

# GASGUARD NH<sub>3</sub>-2% HIGH-RANGE AMMONIA SENSOR



## Key Features

- Ammonia selective catalytic bead sensor technology
- Useful for activation of electrical shunt-trip or E-stop up to 20,000 ppm
- Low cost compared to infrared type ammonia sensors
- Industry standard linear 4/20 mA output
- Absolutely no zero drift compared to other catalytic bead type sensors
- Sensing element designed for long life in harsh industrial environments
- Designed to perform in temperatures of -40°F to +150°F
- Accurately monitor explosive NH<sub>3</sub> levels for emergency response situations
- Real-time continuous monitoring
- 2-year warranty, including replacement sensor element

## Ammonia compressor room explosion prevention. High-range sensor at a low-range price.

The GasGuard NH<sub>3</sub>-2% is designed to detect and monitor potentially explosive levels of ammonia vapors in the event of a catastrophic failure. Codes specify an electrical shunt-trip of the mechanical room at a level not higher than 25% LEL to remove potential ignition sources in the event of a serious ammonia leak. The GasGuard NH<sub>3</sub>-2% allows for an earlier trip level of 12.5% LEL.

The GasGuard NH<sub>3</sub>-2% utilizes an ammonia selective catalytic bead sensor technology with a matched pair of detector elements. When ammonia vapors enter the sensor, the passive bead remains un-changed while the active detector bead catalyzes the oxidation of gas, generating heat and changing its resistance. The resulting change in resistance is accurately measured across the bridge circuit.

The GasGuard NH<sub>3</sub>-2% provides an industry standard linear 4/20 mA output signal proportional to 0-2% (0-20,000 ppm) ammonia. The potted transmitter is compatible with most gas detection systems and PLCs. Long sensor life with minimal span adjustment can be expected in most mechanical room applications. The sensor element is designed for simple calibration and is field replaceable.

## Applications

- Compressor Rooms
- Tank Rooms
- Cold Storage
- Refineries
- Electrical Shutdown
- Sea Vessels
- Pulp and Paper
- Chemical Plants
- Heat Treatment
- Refrigeration System
- Breweries

## Benefits

- Low cost explosion protection
- Long sensor life (5+ years typical)
- Simple operation & calibration

**CALIBRATION  
TECHNOLOGIES  
INC.**



Since low-range sensors can't detect high enough and high-range sensors can't detect accurately at low levels, the use of the **GasGuard NH<sub>3</sub>-2%** sensor in conjunction with low-range GasGuard NH<sub>3</sub> sensors ensures a second-stage line of defense in the event of a serious ammonia leak. Intended for electrical shutdown, the **GasGuard NH<sub>3</sub>-2%** provides protection against potentially explosive situations.

From hot mechanical rooms, to acid washdowns of processing areas, the **GasGuard NH<sub>3</sub>-2%** is prepared to survive in just about any harsh industrial condition. Every circuit board is sealed forever in potting compound, protecting sensitive electronic components and copper tracing from corrosion. A specially vented chemical-resistant polycarbonate enclosure protects the sensor from accidental damage, weather, and direct hose-hits from clean-up crews.

Typical sensor life is 5-7 years, with minimal to no cross-sensitivity to most other gases. Field replaceable sensor element keeps long term maintenance simple and low cost.

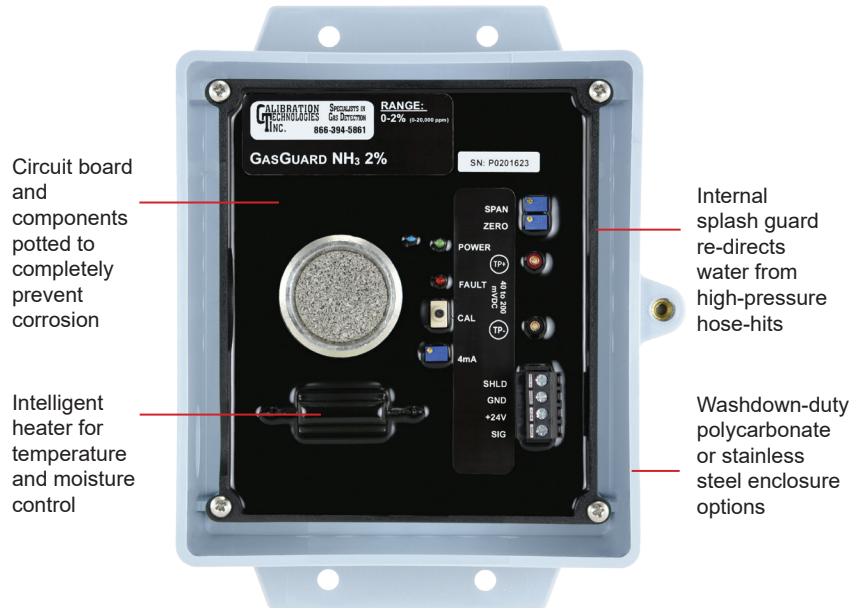
## Ordering Information

The **GasGuard NH<sub>3</sub>-2%** is delivered calibrated and ready to install. The assembly includes sensor and potted transmitter mounted inside the hinged polycarbonate enclosure. Use the model numbers below to order.

**Order #:** [GG-NH3-2%](#)  
[GG-NH3-2%-ST](#) (stainless enclosure)  
[GG-NH3-2%-RS](#) (replacement sensor)



replacement sensor



Circuit board and components potted to completely prevent corrosion

Intelligent heater for temperature and moisture control

Internal splash guard re-directs water from high-pressure hose-hits

Washdown-duty polycarbonate or stainless steel enclosure options

## SPECIFICATIONS

Due to ongoing research and product improvement, specifications are subject to change

**Input Power:**  
+24 VDC, 250 mA

**Detection Principle:**  
Catalytic Bead

**Detection Method:**  
Diffusion

**Gases:**  
Ammonia (NH<sub>3</sub>)

**Ranges:**  
0-2% (20,000 ppm)

**Output Signal:**  
Linear 4/20 mA (max input impedance: 700 Ohms)

**Linearity:**  
+/- 0.5% of full-scale

**Repeatability:**  
+/- 1% of full-scale

**Response Time:**  
T50 = less than 30 seconds  
T90 = less than 90 seconds

**Accuracy:**  
+/- 5% of value, but dependent on calibration gas accuracy

**Zero Drift:**  
Less than 0.01% of full-scale per month, non-cumulative

**Span Drift:**  
Application dependent, but generally less than 2% per month

**Temperature Range:**  
-40°F to +150°F (-40°C to +66°C)

**Humidity Range:**  
5% to 100% condensing

**Wiring Connections:**  
3 conductor, shielded, stranded, 20 AWG cable (General Cable C2525A or equivalent) up to 1500 ft

**Terminal Block Plugs (Field Wiring):**  
12-26 AWG, torque 4 lbs-in

**Enclosure:**  
NEMA 3RX injection-molded, washdown-duty polycarbonate sensor housing with hinged lid and captive screw. For non-classified areas. Optional 316 18 GA, NEMA 3RX washdown-duty stainless steel housing with hinged lid and captive screw. For non-classified areas

**Dimensions:**  
7.5" high x 6.5" wide x 3.75" deep

**Weight:**  
3 lbs

**Certification:**  
ETL listed to UL standard 61010-1, and CSA standard C22.2 No. 61010-1-12

**Warranty:**  
2 years (including replacement sensor)

