

EC-NH₃

Ammonia Specific Electrochemical Gas Sensor/Transmitter



The EC-NH₃ sensor provides a simple and reliable system for detecting ammonia leakage in almost any environment, responding rapidly to ammonia gas concentrations in the low PPM range without interference from common gases.

The EC can be configured to monitor other gases. See table on back page.

The EC-NH₃ sensor has set the ammonia industry standard for reliability, durability and long-term economical “gas specific” performance. It consists of a pair of polarized electrodes isolated from the ambient air by a gas permeable membrane. As NH₃ diffuses into the sensor, a redox reaction occurs, generating a current linearly proportional to NH₃ gas concentration.

Unlike many other NH₃ sensors, this gas diffusion unit exhibits excellent zero and calibration stability over long periods of time.

The EC-NH₃ can be used with any Manning Systems Readout/Alarm unit. The readouts have built-in visual and audible alarms, as well as relay output for ventilation fan activation, central alarm tie-in, etc. In addition, the EC-NH₃ can provide direct input into PLCs and computer control systems which accept a linear 4/20 mA signal.

The NEMA 1, #16 gauge steel enclosure can be adapted for washdown conditions. Stainless steel and explosion-proof designs are available (contact Manning Systems).

ATMOS™

The EC-NH₃ can be equipped with the optional ATMOS technology (patent pending) that allows it to meet all of its performance specifications down to -50° F and in condensing humidity environments or during washdown. ATMOS (Adaptive Temperature and Moisture Optimizing System) is a comprehensive, environment-adaptive technology that actually senses the surrounding environment and creates a controlled, mini-atmosphere inside the sensor enclosure to optimize the air sample quality. ATMOS allows the EC-NH₃ to automatically adapt to its environment and provide accurate and reliable performance under the harshest conditions.

Applications

- Food Processing
- Refrigeration Systems
- Chemical Manufacturing
- Gas Bottling Plants
- Potable Water Plants
- Perimeter Monitoring

Key Features

- Specific to ammonia
- Rapid response
- Long sensor life
- Modular electronics for ease of installation
- NEMA 1, #16 gauge heavy-duty steel enclosure
- NEMA 4 packaging available
- Explosion-proof design available
- Test adapter available
- Pre-amp and sensor have been designed to intrinsically safe standards
- Inexpensive cell replacement



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Manning Systems, Inc. provides a complete line of industrial quality Gas Alarm Monitoring Systems for equipment rooms, refrigerated spaces, storage facilities, laboratories and process areas.

Ammonia Specific Electrochemical Gas Sensor/Transmitter

EC-NH₃

Specifications

Method:

Electrochemical (diffusion)

Ranges:

0-100 ppm (standard)
0-200 ppm
0-250 ppm
0-500 ppm
0-1,000 ppm

Output:

Isolated 4/20 mA, 700 ohms max. at 24 VDC

Accuracy:

±5% generally, but limited by available calibration gas accuracy

Repeatability:

±2% full scale

Operating Humidity:

5-100% RH (condensing)

ATMOS™ enviro-adaptive technology option required for condensing conditions or refrigerated areas (contact Manning Systems)

Operating Temperatures:

-50°F to 125°F

ATMOS™ enviro-adaptive technology option required for refrigerated areas or outdoors (contact Manning Systems)

Sensor Pressure Limits:

0-10 PSIG

Power Source:

12-24 VDC, 33 mA max

Special enclosures may require additional power (contact Manning Systems)

Gas Sampling:

Diffusion method is standard
(sample draw connections are available)

Weight:

3 lbs.

Dimensions:

6"H x 4"W x 3.5"D

Cable Recommendations:

#18/3 shielded cable
(Belden #8770 or equal)

Cable runs <1500'

Enclosure:

NEMA 1, gasketed, #16 gauge steel
(standard)

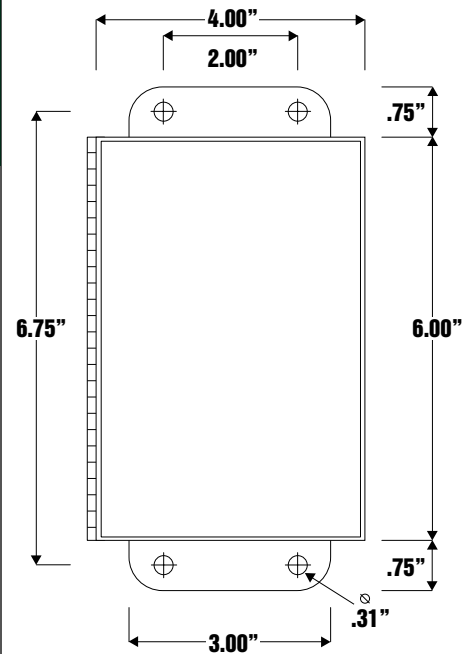
NEMA 4, stainless steel or explosion-proof designs, including modified enclosures for low temperatures, ventilation ducts, etc., are available (contact Manning Systems)

NOTE: The standard EC is for use in non-classified areas only.

Other gases/ranges available in the EC:

Gas	Standard Range
Bromine	0-2 ppm
Carbon Monoxide	0-200 ppm
Chlorine	0-5 ppm
Chlorine Dioxide	0-1 ppm
Hydrogen	0-2000 ppm
Hydrogen Chloride	0-20 ppm
Hydrogen Fluoride	0-20 ppm
Hydrogen Sulfide	0-50 ppm
Nitric Oxide	0-200 ppm
Nitrogen Dioxide	0-10 ppm
Ozone	0-1 ppm
Sulfur Dioxide	0-10 ppm

Dimensions



The EC-NH₃, used in conjunction with Manning Systems readout units, is an integral part of the Manning Primary Safety System (MPSS), a total, turnkey solution for the detection of toxic gas leaks showing gas safety status of an entire industrial facility at a single glance. It provides a "hardened" gas safety equipment system utilizing dedicated MPSS electrochemical and infrared sensors connected in realtime to GM-10, GM-4 or GM-1 dedicated central gas alarm monitors – all protected by a single uninterruptible power system. Multiple relays trigger key emergency safety control of equipment shutdown functions and allow Emergency Responders to easily assess an ammonia or other gas leak situation – even in the event of computer viruses, operating system crashes or human error.

Calibration Gas Kits are always available from Manning Systems to maintain and verify the highest level of total system performance.

Specifications subject to change without notice.



The "C" and "US" indicator adjacent to the CSA Mark signifies that the product has been evaluated to the applicable ANSI/UL and CSA Standards for use in the U.S. and Canada. This includes products eligible to bear the NRTL indicator. NRTL, i.e., Nationally Recognized Testing Laboratory, is a designation granted by the U.S. Occupational Safety & Health Administration (OSHA) to laboratories which have been recognized to perform certification to U.S. Standards.

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Limited Warranty

1. Limited Warranty. Manning Systems, Inc. ("Manning") warrants to the original purchaser and/or ultimate customer (the "Purchaser") of Manning's Products (the "Product") that if any part thereof proves to be defective in material or workmanship within eighteen months of the date of shipment by Manning or twelve months from the date of first use by the Purchaser, whichever comes first, such defective part will be repaired or replaced free of charge, at Manning's discretion if shipped prepaid to Manning, at 11511 West 83rd Terrace, Lenexa, Kansas 66214, in a package equal to or in the original container. The Product will be returned freight prepaid and repaired or replaced if it is determined by Manning that the part failed due to defective materials or workmanship. The repair or replacement of any such defective part shall be Manning's sole and exclusive responsibility and liability under this limited warranty.

2. Exclusions.

A. If gas sensors are part of the Product, the gas sensor is covered by a twelve-month limited warranty of the manufacturer.
B. If gas sensors are covered by this limited warranty, the gas sensor is subject to inspection by Manning for extended exposure to excessive gas concentrations if a claim by the Purchaser is made under this limited warranty. Should such inspection indicate that the gas sensor has been expended rather than failed prematurely, this limited warranty shall not apply to the Product.
C. This limited warranty does not cover consumable items, such as batteries, or items subject to wear or periodic replacement, including lamps, fuses, valves, vanes, sensor elements, cartridges, or filter elements.

3. Warranty Limitation and Exclusion. Manning will have no further obligation under this limited warranty. All warranty obligations of Manning are extinguishable if the Product has been subjected to abuse, misuse, negligence or accident or if the Purchaser fails to perform any of the duties set forth in this limited warranty or if the Product has not been operated in accordance with instructions, or if the Product's serial number has been removed.

4. Disclaimer of Unstated Warranties. THE WARRANTY PRINTED ABOVE IS THE ONLY WARRANTY APPLICABLE TO THIS PURCHASE. ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED.

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