HY-GUARD™

BATTERY SAFETY HYDROGEN AREA MONITOR

H2scan®
Advanced Hydrogen Sensing

Advanced Hydrogen Monitoring for Battery Safety Systems

The HY-GUARD™ hydrogen monitoring system tackles critical safety issues for standby power battery setups by introducing the industry's first hydrogen sensor specifically designed for most battery applications.

- No false alarms
- Continuous self-calibration that verifies sensor performance throughout its operational life
- Helps facilities stay compliant with the International Fire Code (IFC) and NFPA 855
- Multiple mounting choices including ceiling and cabinet mounting options
- Flexible communication options including dry potential-free contacts, 4-20 mA analog, and Modbus RTU (RS-485)
- Lasts the service life of most battery types

HY-GUARD's design, bridges the gap between basic detection devices and overengineered industrial solutions. HY-GUARD was designed with most battery applications in mind.

Transform Battery Room Safety

- True Safety Assurance: HY-GUARD self-verification eliminates false security through continuous self-verification
- Zero Maintenance: Long sensor life and no calibration required over the life of the instrument
- Flexible Configuration: Modular design allows selection of needed required capabilities, ranging from relay outputs to advanced communication protocols
- Superior Reliability: Proven sensor technology without the drift, false alarms, and premature failures common in catalytic and metal oxide sensors
- Standards-drive Development: Designed to meet stringent fire code, including NFPA 855, the global standard for energy storage safety

Upgrade Your Hydrogen Safety Program with a Complete Solution

Continuous Self-Calibration: Every 12 hours throughout the long sensor life. No calibration gases, bump testing or site visits. Provides alerts if the sensor performance degrades

All-in-One Design: Integrated, compact solution eliminates external modules, excessive wiring and complex conduit installations

Right-Sized for Battery Applications: Purpose-built for standby power systems. Modular options support specific requirements without paying for unnecessary features

Field-Proven Technology: Delivers H2scan's industry-leading hydrogen sensing technology, refined over 20 years in utility and power utility applications

Flexible Mounting Options: Easy installation with options for standard mounting

Simple Installation Setup: Easy setup process designed for simple deployment

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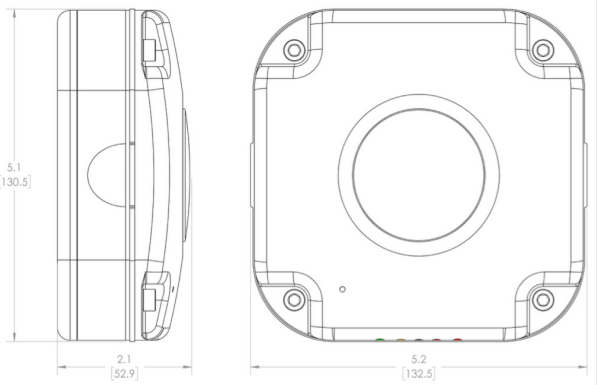
HY-GUARD features an easy pull-apart design that simplifies installation, maintenance, and bump testing. Its construction allows quick access to internal components without specialized tools, which ensures reliable performance with minimal effort. This simplistic design makes ongoing operation and verification straightforward for technicians and facility teams.

HY-GUARD Operating Modes

LED	Mode	
Green	Power Indicator	
Red	Cautionary Alarm 1% H_2	
Red	Critical Alarm 2% H_2	
Yellow	Self-Diagnostics Indicator	
Push-Button	Alarm Acknowledge & H_2 Simulation	

HY-GUARD Sensor Module and Back Plate

HY-GUARD Dimensions



Product Specifications

Operating Conditions	
H_2 Range	0.4 - 2%
Accuracy	±0.3% H_2 (Absolute Error)
Response Time[1]	50 to 70 seconds
Ambient Temperature	15°C to 40°C (59°F to 104°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Humidity	0 - 95% RH non-condensing
Lower Detection Limit (LDL)	0.4%
Sensor Detection Range	0.4% - 5.0%
Connector Type	AC: Relay 1%, Relay 2%, Fault DC: RS-485, 4-20 mA
Physical	
Dimensions	132.5 x 130.5 x 52.9 mm (5.2 x 5.1 x 2.1 in)
Weight	(0.5 kg) 1.1 lbs
Vibration	ISTA 6-FEDEX-A Test
Shock	ISTA 6-FEDEX-A Test
Buzzer	83 db at 3 ft
Power	
Input Voltage AC	85 to 264 VAC
Input Voltage DC	15 to 60 VDC
Power Consumption	10 W max
Analog Output	0 minimum, 4-20 nominal, 24 mA max
RS-485	Modbus (two-wire)
Certifications	
Compliance & Certification	IEC 61010[2] - In Progress FCC Part 15 REACH RoHS
Applicable Standards	OSHA 29 CFR 1926 IFC 608/ Chapter 12 NFPA 1 & 855 NFPA 68 & 69 IEC 62933 IEEE Standards – Stationary battery and energy storage

1. The response time is the time until the measured H_2 exceeds 1% when transitioning from air to 3% H_2/Air
2. The HY-GUARD was designed for and passed pre-conformance testing per the requirements of UL 61010-1 and CSA C22.2 No. 61010-1, and is currently undergoing formal certification by an agency

Note: HY-GUARD supports both AC and DC power inputs. AC is used as the primary source by default. In the event of AC loss, HY-GUARD will automatically switch to DC when AC and DC are powered by separate power sources

Specifications subject to change without notice

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