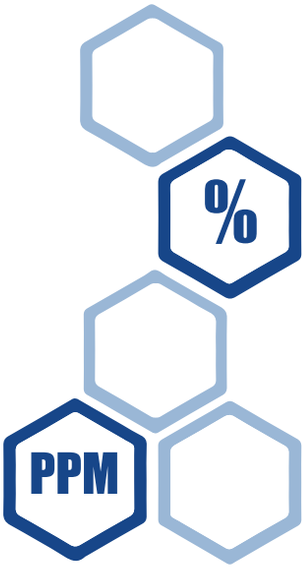
Analytical Industries Inc

Oxygen monitors for gloveboxes and nitrogen generators

GPR-1500 GB & GPR-2500 GB



Designed specifically for measuring oxygen in glove boxes from air (21% O_2) down to low levels (0-10 ppm O_2), this oxygen monitor range has easy installation options that ensure the best fit with the glove box operators needs. The analyzer or remote sensors can be connected directly on the glove box using a KF-40 flange. In the remote version the oxygen sensor can be placed in the glove box using our sample/ calibration module.

Highlights

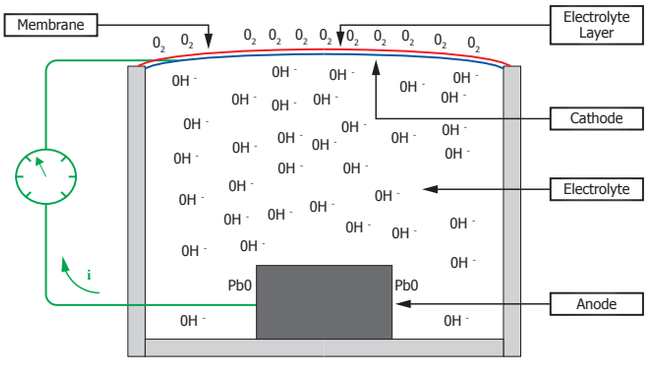
- Measurement ranges from 0-10ppm up to 0-25% O_2
- Accuracy of better than 2% of selected range
- 24 months sensor life span (in normal use)
- 4-20 mA output
- 18-24V loop powered
- XLT sensor options for CO_2 backgrounds

Applications

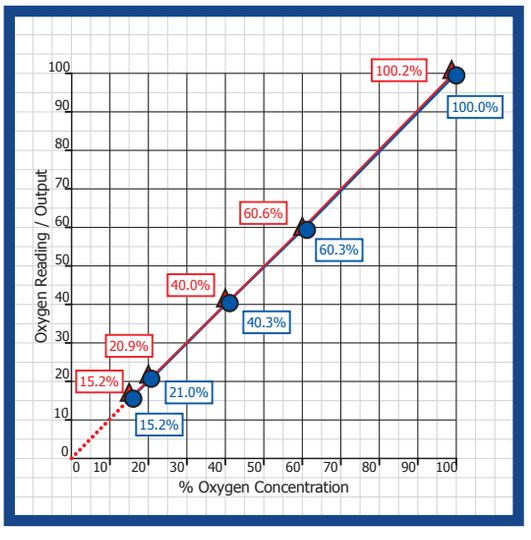
- Monitoring oxygen in glove boxes
- Oxygen depletion in confined spaces (GPR-2500 only)
- Measuring oxygen in nitrogen generators

Sensor Technology

The sensors from AII have been designed to avoid potential weaknesses common in typical galvanic cell design. Our materials, construction and assembly methods have been continuously refined over decades. Each sensor type has been specifically engineered to provide the optimum balance between performance and longevity for individual applications. The result is confidence in the measurement and low maintenance. In the absence of oxygen, the sensor will produce zero output and the sensor is linear up to 100%, therefore only a span calibration is required in most cases (see graph).



Sensor Construction



Typical sensor output

The Analytical Industries' XLT sensor

For applications with a background gas containing more than 0.5% CO_2, the specially designed XLT sensor should be selected. With most standard electrochemical sensors an alkaline electrolyte is used and this is neutralised over time when exposed to acidic gases, such as CO_2. To combat this, AII developed the XLT sensor with a special electrolyte formula which has the added benefit of being able to operate in temperatures as low as -10°C.

Options available for all models

Mounting: KF-40 flange fitting on analyzer or remote sensor

Flow-through housing with 1/8" compression fitting

Sample/calibration module

XLT sensor: For use in backgrounds containing carbon-dioxide

GPR-1500 GB

For trace oxygen measurements as low as 0.1 ppm O_2 in various background gases. The sensor is housed in a stainless steel case that can be screwed into place.

Options:

Calibration module: Special stand for sampling or calibration (SS-3170)

Available ranges: 0-10, 0-100, 0-1,000 ppm & 0-1% O_2, 0-25% for calibration only

GPR-2500 GB

For oxygen measurements from 21% down to 100 ppm O_2 in a range of gas backgrounds.

Options:

Calibration module: Special stand for sampling or calibration (B-3170)

Available ranges: 0-1, 0-5, 0-10% and 0-25%

Technical Specifications

	GPR-1500 GB	GPR-2500 GB
Measurement range	0-10, 0-100, 0-1000 ppm, 0-1%, 0-25%	0-1%, 0-5%, 0-10%, 0-25%
Accuracy	< 2% of selected range at constant conditions	
Response time	T90 < 10 seconds	
Recovery time	60 seconds in air to < 10 ppm in < 1 hour on N_2 purge	Not applicable
Sensitivity (LDL)	0.05 ppm	0.005 %
Linearity	< 1% of scale	
Sensor model	GPR-12-333	GPR-11-32-4
	XLT-12-333 for gases containing > 0.5% CO_2	XLT-11-24-4 for gases containing > 0.5% CO_2
Sensor life at 25ºC (77°F) and 1 atm	24 months in < 1000 ppm O_2 6 months in air	GPR-11-32-4 32 months in air XLT-11-24-4 24 months in air
Calibration interval	30 days	
Inlet pressure	Nominally atmospheric Flow through system: 0.34-2 barg (5-30 psig) with atmospheric vent	
Flow rate	Ambient monitoring or Flow through system 0.5-1 Nl/min (1-2 SCFH)	
Gas connections	KF 40 flange or 1/8" compression tube fittings (with flow through housing)	
Wetted parts	GPR-1500 GB Stainless steel GPR-2500 GB Delrin	
Display	Graphical LCD 7 x 3.5cm (2.75 x 1.375"); resolution 0.001	
Enclosure	Painted aluminum, 7.6 x 10.1 x 5.1cm (3 x4 x2")	
Weight	900g (2lbs)	
Compensation	Temperature	
Signal output	4-20mA (loop current)	
Alarms	None	
Operating temperature	GPR sensor: 5ºC to 45ºC (41°F to 113°F) XLT sensor: -10ºC to 45ºC (14°F to 113°F)	
Power	18-24 V DC two wire loop	
Area classification	General purpose	

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