



Hydrogen Specific Monitoring Solutions:

- In-Line Process Hydrogen Monitor
- Fixed Area Hydrogen Monitor
- Handheld Hydrogen Leak Detector



*The Leading Provider of Hydrogen Sensor Systems
That Supports Critical, Real-Time Monitoring and
Control Functions for the Growing Hydrogen Economy*

HYDROGEN SPECIFIC MONITORING SOLUTIONS



HYDROGEN SPECIFIC SENSING SYSTEMS



Whether to ensure the safety and protection of personnel or to effectively monitor industrial processes, many industries can benefit from hydrogen detecting technology. H2scan has responded to the needs of these industries by developing innovative, hydrogen-specific technology solutions.

H2scan provides state-of-the-art leak detection, process gas monitoring, or both! Whatever you need, H2scan hydrogen-specific sensing systems are uniquely able to detect and measure hydrogen against virtually any background gases without false readings and the expensive support equipment common with other systems.

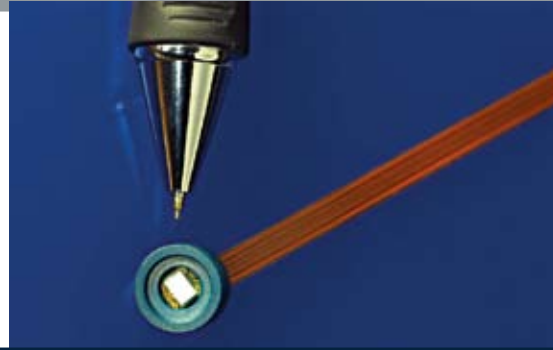
H2scan systems detect hydrogen in air and non-oxygen environments in seconds down to 15 parts per million concentrations. Standard systems range from a handheld portable leak-detection unit to fixed area leak-detection monitors and in-line real time monitors for various process gas streams.

DESIGNED SPECIFICALLY FOR THE MOST DEMANDING APPLICATIONS

H2scan systems are programmable to customer-specific levels of hydrogen detection and all feature analog and digital output to communicate data back to an operator, display, or process monitoring system.

THE WIDE RANGE HYDROGEN SENSOR

H2scan systems powered by the Wide Range Sensor - WRS provides a comprehensive, cost-effective solution for all of your hydrogen sensing and process monitoring needs.



WIDE RANGE HYDROGEN SENSOR

It is **CRITICAL** to reliably monitor the presence of hydrogen gas wherever it is produced, used, stored, or transported. H2scan systems are solid-state solutions that detect concentrations of hydrogen gas with or without oxygen present in concentrations from 15 parts per million to 100% hydrogen by volume.

H2scan systems implement monitoring based on data from our patented Wide Range Hydrogen Sensors. The sensors utilize palladium alloy thin films to measure hydrogen in low and high concentrations. The low level sensor is a MOS capacitor with a palladium alloy plate for one electrode of the capacitor. The presence of hydrogen changes the electric field of this capacitor, causing a proportional change in capacitance. The high level sensor is a thin film resistor. The sensor contains a thin film of a palladium alloy deposited on a silicon substrate that changes resistance in the presence of hydrogen. As the concentration of hydrogen atoms in the lattice increases, the resistance of the palladium alloy increases in direct proportion. H2scan systems interpret these changes and display the hydrogen concentration while also generating an analog signal that can be sent to external monitoring systems. No other gases or environmental controls are necessary for these measurements. No oxygen is required for a reading.

The WRS sensor also features a temperature sensing element and an on-board heater. Using these, H2scan systems maintain the sensor substrate at a constant temperature. This elevated, controlled temperature assures that sensor operation is unaffected by ambient or process gas temperature.

ADVANTAGES

Tolerant to:
CO
CO₂
Hydrocarbons
H₂S
He

Fast Response

Operational in the Absence of Oxygen

Effectively Reads Concentration of Hydrogen for Stationary, Portable, and Process Monitoring Applications

User Friendly Interface:
0-5 V or 4-20 mA
RS-422 or RS-232

With advanced capabilities and a robust design, H2scan products support a variety of applications and background environments for both the present and the future.

PETROCHEMICALS

Air Products
Air Liquide
UOP
Chevron



SEMICONDUCTOR MANUFACTURING

Novellus
Air Liquide
Air Products



Ballard
BOC
Ford
Honda
Hydrogenics
Nissan
Toyota
UTC
Santa Clara Valley Transit Authority

FUEL CELL TECHNOLOGIES



APPLICATIONS AND CUSTOMERS

This includes effective monitoring capabilities with or without the presence of oxygen, as well as miniaturization for meeting cost and size constraints.



BATTERY MONITORING

GCI Alaska
L-3 Communications
Sprint



LEAK DETECTION

Bechtel
Boeing
Chevron
Ford
Weyerhaeuser



NUCLEAR

Battelle
Meggitt
Teledyne
Cook Nuclear
So. Carolina Power & Energy

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HY-ALERTA SAFETY SYSTEMS

The HY-ALERTA™ 500 Handheld Hydrogen Leak Detector provides state-of-the-art portable hydrogen leak detection. This detector will effectively locate the source of a hydrogen leak before it becomes a major problem.

KEY ADVANTAGES:

- Auto zero feature eliminates the need for frequent recalibrations
- Visual indication and detection of a hydrogen leak
- Fast response times



The HY-ALERTA™ 600 Fixed Area Hydrogen Monitor is ideal for protecting any areas where hydrogen is used or stored. It provides continuous monitoring capability 24 hours a day and can be linked to alarm systems for the safe shutdown of a facility.

KEY ADVANTAGES:

- Real time safety monitoring
- No false alarms from other combustible gases or compounds
- Long product life expectancy with recommended recalibration schedule



HY-OPTIMA PROCESS MONITORING SYSTEMS

The HY-OPTIMA™ 700 In-Line Process Hydrogen Monitor is ideal for real time monitoring of hydrogen concentrations in a variety of gas streams. Its fast response and excellent accuracy enables the users to monitor their operations more efficiently.

KEY ADVANTAGES:

- Real time, in-line monitoring for process optimization
- Operates in multiple background gases (with or without O₂)
- No cross sensitivity to other combustible gases

Consult the datasheets for complete specifications



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HYDROGEN SPECIFIC MONITORING SOLUTIONS

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