Product Datasheet

MOX3 Oxygen MediceL®

Document Purpose

The purpose of this document is to present the performance specification of the MOX3 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 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.

Product Data Sheet

Key Features & Benefits:

- **Meets the requirements of ISO 80601-2-55**
- **Linear output from 0% to 100% O_2**

Technical Specifications

MEASUREMENT

Operating Principle	Partial Pressure Electrochemical
Measurement Range	0-1500 mBar O_2
Ouput*	9 - 13 mV in 210 mBar O_2
Response Time (T_{90})*	<15 s (air to 100% O_2)
Baseline Offset*	<200 µV
Linearity	Linear 0-100% O_2 See Note [1]

ELECTRICAL

Temperature Compensation	<2% O_2 equivalent (0°C to 40°C)
External Load Resistor	10 kΩ Minimum (see important note)
Connector	UK Data Socket AMP P/N 5520257-2

MECHANICAL

Weight	42g (nominal)
Housing Material	White ABS
Orientation	Any

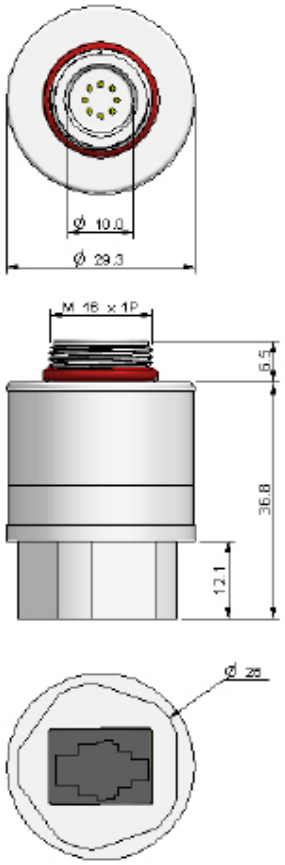
ENVIRONMENTAL

Typical Applications	Critical Care Anaesthesia
Operating Temperature Range	-20°C to +50°C
Operating Pressure Range	0.5 - 2.0 Bar
Operating Humidity Range	0 - 99% RH non-condensing

LIFETIME

Long Term Ouput Drift in 100% O_2	< 5% signal loss/year
Recommended Storage Temp	-10°C to +40°C (short excursions to +50°C allowed)
Expected Operating Life	1.5 x 10^6 % O_2 hours at 20°C 0.8 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 1 of our standard terms and conditions which otherwise apply)

Product Dimensions



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

IMPORTANT NOTE:

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

For further information on the external load resistance and connection to the recommended mating part, please see Operating Principle OP-04 or contact City Technology.

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% N_2, 21% O_2, 60% O_2 and 100% O_2.

*** Specifications are based on measurements made with cylinder gases using a flow rate of 100 mls min^{-1} and are valid at 20°C, 50% RH and 1013 mBar, 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.**

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 anaesthesia (not including xenon), critical care, incubators and general oxygen monitors

An 'Instruction For Use' leaflet (RM945 Issue 1.0) is included with each sensor.

Stablisation 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 disculled 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 before each 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.

Certifications

CE
0088

This product has been licensed for sale by the FDA in the US.
For confirmation see http://www.accessdata.fda.gov/cdrh_docs/pdf4/K041773.pdf

This product has been licensed for sale in Canada.
For confirmation see http://www.mdall.ca

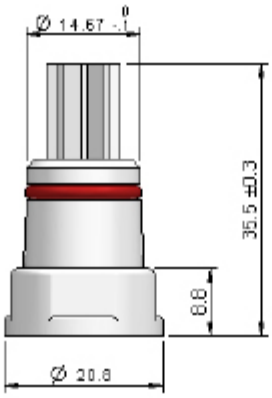
Cross Sensitivity

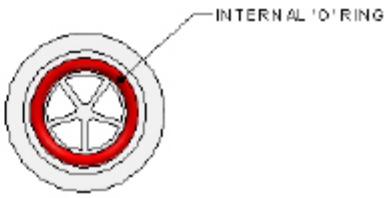
The table below shows how MOX3 MediceLs respond when tested with the gas mixtures listed in ISO 80601-2-55

Test Gas	% O2 Error
50% He / 50% O_2	< 1%
60% N_2O / 40% O_2	< 1%
2% Halothane / 40% O_2 / 30% N_20 / 5% CO_2 / Bal N_2	< 1.5%
2% Enflurane / 40% O_2 / 30% N_20 / 5% CO_2 / Bal N_2	< 1.5%
2% Isoflurane / 40% O_2 / 30% N_20 / 5% CO_2 / Bal N_2	< 1.5%

MOX Adaptor (15mm Taper)

MOX3 Sensors are supplied with an adaptor that can be fitted to the sensor thread and used to direct gas flow to the sensor.





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.