

# HY-ALERTA™ Fixed Area Hydrogen Safety Monitors

The H2scan HY-ALERTA™ fixed area monitors provide fast hydrogen-specific leak detection and safety monitoring from 0.4% to 5% hydrogen (10% to 125% of hydrogen's lower explosive limit). No cross-sensitivity to other combustible gases prevents false alarms and improves reliability. Capable of operating with or without air/oxygen present.

## Applications

### Battery Rooms

H2 monitoring during lead acid battery charging

### Control Rooms / Analyzer Buildings

Detection of potentially flammable H2 buildup in occupied areas

### Laboratories

General hydrogen safety monitoring

### Alternative Energy

Hydrogen refueling station safety monitoring  
Fuel cell and electrolyzer leak monitoring

### Hydrogen Cooled Generators and Turbines

Leak detection during operation

### Industrial Gas Supply and Hydrogen Production

Leak detection around H2 storage facilities and pipes

### Furnaces and Manufacturing

Area monitoring for unburnt hydrogen

### Other Applications

General area monitoring wherever there is a risk of hydrogen accumulation

## Advantages

- Highly reliable
- Low life cycle cost
- Easy to install and operate
- Minimal maintenance required
- No cross sensitivity to combustible gases
- Not vulnerable to poisoning like other detectors
- Wide hydrogen-specific detection range
- Works in air, oxygen, or inert gas background
- Does not degrade over time
- Non-consumable solid state technology
- Field-configurable settings
- Will not saturate with exposure to hydrogen

**HY-ALERTA™ 600B**  
General Purpose



**HY-ALERTA™ 1600**  
Intrinsically Safe



**HY-ALERTA™ 2620**  
Explosion Proof



The HY-ALERTA™ area monitor is a reliable, consistent hydrogen gas detector for industrial markets. H2scan uses a solid-state non-consumable sensor for direct hydrogen measurement in air or inert gases, with no cross sensitivity to other combustibles.

**How it Works** A thin film palladium-nickel alloy absorbs and desorbs hydrogen as it comes in contact with the sensor. The palladium catalyzes the hydrogen molecule into atomic hydrogen, which gets absorbed into the metal lattice and changes the bulk resistivity. This change in resistance is calculated very accurately and reported in real time. The analyzer is hydrogen specific because even though palladium can catalyze several elements, only hydrogen can penetrate the lattice structure at a rate that is meaningful to the measurement. As a result it is unaffected by any other gases. Since it is a solid state device, the sensor does not degrade over time. The output reports the partial pressure of the hydrogen in the background, which corresponds to the hydrogen concentration.

**Ease of Use** With no moving parts, the analyzer is extremely reliable and easy to use. Once installed, it typically only requires a quick calibration every three months, using readily available bottled gas mixtures of 1% and 2% hydrogen in air. No other maintenance is necessary. Communication is either via an analog 4-20mA output or serial communication using RS232 or RS422, depending on the model.

**Performance and Safety** The safety monitor is intended for use in an air, oxygen, or inert gas background where hydrogen is only occasionally present for short periods, as may occur if there is a leak or off gassing from batteries. The detection range is from 4000 ppm to 5% hydrogen, covering 10% to 125% of hydrogen's lower explosive limit. The monitors can be ceiling, wall, or pole mounted for optimal performance. H2scan offers general use, intrinsically safe, and explosion proof models to meet any safety monitoring need.

### HY-ALERTA Specifications

	HY-ALERTA™ 600B General Use	HY-ALERTA™ 1600 Intrinsically Safe	HY-ALERTA™ 2620 Explosion Proof
<b>Measuring Range:</b>		0.4 to 5% (10 to 125% LEL)	
<b>T90 Response Time:</b>		<60 seconds	
<b>Accuracy:</b>		± (0.03 x indication + 0.2)% H2	
<b>Operating Temperature:</b>		-20 to +55 °C (+40 °C for 1600)	
<b>Operating Humidity:</b>		< 95% RH (non-condensing)	
<b>Calibration Background Gas:</b>		Air	
<b>Calibration Interval:</b>		90 days	
<b>Storage Temperature:</b>		-40 to +80 °C (+50 °C for 1600)	
<b>Usage:</b>	Indoor / Outdoor	Indoor / Outdoor	Indoor / Outdoor (IP67 rated)
<b>Analog Output:</b>	4-20 mA	4-20 mA (requires analog barrier)	4-20 mA
<b>Serial Output:</b>	RS232 or RS422	RS422 (requires serial barrier)	RS232 or RS422
<b>Relays:</b>	1A / 30 VDC SPDT	Available	5A / 240 VAC SPDT
<b>Input Voltage:</b>	10 – 26 VDC	20 – 28 VDC	90 – 240 VAC
<b>Input Power:</b>	10 W	10 W	15 W
<b>Dimensions L x W x D (in):</b>	8.2 x 4.4 x 1.6	8.1 x 4.4 x 1.6	7.5 x 5.4 x 5.7
<b>Safety Certifications:</b>		Probe Tip: Body: Certificate Number: ITS07ATEX25634X	C/UL: Class I Div 1 Groups B C D ATEX: IECEX: Ex db IIB + H2 T4 Gb 

HY-ALERTA™ 1600 Hazardous Area Installation Guide

