KECO

CASE STUDY

COMPARISON: KECO OXYHOUND VS ELECTROCHEMICAL O2 ANALYZERS

OXYHOUND™

PROBLEM

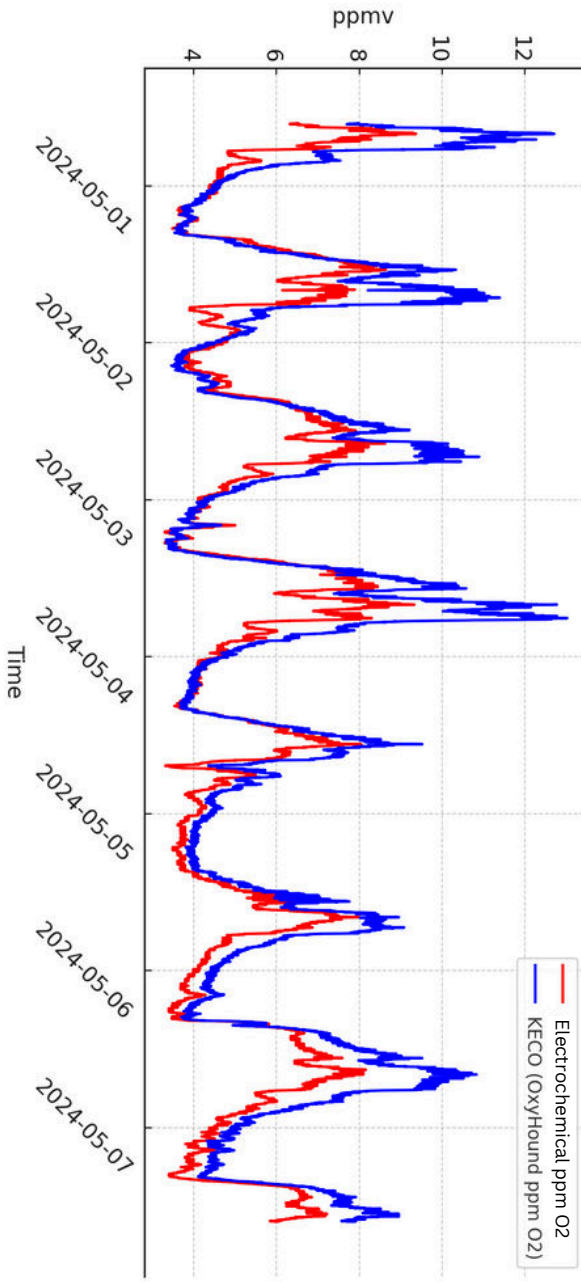
Traditionally, industries across sectors such as Oil & Gas, manufacturing, and renewable energy have faced challenges in accurately monitoring oxygen levels in various processes. Older technologies like paramagnetic analyzers, electrochemical cells, and zirconia have limitations such as requiring higher maintenance, frequent cell replacement, susceptibility to containments or lack of precision. Tunable Diode Laser (TDL) tend to have higher performance but at a much steeper price, often unaffordable for most applications.

SOLUTION

The OxyHound addresses these challenges by providing low maintenance and high reliability at an economical price. It utilizes an optical **quench luminescence approach,** which enables precise oxygen measurements in a gaseous phase. This technology provides real-time and continuous oxygen level monitoring, making it ideal for various industrial environments. Additionally, its user-friendly design, robust construction, and extensive safety features ensure reliability in both indoor and outdoor settings.

RESULTS

- Improved accuracy and efficiency in oxygen level monitoring.
- Reduces downtime and eliminates the need for frequent electrolyte changes or membrane maintenance.
- Cost effective price makes the OxyHound a game changer and a practical choice across most applications.



9515 Windfern Road Houston TX 77064
www.liquidgasanalyzers.com
281.407.7323

Rev 1.0 - May 10, 2024

ADVANTAGES OF QUENCHING LUMINESCENCE OVER ELECTROCHEMICAL METHODS FOR DETECTING OXYGEN IN A GAS

OXYHOUND™

- **CROSS-SENSITIVITY DATA:** No degradation or cross-interference from H2S, CO2, NH3, gaseous SO2, sulfate, chloride or other ionic species. Compatible with hydrocarbons such as natural gas (even with CO2 and H2S present), propylene, ethylene, polypropylene, methanol and ethanol mixtures.

- **SENSITIVITY TO OXYGEN:** Luminescence quenching methods are highly sensitive to oxygen. The presence of oxygen directly affects the luminescent properties of certain materials, leading to a more direct and sensitive detection compared to some electrochemical sensors, where interference from other gases might be an issue.

- **FAST RESPONSE TIME:** Luminescence quenching typically offers faster response times because the change in luminescence intensity or lifetime occurs almost instantaneously upon interaction with oxygen. This is crucial for applications where rapid detection and monitoring of oxygen levels are necessary, such as in industrial gas processes or safety monitoring.

- **MINIMAL SENSOR FOULING:** In many cases, luminescent materials used for oxygen detection do not directly interact with the gas or its contaminants other than through quenching phenomena, which reduces the risk of sensor fouling. This is a significant advantage over electrochemical sensors, which can suffer from surface fouling and degradation that affect their lifespan and reliability.

- **NO NEED FOR REFERENCE ELECTRODES:** Unlike electrochemical sensors, luminescence-based sensors do not require reference or auxiliary electrodes. This simplifies the sensor design and can reduce the overall cost and complexity of the detection system.

- **LESS AFFECTED BY ENVIRONMENTAL VARIATIONS:** Luminescence-based methods are often less sensitive to changes in environmental conditions such as humidity and temperature compared to electrochemical sensors, which can exhibit varying response characteristics under different environmental conditions.

- **SIMPLE & ROBUST EQUIPMENT:** The equipment required for measuring luminescence (such as photodetectors and light sources) is typically less complex and more robust than that needed for electrochemical detection, which may require careful calibration and maintenance of electrodes.

KECO

9515 Windfern Road Houston TX 77064
www.liquidgasanalyzers.com
281.407.7323

Rev 1.0 - May 10, 2024