



Manning Ammonia Sensor

ECF2/ECF9 Cell

General Description

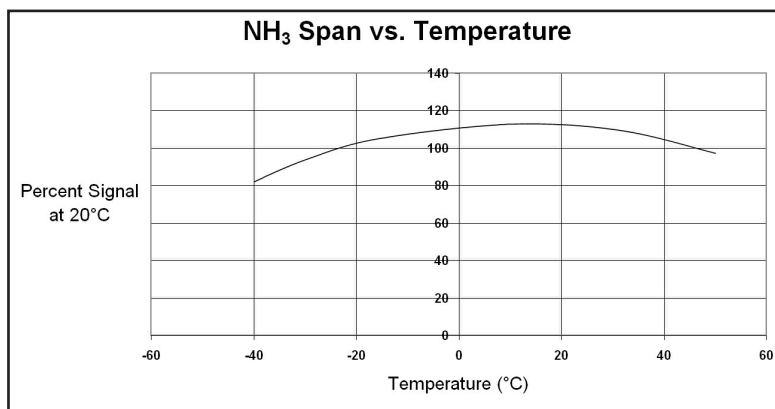
The ECF2/ECF9 electrochemical cell is a three-electrode sensor designed to measure ammonia concentrations in ambient air. The sensor responds to low levels of NH₃ by generating a small current linearly proportional to the parts per million of ammonia by volume. The sensor is designed for operation at non-condensing humidities and at air temperatures from -40°F to 122°F (-40° to +50°C). Condensation will not permanently damage the sensor but, because of ammonia's high solubility in water, it will prevent the passage of ammonia into the sensor.

Specifications

Primary response	Volume % NH ₃
Range	0-500 PPM
Bias voltage	+200 mV on sensing electrode with respect to the reference electrode
Output signal	0.05 μ A/PPM nominal
Output signal range	0.025-0.1 μ A/PPM
Operating temperature range	-40°F to 122°F (-40°C to +50°C)
Operating pressure range	-5 PSIG to +50 PSIG (calibration performed at operating pressure)
Operating humidity range	0% RH to 99% RH, non condensing
Zero offset at 68°F (20°C)	< -2.0 PPM NH ₃ equivalent typical < -5.0 PPM NH ₃ equivalent maximum
Span drift at STP	< 2% per month
Effect of temperature on zero	Zero current doubles for 18°F (10°C) increase from the normal signal at 68°F (20°C)
Effect of temperature on span	See Span Temperature Effect graph
Response time (T90)	< 240 second (see sensor response curve)
Operating life at STP	> 2 years expected
Storage period prior to use	Recommended: 1 year maximum for best sensor performance; store at less than 77°F (25°C) in a sealed container
Sensor warranty	15 months from shipment date
Size	1.06 in D x 1.75 in L (27 mm D x 44 mm L)
Weight	0.3 ounces (7.5 grams)

Cross-sensitivity Data

Cross-sensitivity Data	
Gas	Response
Halogens	-0.1
Carbon monoxide	0.05 PPM
Hydrogen chloride	none
Hydrogen sulfide	0.3 PPM
Sulfur Dioxide	none
Hydrogen Fluoride	none
Hydrogen cyanide	none
Nitric Oxide	none
Nitrogen Dioxide	none
Hydrogen	0.02 PPM
Methane	none
Carbon dioxide	none
Acetylene	0.03 PPM
Ethanol	0.01 PPM
Methyl Mercaptan	none
Ozone	none



Sensor Mounting

Ammonia sensors are cylindrical and have a potted cable from the back for connection to electronic amplifier circuits. The sensor will operate in any position but it is best to mount it so that the membrane area is facing either down or to one side. Dirt and water are more likely to accumulate on the membrane if it is mounted facing up. This will interfere with the sensor's operation. The sensitive area of the sensor is the white membrane on the front. Do not mount filters and flame arrestors in front of the sensor; anything that can retain water droplets will prevent ammonia from passing into the sensor area.

Find out more

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