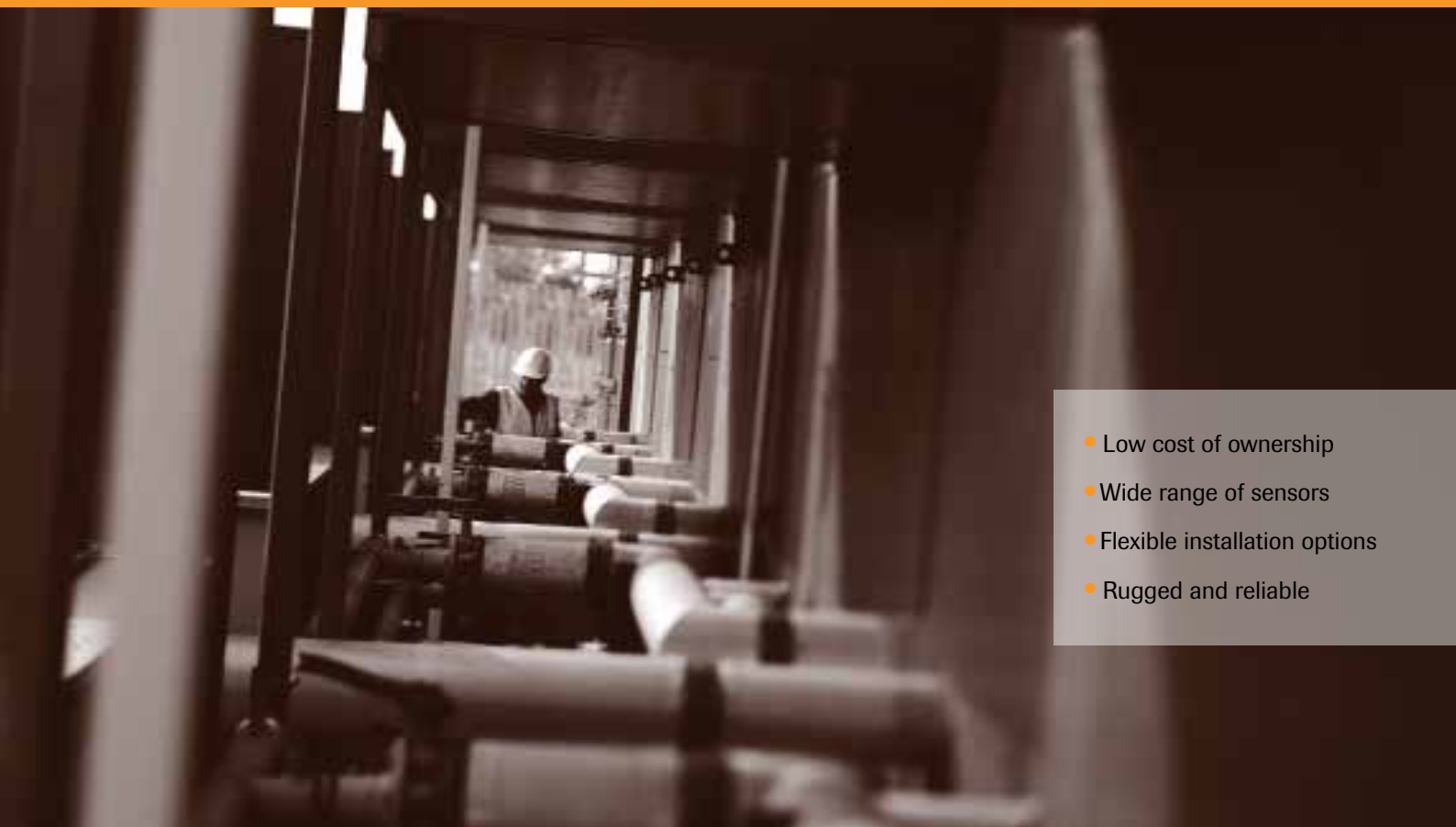


Xgard

Fixed Gas Detectors



- Low cost of ownership
- Wide range of sensors
- Flexible installation options
- Rugged and reliable

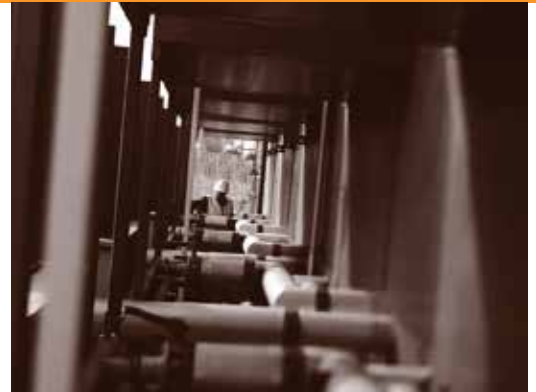


Xgard

Fixed Gas Detectors

When lives and property are at risk and you need gas detection equipment that is totally reliable, you need Crowcon. For over 40 years Crowcon has been developing and manufacturing high quality products with a reputation for reliability and technical innovation.

The Xgard range of gas detectors has been specifically designed to meet your requirements. The dangers presented by toxic and flammable gases as well as oxygen deficiency vary with each application.



Choose the gas detector for your needs

Xgard offers three different sensor concepts so you can choose exactly what you need for your site. Xgard is available in flameproof, intrinsically safe, or safe area formats for use in all environments, whatever the classification.

Low cost of ownership

Xgard detectors are designed for easy installation and maintenance to keep costs down.

The three junction box options are all designed to make replacement of sensors and sinters extremely simple. Spare sensors simply plug-in.

Many spare parts are common to all Xgard models, which keeps spares holding requirements to a minimum.

Flexible installation options

Xgard is designed for either wall or ceiling mounting without the need for additional brackets.

Xgard can accommodate M20, 1/2" NPT or 3/4" NPT cable glands to suit all site requirements.

High temperature models are available for hot environments (up to 150°C).

Accessories are available for duct mounting and sampling applications as well as remote gassing for simple sensor checking.

Wide range of sensors

Poison resistant pellistors, for all flammable detection needs including hydrocarbons, hydrogen, ammonia, jet fuel, leaded petrol and vapours containing halogens.

Electrochemical sensors are used to detect a vast range of toxic gases and oxygen.

Thermal conductivity sensors are available to monitor % volume concentrations of gases.

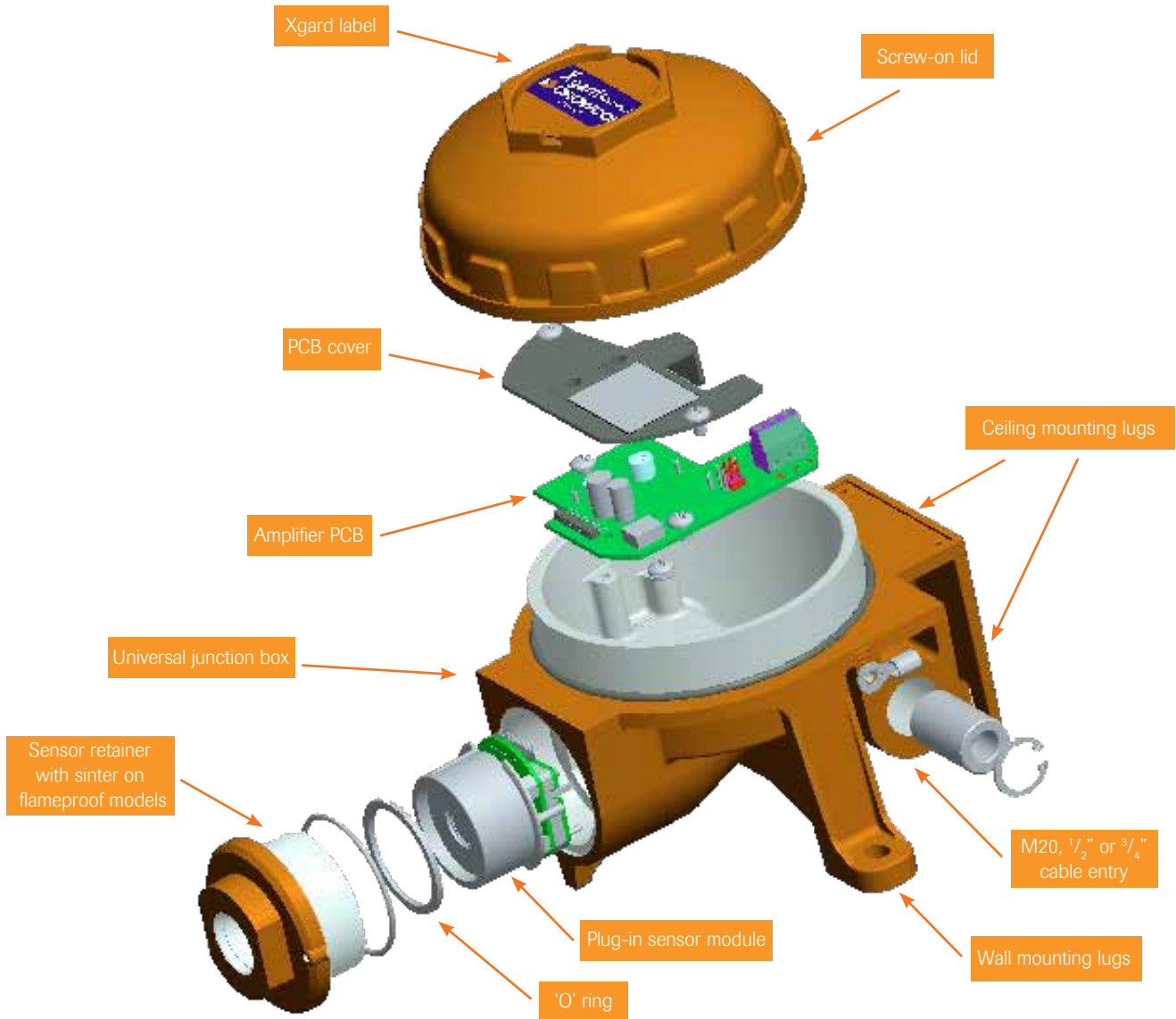
Rugged and reliable

Xgard is manufactured using a choice of three materials: glass reinforced nylon, highly durable aluminium with a tough polyester coating, or 316 stainless steel for ultimate corrosion resistance. All versions are designed to operate even in the harshest conditions.

Spray deflectors and weatherproof caps are available for use in areas subject to regular wash-downs, or offshore environments.

All models have been validated to the functional safety standard IEC 61508 (SIL 1 to SIL 3).

Please see the back page for full technical specifications.



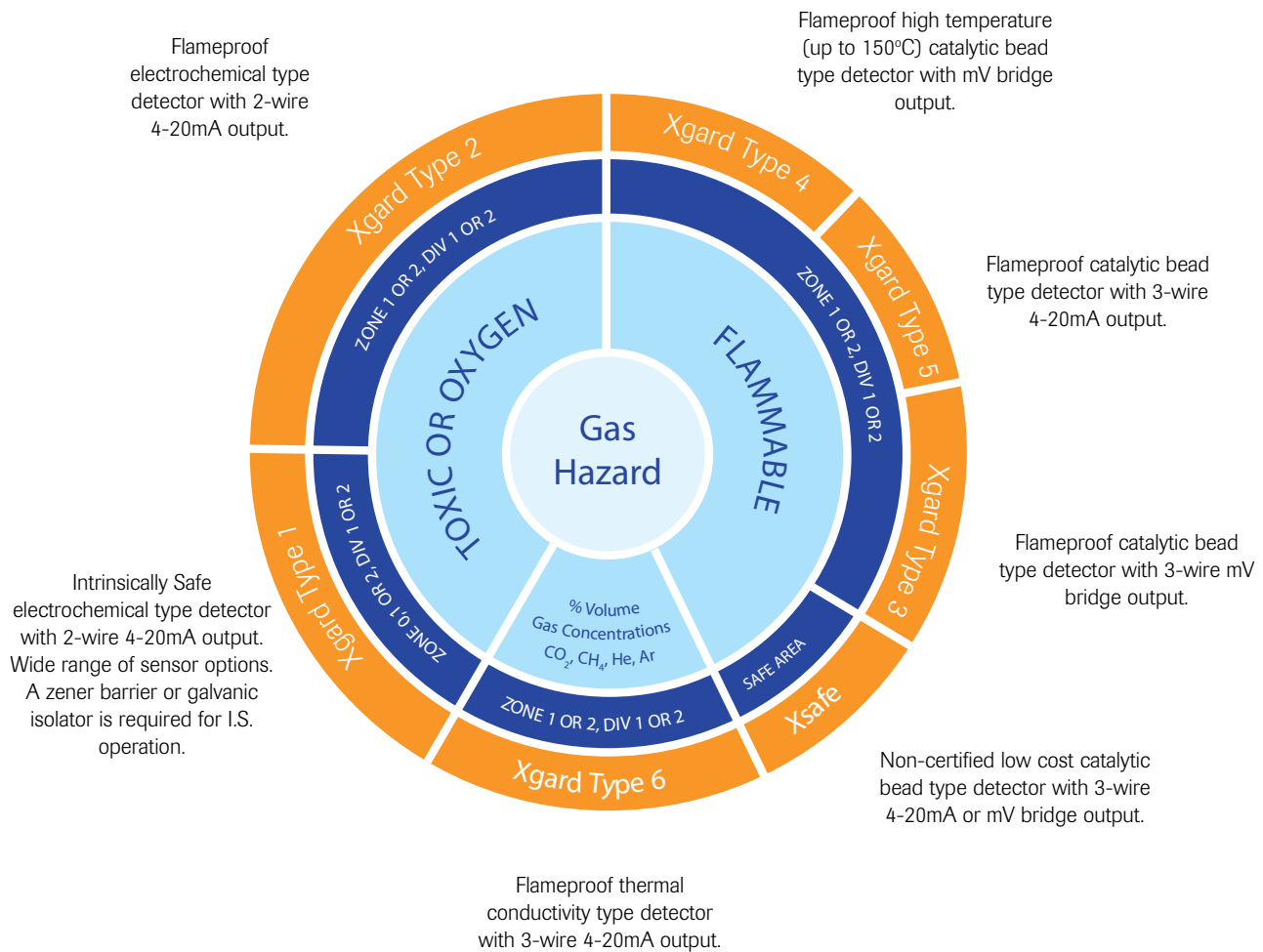
Accessories

(all accessories require an Accessory Adaptor to be fitted to the Xgard junction box)

| Spray Deflector | Sun Shield | Weatherproof Cap | Collector Cone | Flow Adaptor | Accessory Adaptor |
|---|---|---|---|---|---|
| For outdoor use and protection against wash-down operations. | For use where a detector is installed in direct sunlight | For use in very wet conditions, such as offshore installations and ships. | For aiding detection of gases which are lighter than air, such as hydrogen and methane. | For use in sampling applications. | For fitting accessories to Xgard. |
|  |  |  |  |  |  |

Detector Selector

The Xgard range offers a comprehensive selection of fixed point gas detectors that meet the diverse requirements for flammable and toxic gas detection and oxygen monitoring in industries throughout the world. This diagram is designed to help you choose the correct Xgard detector to suit your needs.



Ordering Requirements

The following code is designed to help in the selection of the correct detector. The product reference number should be compiled by inserting the appropriate integer in each box.

| Detector | Type No. | Type No. Code | Enclosure Code | Cable Entry Code | Certification Code | Gas Type | Range | | | |
|----------|----------|---------------|-------------------|------------------|--------------------|----------|---------|----------------|-----------------|----------------|
| XGARD | Type 1 | 1 | Standard*1 | A | M20 | M20 | ATEX AT | Abbreviated up | From selection | |
| XSAFE | Type 2 | 2 | Stainless Steel*2 | S | 1/2" NPT | 1/2" | UL | UL | to 8 characters | shown on table |
| | Type 3 | 3 | | | 3/4" NPT | 3/4" *3 | | | | |
| | Type 4 | 4 | | | | | | | | |
| | Type 5 | 5 | | | | | | | | |
| | Type 6 | 6 | | | | | | | | |
| | XSAFE | XS | | | mV or mA | | | | | |

*1: Xgard Type 1 ATEX certified detectors will be supplied in a glass-reinforced nylon enclosure as standard, or in a 316 stainless steel enclosure as an option. Xgard Type 1 UL certified detectors and all other Xgard Types will be supplied in aluminium as standard, or in a 316 stainless steel enclosure as an option.

*2: The stainless steel option is not available for Xsafe and Xgard Type 4. Example product reference for an I.S. 0-25ppm H₂S detector with ATEX certification and M20 cable entry in a standard (nylon) junction box: XGARD/1/A/M20/AT/H2S/25.

*3: 3/4" NPT cable entry available on the aluminium enclosure only.

Xgard gases and ranges:

| | LTEL (ppm) LEL (% Vol) | STEL (ppm) UEL (% Vol) | Range Available: Type 1 | Range Available: Type 2 | Ranges Available: Type 3, 4, 5 & Xsafe | Range Available: Type 6 |
|--|-----------------------------------|-----------------------------------|--|---|---|---|
| Acetylene (C ₂ H ₂) | 2.3 | 100 | - | - | 0- 100% LEL* | - |
| Ammonia (NH ₃) | 25 15 | 35 33.6 | 50, 100, 250, 500, 1000 ppm | - | 0- 25% LEL* | - |
| Argon (Ar) | - | - | - | - | - | Contact Crowcon |
| Arsine (AsH ₃) | 0.05 | - | 1 ppm | - | - | - |
| Bromine (Br ₂) | 0.1 | 0.2 | 3 ppm | - | - | - |
| Butane (C ₄ H ₁₀) | 1.4 | 9.3 | - | - | 0-100% LEL* | - |
| Carbon dioxide (CO ₂) | 5000 (0.5% Vol) | 15000 (1.5% Vol) | - | - | - | Contact Crowcon |
| Carbon monoxide (CO) | 30 | 200 | 50, 100, 200, 250, 500, 1000, 2000 ppm | 50, 100, 200, 250, 500, 1000, 2000 ppm | - | - |
| Chlorine (Cl ₂) | - | 0.5 | 3, 5, 10, 20, 50, 100 ppm | - | - | - |
| Chlorine Dioxide (ClO ₂) | 0.1 | 0.3 | 1 ppm | - | - | - |
| Diborane (B ₂ H ₆) | 0.1 | - | 1 ppm | - | - | - |
| Ethane (C ₂ H ₆) | 2.4 | 15.5 | - | - | 0-100%* LEL | - |
| Ethylene (C ₂ H ₄) | 2.3 | 36 | - | - | 0-100%* LEL | - |
| Ethylene oxide (C ₂ H ₄ O) | 5 | - | 10, 50, 100 ppm | - | - | - |
| Fluorine (F ₂) | 1 | 1 | 1 ppm | - | - | - |
| Germane (GeH ₄) | 0.2 | 0.6 | 2 ppm | - | - | - |
| Helium (He) | - | - | - | - | - | Contact Crowcon |
| Hydrogen (H ₂) | 4 | 77 | 200, 2000 ppm | 200, 2000 ppm 100% LEL | 0- 100%* LEL 50% LEL, 100% LEL | 0-5%, 10%, 50% vv (in air) 0-20%, 25%, 30%, 50% vv (H ₂ in N ₂) |
| Hydrogen chloride (HCl) | 1 | 5 | 10, 25 ppm | - | - | - |
| Hydrogen cyanide (HCN) | - | 10 | 25 ppm | - | - | - |
| Hydrogen fluoride (HF) | 1.8 | 3 | 10 ppm | - | - | - |
| Hydrogen sulphide (H ₂ S) | 5 | 10 | 5, 10, 20, 25, 50, 100, 200, 250, 300, 1000 ppm | 5, 10, 20, 25, 50, 100, 200 ppm | - | - |
| LPG | 2 | 10 | - | - | 0-100% LEL | - |
| Methane (CH ₄) | 4.4 | 17 | - | - | 0-100% LEL | - |
| Nitric Oxide (NO) | 5*1 | 5*1 | 25, 50, 100 ppm | - | - | - |
| Nitrogen dioxide (NO ₂) | 1*1 | 1*1 | 10, 50, 100 ppm | - | - | - |
| Ozone (O ₃) | - | 0.2 | 1ppm | - | - | - |
| Oxygen (O ₂) | - | - | 25% Vol | 25% Vol | - | - |
| Pentane (C ₅ H ₁₂) | 1.1 600ppm | 8.7 1800ppm | - | - | 0-100% LEL* | - |
| Petrol vapour | 1.4 | 6 | - | - | 0- 100% LEL* | - |
| Phosgene (COCl ₂) | 0.02 | 0.06 | 1 ppm | - | - | - |
| Phosphine (PH ₃) | 0.1 | 0.2 | 1 ppm | - | - | - |
| Propane (C ₃ H ₈) | 1.7 | 10.9 | - | - | 0-100% LEL | - |
| Silane (SiH ₄) | 0.5 | 1 | 1 ppm | - | - | - |
| Sulphur Dioxide (SO ₂) | 1*1 | 1*1 | 10, 20, 50, 100, 250 ppm | - | - | - |
| Vinyl chloride (VCM) (CH ₂ = CHCl) | 3.6 3 | 33 - | - | - | 0-100% LEL* | - |
| Volatile organics (VO)*2 | - | - | 0- 100 ppm *2 | - | - | - |

Notes:

Other sensors and ranges may be available, please contact Crowcon.

*Ranges not available for Xsafe or Xgard Type 4

LEL & STEL figures are derived from the UK HSE document: EH40 2011. Alternative thresholds may apply in countries outside of the UK

LEL figures derived from EN60079-20-1: 2010

*1 Current limits advised in the UK

*2 Nominal 0-100ppm range with Carbon Monoxide (CO). Contact Crowcon for a full list of gases that can be detected using this sensor

Xgard Specification:

| | Type 1 | Type 2 | Type 3 | Type 4 | Type 5 | Type 6 | Xsafe |
|-------------------------------------|--|---|--|--|--|---|---|
| Size | 156 x 166 x 111mm (6.1 x 6.5 x 4.3 inches) | | 195 x 166 x 111mm (7.6 x 6.5 x 4.3 inches) | | 156 x 166 x 111mm (6.1 x 6.5 x 4.3 inches) | | |
| Weight | Nylon: 0.5kg (1.1 lbs) Alloy: 1kg (2.2 lbs) 316 S/S: 3.1kg (6.8 lbs) | Aluminium: 1kg (2.2 lbs) Stainless steel: 3.1kg (6.8lbs) | | 1.5kg (3.3 lbs) | Aluminium: 1kg (2.2 lbs) Stainless steel: 3.1kg (6.8lbs) | | 1kg (2.2 lbs) |
| Enclosure material | ATEX certified: Glass reinforced nylon or 316 S/S UL Certified: Aluminium or 316 S/S | | Aluminium or 316 Stainless Steel | | Aluminium | Aluminium or 316 Stainless Steel Aluminium | |
| Ingress protection | IP65 | | | IP54 | IP65 | | |
| Cable entries | 1 x M20, 1/2 "NPT or 3/4 NPT* on right-side | | | | | | |
| Terminations | 0.5 to 2.5mm ² | | | | | | |
| Sensor types | Electrochemical | | Catalytic bead | 316 S/S sensor housing with catalytic beads | Catalytic bead | Thermal conductivity | Catalytic bead |
| Operating temperature | -40 to +50°C (-40 to 122°F) (Sensor dependant) | -20 to +50°C (-4 to 122°F) (Sensor dependant) | -40 to +80°C (-40 to 176°F) | -20 to +150°C (-4 to 302°F) | -40 to +55°C (-40 to 131°F) | +10 to +55°C (50 to 301°F) | mV: -40 to +80°C (-40 to 176°F) mA: -40 to +55°C (-40 to 131°F) |
| Humidity | 15-90% RH non-condensing | | 0-99% RH non-condensing | | | 0-90% RH | 0-99% RH |
| Repeatability Zero drift | <2% FSD (Typical) <2% FSD per Month (Typical) | | | | | | |
| Response time | T90 <15s Oxygen T90 <30s to 120s Toxic (sensor dependant) | | T90 <15s (Typical) | | | | |
| Operating voltage | 8- 30V dc | | 2.0V dc +/- 0.1V (Typical) | | 10-30V dc | | mA: 10- 30V dc mV: 2.0Vdc |
| Power requirements | 24mA maximum | | 300mA (Typical) | | 50mA at 24V dc 1.2W | | mA: 50mA at 24V dc 1.2W mV: 300mA (Typical) |
| Electrical output | 2-wire 4-20mA (current sink) | | 3- wire mV bridge Typical signal: 12-15 mV/ %LEL CH4 | 3- wire mV bridge Typical signal: >10 mV/ %LEL CH4 | 3- wire 4-20mA (current sink or source) | | mA: 3- wire 4-20mA (current sink or source) mV: 3- wire mV bridge Typical signal: 12-15mV/ %LEL CH4 |
| Approvals | ATEX: II 1 G Exia IIC T4 Ga (Tamb -40 to +55°C) UL/cUL: Class I, Div. 1 Groups A, B, C, D IECEX GOST-R | ATEX: II 2 GD Exd IIC T6 Gb (Tamb -40 to +50°C) UL: Class I, Div. 1 Groups B, C, D IECEX GOST-R | ATEX: II 2 GD Exd IIC T4 Gb (Tamb -40 to +80°C) Exd IIC T6 Gb (Tamb -40 to +50°C) Ex tb IIIC T180°C Db UL: Class I, Div. 1 Groups B, C, D IECEX GOST-R | ATEX: II 2 GD Exd IIC T3 Gb (Tamb -40 to +150°C) | ATEX: II 2 GD Exd IIC T6 Gb (Tamp -40 to +50°C) Exd IIC T4 Gb (Tamb -40 to +80°C) Ex tb IIIC T180°C Db UL: Class 1, Div. 1 Groups B, C, D IECEX GOST-R | | Not certified for use in hazardous environment. |
| EMC compliance | EN 50270 FCC Part 15 ICES- 003 | | | | | | |

* 3/4" cable entry only available on aluminium junction boxes

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

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