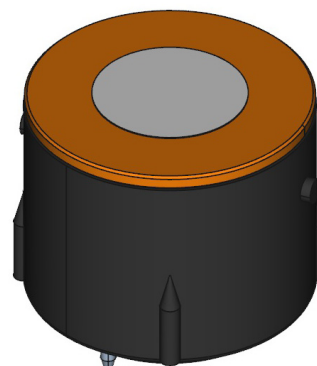


# Low Range NO CiTicel®

5NFL Nitric Oxide Sensor

Product Code: AF508-W0P



## Document Purpose

The purpose of this document is to present the performance specification of the 5NFL nitric oxide gas sensor.

This document should be used in conjunction with Operating Principles (OP20) and the Product Safety Datasheet (PSDS 18).

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 (OP20).

## KEY FEATURES & BENEFITS

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Improved baseline  
performance



Higher output signal  
and sensitivity



Incorporates scavenging  
electrode for removal  
of by-products



Electrical connection  
via PCB pins or  
solder tags

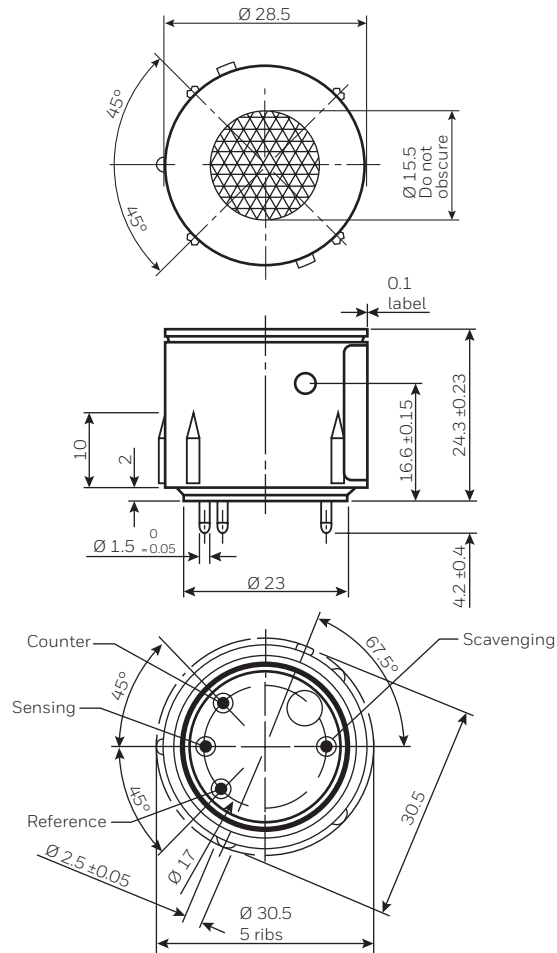
RoHS 

RoHS Compliant

TECHNICAL SPECIFICATIONS	
Measurement	
Operating Principle	4-electrode electrochemical
Measurement Range	0 ppm to 300 ppm NO
Maximum Overload	1000 ppm NO
Sensitivity*	0.50 $\mu\text{A/ppm}$ $\pm 0.08 \mu\text{A/ppm}$
Filter	To remove effect of $\text{SO}_2$
Filter Life	9000 ppm hours (100 ppm $\text{SO}_2$ 100 ppm NO, 5% breakthrough)
T90 Response Time*	< 30 seconds
Baseline Offset (clean air)*	0 to +3 ppm equivalent
Maximum Zero Shift (20°C to 40°C)	6 ppm equivalent
Resolution (Electronics dependent)	<0.5 ppm when used with recommended electronics
Repeatability	2% of signal
Linearity	Linear
Electrical	
Recommended Load Resistor	10 $\Omega$
Bias Voltage	+300 mV
Mechanical	
Weight	13 g nominal
Orientation	Any
Environmental	
Operating Temperature Range (continuous)	-20°C to 40°C [-4°F to 104°F]
Recommended Storage Temperature	0°C to 20°C
Operating Pressure Range	Atmospheric $\pm 10\%$
Absolute Pressure Coefficient	<0.01% signal/mbar
Differential Pressure Coefficient	<0.03% signal/mbar
Operating Humidity Range	15%rH to 90%rH non-condensing
Lifetime	
Expected Operating Life	Three years in air
Long-Term Output Drift	<2% signal loss/month
Storage Life	6 months in CTL container

\* Specifications are valid at 20°C, 50%rH and 1013 mBar, using recommended circuitry. Performance characteristics outline the performance of sensors supplied within the first three months. Output signal can drift below the lower limit over time.

## Product Dimensions (without bayonet fitting)



**Note:** Connection should be made via PCB sockets only. Soldering to the pins will seriously damage your sensor.

## 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.**

Gas	Cross Interference %	Concentration Used (PPM)
Carbon Monoxide, CO	0	1000
Nitrogen Dioxide, NO <sub>2</sub>	<5	20
Hydrogen, H <sub>2</sub>	0	2000
Hydrogen Chloride, HCl	0	150
Hydrogen Sulfide, H <sub>2</sub> S	0	200
Sulfur Dioxide, SO <sub>2</sub>	0	200

## 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.

**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.

## Product Dimensions (with bayonet fitting)

