

Product Data Sheet

Product Datasheet

CAT 25 Combustible Gas Sensor

Document Purpose

The purpose of this document is to present the performance specification of the CAT 25 combustible gas sensor.

This document should be used in conjunction with Operating Instructions (7pelops).

The data provided in this document are valid at 20°C, 50% RH and 1013 mBar for 3 months from the date of sensor manufacture. Output signal can drift below the lower limit over time. For guidance on sensor performance outside of these limits and on the safe use of the sensor, please refer to the Operating Instructions.

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Performance Characteristics

MEASUREMENT

Operating Principle	Constant voltage
Gases Detected	Most combustible gases and vapours
Range	0-100% LEL
Maximum Methane Concentration	5% v/v
Sensitivity*	>25 mV/%methane
T90 Response Time*	<10 seconds (methane)
Poison Resistance	
Hexamethyl-Disiloxane	Some
Hydrogen Sulfide	Some
Linearity	± 10% LEL up to 100%LEL

ELECTRICAL

Operating Voltage	3,3 ± 0.02 VDC
Detector Operating Current	70 ± 5 mA
Maximum Power Consumption	230 mW

MECHANICAL

Can Type	Open
Casing Material	Stainless steel
Pin Material	Ferrous alloy with plating of gold over nickel
Orientation Sensitivity	None

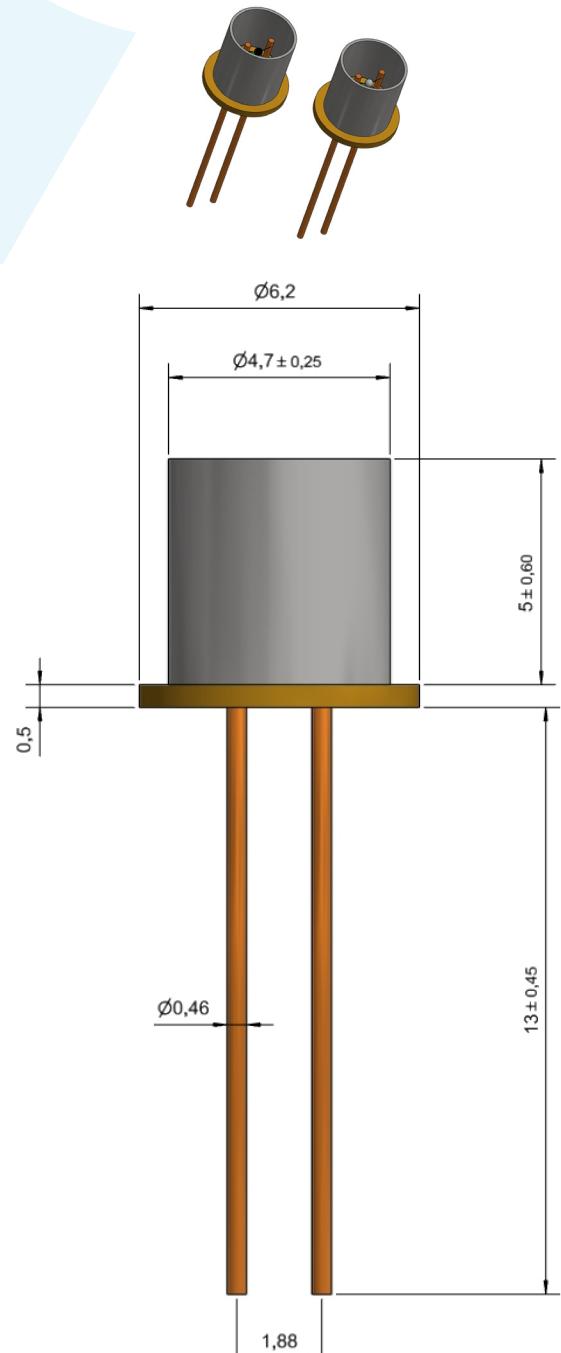
ENVIRONMENTAL

Operating Temperature Range	-40°C to +50°C
Operating Pressure Range	1 atm ± 10%
Operating Humidity Range	0 - 90% RH non-condensing

LIFETIME

Expected Operating Life	Greater than 2 years
Long Term Span Drift*	< ±2% LEL methane per year
Long Term Zero Drift*	< ±5% LEL methane per year
Storage Conditions	10 - 20°C, 45 - 75%RH in clean air
Storage Life	6 months in sealed container
Warranty Period	12 months from date of despatch

Product Dimensions



All dimensions in mm

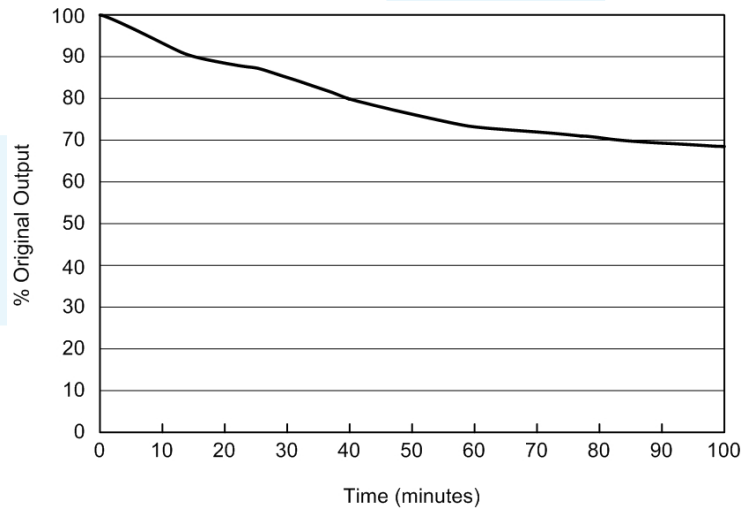
All tolerances ± 0.15 mm unless otherwise stated

NOTE : Product includes both active and compensating beads

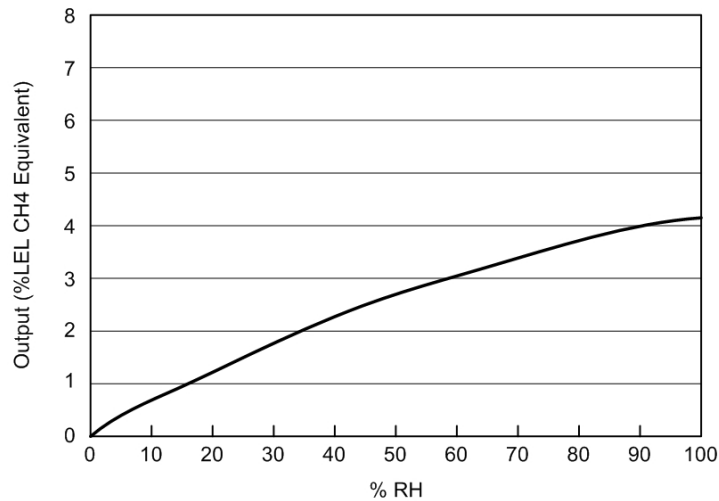
* Specifications are valid at 20°C, 50% RH, 1013 mBar and flow rate of 300 ml/minute, using City Technology recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first 3 months. Output signal can drift below the lower limit over time.

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CAT 25 Poison Resistance (2.5% v/v CH₄ and 2 ppm HMDS)



CAT 25 Relative Humidity Zero Profile (40°C and 0-100% RH)



Note: Poison resistance and humidity data is supplied for guidance only and does not constitute a specification.

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Relative Sensitivities

IMPORTANT NOTE

The relative response data shown below does not form part of the product specification and is supplied for guidance only. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

The table below shows the variation in response of the CiTipeL on exposure to a range of gases and vapours at the same %LEL concentration. The figures are experimentally derived and expressed relative to the methane signal (=100). Testing was performed using 2.5%vol. CH₄ (50%LEL CH₄ based on LEL values from the now obsolete EN50054).

Relative response data are shown in the table below, based on the LEL values stated in EN 50054 (now obsolete) and EN60079-20-1:2010.

Gas / Vapour	Relative Sensitivity	Gas / Vapour	Relative Sensitivity
Methane	100	Methanol	84
Hydrogen	107	Ethanol	64
Ethane	82	Propan-2-ol	49
Propane	63	Acetone	50
Butane	51	Butan-2-one (MEK)	48
Pentane	50	Di ethyl ether	40
Hexane	46	Ethyl Acetate	46
Heptane	44	Toluene	44
Octane	38	Xylene	31
Ethylene	81	Acetylene	47

SAFETY NOTE

This sensor is designed to be used in safety critical applications. To ensure that the sensor and/or instrument in which it is used, are operating properly, it is a requirement that the function of the device is confirmed by exposure to target gas (bump check) before each use of the sensor and/or instrument. Failure to carry out such tests may jeopardise the safety of people and property.

Every effort has been made to ensure the accuracy of this document at the time of printing. In accordance with the company's policy of continued product improvement City Technology Limited reserves the right to make product changes without notice. The products are always subject to a programme of improvement and testing which may result in some changes in the characteristics quoted. As the products may be used by the client in circumstances beyond the knowledge and control of City Technology Limited, we cannot give any warranty as to the relevance of these particulars to an application. It is the clients' responsibility to carry out the necessary tests to determine the usefulness of the products and to ensure their safety of operation in a particular application.