Analytical Industries Inc

Trace Oxygen Analyzer: sample panel or wall-mounted

GPR-1500 series

PPM

A wall mounted oxygen analyzer in a NEMA enclosure, suitable for indoor or outdoor. This single channel oxygen meter can be used with flow-through O_2 cells for in-line gas analysis in safe as well as hazardous areas where ATEX approval is needed. The low detection limit of 0.05ppm offers low oxygen measurement down to a range of 0 to 10 ppm. Ideal for clean gas applications and when used with the XLT oxygen sensor type it allows measurement in pure carbon dioxide. The Analytical Industries long-life oxygen sensors are maintenance-free sealed electrochemical cells that don't need top up of electrolyte and can be exchanged in few minutes. .

Highlights

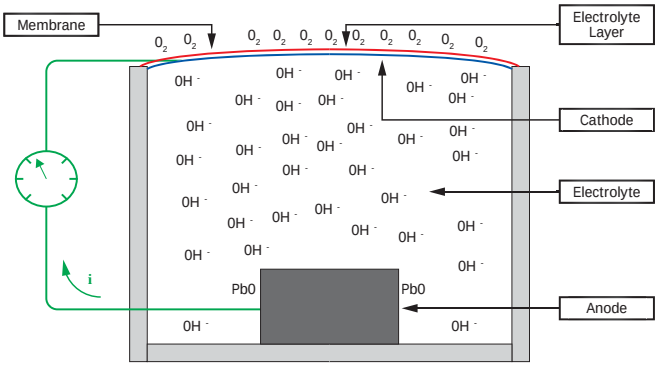
- Multiple user-configurable measurement ranges available
- General purpose or intrinsically safe (ATEX) models
- Fast recovery from exposure to air
- Can measure in pure CO_2 with XLT sensor
- Two alarms with GPR-1500 A

Applications

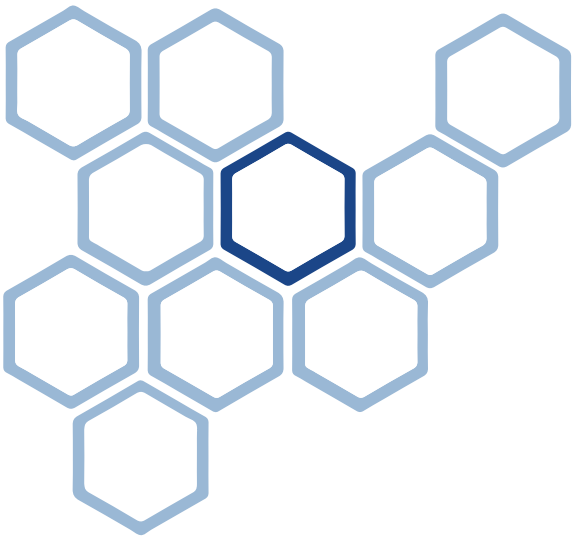
- Inert gas purity measurements
- Gas quality measurements in double glazing window manufacturing
- Blanket gas in small vessels

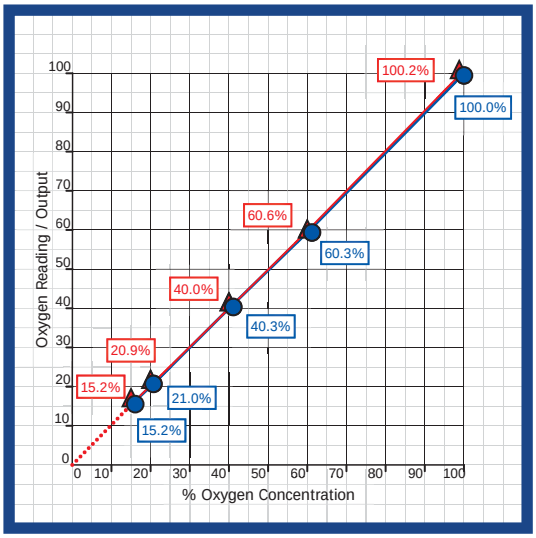
Sensor Technology

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.

GPR-1500 N (ATEX)

General purpose or hazardous area trace oxygen analyzer with four measurement ranges from 0 to 10 ppm, up to 0-1%. The analyzer consists of a control unit with HMI and an easily accessible sensor housing all contained within a NEMA enclosure suitable for indoor or outdoor mounting. This unit is loop-powered (18-28 V DC) and provides a 4-20 mA output signal. All gas wetted parts are stainless steel, the XLT sensor can be supplied as an option.

GPR-1500 A

This unit is supplied with all of the above features, plus two user-configurable alarms and the ability to be mains-powered. For safe area use only.

Technical Specifications

	GPR-1500 A	GPR-1500 N	GPR-1500 N ATEX
Measurement range	0-10, 0-100, 0-1000 ppm, 0-1%, (0-25%)		
Accuracy	< 2% of selected range at constant conditions		
Response time	T90 < 10 seconds		
Sensitivity (LDL)	0.05 ppm		
Linearity	<1% of scale		
Sensor model	GPR-12-333 for inert gas streams		
	XLT-12-333 for gases containing > 0.5% CO_2		
Sensor life at 25°C (77°F) and 1 atm	24 months in < 1000 ppm O_2		
Calibration interval	30 days		
Inlet pressure	0.34-2 barg (5-30 psig) with atmospheric vent		
Flow rate	0.5-1.0 Nl/m (1-2 SCFH)		
Gas connections	1/8" compression tube fittings		
Wetted parts	Stainless steel		
Display	Graphical LCD 7 x 3.5cm (2.75 x 1.375"); resolution 0.01		
Enclosure	Fiberglass NEMA 4X, 6.75 x 8.375 x 4.25“		Fiberglass NEMA 4X, 6.75 x 8.375 x 4.25"
Weight	3.6kg (8lbs)		
Compensation	Temperature compensated output		Temperature
Signal output	4-20 mA or 1-5 V, optional Modbus	4-20 mA	
Alarms	Two user configurable alarms	No alarms	
Operating temperature	GPR sensor: 5°C to 45°C (41°F to 113°F) XLT sensor: -10° to 45°C (14°F to 113°F)		
Power	12-28 V DC non-loop or 110-220 VAC		18-24 V DC
Area classification	General purpose		UL: Class I, Division 1, Group C, D hazardous areas with external intrinsic safety barrier ATEX: II 2 G Ex ia IIB T4 Gb T_{amb} -20°C to +50°C
Recovery time	30 seconds in air to < 10 ppm in < 1 hour on N_2 purge		

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