified

ATEX certified A1100 sensor available for harsh chemical environments.

Rugged and Resistant

Robust stainless steel design for use in the most demanding applications including resistance to CIP and pressures up to 100 bar.

Unique Design

Unique design allows for extended period between recharges.

Retrofitting

100% retrofit to existing Orbisphere sampling devices.

DW PW IW FB

Specifications*

Orbisphere A1100 oxygen sensors are 100% compatible with Orbisphere 36xx series and 410/510 series instruments and 100% retrofit to all Orbisphere sampling devices. Different pre-mounted membrane kits are available to fulfill any particular process requirements.

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 hot wort (maximum 70°C / 158°F)	In-line wort; air/O_2 injection; sewage treatmt.	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	108 rads	2 x 104 rads	108 rads	108 rads	N/A	108 rads
Current in air at 25 °C / 77 °F	1 µA	5 µA	25 µA	8 µA	0.75 µA	5 µA	0.2 µA
Dissolved O_2 measurement range	10 ppb-400 ppm	1 ppb-80 ppm	0.1 ppb-20 ppm	1 ppb-40 ppm	10 ppb-400 ppm	2 ppb 80 ppm	50 ppb 2000 ppm
Gaseous O_2 measurement range	20 Pa-1000 kPa	5 Pa-200 kPa	0.25 Pa-50 kPa	2 Pa-100 kPa	20 Pa-1000 kPa	5 Pa-200 kPa	100 Pa-5000 kPa
Accuracy	± 1% of reading, or ± lower range, whichever is greater (assuming correct calibration)						
Optimized temperature compensated range	-5 to 60 °C 23 to 140 °F	-5 to 60°C 23 to 140°F	-5 to 60°C 23 to 140°F	-5 to 60°C 23 to 140°F	-5 to 60°C 23 to 140°F	-5 to 60°C 23 to 140°F	-5 to 60°C 23 to 140°F
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*, mL/min., in 32001 flow chamber	25	50	180	120	25	50	5
Recommended linear Liquid flow rate* cm/sec	20	30	200	100	60	30	5
Recommended gaseous flow rate	0.1 to 3 L/min.	0.1 to 3 L/min.	0.1 to 3 L/min.	0.1 to 3 L/min.	0.1 to 3 L/min.	0.1 to 3L/min.	0.1 to 3 L/min.

**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 maximize 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)*

Sensor Characteristics

Weight
300 g (10.58 oz)

Pressure Resistance
Up to 100 bar (1450 psia)
(mechanical and during measurement)

Temperature Range
-5 to 60°C / 23 to 140°F (without grille) (during measurement)
-5 to 95°C / 23 to 203°F (with a grille)

Temperature Range
-15 to 110°C / 5 to 230°F
(due to electrolyte, but sensor will not be damaged up to 200°C / 392°F) (mechanical)
Water Ingress Sensor: IP68
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
Smart Memory chip with RS485 communication up to 500 m

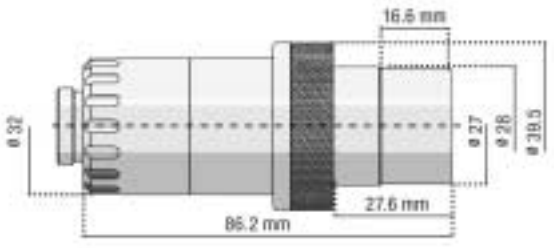
Stored Data
Sensor model, serial number
Calibration parameters of last 10 calibrations

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.

Ask your local Orbisphere representative for a complete list of spares and accessories.

CE

**Specifications subject to change without notice.*



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