



## **EC-FX-NH3**

A new and improved approach to ammonia gas detection.

# EC-FX-NH3

## Sensor and Transmitter

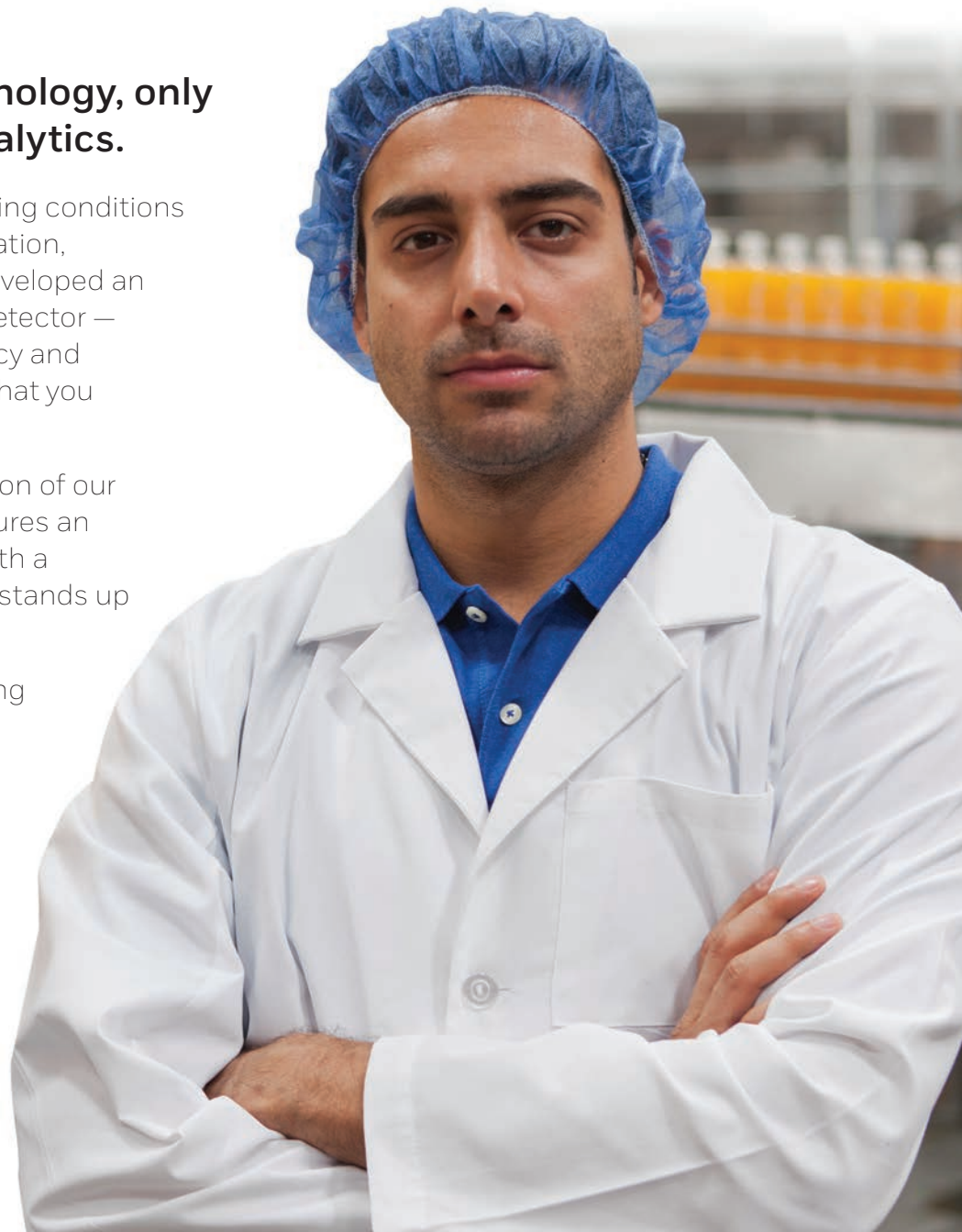
introducing a better, tougher  
longer-lasting sensor  
for industrial refrigeration

### **Breakthrough technology, only from Honeywell Analytics.**

In response to the challenging conditions found in Industrial Refrigeration, Honeywell Analytics has developed an innovative new ammonia detector — delivering reliability, accuracy and long-lasting performance that you can't get anywhere else.

The EC-FX-NH3, an evolution of our Manning EC-F9-NH3, features an all-new ammonia sensor with a proprietary electrolyte that stands up to harsh environments.

So whether you're monitoring ammonia in blast freezers, cold storage or engine rooms, you can feel confident in the effectiveness of your gas detection system, helping you ensure life safety, prevent food spoilage and manage costs.







## Three harsh environments. One tough sensor.

If you use ammonia as part of your refrigeration process, you face several challenges in protecting your plant from the danger and expense of ammonia leaks:



### Cold Storage

From banana rooms to ice cream storage to food processing facilities, your cold storage areas are subject to extremely low temperatures — plus changes in humidity during cleaning and changes in pressure due to opening and closing doors. These fluctuations can cause some ammonia sensors to go into fault or false alarm. But since workers are often present in these areas, it's critical for ammonia sensors to stand up to tough conditions and accurately report gas at low levels.



### Refrigerated Processing Areas

Some of the harshest environments in the food industry are spiral freezers and blast freezers, where rapid freezing often means drastic changes in temperature. This temperature shock — along with humidity shock from hot-water washdowns — can further challenge the resilience of your ammonia sensors.



### Engine Rooms

Finally, the most likely places for a catastrophic ammonia leak are often your engine rooms, since they typically hold ammonia for use throughout your plant. But in the hot conditions of most engine rooms, the liquid electrolytes in standard ammonia sensor cells can dry out quickly, sometimes reducing the sensor's life span and causing false alarms.

*Maintaining sensitivity and accuracy — even with rapid changes in temperature and humidity*

EC-FX-NH3  
Creating a New Standard



# the gold standard in ammonia detection with innovation you can trust



## Creating a new standard of reliability in ammonia gas detection

The EC-FX-NH3 is the next evolution of the proven Manning Systems technology, which was designed specifically for the extreme conditions of fruit and vegetable processing, bakeries, meat and poultry processing, beverage and bottling plants, and more.

In fact, our Manning EC-F9-NH3 and EC-F2-NH3 products have been the most-installed ammonia gas detectors in the refrigeration industry. Now, with the all-new EC-FX-NH3 from Honeywell Analytics, we're making that great technology even better.

isn't it time you upgraded  
to the most innovative, longest-lasting technology  
for ammonia detection?

Contact Honeywell Analytics today at **1-888-955-2585** to upgrade your ammonia sensors, reduce your costs, and ensure the continued safety and productivity of your plant.

# EC-FX-NH3

## Lifespan, Capabilities and Design



### Longer life span.

Thanks to our proprietary technology, the EC-FX sensor lasts up to 18 months longer than competitors and we back it up with the longest warranty on the market. See how it compares:

Application	Competing Sensors	EC-FX-NH3
Cold storage and freezers	Replace once or more every 2 years	Replace once every 4 to 5 years
Engine rooms	Replace every 6 to 18 months	Replace once every 3 to 4 years

And if you're using an ammonia gas detector from another manufacturer, you can potentially save even more by switching to the EC-FX-NH3 transmitter with the all-new sensor. Over a 10-year period, you can cut costs by up to \$5,500 per sensor in the engine room and \$2,800 per sensor in cold storage and blast freezers.

***Depending on the number of ammonia gas detectors in your operations, that longer sensor life can add up to serious savings.***

### Robust capabilities with unique design

The EC-FX-NH3 responds quickly to ammonia gas concentrations in low parts per million (PPM). You can count on this detector to stand up to the challenges of industrial refrigeration environments.

- **Rugged construction for long-term reliability.** Unlike fragile plastic housings that may break in cold temperatures, the heavy-duty steel enclosure of the EC-FX-NH3 was built to withstand cold and wet environments. The EC-FX-NH3 is also available in stainless steel.
- **ATMOS™ Technology for environmental flexibility.** The EC-FX-NH3 automatically adapts to its environment and can operate in -50°F and 100 percent humidity. So whether you're monitoring ammonia in a banana room or a blast freezer, during dry conditions or a hot-water washdown, the detector maintains accurate and reliable performance.
- **SensorCheck™ Technology for peace of mind.** The EC-FX-NH3 is equipped with a microprocessor that checks the electrical viability of the sensor every 24 hours. If there's a problem, SensorCheck™ sends an indication to your controller — so you can rest assured that the sensor is operating properly.
- **Optional LCD for real-time visibility.** With an easy-to-read display, you can clearly see the ammonia concentration at any given time. The optional display also makes it easy to set alarm levels and change settings — all from the detector.
- **Backwards compatible.** The EC-FX sensor is backwards compatible with both EC-F9-NH3 and EC-F2-NH3.

Add it up, and our new EC-FX-NH3 gas detector — housing an all-new, proprietary ammonia sensor from Honeywell Analytics — is the new gold standard for reliability, accuracy and long-term performance in ammonia gas detection.



# EC-FX-NH3 Transmitter Specifications



## General Specification

<b>Use</b>	Electrochemical (diffusion) type sensor that works in conjunction with any Honeywell Analytics readout or alarm unit. Readouts have built in visual and audible alarms, as well as relay output for ventilation fan activation, central alarm tie-in, etc. The EC-FX-NH3 can provide a linear 4/20 mA signal input into PLC's.
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## Common Operation

<b>Operation</b>	In units without the optional LCD module, a group of LEDs are installed to the PCB. In units with the optional LCD, two external push buttons, "Accept" and "Scroll" are used to navigate test functions and operating modes.
<b>LCD display (optional)</b>	2 line by 8 alpha numeric characters and continuous backlight
<b>Output</b>	Isolated 4/20 mA, 700 ohms max. at 24 VDC. Signal output reduces to 0.5 mA to indicate a fault condition. RS-485, Modbus RTU protocol
<b>Accuracy</b>	±5% full scale*
<b>Environmental IP rating</b>	Indoor use, IP 44 in accordance with EN60529:1992

## Operational

<b>Humidity</b>	5-100% RH (condensing)
<b>Temperature</b>	-50°F to +120°F (-45°C to +49°C), ATMOS™ equipped enviro-adaptive technology required for refrigerated areas or outdoors
<b>Sensor Pressure Limit</b>	0-10 PSIG
<b>Storage</b>	-40°F to +176°F (-40°C to +80°C), 20 to 80%RH (non condensing)

## Common Module

<b>Communication</b>	4/20 mA output: #18/3 shielded cable (Belden 8770 or equal), cable runs < 1,500 ft. RS-485: for communication cable, use 24 AWG twisted pair, shielded (Belden #9841 or equal), cable runs up to 2,000 ft. For power cable use 14 AWG (Belden #5100UE or equal), cable runs up to 1,000 feet.
<b>Power Source</b>	24 VDC, 0.5 amp max.
<b>Repeatability</b>	<10% of full scale

## Sensor Specifications

<b>Sensor Pressure Limit</b>	Atmospheric ±10%
<b>Response Time (T90)</b>	<30s for EC-FX-NH3-LR ranges 0-100 ppm, 0-200 ppm, 0-250 ppm and <75s for EC-FX-NH3-HR ranges 0-500 ppm, 0-1000 ppm
<b>Ranges</b>	0-100 ppm, 0-200 ppm, 0-250 ppm, 0-500 ppm, 0-1000 ppm
<b>Sensor Warranty</b>	Three years from date of shipment
<b>Sensor Viability Test</b>	SensorCheck™, an internal microprocessor determines the sensor's electrical viability every 24 hours. If the viability test fails, a 0.5 mA signal will indicate a fault. An internal light will show if a sensor is dried up or disconnected.
<b>Enclosure</b>	NEMA 1, gasketed, #16 gauge steel (standard). Stainless steel, including modified enclosures for low temperatures, ventilation ducts, etc. are available.
<b>Weight</b>	3 lbs (1.36 kg)

\* ±5% of full scale range at temperature of calibration. Contact HA for additional details.

### CAUTION:

EC-FX is designed for operation in a wide range of environments and harsh conditions. However, it is important that exposure to high concentrations of solvent vapors is avoided, both during storage, fitting into instruments, and operation. EC-FX is designed to be used in safety critical applications. To ensure that the sensor and/or instrument in which it is used, are operating properly, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check). Failure to carry out such tests on a regular basis may jeopardize the safety of people and property.

# EC-FX-NH3 Three-Year Warranty



## extended three-year warranty for the next generation in ammonia sensors

We stand behind our products. We are so confident in the performance of our new sensor that it comes with a **three-year warranty – twice the warranty of most competing sensors.**

Our proprietary new EC-FX sensor, backed by rigorous testing, was engineered to Honeywell's highest standards of safety, reliability and cost-effectiveness:

### Stability you can count on.

Unlike other ammonia sensors, our new sensor maintains sensitivity – even during rapid changes in temperature and humidity. While other sensors may quickly lose sensitivity after exposure to ammonia gas, our EC-FX sensor bounces back from alarm-level gas exposure and resumes accurate detection. So you can rest assured that your ammonia sensors are protecting lives and operations.

### Lower cost of ownership.

Fewer sensor replacements means a lower cost of ownership over time. In fact, if you're currently using our EC-F9 or EC-F2 transmitter, you can significantly cut your costs by switching your current sensor for the new EC-FX sensor. Over a 10-year period, you can save up to \$2,500 per sensor in an engine room and up to \$1,300 per sensor in cold storage and blast freezers.



Proprietary technology for  
longer life and lower costs

*EC-FX-NH3 with Stainless Steel enclosure and LCD options*

# Honeywell Analytics Gas Detection Offerings

Honeywell Analytics gas detectors protect people, assets and environment from toxic and combustible gas hazards, helping to create safer, more comfortable, secure and productive environments. Our strength derives from Honeywell's leadership in sensor technology; in fact Honeywell operates four sensor manufacturing plants, supplying an entire industry with its core detective element.



## Commercial

Gas detection from standalone units to fully engineered, multi-point systems, all offering cost-effective regulatory compliance.

- » Applications: parking structures, chillers, mechanical rooms, office towers, commercial buildings, shopping centers, swimming pools, golf courses, schools and universities, laboratories

## Industrial

Renowned Sieger and Manning gas detection systems with advanced electrochemical, infrared and open path sensing technologies.

- » Applications: oil and gas, cold storage, water/wastewater treatment, chemicals, engine rooms, plastics and fibers, agriculture, printing and light industrial

## Portables

Single or multi-gas detectors ranging from compact, lightweight designs for personal protection to systems-based, networkable instrumentation for industrial hygiene.

- » Applications: underground utility and electricity ducts, boiler rooms, post-fire sites, sewers, industrial plants, industrial hygiene, first responder teams, remote fleets



### For more information:

[www.honeywellanalytics.com](http://www.honeywellanalytics.com)

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## High Tech/Government

Reliable gas and chemical detection including infrared spectroscopy (MST) with no cross interference, to Chemcassette paper-based solutions (MDA Scientific) offering detection down to parts per billion.

- » Applications: semiconductor manufacturing, aerospace propulsion, specialty chemicals industry, research laboratories, emergency response

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## Technical Services

24/7 global network includes post-sales service and Systems Integration teams.

- » Emergency call out, service contracts, on/off-site repair, training and commissioning
- » Complete range of spares, consumables and accessories

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# Honeywell