AO2 CiTiceL®

Oxygen (O_2) 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% O_2
Output	9 - 13 mV in Air
Response Time (T_{90})	<5 s
Response Time ($T_{99.5}$) See Note 1	<40 s
Baseline Offset	<20 µV
Linearity	Linear 0-100% O_2

ELECTRICAL

On Board Temperature Compensation	<2% O_2 equivalent 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

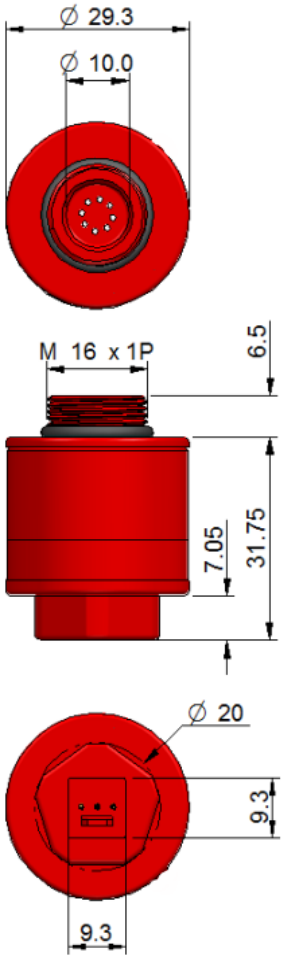
Typical Application	Vehicle Exhaust Analysis
Operating Temperature Range	-20°C to +50°C
Operating Pressure Range	0.5 - 2.0 Bar
Differential Pressure Range	0 to 500 mBar max
Operating Humidity Range	0 - 99% RH non-condensing

LIFETIME

Long Term Ouput Drift in 100% O_2	<10% signal loss/year
Expected Operating Life	360,000% O_2 hours at 20°C 286,000% O_2 hours at 40°C or 2 years in air at STP.
Packaging	Sealed blister
Standard Warranty	12 months from date of despatch

Note 1: $T_{99.5}$ Response is equivalent to a change in concentration fom 20.9% O_2 to 0.1% O_2

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.

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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.

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

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