

**Product: XgardIQ Sensor Module**

**Subject: Technical Specification**

Document reference: M070064

Issue 2 November 2017



<b>Product:</b>	<b>XgardIQ</b>
<b>Sensor Module Part Number:</b>	<b>XIQ-AS (0-1000ppm)</b>
<b>Gas Type:</b>	<b>Ammonia (NH<sub>3</sub>)</b>
<b>Sensor Technology:</b>	Electrochemical

**Environmental Specification:**

Temperature Range:	-20°C to +40°C
Humidity Range for Operation/Storage:	15 to 90%rh non-condensing.
Recommended Storage Temperature	20°C
Warranty Period:	12 months if operated within stated environmental limits and not exposed to excessive gas concentrations or contaminants (see Product Notes).
Pressure Range:	Atmospheric +/-10%

**Performance Characteristics:**

Expected Operating Life:	>24 months in air if operated within stated environmental limits and not exposed to excessive gas concentrations or contaminants (see Product Notes).
Storage Life:	6 months from date of manufacture.
T90 Response Time:	~68 seconds
Minimum Display Resolution:	1ppm
Linearity	<3% of full-scale
Long Term Sensitivity Drift:	<10% per 6 months

**Configuration:**

XgardIQ Display Name:	NH3
Range:	0-1000ppm
Maximum User-Selectable Range:	0-1000ppm
Minimum Recommended User-Selectable Range:	0-100ppm
Alarm 1 Threshold	50ppm
Alarm 2 Threshold	100ppm
Stabilisation Time	60 seconds

## Product Notes and Calibration Instructions:

Crowcon recommends ammonia sensors are initially calibrated on commissioning and re-calibrated every 6 months minimum.

Please refer to the XgardIQ installation, operating and maintenance instructions for information on performing sensor zero and calibration.

Crowcon recommends calibration is performed using 500ppm ammonia (NH<sub>3</sub>) in air at a flow-rate of 0.5 - 1 litre per minute\*. The sensor must be zeroed in clean air before calibration is performed. Calibration gas must be applied to the sensor for 5 minutes before being calibrated.

**Note:** The sensor signal will take between 5 and 60 minutes to fully return to zero after test gas has been applied. The signal will quickly fall to low levels after the sensor has been re-exposed to clean air, however will take several minutes to reach zero. Re-zeroing the instrument before the sensor has fully reached zero could result in a negative reading and a possible 'Sensor Under-range' fault.

**Note:** if a dust filter accessory is fitted to the sensor, calibration must be performed with the filter in-place. Filters must be inspected regularly and replaced as soon as they show signs of contamination. A dust filter will affect the T90 response time of the sensor: response time may be significantly longer than shown on this datasheet.

## Cross-Sensitivity Data:

Gas	Concentration Used	Reading
Alcohols	1000ppm	0
Carbon Monoxide	100ppm	0
Chlorine	5ppm	0
Hydrogen	3,000ppm	0
Hydrogen Sulphide	20ppm	2
Nitrogen Dioxide	10ppm	0
Sulphur Dioxide	20ppm	-40

## Safety Information:

**\*Warning:** Calibration of this sensor requires the use of a dangerously high concentration of ammonia gas. Precautions must be taken to ensure the area is well ventilated and that calibration technician does not inhale the gas.

XgardIQ sensor modules are designed to detect gases or vapours in air, and not inert or oxygen deficient atmospheres.

Maintenance and calibration operations must be performed by qualified service personnel.

Electrochemical cells used in toxic and oxygen sensor modules contain small volumes of corrosive electrolyte. Care should be observed when replacing or disposing of cells to ensure that the electrolyte does not come into contact with skin or eyes.

## Disclaimer:

The data contained on this document is provided for guidance purposes only and is correct at the time of issue. Performance data is typical as measured at Crowcon; no guarantees can be made on the performance of individual products. Environmental specifications are specific to the sensor listed, and may differ from those shown on the gas detector datasheet.