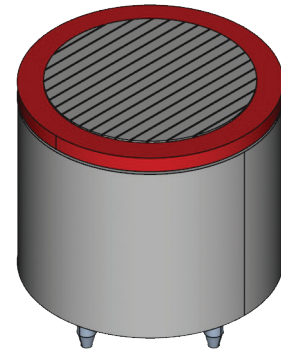


# 4AN Acrylonitrile CiTiceL<sup>®</sup> Sensor

Acrylonitrile (C<sub>3</sub>H<sub>3</sub>N) Gas Sensor  
Part Number: AI200-800



## Document Purpose

The purpose of this document is to present the performance specification of the 4AN CiTiceL.

This document should be used in conjunction with Operating Principles (OP09) and the Product Safety Datasheet (PSDS 2).

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. For guidance on sensor performance outside of these limits, please refer to the Operating Principles.

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.

## KEY FEATURES & BENEFITS

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Higher durability  
and stability



Low temperature  
and humidity effect



12-month  
warranty

RoHS 

RoHS compliant



Anti-poisoning in the  
environment with  
acrylonitrile background

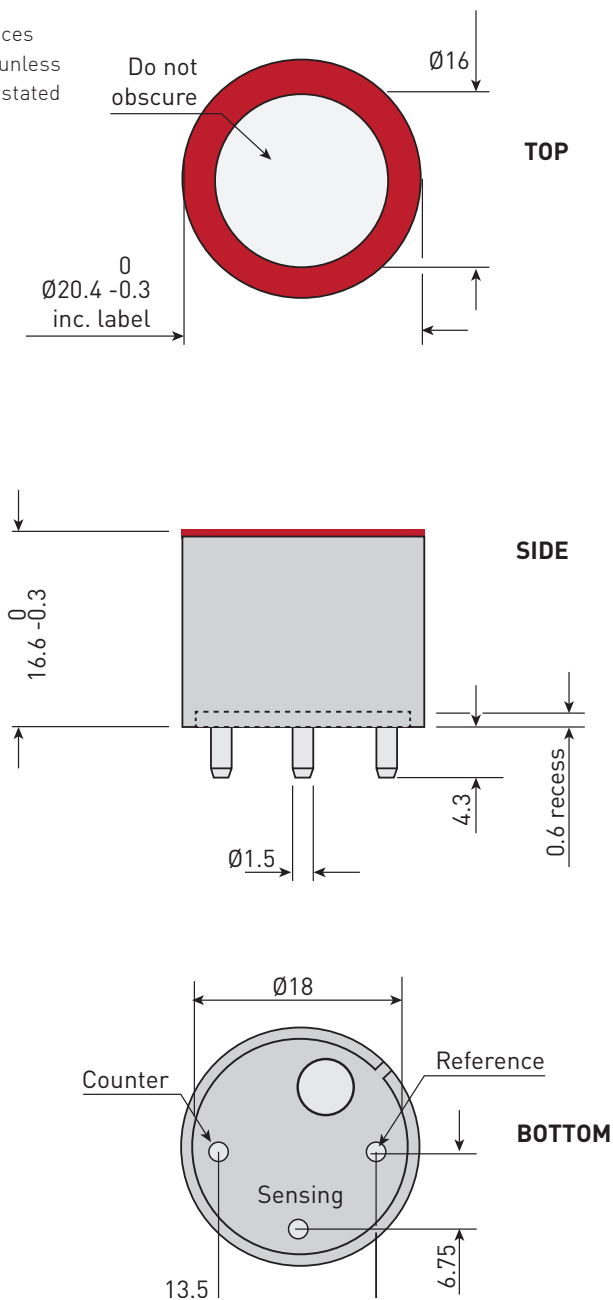
**APPLICATION NOTE: Not suitable for repeated or continuous exposures.** 4AN is designed for life safety applications where the sensor is only exposed to gas occasionally. Repeated or continuous exposures will result in significant output drift and shortened operating life. If the sensor is exposed to gas, functionality and performance characteristics should be checked to confirm that the sensor is still performing within acceptable limits.

TECHNICAL SPECIFICATIONS	
<b>MEASUREMENT</b>	
<b>Operating Principle</b>	3-electrode electrochemical
<b>Measurement Range</b>	0 ppm to 80 ppm C <sub>3</sub> H <sub>3</sub> N
<b>Filter</b>	None
<b>Sensitivity*</b>	250 nA/ppm ±100 nA/ppm
<b>Response Time (T<sub>90</sub>)*</b>	<120 seconds at 20°C
<b>Baseline Offset (clean air)*</b>	-0.5 ppm to +1 ppm acrylonitrile equiv.
<b>ELECTRICAL</b>	
<b>Recommended Load Resistor</b>	10 Ω
<b>Bias Voltage</b>	300 mV
<b>MECHANICAL</b>	
<b>Housing Material (Cap and Body)</b>	ABS
<b>Weight</b>	5 g
<b>Orientation</b>	Any
<b>ENVIRONMENTAL</b>	
<b>Operating Temperature Range</b>	-20°C to +50°C
<b>Recommended Storage Temperature</b>	0°C to 20°C
<b>Operating Pressure Range</b>	Atmospheric ±10 %
<b>Operating Humidity Range</b> <i>(extended exposure to extreme humidity conditions will degrade sensor performance)</i>	15% to 90% RH non-condensing
<b>LIFETIME</b>	
<b>Expected Operating Life</b>	Two years in air
<b>Storage Life</b>	6 months in CTL container
<b>Standard Warranty</b>	12 months

\* 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

All tolerances ±0.15 mm unless otherwise stated



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

### 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.