

Product Data Sheet Draft

Product Datasheet

NX1 Nitric Oxide CiTiceL[®]

Document Purpose

The purpose of this document is to present the performance specification of the NX1 Nitric Oxide sensor.

This document should be used in conjunction with the Product Data Handbook (autotoxops.pdf) and the Product Safety Datasheet (PSDS 18B).

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 (autotoxops.pdf).

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Key Features & Benefits:

- Designed for Automotive Applications
- Fast Response

Technical Specifications

MEASUREMENT

Operating Principle	3-electrode electrochemical
Measurement Range	0-5,000 ppm NO
Filter	To remove effect of SO ₂ in gas stream
Sensitivity*	0.05 ± 0.01 µA/ppm
Response Time (T₉₅)*	<8 Seconds at 20°C
Baseline Offset (clean air)*	0 to +12 ppm equivalent
Zero Shift (0°C to +40°C)	<30 ppm equivalent
Resolution	Dependent on electronics (1 ppm when used with recommended electronics)
Repeatability	2% of signal
Linearity	Linear

ELECTRICAL

Recommended Load Resistor	10 Ω
Bias Voltage	+300 mV

MECHANICAL

Weight	32 g (nominal)
Housing Material	ABS
Orientation	Any

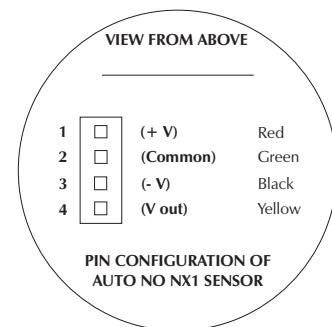
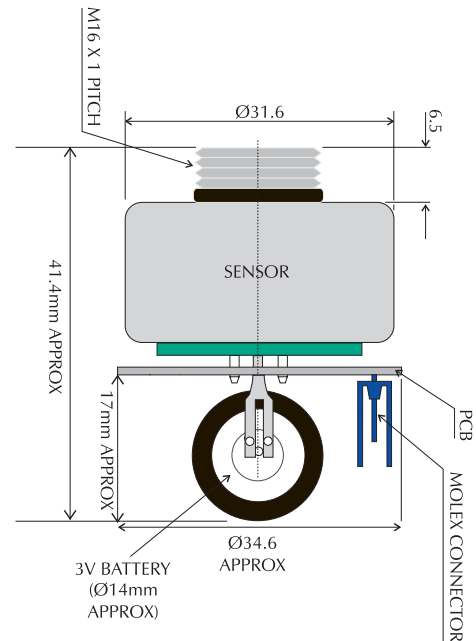
ENVIRONMENTAL

Operating Temperature Range	-20°C to +50°C
Recommended Storage Temp	0°C to 25°C in CTL packaging
Operating Pressure Range	800 to 1100 mBar
Pressure Coefficient	0.02% signal/mBar
Operating Humidity Range	15 to 90% RH non-condensing

LIFETIME

Long Term Sensitivity Drift	Typically <5% signal loss/year
Storage Life	6 months in CTL container

Product Dimensions



All dimensions in mm

All tolerances ±0.15 mm unless otherwise stated

IMPORTANT NOTES:

Prolonged exposure to high or low humidity may lead to an increased response time.

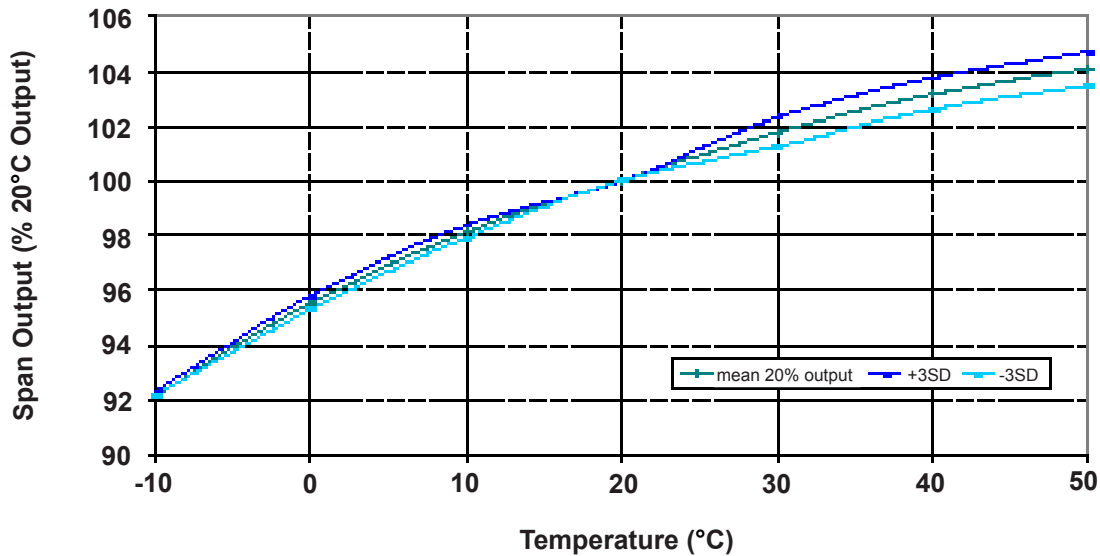
Connection should be made via PCB sockets only. Soldering to the pins will seriously damage your sensor and invalidate the warranty.

* 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.

Automotive NX1 CiTiceL® Part Details	
MOLEX HEADER (0.100"/2.54mm)	Molex Part Number 22-29-2041
CRIMP TERMINAL HOUSING (MATING PART)	Molex Part Number 22-01-2045

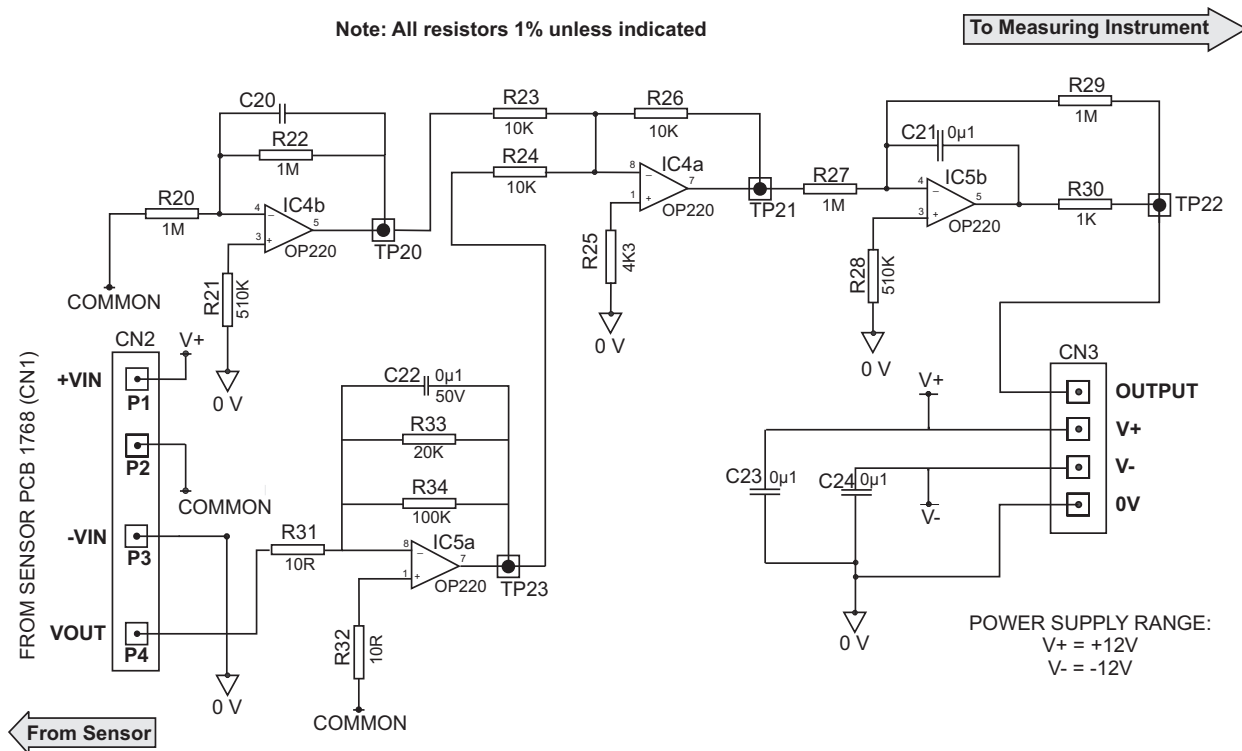
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Typical Span Output vs Temperature (°C)



Recommended External Circuit for Sensor

This diagram shows the recommended operating circuit for the NX1 CiTiceL, designed to give an output of 0-5 V over the range 0-5000 ppm, where the sensitivity is 60 nA/ppm.



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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.

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 a functional check before each use of the sensor and/or instrument. Failure to carry out such tests may jeopardise 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.