

Product: XgardIQ Sensor Module

Subject: Technical Specification

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Product:	XgardIQ
Sensor Module Part Number:	XIQ-AV
Gas Type:	Hydrogen Fluoride (HF)
Sensor Technology:	Electrochemical

Environmental Specification:

Operational Temperature Range:	+5°C to +40°C. Abrupt change in ambient humidity may cause a zero reading transient.
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 humidity.
Pressure Range:	Atmospheric +/-10%

Performance Characteristics:

Expected Operating Life:	>18 months in air if operated within stated environmental limits and not exposed to excessive gas concentrations or humidity.
Storage Life:	8 weeks from date of manufacture.
T90 Response Time:	~78 seconds
Minimum Display Resolution:	0.01ppm
Repeatability	<10% of full-scale
Linearity	<10% of full-scale
Long Term Sensitivity Drift:	<10% per 6 months

Configuration:

XgardIQ Display Name:	HF
Range:	0-10 ppm
Maximum User-Selectable Range:	0-10ppm
Minimum Recommended User-Selectable Range:	0-2ppm
Alarm 1 Threshold	1.8ppm
Alarm 2 Threshold	3ppm
Stabilisation Time	60 seconds

Product Notes and Calibration Instructions:

Crowcon recommends HF sensors are initially calibrated on commissioning and re-calibrated every 6 months minimum, with a bump-test on intervening 3 month periods.

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

Due to the highly reactive and unstable nature of HF gas, Crowcon recommends calibration is performed using 10ppm Hydrogen Chloride (HCl). The sensor must be zeroed in clean air before calibration is performed.

Sensors may be calibrated with HCl either from a 10-litre Tedlar bag or a calibration gas cylinder. 10ppm HCl should be applied at a flow-rate of 0.5 - 1 litre per minute. **The XgardIQ transmitter must be set to read 8ppm HF with 10ppm HCl applied.**

Note: If calibration gas is applied from the cylinder, a stainless steel regulator and Teflon tube must be used. Gas must be flowed through the regulator and tube for 5 minutes before attempting calibration to allow for gas absorption into these materials.

Note: Chlorine is *not* suitable for calibrating HF sensors.

Note: the sensor must not be zeroed for at least 30 minutes after a bump-test or calibration action. This time period is required for re-stabilisation of the HF sensor.

Note: a dust filter accessory should not be used on an HF sensor module.

Cross-Sensitivity Data:

Gas	Concentration Used	Reading
Acetic Acid	100ppm	~80ppm
Alcohols (isopropyl alcohol)	11000ppm	<1ppm
Carbon Dioxide	4860ppm	0ppm
Carbon Monoxide	903ppm	0ppm
Chlorine	5ppm	>5ppm
Hydrocarbons (Methane)	18000ppm	<1ppm
Hydrogen	3000ppm	<1ppm
Hydrogen Chloride	10ppm	8ppm
Sulphur Dioxide	20ppm	<10ppm

Safety Information:

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.