

Product Data Sheet

Product Datasheet

INQOX Oxygen MediceL[®]

Document Purpose

The purpose of this document is to present the performance specification of the INQOX oxygen sensor.

This document should be used in conjunction with the Operating Principles (OP04) and the Product Safety Datasheet (PSDS 4).

The data provided in this document are valid at 20°C, 50% RH and 1013 mBar, unless otherwise stated, for 3 months from the date of sensor manufacture.

Output signal can drift below the lower limit over time. For guidance on the safe use of the sensor, please refer to the Operating Principles OP04.

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- Key Features & Benefits:**
- Linear output from 0-100% Oxygen
 - Not intended for use in the presence of anaesthesia gases

Technical Specifications

MEASUREMENT

Operating Principle	Partial Pressure Electrochemical
Measurement Range	0-1500 mBar O ₂
Output*	7 - 14 mV in 210 mBar O ₂
Response Time (T₉₀)*	<5 seconds
Baseline Offset*	<100 µV
Linearity	Linear 0-100% O ₂ (See Note 1)

ELECTRICAL

On Board Temperature Compensation	<3% signal change (over range 20°C to 40°C)
External Load Resistor	100 kΩ Maximum
Connector	3 Pin Molex header (MOLEX 22-29-2031)
Recommended Mating Part	Molex Housing (MOLEX 22-01-2035) Molex Crimp Terminals (MOLEX 08-45-0110)

MECHANICAL

Weight	40 g (nominal)
Housing Material	White ABS
Orientation	Any

ENVIRONMENTAL

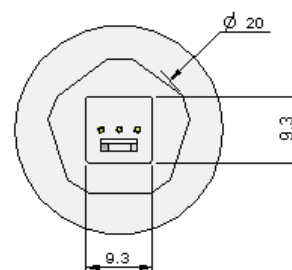
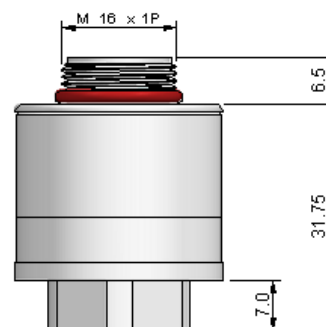
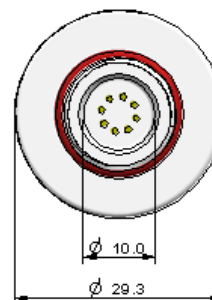
Typical Applications	Neonatal Incubators
Operating Temperature Range	-20°C to +50°C
Operating Pressure Range	0.5 - 2.0 Bar
Differential Pressure Range	0 to 500 mBar max
Operating Humidity Range	0 - 99% RH non-condensing

LIFETIME

Long Term Output Drift in 100% O₂	<5% signal loss/year
Recommended Storage Temp	-10°C to +40°C (short excursions to +50°C allowed)
Expected Operating Life	0.94 x 10 ⁶ % O ₂ hours at 20°C 0.60 x 10 ⁶ % O ₂ hours at 40°C
Packaging	Sealed blister
Standard Warranty	13 months from date of despatch (This amounts to a variation of condition 6 of our standard terms and conditions which otherwise apply)

Note 1: The regression coefficient of the best fit line should be better than 0.9995 when measured through four data points from testing with 100% N₂, 21% O₂, 60% O₂ and 100% 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 measurements made with cylinder gases using a flow rate of 100 ml/min. Conditions at 20°C, 50% RH and 1013 mBar, using City Technology recommended circuitry. For sensor performance data under other conditions, contact City Technology.

* Specifications are valid at 20°C, 50% RH and 1013 mBar unless otherwise stated, 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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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.

Intended Use

These sensors are designed to be used to monitor the partial pressure of oxygen in neonatal incubators, non-anaesthesia critical care, CPAP and general oxygen monitors.

Stabilisation Time

Allow at least 15 minutes to stabilise in the instrument before calibration or refer to manufacturer's instructions.

Cleaning and Sterilisation

In case of contamination, the sensor may be cleaned with distilled water and allowed to dry naturally. The sensor is not suitable for sterilisation by steam or exposure to chemicals such as ethylene oxide or hydrogen peroxide.

Calibration Interval

These sensors are designed to have minimal drift over their useful lifetime. For maximum accuracy however, they should be calibrated in 100% Oxygen before use.

If the Sensor is Dropped

If a sensor is dropped, then it should be placed in quarantine for 24 hours and a follow-up check made by a 2 point calibration.

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.

RFI/EMI Susceptibility

MediceLs contain metal and may be susceptible to RFI or EMI. For further information please contact City Technology.

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Cross Sensitivity Table

Whilst CiTiceLs are designed to be highly specific to the gas they are intended to measure, they will 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.

IMPORTANT NOTE : The cross sensitivity data shown below does not form part of the product specification and is supplied for guidance only. Values quoted are based on tests conducted on a small number of sensors and any batch may show significant variation. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

<u>Test Gas</u>	<u>% O₂ Error</u>
50% He/50% O ₂	<1%
5% CO ₂ /28.5% O ₂ /66.5% N ₂ O	<1%

Certifications



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 jeopardize 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.