DYNAMENT
INFRARED GAS SENSORS

**Product Datasheet**
**DS0003**

# Platinum Series Dual Gas – Hydrocarbon and Carbon Dioxide Sensor

For detection of hydrocarbons and carbon dioxide


Dynament infrared sensors operate by using the NDIR principle to monitor the presence of the target gas. The sensor contains a long life tungsten filament infrared light source, an optical cavity into which gas diffuses, a dual temperature compensated pyroelectric infrared detector, an integral semiconductor temperature sensor and electronics to process the signals from the pyroelectric detector.

## FEATURES

- Available in 2 power variants, 80mA and 15mA
- Industrial Ex d IIC Certified, Mining M1 Certified available for all variants
- SIL1 certification available for all variants
- All sensors carry a 5-year warranty
- Measures methane from 0 to 100% volume with a resolution of 0.01 % for 0-5% methane and 0.1% for 5-100% volume
- Multiple gas ranges enable the accurate detection of 0-100% vol. methane, 0-2% vol. propane and 0-100% vol. carbon dioxide with one sensor
- Measures carbon dioxide from 0 to 5% volume with a resolution of 0.01 % and 0.1% for 5-100% volume
- Configuration available specifically for biogas measurement
- Offers reduced response times when compared with earlier versions
- User configurable using USB powered Premier Configuration Unit
- Output can be scaled in % volume or % LEL
- Internal Flash memory allowing sensor firmware updates via configuration unit
- Enhanced EMC protection

**Dynament Limited**
Hermitage Lane Industrial Estate, Kings Mill Way, Mansfield, Nottinghamshire, NG18 5ER, UK.
Tel: 44 (0)1623 663636
Email: sales@dynament.com · www.dynament.com · www.processsensing.com

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## HYDROCARBON SPECIFICATION

| | |
|---|---|
| **Methane measuring range:** | 0-5%, 0-100% volume or both |
| **Hydrocarbon measuring range** | 0-100% LEL equivalent |
| **Resolution:** | 0.01% for readings up to 5% volume methane<br>0.1% for readings from 5% up to 100% volume methane<br>0.01% propane for all readings |
| **Accuracy:** | ± 10% of the reading @ 20°C (68°F), 1 bar pressure, applied gas. |
| **Response Time $T_{90}$:** | <30s @ 20°C (68°F) ambient |
| **Zero Repeatability:** | ± 1% of full scale @ 20°C (68°F) ambient |
| **Span Repeatability:** | ± 2% of full scale @ 20°C (68°F) ambient |
| **Long term zero drift:** | ± 1% of full scale per month @20°C (68°F) ambient, (max ± 3% of full scale per year) |
| **Temperature performance:** * May not be applicable when using gas cross-reference factors | ± 0.1% volume or ± 10% of reading up to 50% of full scale, ± 15% of reading from 50% to 100% of full scale, or 2% of full scale whichever is greater over the range -20°C to +50°C (-4°F to 122°F) |

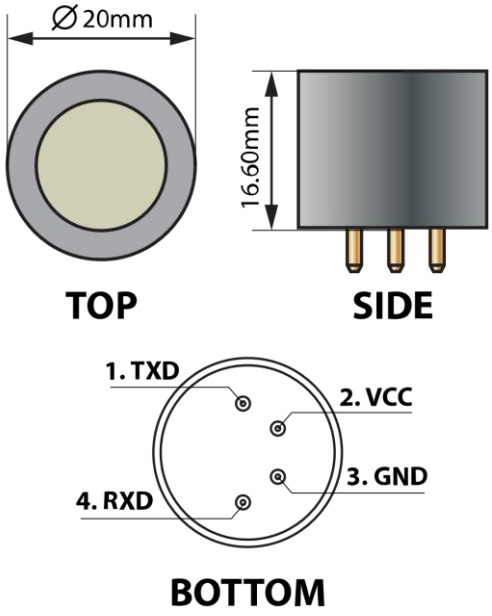
## CARBON DIOXIDE SPECIFICATION

| | |
|---|---|
| **Measuring range for low $CO_2$:** | 0 - 1%, 0-2%, 0-5% volume $CO_2$ |
| **Measuring range for high $CO_2$:** | 0-100% volume $CO_2$ |
| **Resolution:** | 0.01% for all readings up to 5% volume<br>0.1% for all readings 5%-100% volume |
| **Accuracy:** | ± 10% of the reading @ 20°C (68°F), 1 bar pressure, applied gas. |
| **Response Time $T_{90}$:** | <30s @ 20°C (68°F) ambient |
| **Zero Repeatability:** | ± 500ppm @ 20°C (68°F) ambient |
| **Span Repeatability:** | ± 500ppm @ 20°C (68°F) ambient |
| **Long term zero drift:** | ± 500ppm / month @ 20°C (68°F) ambient |
| **Temperature performance:** | ± 10% of reading up to 50% of full scale and ± 15% of reading from 50% to 100% of full scale over the range -20°C to +50°C (-4°F to 122°F) |

## GENERAL SPECIFICATION

| | |
|---|---|
| **Operating Voltage Range:** | 3.0 – 5.0 V d.c. |
| **Operating temperature range:** | -20°C to +50°C (-4°F to 122°F)<br>(-40°C to +75°C (-40°F to 167°F) for XTR) |
| **Warm up time:** | To final zero ± 2% full scale : Approximately 1 minute @ 20°C (68°F) ambient, some sensors may take longer |
| **Storage temperature range:** | -20°C to +50°C (-4°F to 122°F) |
| **Humidity range:** | 0 to 95% RH non-condensing. |
| **Digital signal format:** | 8 data bits, 1 stop bit, no parity. 2.8V logic level |
| **Warranty:** | 5 years |
| **Weight:** | 15 grams |
| **Pressure** | ± 5% of the calibration pressure to maintain the accuracy limits |

## MECHANICAL DETAIL




## COMPLIANCE AND REGULATIONS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