

# MND2 MediceL<sup>®</sup>

Nitric Dioxide (NO<sub>2</sub>) Gas Sensor

Part Number: AG7F4-400

## Document Purpose

The purpose of this document is to present the performance specification of the MND2 Nitric Dioxide gas sensors.

This document should be used in conjunction with the Product Data Handbook (mtoxops.pdf) and the Product Safety Datasheet 5.

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 Product Data Handbook (mtoxops.pdf).



## KEY FEATURES & BENEFITS

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Capable of continuous measurement



4<sup>th</sup> electrode for additional temperature stability



Often used for inhaled nitric oxide therapy

**RoHS** 

RoHS compliant

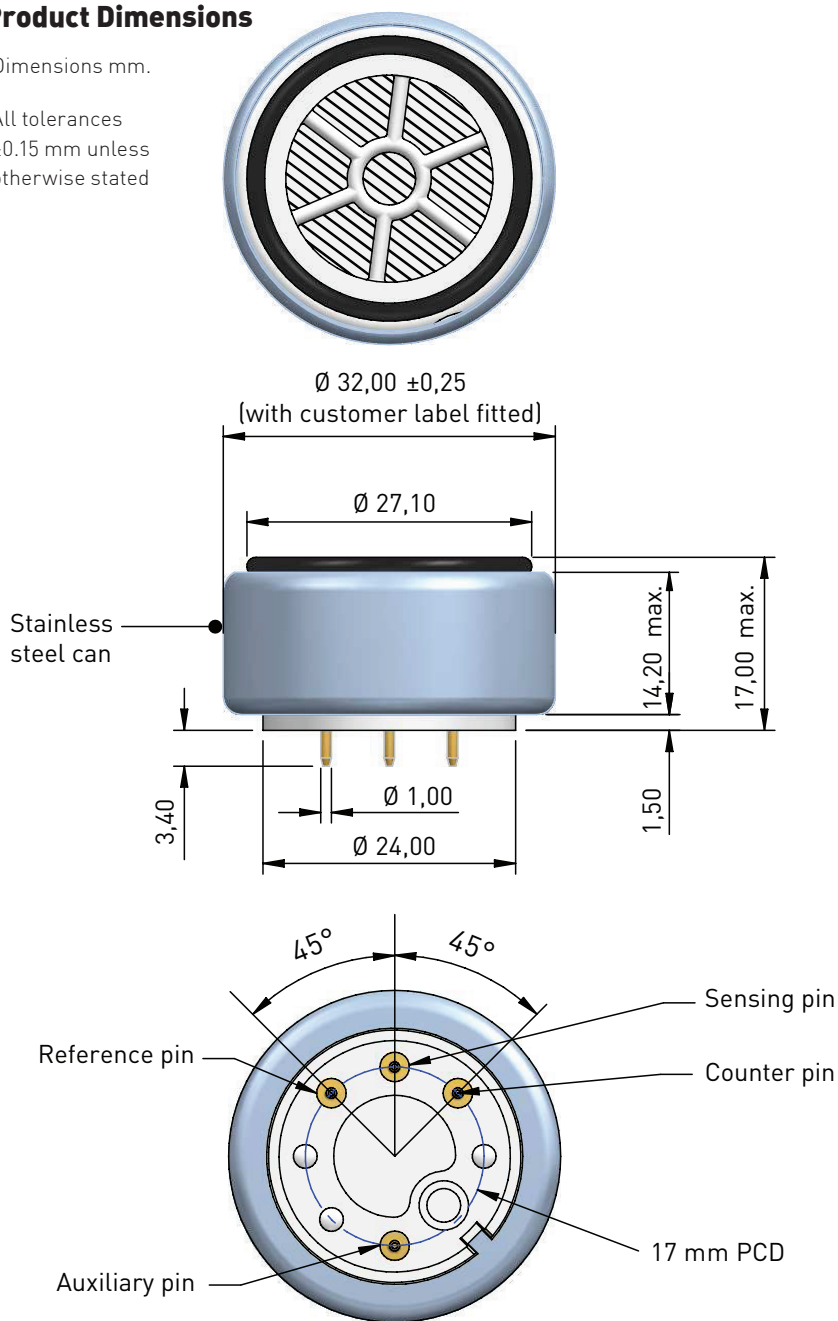
| TECHNICAL SPECIFICATIONS            |                                   |
|-------------------------------------|-----------------------------------|
| MEASUREMENT                         |                                   |
| Operating Principle                 | 4-electrode electrochemical       |
| Measurement Range                   | 0 ppm to 50 ppm NO <sub>2</sub>   |
| Maximum Overload                    | 200 ppm                           |
| Output Signal                       | 0.5 µA/ppm ±0.1 µA/ppm            |
| Response Time (T <sub>90</sub> )    | <40 seconds                       |
| Typical Baseline Offset (clean air) | -0.75 ppm to +0.75 ppm equivalent |
| Repeatability                       | 2% of signal                      |
| Linearity                           | Linear                            |
| ELECTRICAL                          |                                   |
| Recommended Load Resistor           | 10 Ω                              |
| Bias Voltage                        | Not required                      |
| Recommended Gain                    | 0.8                               |
| MECHANICAL                          |                                   |
| Housing Material                    | 20% glass filled polypropylene    |
| Weight                              | 16 g (nominal)                    |
| Orientation                         | Any                               |
| ENVIRONMENTAL                       |                                   |
| Typical Applications                | Inhaled Nitric Oxide Therapy      |
| Operating Temperature Range         | -20°C to +50°C                    |
| Recommended Storage Temperature     | 0°C to 20°C                       |
| Operating Pressure Range            | 800 mBar to 1200 mBar             |
| Differential Pressure Range         | ±100 mBar                         |
| Operating Humidity Range            | 15% to 90% RH non-condensing      |
| LIFETIME                            |                                   |
| Expected Operating Life             | 1 year                            |
| Long-Term Output Drift              | 2% signal loss/month              |
| Standard Warranty                   | 12 months from date of dispatch   |

\* Specifications 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.

## Product Dimensions

Dimensions 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 damage it and invalidate the warranty.

## 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

## 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 values quoted are based on tests conducted on a small number of sensors. They are intended to indicate sensor response to gases other than the target gas. Sensors may behave differently with changes in ambient conditions and any batch may show significant variation from the values quoted.**

| Gas                              | Response |
|----------------------------------|----------|
| Carbon Monoxide                  | None     |
| Nitrous Oxide (N <sub>2</sub> O) | None     |
| Nitrous Dioxide (NO)             | None     |
| Desflurane                       | None     |
| Isoflurane                       | None     |
| Halothane                        | None     |

N.B. Unaffected by operation in 100% oxygen.

### 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 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, we cannot give any warranty as to the relevance of these particulars to an application. City Technology warrants goods of its manufacture as being free of defective materials and faulty workmanship. City Technology's standard product warranty applies unless agreed to otherwise by City Technology in writing; please refer to your order acknowledgment or consult your local sales office for specific warranty details. If warranted goods are returned to City Technology during the period of coverage, City Technology will repair or replace, at its option, without charge those items it finds defective. The foregoing is buyer's sole remedy and is in lieu of all other warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall City Technology be liable for consequential, special, or indirect damages. Though City Technology provides application assistance personally, or through our literature and website, it is up to the customer to determine the suitability of the product in the application.