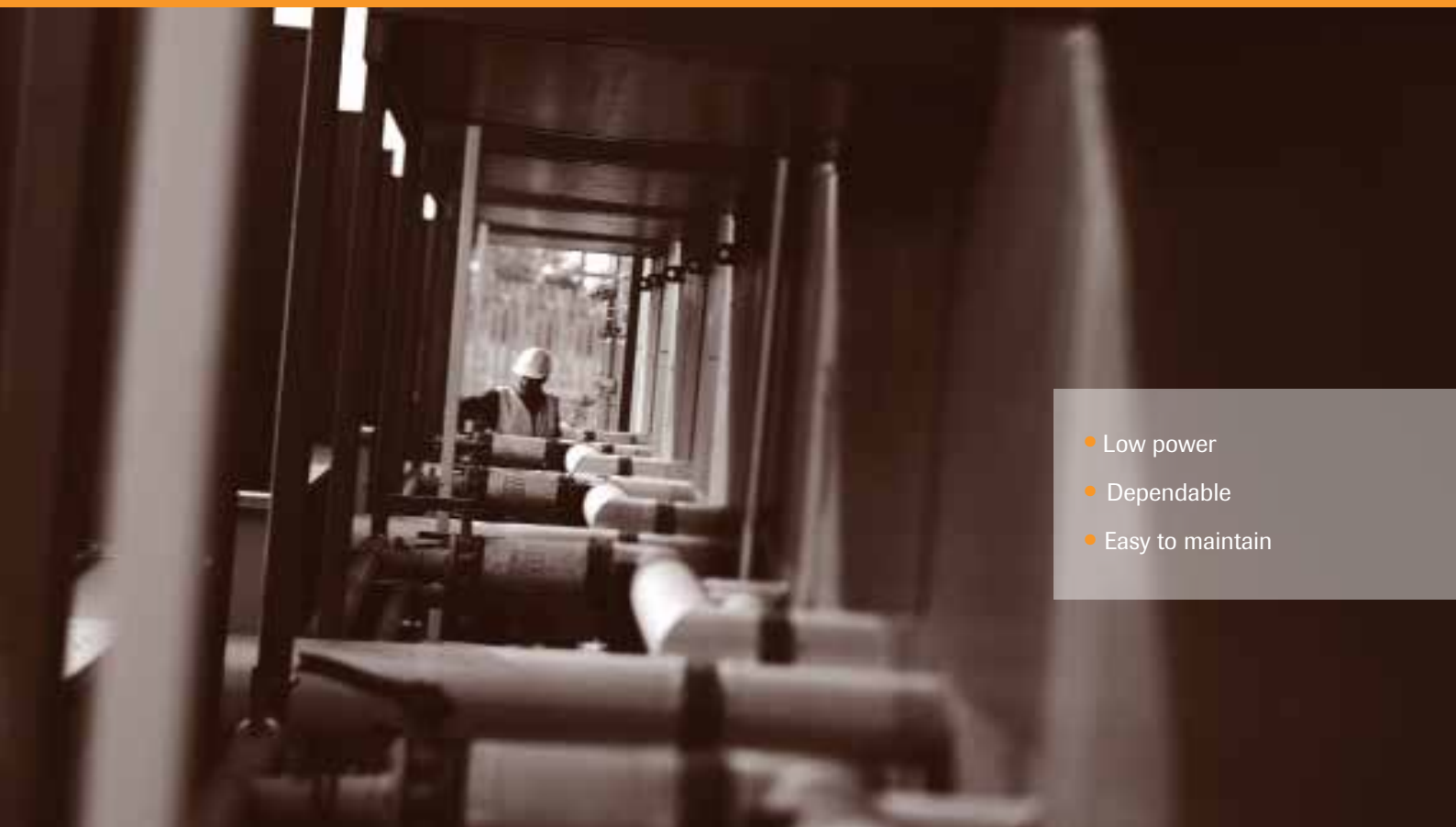


# IREX

## 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.

## IRES Specifications:

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

Linearisation	Range
Methane (CH <sub>4</sub> )	0-20, 50, 100% LEL
Acetone (C <sub>3</sub> H <sub>6</sub> O)	0-100% LEL
Butane (C <sub>4</sub> H <sub>10</sub> )	0-100% LEL
Ethanol (C <sub>2</sub> H <sub>5</sub> OH)	0-100% LEL
Ethylene (C <sub>2</sub> H <sub>4</sub> )	0-100% LEL
Ethyl acetate (C <sub>4</sub> H <sub>8</sub> O <sub>2</sub> )	0-100% LEL
Heptane (C <sub>7</sub> H <sub>16</sub> )	0-100% LEL
Hexane (C <sub>6</sub> H <sub>14</sub> )	0-100% LEL
LPG	0-100% LEL
Octane (C <sub>8</sub> H <sub>18</sub> )	0-100% LEL
Methanol (CH <sub>3</sub> OH)	0-100% LEL
Pentane (C <sub>5</sub> H <sub>12</sub> )	0-100% LEL
Petrol vapour	0-100% LEL
Propane (C <sub>3</sub> H <sub>8</sub> )	0-100% LEL
Propylene (C <sub>3</sub> H <sub>6</sub> )	0-100% LEL
THF (Tetrahydrofuran) (C <sub>4</sub> H <sub>8</sub> O)	0-100% LEL
Xylene (C <sub>8</sub> H <sub>10</sub> )	0-100% LEL
Methyl acetate (C <sub>3</sub> H <sub>6</sub> O <sub>2</sub> )	0-100% LEL
Propylacetate (C <sub>5</sub> H <sub>10</sub> O <sub>2</sub> )	0-100% LEL
Hexene (C <sub>6</sub> H <sub>12</sub> )	0-100% LEL
Paraxylene (C <sub>8</sub> H <sub>10</sub> )	0-100% LEL
Ethane (C <sub>2</sub> H <sub>6</sub> )	0-100% LEL
Ethylene dichloride (EDC)	0-100% LEL
Cyclohexane (C <sub>6</sub> H <sub>12</sub> )	0-100% LEL
Butadiene (C <sub>4</sub> H <sub>6</sub> )	0-100% LEL
Toluene (C <sub>7</sub> H <sub>8</sub> )	0-100% LEL
Butene (C <sub>4</sub> H <sub>8</sub> )	0-100% LEL
Hexane (C <sub>6</sub> H <sub>14</sub> )	0-100% LEL
Styrene (C <sub>8</sub> H <sub>8</sub> )	0-50% LEL

Other ranges may be available, contact Crowcon.

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

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