



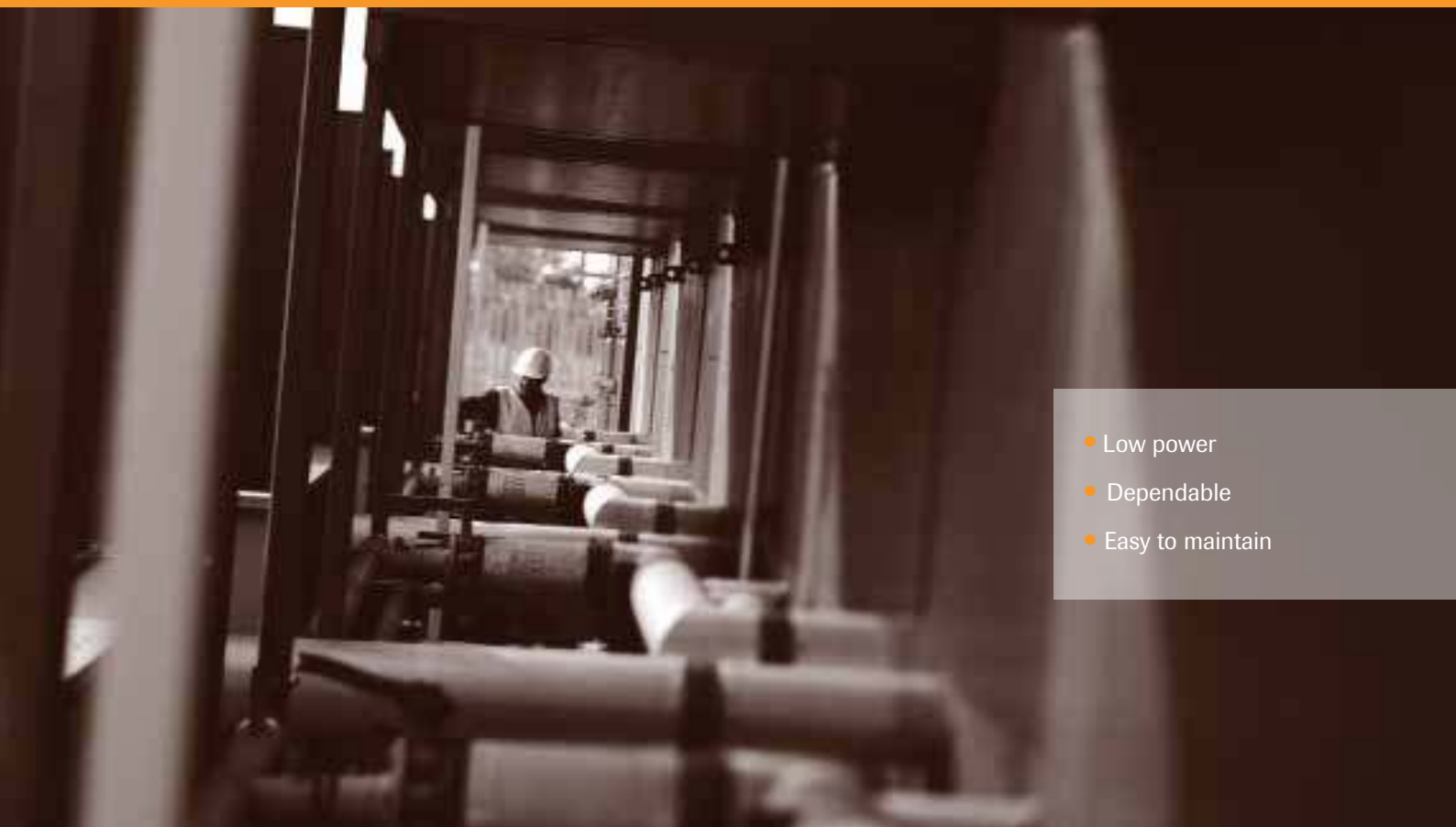
THORNE &
DERRICK
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CROWCON
Detecting Gas Saving Lives

IREX

Fixed Point Gas Detectors



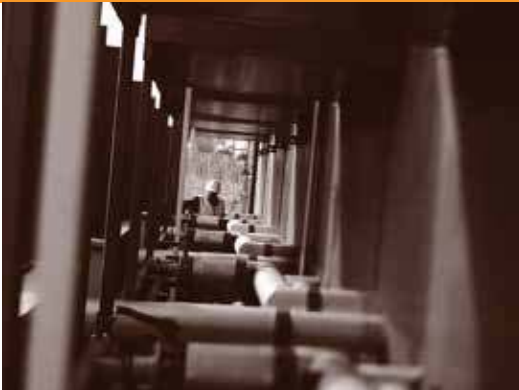
- Low power
- Dependable
- Easy to maintain



Pellistor Exchange IR Gas Detector

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.

Crowcon fixed detectors have been proven in many arduous environments, including oil and gas exploration, water treatment, and steel and chemical plants. IREX offers uniquely low powered, fail-safe detection of hydrocarbon gases and vapours.



Choosing the fixed gas detector for your needs

The IREX concept enables pellistor-based gas detection systems to be upgraded to dual-wavelength IR gas detector technology without incurring the very significant costs associated with upgrading the control system and re-installation.

IREX is an innovative infrared (IR) flammable gas detector designed specifically to directly replace pellistor (catalytic bead) type flammable gas detectors. IREX operates from control systems designed solely for use with pellistor-based gas detectors: it produces a mV Wheatstone Bridge type signal (as per a pellistor) and operates from as little as 2.9Vdc. IREX can be directly connected to a control system, or can be supplied with an M20 'spigot gland' enabling originally installed detector junction boxes and cables to be retained. Pellistor sensor technology has provided effective flammable gas detection at low cost for many years. Pellistors do however have several disadvantages:

IR Technology Verses Pestillor Gas Sensors

Pellistors do not fail safe	Sensors can be 'poisoned' and rendered insensitive to gas by silicones, lead, sulphurs and chlorinated compounds
Pellistors are high-maintenance	Sensors must be regularly tested with gas to ensure they are still operational. Sensors typically last 3-5 years, after which they must be exchanged
Pellistors must be operated behind a sinter (flame arrestor)	Sinters may become blocked, thus preventing gas from reaching the sensor
Pellistors may burn-out	If exposed to gas concentrations in excess of 110% LEL
Pellistors need oxygen	Their ability to detect gas reduces significantly in oxygen deficient atmospheres

All of these issues are overcome using IREX.



Low power

IREX consumes less than 1W of power	Ensures compatibility with a wide range of control systems
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Dependable

Independently tested for reliability and performance in harsh offshore conditions by Micropack Engineering Ltd	Demonstrates IREX will operate dependable in any application
3rd party approval to the performance standard EN60079-29-1	
Employs sophisticated systems and algorithms	Ensures reliable operation at all times
T90 response time of less than 4 seconds	Rapid indication of hydrocarbon gas hazards
Optical components are treated with a STAY-CLIR coating	Prevents partial obscuration in condensing atmospheres

Easy to maintain

No adjustments are necessary at the detectors, zero and span adjustments (if required) are performed at the control panel only	Saves significant time and cost
Test can be applied remotely via a tube to the standard weather cover	
Sinter free operation	Unlike a pellistor sensor: there is no risk of a sinter becoming blocked

IREX accessories

Spigot gland

For mounting IREX to existing M20 junction box



Auxiliary junction boxes

Exd or Exe certified



Mounting bracket

Suitable for wall or pipe mounting (not required if spigot gland is used)



PC communications kit



Calibration cap

(Required if ambient air speed exceeds 2m/s)



2" pipe mounting kit

Please see the back page for full technical specifications.

IREX Specifications:

Size	120 x 55 x 130mm (1.7 x 5.1 x 3.3ins) (with spigot gland)
Weight	1.5kg (10.8oz)
Enclosure material	316 stainless steel
Ingress protection	IP66
Power	800mW nominal
Connection	Supplied either with M20 spigot gland for insallation into existing junction boxes or with one M20 cable gland entry
Operating voltage and current	3Vdc nominal (2.9-3.2Vdc) 260mA nominal (260-280mA)
Electrical output	3-wire mV (Wheatstone) Bridge. Typically 10-20mV per % vol. methane
Operating temperature	-40 to +75°C
Humidity	0-100% RH non-condensing
Repeatability	+/- 2% FSD
Zero drift	+/- 2% FSD per year maximum
Response time	T-90 <4 seconds
Performance	Tested in accordance with EN60079-29-1
Functional safety	Validation to IEC61508 SIL 2
Approvals	II 2 G Exd IIB + H ₂ T6 (-40 to +50°C) T4 (-40 to +75°C) ATEX & IECEx
EMC compliance	EN 50270, FCC, ICES-003

Linearisation	Range
Methane (CH₄)	0-20, 50, 100% LEL
Acetone (C₃H₆O)	0-100% LEL
Butane (C₄H₁₀)	0-100% LEL
Ethanol (C₂H₅OH)	0-100% LEL
Ethylene (C₂H₄)	0-100% LEL
Ethyl acetate (C₄H₈O₂)	0-100% LEL
Heptane (C₇H₁₆)	0-100% LEL
Hexane (C₆H₁₄)	0-100% LEL
LPG	0-100% LEL
Octane (C₈H₁₈)	0-100% LEL
Methanol (CH₃OH)	0-100% LEL
Pentane (C₅H₁₂)	0-100% LEL
Petrol vapour	0-100% LEL
Propane (C₃H₈)	0-100% LEL
Propylene (C₃H₆)	0-100% LEL
THF (Tetrahydrofuran) (C₄H₈O)	0-100% LEL
Xylene (C₈H₁₀)	0-100% LEL
Methyl acetate (C₃H₆O₂)	0-100% LEL
Propylacetate (C₆H₁₀O₂)	0-100% LEL
Hexene (C₆H₁₂)	0-100% LEL
Paraxylene (C₈H₁₀)	0-100% LEL
Ethane (C₂H₆)	0-100% LEL
Ethylene dichloride (EDC)	0-100% LEL
Cyclohexane (C₆H₁₂)	0-100% LEL
Butadiene (C₄H₆)	0-100% LEL
Toluene (C₇H₈)	0-100% LEL
Butene (C₄H₈)	0-100% LEL
Hexane (C₆H₁₄)	0-100% LEL
Styrene (C₈H₈)	0-50% LEL

Other ranges may be available, contact Crowcon.



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