Analytical Industries Inc

# Oxygen Analyzer for Industrial Gas Use

## GPR-2500 series

The GPR-2500 is a wall-mounted industrial oxygen analyzer for percentage oxygen measurements in both general purpose or hazardous areas. Available in several variants, all of which are supplied in a lightweight NEMA enclosure with stainless steel pipework and easy to access maintenance-free electrochemical oxygen sensors for user-friendly and cost-effective maintenance.


### Highlights

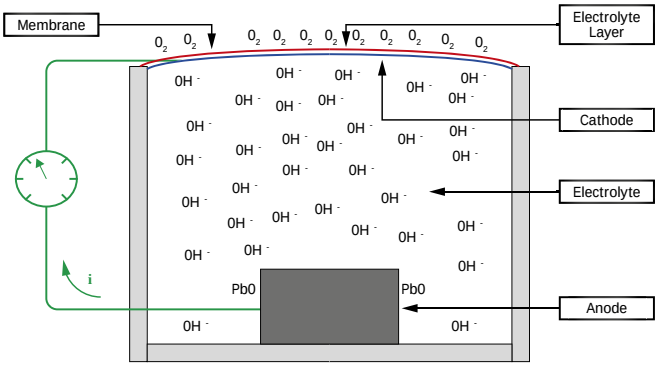
- Advanced galvanic electrochemical sensors
- Measuring oxygen in ranges: 0-1% up to 0-100% (model dependant)
- Accuracy of better than 2% of selected range
- Auto-ranging or fixed range (user selectable)
- Long lifespan of the GPR sensor of 32 months and more
- Simple to use HMI

### Applications

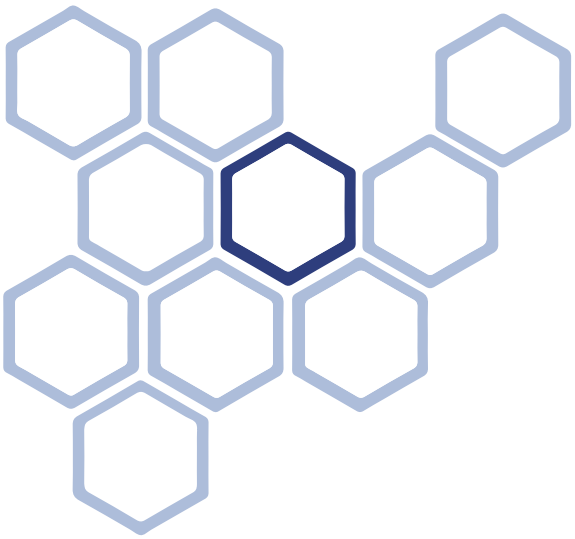
- Oxygen monitoring of research and laboratory applications
- Inert gas (blanketing) monitoring
- Modified atmosphere packaging (feed line)

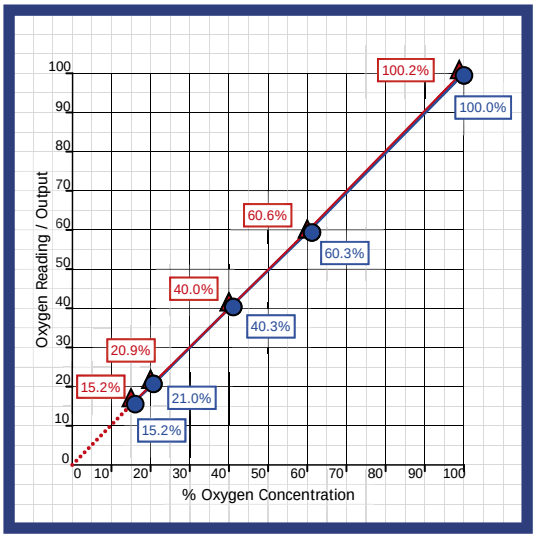
## Sensor Technology

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-2500 N (ATEX)

Base model percentage oxygen analyser with temperature compensation, loop powered (18-24V DC) and with a 4-20mA output. Available for use in both general purpose and certified for use in hazardous areas (ATEX).

**Ranges available:** 0-1%, 0-5%, 0-10% & 0-25% $O_2$


## GPR-2500 A

The Analytical Industries GPR-2500 A model offers the temperature and an additional barometric pressure compensation as well as two user configurable alarm relays as standard. The instrument has the option of 12-24 V DC or mains power. Available for general purpose areas.

**Ranges available:** 0-1%, 0-5%, 0-10% & 0-25% $O_2$


## GPR-2500 MON

The base model analyzer for measuring up to 100% oxygen in a safe area. This unit is supplied with temperature compensation, is loop powered (18-24 V DC) providing a 4-20 mA output.

**Ranges available:** 0-100% $O_2$

## GPR-2500 AMO

The GPR2500 AMO analyzer for measuring up to 100% oxygen in a safe area offers the temperature and an additional barometric pressure compensation as well as two user configurable alarm relays. The instrument has the option of 12-24 V DC or mains power. Available for general purpose areas.

**Ranges available:** 0-100% $O_2$

## Technical Specifications

| | GPR-2500 N (ATEX) | GPR-2500 A | GPR-2500 MON | GPR-2500 AMO |
|---|---|---|---|---|
| **Measurement range** | 0-1%, 0-5%, 0-10%, 0-25% | | 0-100% | |
| **Accuracy** | < 2% of range at constant conditions | | | |
| **Response time** | T90 <10 seconds | | T90 <13 seconds | |
| **Sensitivity (LDL)** | < 0.5% of scale | | | |
| **Linearity** | <1% of scale | | | |
| **Sensor model** | GPR-11-32-4<br>XLT-11-24-4 for gases containing > 0.5% $CO_2$ | | GPR-11-120-4 | |
| **Sensor life in air at 25°C (77°F) and 1 atm** | GPR-11-32-4: 32 months<br>XLT-11-24-4: 24 months | | GPR-11-120-4: 24 months in 100% $O_2$ | |
| **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 0.001% | | Graphical LCD 7 x 3.5cm (2.75 x 1.375”); resolution 0.1% | |
| **Enclosure** | Fiberglass NEMA 4X, 10.1 x 22.9 x 7.6cm (4 x 9 x 3") | | | |
| **Weight** | 3.6kg (8lbs) | | | |
| **Compensation** | Temperature | Barometric pressure and temperature | Temperature | Barometric pressure and temperature |
| **Signal output** | 4-20 mA | | | |
| **Alarms** | N/A | Two user configurable alarms: magnetic coil relays rated 3A at 100 V AC | N/A | Two user configurable alarms: magnetic coil relays rated 3A at 100 V AC |
| **Operating temperature** | GPR sensor: 5°C to 45°C (41°F to 113°F)<br>XLT sensor: -10° to 45°C (14°F to 113°F) | | | |
| **Power** | 18-24 V DC | 12-28V DC non-loop or 110-220 V AC | 18-24 V DC | 12-28 V DC non-loop or 110-220 V AC |
| **Area Classification** | II 2 G<br><br>Ex ia IIB T4 Gb<br>$T_{amb}$ -20°C to +50°C | | | |

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