

XgardIQ

Intelligent Gas Detector and Transmitter



Minimise the time operators spend in hazardous areas.



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When lives and property are at risk and you need gas detection equipment that is totally reliable, you need Crowcon. For over 45 years Crowcon has been developing and manufacturing high quality products with a reputation for reliability and technical innovation.

Crowcon fixed-point detectors have been proven in many arduous environments, including oil and gas exploration and production, petrochemicals, water treatment, chemical plants and steel mills. XgardIQ provides fail-safe detection of a very wide range of gases and vapours.



Product Description

XgardIQ is an intelligent and versatile gas detector and transmitter compatible with Crowcon's full range of sensor technologies. XgardIQ is available fitted with a variety of flammable, toxic and oxygen gas sensors and provides a bright OLED display with clear and comprehensive status information in a range of languages.

Confidence with Positive Safety

Bright LEDs indicate detector status at a glance; the unique Positive Safety LED confirms the detector is operating safely and alerts operators to any irregular events that may affect product integrity such as the ambient temperature exceeding sensor limits. When working safely, the blue LED remains on constantly. If any abnormal conditions are detected the LED will flash and a warning message will be displayed.

Flexible signal outputs

XgardIQ provides comprehensive and powerful output signal options; analogue 4-20mA signal with auto sink/source detection feature and RS-485 Modbus communications are provided as standard. Alarm and fault relays featuring heavy-duty changeover contacts, rated 230Vac 5A, are available at purchase or may be added at any time after installation. HART communications can be provided both over the analogue signal and via local I.S. terminals for diagnostics via any HART asset management system or hand-held device.

Improved safety

XgardIQ minimises the time personnel spend in potentially hazardous locations by using simple hot-swappable sensor modules. Sensors can be bump tested and calibrated in-situ or removed in seconds using one hand, and either replaced with a pre-calibrated sensor module or re-calibrated in a safe area before being re-fitted. All functions and adjustments can be made via the integral keypad without the need for special tools or hot-work permits.



Rugged and robust

ATEX and IECEx certified for use in Zone 1 and Zone 2 hazardous areas, XgardIQ has been designed for long-life operation in extreme environments. Featuring a rugged 316 stainless steel construction and a wide operating temperature range from -40°C to +75°C, XgardIQ is suitable for the most demanding applications.



XgardIQ Options

XgardIQ is compatible with Crowcon's full range of sensor technologies. The transmitter provides analogue 4-20mA and RS-485 Modbus signals as standard and HART communications is available as an option. A relay module may be fitted at the time of purchase, or retrofitted at any time. The 316 stainless steel enclosure has three cable entries suitable for either M20 or ½"NPT cable glands.

If XgardIQ is to be installed months ahead of scheduled commissioning, it can be supplied without a sensor module to avoid the possibility of the sensor being poisoned or expiring whilst inactive. The transmitter is supplied with a dummy sensor module to maintain dust and water ingress protection and sensor modules can be delivered and installed prior to commissioning.



Transmitter with Sensor

- Pre-calibrated flammable, toxic or oxygen sensor module
- Huge range of gas sensors.



Transmitter Only

- Enables transmitter to be installed in advance of commissioning
- Supplied with a dummy sensor module for weather protection
- Auto-configure function when the sensor module is plugged in.



Relays

- Simple plug-in module
- Heavy-duty 230Vac, 5A contacts
- Alarm 1, Alarm 2 and Fault relays
- On-delay and off-delay timers
- Can be retrofitted as needed.



HART Communications

- Enables diagnostics via asset management systems
- Local I.S. HART terminal connection
- Detectors can be installed on a HART addressable network.

Minimising risk

XgardIQ offers powerful features which minimise the time operators spend in hazardous areas performing routine maintenance.

Easy to use

Positive Safety indicator	Status checking at a glance and from a distance.
OLED display	Bright, clear display indicates gas level even in dark locations.
Buttons	Functions performed via buttons, without the need for special magnets or tools.
Event log	Clear history of detector use.

Simple installation and maintenance

Hot-swap sensor modules	Easily removed or replaced using one hand without requiring hot work permit or special tools.
Auto-sense function	Automatically detects whether the control system is 4-20mA current sink or source, saving time and faults.
Auto-configure function	Detects when sensor module is plugged in and uploads the appropriate gas type, range, units and alarm levels.
Smart Bump and Speedy Bump test	Sensor health and response verified quickly and easily following simple on-screen instructions. Detector automatically provides a reminder when next bump test is due.
Calibration due warning	Automatically reminds the user when calibration is due to ensure sensors remain accurate at all times.
Sensor range selection	Users can set the full-scale range of the sensor via the display menu according to site or specific location requirements.

Accessories

Dummy Sensor Module

Maintains IP rating of the XgardIQ transmitter when no sensor module is installed.



Calibration Cap

Clips to the XgardIQ transmitter or remote sensor housing for application of calibration/bump test gas.



Collector Cone

Clips to the sensor housing to aid detection of lighter-than-air gases such as hydrogen or methane.



Flow Adaptor

For gas sampling applications.



Splash Guard

For outdoor installations and sensor protection from water sprays. Includes pipe spigot for application of bump test gas.



Sun Shade

Protects the detector from elevated temperatures due to direct sunlight.



Pipe Mounting Kit

Stainless steel U-bolts, nuts and washers to enable XgardIQ to be rigidly mounted to a 50mm (2") pipe. Maximum pipe diameter: 60mm.



Gases and Ranges

Gas	Sensor Type	Units	Max Range*	Standard Range	Alarm 1 level [†]	Alarm 2 level [†]	Temp range °C
Ammonia (NH ₃)	Electrochemical	PPM	1000	50	25	35	-20 to +40
Carbon Monoxide (CO)	Electrochemical	PPM	1000	250	30	200	-30 to +50
Ethanol (C ₂ H ₆ O)	Pellistor	%LEL	100	100	20	40	+10 to +75
Hydrogen (H ₂)	Pellistor	%LEL	100	100	20	40	-40 to +75
Hydrogen Fluoride (HF)	Electrochemical	PPM	10	10	1.8	3	+5 to +40
Hydrogen Sulphide (H ₂ S)	Electrochemical	PPM	200	25	5	10	-30 to +50
LPG	Pellistor	%LEL	100	100	20	40	-40 to +75
Methane (CH ₄)	Pellistor	%LEL	100	100	20	40	-40 to +75
Oxygen (O ₂)	Electrochemical	%Vol	30	25	19 (falling)	17 (falling)	-20 to +50
Propane (C ₃ H ₈)	Pellistor	%LEL	100	100	20	40	-40 to +75
Pentane (C ₅ H ₁₂)	Pellistor	%LEL	100	100	20	40	-40 to +75
Sulphur dioxide (SO ₂)	Electrochemical	PPM	100	10	1	1	-30 to +50
Ammonia (NH ₃)	Pellistor	%LEL	25	25	10	20	-40 to +75
Acetone (CH ₃) ₂ CO	Pellistor	%LEL	100	100	20	40	-40 to +75
Butane (C ₄ H ₁₀)	Pellistor	%LEL	100	100	20	40	-40 to +75
Carbon dioxide (CO ₂)	IR	PPM	3000	3000	500	1500	-20 to +50
Carbon dioxide (CO ₂)	IR	%Vol	5	2	0.5	1.5	-20 to +50
Chlorine (Cl ₂)	Electrochemical	PPM	20	5	0.5	0.5	-20 to +40
Chlorine dioxide (ClO ₂)	Electrochemical	PPM	1	1	0.1	0.3	-20 to +40
Acetylene (C ₂ H ₂)	Pellistor	%LEL	100	100	20	40	-40 to +75
Ethylene (C ₂ H ₄)	Pellistor	%LEL	100	100	20	40	-40 to +75
Ethylene oxide (ETO)	Electrochemical	PPM	100	10	1	5	-20 to +50
Heptane (C ₇ H ₁₆)	Pellistor	%LEL	100	100	20	40	-40 to +75
Hexane (C ₆ H ₁₄)	Pellistor	%LEL	100	100	20	40	-40 to +75
Hydrogen (H ₂)	Electrochemical	PPM	2000	2000	500	1000	-20 to +40
Hydrogen (H ₂)	Electrochemical	%LEL	100	100	20	40	-20 to +40
Hydrogen chloride (HCl)	Electrochemical	PPM	30	10	1	5	-20 to +40
Hydrogen cyanide (HCN)	Electrochemical	PPM	30	25	5	10	-40 to +40
Isopropanol (C ₃ H ₈ O)	Pellistor	%LEL	100	100	20	40	-40 to +75
Methanol (CH ₃ OH)	Pellistor	%LEL	100	100	20	40	-40 to +75
Nitric oxide (NO)	Electrochemical	PPM	100	25	5	10	-30 to +50
Nitrogen dioxide (NO ₂)	Electrochemical	PPM	100	10	1	1	-20 to +50
Ozone (O ₃)	Electrochemical	PPM	1	1	0.1	0.2	-20 to +40
Propylene (C ₃ H ₆)	Pellistor	%LEL	100	100	20	40	-40 to +75
Toluene (CH ₃)	Pellistor	%LEL	100	100	20	40	-40 to +75
Xylene (C ₈ H ₁₀)	Pellistor	%LEL	100	100	20	40	-40 to +75

* NOTE: Measuring ranges are user-selectable on the XgardIQ transmitter

[†] NOTE: Alarm levels are user-adjustable on the XgardIQ transmitter

Gases highlighted in blue are available for order
Contact Crowcon for gases highlighted in grey

Specification

Size	XgardIQ transmitter	H278 x W140 x D89mm (10.9 x 5.5 x 3.5ins)
Weight	XgardIQ transmitter	4.1kg (9lbs, stainless steel)
Enclosure material		316 stainless steel
Ingress Protection		IP66
Connection		Three M20 or 1/2" NPT cable gland entries. Certified, removable plugs are fitted to left-hand and lower right-hand entries
Power		14-30Vdc. < 4W
Display	Main display	OLED 128 x 64 pixels, yellow text on black background
	Indicators	Amber, Red and Green LEDs for detector status Blue Positive Safety LED
Electrical output		4-20mA current sink or source (auto-sense or manual selection) Warning and fault signals are configurable NAMUR NE 43 compliant
		RS-485 Modbus RTU
		HART 7 over 4-20mA signal and via local I.S. test points (optional)
		Foundation Fieldbus (option pending, contact Crowcon)
	Relays (optional)	Alarm 1, Alarm 2, Fault SPDT contacts rated 5A, 230Vac (Fault relay: SPST contacts)
	Relay configuration options	Energised or de-energised Latching or non-latching Rising or falling Configurable On and Off delays for alarm relays
Event logging		Records alarm, fault and maintenance events. Events can be viewed on-screen and downloaded to a PC
Operating temperature		Transmitter only: -40°C to +75°C (-40°F to 167°F) Note: sensor operating temperatures vary, refer to Gases and Ranges table
Humidity		Transmitter only: 0 to 95% RH non-condensing Note: sensor humidity operating range may vary. Contact Crowcon for specific sensor data
Repeatability		+/- 2% FSD
Zero drift		+/- 2% FSD per year maximum
Response time		Sensor dependant: contact Crowcon for specific sensor data
Performance	Tested in accordance with:	EN60079-29-1 (flammable gas sensors)* EN50104 (oxygen sensors)* EN45544 (toxic gas sensors)*
Functional safety		IEC61508, EN50402, SIL 2*
Approvals		ATEX and IECEx Ex II 2 G Ex db ia IIC T4 Gb (Tamb -40°C to +75°C)
EMC compliance		EN50270 FCC CFR47 Part 15B

*Features outstanding at the time of issue, contact Crowcon for details.

Complementary Products



IRmax
Infrared hydrocarbon gas detector



SafeEye 900 Series
Open Path gas detectors



SharpEye 40/40 Series
Flame detectors



Crowcon reserves the right to change the design or specification of the product without notice.

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