



# ELECTROCHEMICAL OXYGEN SENSORS

BETTER TECHNOLOGY. GREATER RELIABILITY. SUPERIOR PERFORMANCE

**AMI**  
ADVANCED MICRO INSTRUMENTS

## THE ADVANTAGE OF AMI'S PROPRIETARY SENSOR TECHNOLOGY

AMI has taken the well understood Electrochemical Oxygen sensors to new levels with superior engineering and proprietary manufacturing and testing protocols. AMI's patented Oxygen Sensors offer customers higher reliability, a longer useful life, and faster response when compared to other manufacturers.

### PROPRIETARY ELECTROLYTE

H<sub>2</sub>S gas can poison an electrochemical O<sub>2</sub> sensor. The standard **T-2** AMI sensor can tolerate up to 10ppm H<sub>2</sub>S. AMI's engineering breakthrough allows the **T-4** and **P-5** sensors to operate in up to 500ppm of H<sub>2</sub>S for their warrantied life. Additionally, specific AMI O<sub>2</sub> sensors perform in up to 100% CO<sub>2</sub> applications.

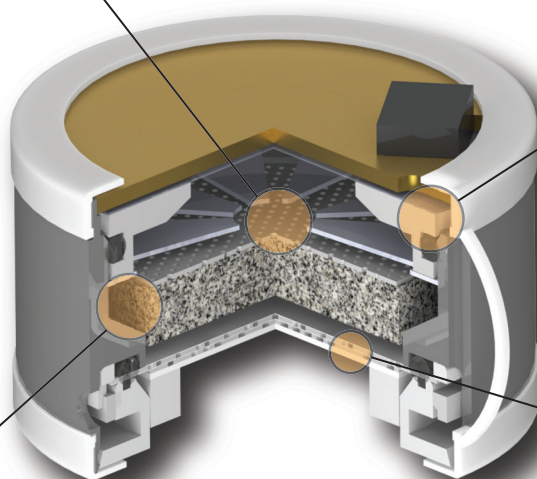
**BENEFIT: WORKS with H<sub>2</sub>S & CO<sub>2</sub> IN THE GAS STREAM**



### PATENTED SEALING TECHNOLOGY

Competitive sensors are very prone to electrolyte leaking, caused from inferior sealing techniques that significantly degrades accuracy, stability, and sensor life. AMI's patented sensor sealing technology eliminates all leaks for the life of the sensor, maintaining sensor performance over its useful life.

**BENEFIT: LONGER SENSOR LIFE**



### MORE ACTIVE MATERIALS

All AMI O<sub>2</sub> sensors utilize a thin wall metallic body that provides increased volumes for consumable active materials. Consequently AMI sensors utilizes a much larger lead anode and a greater amount of electrolyte, resulting in longer sensor life and superior performance. Additionally, the conductive metallic body increases the cathode surface area for the oxygen reduction reaction, resulting in a faster sensor come down time.

**BENEFIT: LONGER SENSOR LIFE & SUPERIOR PERFORMANCE**

### OPTIMIZED DIFFUSIVE MEMBRANE

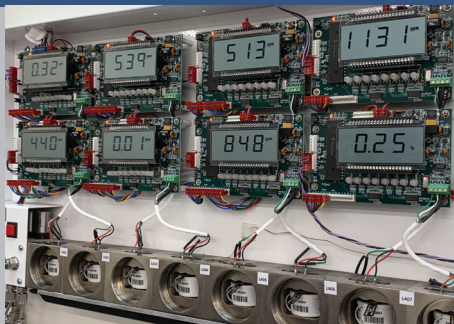
Oxygen diffuses through a unique membrane and immediately gets reduced at the cathode. AMI has perfected the membrane thickness and the positioning of the anode and cathode to produce the fastest response times, highest stability and most linear outputs, which outperforms the competition.

**BENEFIT: SUPERIOR ACCURACY & LINEARITY**



# OXYGEN SENSORS

## AMI QUALITY CONTROL TESTING PROTOCOL



In addition to AMI’s superior design every single oxygen sensor manufactured by AMI undergoes a rigorous temperature and performance test before it can be shipped to a customer. Each unit is independently tested for come down time, noise, linearity and diurnal performance while varying temperature.

It is one more step that AMI takes to ensure our customers receive the best sensors in the industry.

### T-SERIES | P-SERIES



MODEL	T-2	T-4	P-2	P-3	P-4	P-5
Type	TRACE	TRACE	PERCENT	PERCENT	PERCENT	PERCENT
Recommended O <sub>2</sub> Measurement Range <sup>1</sup>	0 - 10,000 ppm	0 - 10,000 ppm	0 - 50%	0 - 25%	0 - 100%	0 - 25%
Minimum Range <sup>2</sup>	0 - 5 ppm	0 - 5 ppm	0 -1,000 ppm	0 - 1,000 ppm	0 - 1.0%	0 -1,000 ppm
Sensitivity <sup>3</sup>	0.05 ppm	0.05 ppm	10 ppm	100 ppm	1,000 ppm	100 ppm
Special Conditions <sup>4</sup>	<10 ppm H <sub>2</sub> S 100% CO <sub>2</sub>	<500 ppm H <sub>2</sub> S 100% CO <sub>2</sub>	O <sub>2</sub> in inert gas	Up to 100% CO <sub>2</sub>	Enriched Oxygen	<500 ppm H <sub>2</sub> S 100% CO <sub>2</sub>

- Notes:
- Any sensor can be used in O<sub>2</sub> applications above its recommended operating ranges, however, it may shorten the sensor’s lifespan.
  - The minimum range of the sensor is dependent on the sensor as well as the AMI Analyzer it is used within.
  - Sensitivity is the minimum change in O<sub>2</sub> in the gas stream that will be detected by the sensor.
  - Notify the factory for use in CO<sub>2</sub> background gas above 50%. The AMI O<sub>2</sub> Analyzer will require additional programming.

### PERFECT MATCH — AMI SENSORS AND ANALYZERS

For the best and most accurate oxygen measurements, our oxygen sensors should be used with our AMI Oxygen Analyzers. Combining the ELIMINATOR CELL BLOCK of the Analyzer with AMI’s proprietary sensor technology optimizes the reliability and accuracy of the measurement readings.

Substituting a lesser oxygen sensor in your high-performance AMI Oxygen Analyzer will severely degrade the the performance of your Analyzer as well as damage the unit and void the warranty.

