

# CAT 16 CiTipeL®

Combustible Gas Sensor Part Number: 2111B2016

## **Product** Data Sheet

#### **Product Datasheet**

CAT 16 Combustible Gas Sensor

#### **Document Purpose**

The purpose of this document is to present the performance specification of the CAT 16 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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## CAT 16 CiTipeL®

**Product Dimensions** 

Ø11

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#### Performance Characteristics

#### **MEASUREMENT**

Operating Principle | Constant Current Gases Detected

Most combustible gases and

vapours

**Measurement Range Maximum Methane Concentration**  0-100% LEL

Sensitivity\*

5% v/v

T90 Response Time\*

>12 mV/%methane <10 seconds (methane)

**Poison Resistance** Hexamethyl-Disiloxane

Very high Very High

Hydrogen Sulfide Linearity

± 10% LEL up to 100%LEL

#### **ELECTRICAL**

Operating Voltage | 2.7 ± 0.02 VDC **Detector Operating Current** | 200 mA

Maximum Power Consumption | 580 mW

#### **MECHANICAL**

Can Type Casing Material

Restricted Nickel Silver

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 5 years Long Term Span Drift\* Long Term Zero Drift\* Storage Conditions

< ±3% LEL methane per year < ±3% LEL methane per year

Storage Life

0 - 20°C, 45 - 75%RH in clean air 6 months in sealed container

Warranty Period | 12 months from date of despatch

**NOTE**: Product includes both active and compensating beads

Ø8±0,25 Ø0,46 3.56

All dimensions in mm All tolerances ±0.15 mm unless otherwise stated

\* 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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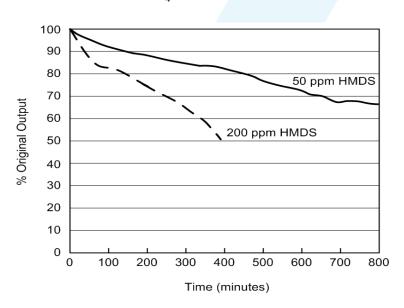
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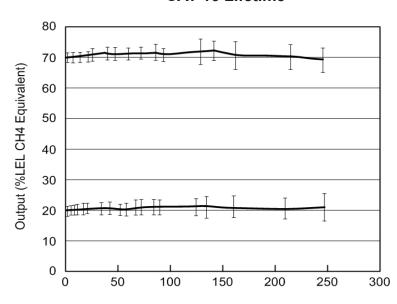
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# CAT 16 Poison Resistance (2.5% v/v CH<sub>4</sub>, 50 ppm & 200 ppm HMDS)



#### **CAT 16 Lifetime**



Note: Poison resistance and lifetime 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. CH<sub>4</sub> (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	Ethanol	54
Hydrogen	121	Propan-2-ol	40
Ethane	70	Acetone	42
Propane	61	Butan-2-one (MEK)	40
Butane	49	MBK	30
Pentane	42	Cyclohexane	37
Hexane	39	Di ethyl ether	39
Heptane	35	Ethyl Acetate	37
Octane	32	Toluene	35
Ethylene	70	Xylene	26
Methanol	72	Acetylene	39

#### **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.

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