

Product Data Sheet

APPLICATION NOTE: Not suitable for repeated or continuous exposures

3HCN 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

MEASUREMENT

Operating Principle	3-electrode electrochemical
Measurement Range	0-100 ppm HCN
Filter	None
Sensitivity*	0.10 ± 0.02 µA/ppm
Response Time (T₉₀)*	<200 Seconds at 20°C
Baseline Offset (clean air)*	-2.0 to +1.5 ppm HCN equivalent

ELECTRICAL

Recommended Load Resistor	10 Ω
Bias Voltage	Not Required

MECHANICAL

Weight	22 g
Housing Material	Polycarbonate
Orientation	Any

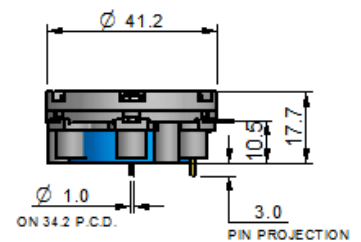
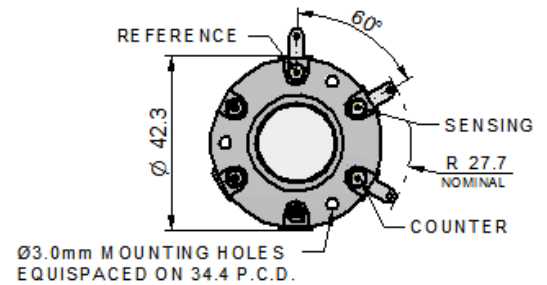
ENVIRONMENTAL

Operating Temperature Range	-20°C to +50°C
Recommended Storage Temp	0°C to 20°C
Operating Pressure Range	Atmospheric ± 10%
Operating Humidity Range	15 - 90% RH non-condensing

LIFETIME

Expected Operating Life	Two years in air
Storage Life	6 months in CTL container
Standard Warranty	12 months from date of despatch

Product Dimensions



All dimensions in mm
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.

AVAILABLE OPTIONS

Sensor	Description	Part Number
3HCN	With side tag and PCB pin connections	AJ002-J00
3HCN(G)	With gold-plated PCB pin connection	AJ002-300
3HCN(S)	With side tag connection	AJ002-000

* 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.

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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.

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	Concentration Used (ppm)	3HCN (ppm HCN)
Carbon Monoxide, CO	300	15 < x\$ < 60
Hydrogen Sulfide, H ₂ S	15	See note below
Sulfur Dioxide, SO ₂	5	5.5 < x\$ < 17.5
Nitric Oxide, NO	35	-14 < x\$ < -3.5
Nitrogen Dioxide, NO ₂	5	-17.5 < x\$ < -10
Chlorine, Cl ₂	1	≈ -0.5
Hydrogen, H ₂	200	0
Ethylene, C ₂ H ₄	100	20 < x\$ < 70

Note that due to a high cross-sensitivity (≈350%), this sensor is unsuitable for use in an atmosphere which contains hydrogen sulfide (H₂S).

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.

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