



Analytical Industries Inc.
Advanced Instruments Inc.

Pico-Ion PPB Oxygen Sensors

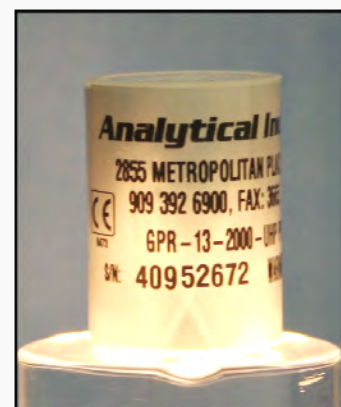
The Pico-Ion PPB oxygen sensor and electrochemical oxygen purity sensor represent the only real innovations in electrochemical galvanic sensor technology in decades.

All products are manufactured under an independently certified Quality Assurance System that complies with ISO 9001:2008, FDA, MDD 93/42/EEC Annex II (European CE) and ISO 13485:2003 (Health Canada) standards.

Pico-Ion UHP Oxygen Sensor

The unique features of this breakthrough in sensor technology are a proprietary sensing electrode material and a gas chamber design that maximizes the rate of reaction above the sensing electrode while minimizing both the amount of oxygen that dissolves into the electrolyte and the temperature dependence of the sensor's output, thereby ensuring long-term stability. The capabilities of the resulting sensor are:

- Accuracy: $\pm 1\%$ FS under constant conditions
- Sensitivity: < 0.5 PPB
- Noise level: < 0.2 PPB
- Stability: < 1 ppb over temperature fluctuations of $\pm 10^\circ$ F
- Low range: 0-100 PPB full scale
- Response time: 90% of full scale: < 60 seconds
- Recovery to: 10 PPB from 1 minute exposure to 9 PPM in 15 minutes
- 1 PPB from 1 minute exposure to 9 PPM in 60 minutes
- 1 PPB from 5 minute exposure to 1 PPM in 30 minutes
- Expected life: 15 months in normal applications



Pico-Ion MS Oxygen Sensor

Drawing upon the features of the UHP sensor, the MS sensor provides the signal output and stability required for oxygen analysis above 5 PPB to fill a much needed cost effective solution between expensive sub-PPB sensors and the limitations of historical galvanic trace PPM sensors.

- Accuracy: $\pm 1\%$ FS under constant conditions
- Sensitivity: < 5 PPB
- Low range: 0-1 PPM full scale
- Response time: 90% of full scale: < 20 seconds
- Recovery to: 1 PPM from 30 second exposure to air in 45 minutes
- 10 PPB from 5 minute exposure to 1 PPM in 15 minutes
- 10 PPB from 2 minute exposure to 9 PPM in 10 minutes
- Expected life: 36 months in normal applications

