Oxygen (O₂) Gas Sensor Part Number: AA428-210

Key Features & Benefits

- Molex Connector
- Linear Output from 0-100% Oxygen

Technical Specifications

MEASUREMENT

Operating Principle | Partial Pressure Electrochemical

Measurement Range | 0-100% O₃

Output 9 - 13 mV in Air

Response Time (T₉₀) Response Time (T_{99.5}) See Note 1

<5 s <40 s

Baseline Offset <20 μV

Linearity | Linear 0-100% O₃

ELECTRICAL

On Board Temperature | <2% O₂ equivalent

Compensation | variation from 0°C to 40°C

External Load Resitor 10 kΩ Minimum

Connector | 3 Pin Molex header

(MOLEX 22-29-2031)

Recommended Mating Part Molex 3-Way Housing

> (MOLEX 22-01-2035) Molex Crimp Terminals

(MOLEX 08-45-0110)

MECHANICAL

Weight | 40 g (nominal) Housing Material Red ABS

Orientation | Any

ENVIRONMENTAL

Typical Application | Vehicle Exhaust Analysis

-20°C to +50°C **Operating Temperature Range** Operating Pressure Range | 0.5 - 2.0 Bar

Differential Pressure Range 0 to 500 mBar max

Operating Humidity Range | 0 - 99% RH non-condensing

LIFETIME

Long Term Ouput Drift in 100% O, <10% signal loss/year

Expected Operating Life 360,000% O_2 hours at 20°C

286,000% O₂ hours at 40°C

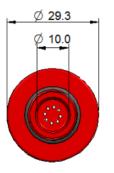
or 2 years in air at STP.

Sealed blister Packaging

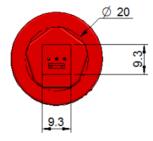
Standard Warranty | 12 months from date of despatch

Note 1: T_{99.5} Response is equivalent to a change in concentration fom 20.9% O₂ to 0.1% O₂

Product Dimensions







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

IMPORTANT NOTE:

Connection should be made via recommended mating parts only. Soldering to the sensor will result in damage and invalidate the warranty.

All performance data is based on conditions at 20°C. 50% RH and 1013 mBar. For sensor performance data under other conditions, contact City Technology.

Doc. Ref.: ao2.indd Issue 2 ECN I 3250 19th June 2014

Page 1 of 3



Product Data Sheet

Poisoning

CiTiceLs are designed for operation in a wide range of environments and harsh conditions. However, it is important that exposure to high concentrations of solvent vapours is avoided, both during storage, fitting into instruments and operation.

When using sensors with printed circuit boards (PCBs), degreasing agents should be used before the sensor is fitted. Do not glue directly on or near the CiTiceL as the solvent may cause crazing of the plastic.

Mechanical Installation

When installing the sensor, it must only be screwed in hand-tight and a gas tight seal ensured. Spanners and similar mechanical aids may not be used, as excessive force may damage the sensor thread.

Cross Sensitivity Table

Whilst CiTiceLs are designed to be highly specific to the gas they are intended to measure, they may still respond to some degree to various other gases. The table below is not exclusive and other gases not included in the table may still cause a sensor to react.

Cross Sensitivity Table

The AO2 has been tested with a number of gases which may be present in automotive exhaust to establish their level of cross interference.

Gas	Concentration	Balance	%O ₂ Equivalent
Carbon Dioxide, CO ₂	16%	N_2	<0.1
Carbon Monoxide, CO	6%	N_2	<0.1
Nitric Oxide, NO	3000 ppm	N_2	<0.1
n-Hexane	2000 ppm	N_2	<0.1
Hydrogen, H ₂	5000 ppm	N_2	<0.1

SAFETY NOTE

Although this product is not designed for use in life safety applications, if it is used in such applications 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, to ensure that the sensor and/or instrument in which it is used, are operating properly. Failure to carry out such tests may jeopardize the safety of people and property.

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Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time.



Doc. Ref.: ao2.indd | Issue 2 ECN | 3250 19th June 2014 Page 2 of 3

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