Classic Line 7HCN Sensor

Honeywell

氰化氢传感器 0-50 ppm

性能表征

产品型号	CLE-0731-700
量程	0 to 50 ppm
最大荷载	100 ppm
灵敏度	0.10 ± 0.04 μA/ppm
基线	< ± 0.2 μA
基线漂移 (-20 °C to 50 °C)	相当于 0 to 0.5 ppm
分辨率	0.2 ppm
响应时间(T_{90})	≤ 60 秒
线性度	线性
长期稳定性	< 2% 信号值/月

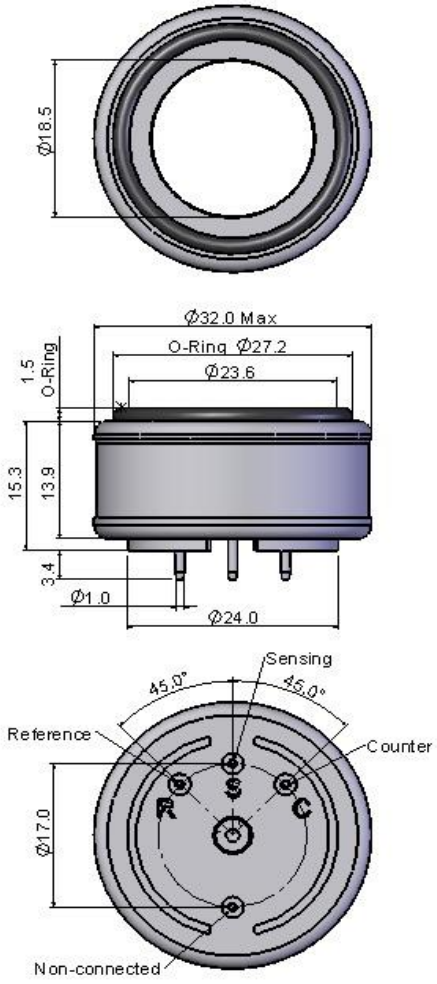
工作条件

工作温度	-20 °C to 50 °C
工作湿度	15 to 90%RH （无冷凝）
工作压力	90 to 110 Kpa
偏压	0 mV
储存时间	6 个月（专用包装盒中）
储存温度	0 °C to 20 °C
使用寿命	空气中 2 年
质保期	交货后 12 个月

物理性能

重量	约 8 克
方位要求	无

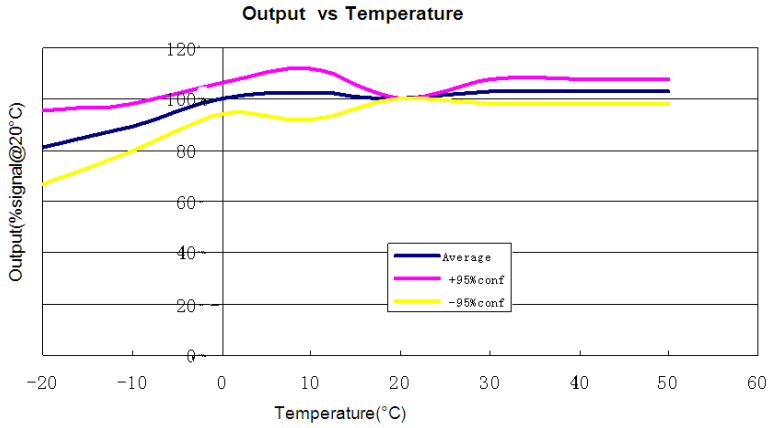
Outline Dimensions

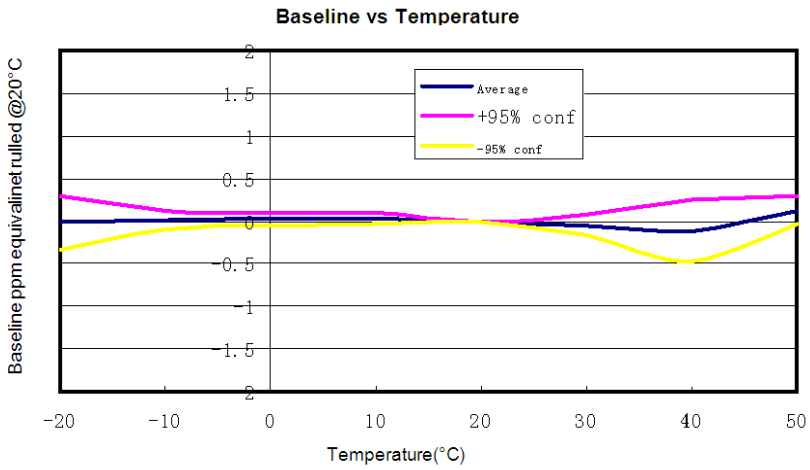


All dimensions are in millimeters.
All tolerances are ±0.2mm.

Note: 推荐使用 PCB 插座来连接传感器，焊接会损害传感器。

温度影响





交叉灵敏度

气体	浓度 (ppm)	输出信号(相当于 ppm HCN)
一氧化碳	300	1
二氧化硫	5	1
二氧化氮	5	-2
硫化氢	15	10
一氧化氮	35	-1
乙烯	100	1

使用须知

1. 以上所有性能规格都是在环境条件：温度 20 ℃, 相对湿度 50% RH，一个大气压（100 kPa 或环境压力）下测得。
2. 推荐用目标气体进行标定。如果用交叉敏感气体进行标定，我们不保证其标定和测量的准确度。
3. 交叉灵敏度会有+/- 30%的浮动，并且可能随着传感器的生产批次不同和传感器的寿命而变化。
4. 上述交叉灵敏度包括但不限于上述气体，该传感器有可能对其他气体有响应。

氰化氢传感器 0-50 ppm

性能表征

产品型	CLE-0731-400
量程	0 to 50 ppm
最大荷载	100 ppm
灵敏度	0.10 ± 0.02 μA/ppm
基线（20 ºC）	< ± 0.2 μA
基线漂移 (-20 to 50 ºC)	相当于 0 to -1 ppm
分辨率	0.2 ppm
响应时间 (T_{90})	≤ 120 秒
线性度	线性
长期稳定性	< 2% 信号值/月

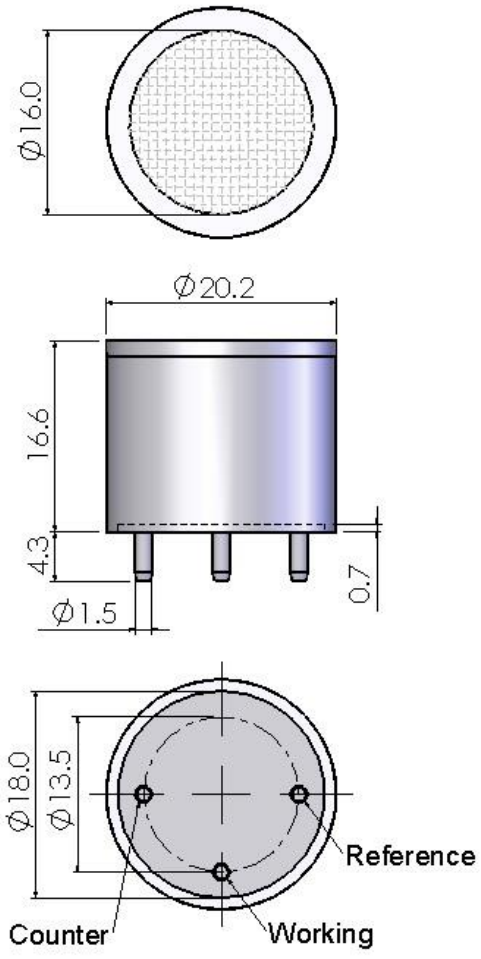
工作条件

工作温度	-20 ºC to 50 ºC
工作湿度	15 to 90%RH（无冷凝）
工作压力	90 to 110 kPa
偏压	0 mV
储存时间	6 个月（专用包装盒中）
储存温度	0 ºC to 20 ºC
使用寿命	空气中 3 年
质保期	交货后 12/24/36 个月

物理性能

重量	约 5 克
方位要求	无

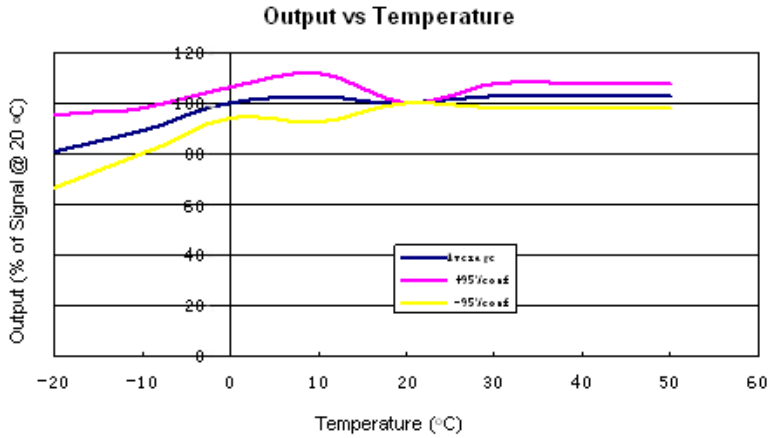
Outline Dimensions

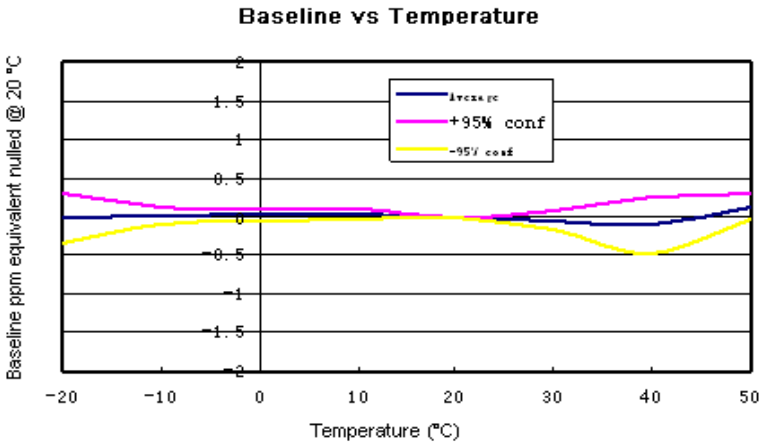


All dimensions are in millimeters.
All tolerances are ±0.2mm.

Note: 推荐使用 PCB 插座来连接传感器，焊接会损害传感器。

温度影响





交叉灵敏度

气体	浓度 (ppm)	输出信号 (相当于 ppm HCN)
一氧化碳	300	0
二氧化硫	5	1.5
二氧化氮	5	-3
硫化氢	15	30
一氧化氮	35	-1
乙烯	100	0

使用须知

1. 以上所有性能规格都是在环境条件：温度 20 ℃, 相对湿度 50% RH，一个大气压（100 kPa 或环境压力）下测得。
2. 推荐用目标气体进行标定。如果用交叉敏感气体进行标定，我们不保证其标定和测量的准确度。
3. 交叉灵敏度会有+/- 30%的浮动，并且可能随着传感器的生产批次不同和传感器的寿命而变化。
4. 上述交叉灵敏度包括但不限于上述气体，该传感器有可能对其他气体有响应。

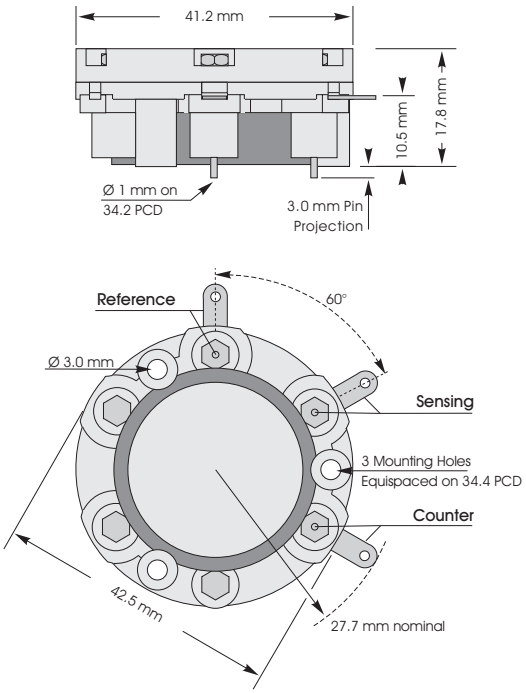
3HCN CiTiceL®

Performance Characteristics

Nominal Range	0-100ppm
Maximum Overload	200ppm
Expected Operating Life	Two years in air at STP
Output Signal	0.1 ± 0.02 µA/ppm
Resolution	0.5ppm
Temperature Range	-20°C to +50°C
Pressure Range	Atmospheric ± 10%
Pressure Coefficient	No data
T_{90} Response Time	≤200 seconds
Relative Humidity Range	15 to 90% non-condensing
Typical Baseline Range (pure air)	-2.0 to +1.5ppm equivalent
Maximum Zero Shift (+20°C to +40°C)	no data
Long Term Output Drift	<2% signal loss/month
Recommended Load Resistor	10Ω
Bias Voltage	Not required
Repeatability	2% of signal
Output Linearity	Linear

N.B. All performance data is based on conditions at 20°C, 50%RH, and 1013mBar

Outline Dimensions



All tolerances ±0.15mm unless otherwise stated.
Sensor shown with side tags and gold pins.

Physical Characteristics

Weight	22g
Position Sensitivity	None
Storage Life	Six months in CTL container
Recommended Storage Temperature	0-20°C
Warranty Period	12 months from date of despatch

Temperature Dependence

The output of a CiTiceL can vary with temperature. A programme of data acquisition is currently underway at City Technology to establish a statistically based relationship for 3HCN sensors. For applications where accurate data is required please contact City Technology.

Cross-sensitivity Data

CiTiceLs may exhibit a response to certain gases in a sample other than the target gas. 3HCN CiTiceLs have been tested with a number of commonly cross-interfering gases and the results are given below. The table shows the typical response to be expected from a sensor when exposed to a given test gas concentration (relevant to safety, e.g. TLV levels).

Gas	Conc.	3HCN	Gas	Conc.	3HCN
Carbon monoxide:	300ppm	15 ≤ x$ ≤ 60ppm	Chlorine:	1ppm	≈-0.5ppm
Hydrogen sulphide:	15ppm	See note below	Hydrogen:	200ppm	0ppm
Sulphur dioxide:	5ppm	5.5 ≤ x$ ≤ 17.5ppm	Hydrogen chloride:	5ppm	n/d
Nitric oxide:	35ppm	-14 ≤ x$ ≤ -3.5ppm	Ethylene:	100ppm	20 ≤ x$ ≤ 70ppm
Nitrogen dioxide:	5ppm	-17.5 ≤ x$ ≤ -10ppm			

For details of other possible cross-interfering gases contact City Technology.

n/d: No data yet, under investigation

Note: Due to a very high cross-sensitivity (≈350%), this sensor is unsuitable for use in atmospheres which contain hydrogen sulphide.

Ordering Information

The 3HCN Hydrogen Cyanide CiTiceL is available with side tags, gold-plated PCB pins, or both PCB pins and side tags. To ensure the appropriate option is supplied care must be taken to provide the correct code when ordering.

Type 3HCN:- With side tag and PCB pin connections - 3HCN
With side tag connection - 3HCN(S)
With gold-plated PCB pin connection - 3HCN(G)

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.

4HN CiTiceL®

Performance Characteristics

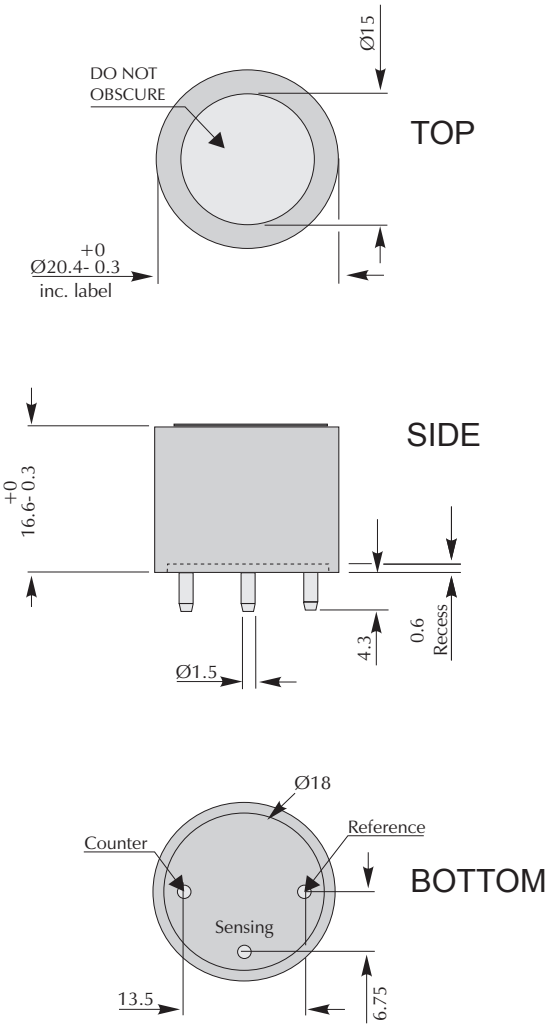
Nominal Range	0-50 ppm
Maximum Overload	100 ppm
Expected Operating Life	Two years in air
Output Signal	0.10 ± 0.02 µA/ppm
Resolution	0.5 ppm
Temperature Range	-20°C to +50°C
Pressure Range	Atmospheric ± 10%
Pressure Coefficient	No data
T_{90} Response Time	<200 seconds
Relative Humidity Range	15 to 90% non-condensing
Typical Baseline Range (pure air)	-0.5ppm to +0.5ppm equiv.
Maximum Zero Shift (+20°C to +40°C)	1ppm
Long Term Output Drift	<2% signal loss/month
Recommended Load Resistor	10 Ω
Bias Voltage	Not required
Repeatability	<2% of signal
Output Linearity	Linear

N.B. All performance data is based on conditions at 20°C, 50%RH, and 1013 mBar

Physical Characteristics

Weight	5 g (approx.)
Position Sensitivity	None
Storage Life	Six months in CTL container
Recommended Storage Temperature	0-20°C
Warranty Period	12 months from date of despatch

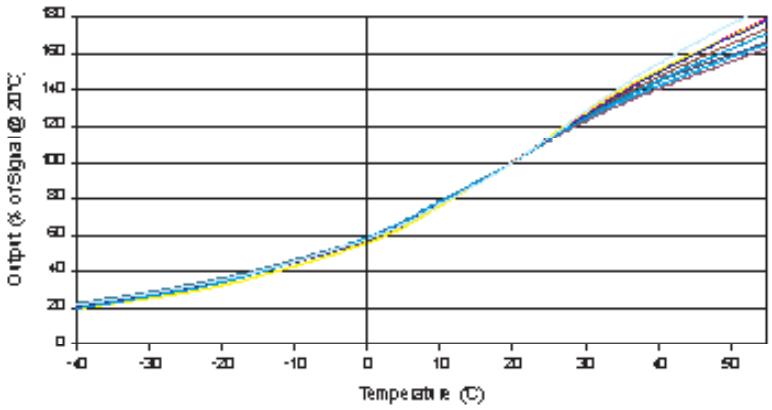
Outline Dimensions



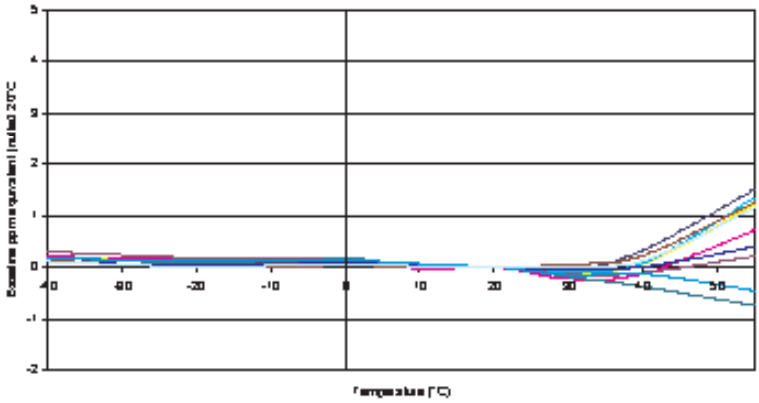
All dimensions in mm
All tolerances ±0.15 mm unless otherwise stated

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

4HN Hydrogen Cyanide CiTiceL- Output vs Temperature



4HN Hydrogen Cyanide CiTiceL - Baseline vs Temperature



Cross-sensitivity Data

CiTiceLs may exhibit a response to certain gases in a sample other than the target gas. 4HN CiTiceLs have been tested with a number of commonly cross-interfering gases and the results are given below. The table shows the typical response to be expected from a sensor when exposed to a given test gas concentration (relevant to safety, e.g. TLV levels).

Gas	Conc.	4HN	Gas	Conc.	4HN
Carbon monoxide:	300ppm	<15ppm	**Nitric oxide:**	35ppm	-28<x$<0ppm
Hydrogen sulphide	15ppm	~90ppm	**Nitrogen dioxide:**	5ppm	-20<x$<-10ppm
Sulphur Dioxide:	20ppm	40<x$<75ppm	**Ethylene:**	100ppm	<25ppm

For details of other possible cross-interfering gases contact City Technology.

Note: Due to a very high cross sensitivity , this sensor is unsuitable for use in atmospheres which contain hydrogen sulphide.

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.

7HCN CiTiceL®

Hydrogen Cyanide (HCN) Gas Sensor
Part Number: AJ702-400

Key Features & Benefits:

- **Robust, industry standard 7-Series packaging**
- **Compact Size**

Technical Specifications

MEASUREMENT

Operating Principle	3-electrode electrochemical
Measurement Range	0-100 ppm HCN
Maximum Overload	200 ppm HCN
Filter	None
Sensitivity	0.10 ± 0.02 µA/ppm
Response Time (T_{90})	<150 Seconds at 20°C
Baseline Offset (clean air)	-2.0 to +1.5 ppm HCN equivalent
Resolution	0.5 ppm (when used with recommended electronics)
Repeatability	2% of signal
Linearity	Linear

ELECTRICAL

Recommended Load Resistor	10 Ω
Bias Voltage	Not Required

MECHANICAL

Weight	17 g
Housing Material:	
Cap	Polycarbonate
Body	ABS
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

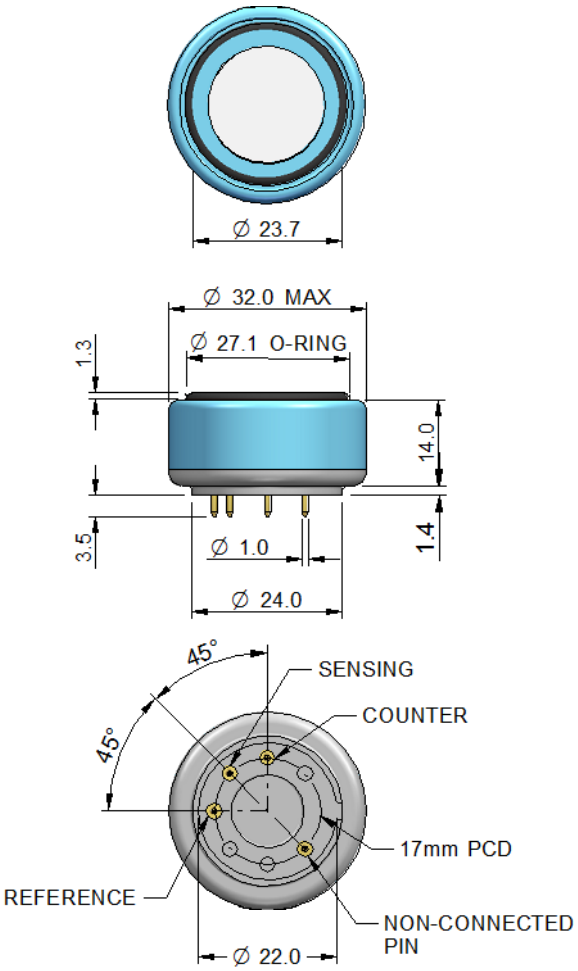
LIFETIME

Long Term Sensitivity Drift	<2% signal loss/month
Expected Operating Life	Two years in air
Storage Life	6 months in CTL container
Standard Warranty	12 months from date of despatch

IMPORTANT NOTE:

All performance data is based on conditions at 20°C, 50% RH and 1013 mBar, using City Technology recommended circuitry. For sensor performance data under other conditions, refer to Operating Principles OP08 or contact City Technology.

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.

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.

Gas	Concentration Used (ppm)	7HCN (ppm HCN)
Carbon Monoxide, CO	300	< 54
Hydrogen Sulfide, H_2S	15	< 53
Sulfur Dioxide, SO_2	5	5.5 < x$ < 17.5
Nitric Oxide, NO	35	-17.5 < x$ < 0
Nitrogen Dioxide, NO_2	5	-20 < x$ < -10
Chlorine, Cl_2	1	≈ 0.5
Hydrogen, H_2	200	0
Ethylene, C_2H_4	100	< 55

Note that due to a high cross-sensitivity (≈350%), this sensor is unsuitable for use in an atmosphere which contains hydrogen sulfide (H_2S).

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.

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.

Hydrogen Cyanide

Sensoric HCN 2E 30 F

Sensoric HCN 2E 30 F

FEATURES

Amperometric 2 electrode sensor cell
Very selective
Fast response
High resolution
Fixed organic gel electrolyte

TYPICAL APPLICATIONS

TLV-monitoring, leakage detection
portable & fixed point applications
Gold mining

PART NUMBER INFORMATION

MINI	1639-221-30009
SENSORIC CLASSIC	1639-221-30069
CTL 4 series adaptation	1639-221-30049
CTL 7 series adaptation	1639-221-30079

HCN 2E 30 F

TECHNICAL SPECIFICATIONS

Measuring Range	0 – 30 ppm
Sensitivity Range	30 nA/ ppm ± 15 nA/ ppm
Zero Current at 20℃	< ± 5 nA
Resolution at 20℃	< 0.2 ppm
Bias Potential	not required
Linearity	< 5% full scale
Response Time at 20℃	
t50	< 20 s calculated from 2 min. exposure time
t90	< 30 s calculated from 2 min. exposure time
Long Term Sensitivity Drift	< 5% per month
Operation Conditions	
Temperature Range	-40℃ to +40℃
Humidity Range	15 - 90% r.H., non–condensing
Effect of Humidity	no effects
Sensor Life Expectancy	> 18 months
Warranty	12 months

HCN 2E 30 F

CROSS SENSITIVITIES AT 20 °C

Gas	Concentration	Reading [ppm]
Alcohols	1000 ppm	0
Ammonia	100 ppm	0
Arsine	0.2 ppm	1
Carbon Dioxide	5000 ppm	0
Carbon Monoxide	100 ppm	0
Chlorine	1 ppm	0
Diborane	0.25 ppm	0.4
Hydrocarbons	% ppm	0
Hydrochloric Acid	5 ppm	0[1]
Hydrogen	10000 ppm	0
Hydrogen Sulfide	10 ppm	0[1]
Nitric Oxide	100 ppm	0
Nitrogen	100 %	0
Nitrogen Dioxide	10 ppm	-19
Ozone	0.25 ppm	0
Sulfur Dioxide	20 ppm	0

1) Short gas exposure in minute range; after filter saturation: H2S approx.40 ppm reading, HCl approx. 5 ppm;

Notes:
1. Interference factors may differ from sensor to sensor and with life time. It is not adviseable to calibrate with interference gases.
2. This table does not claim to be complete. The sensor might also be sensitive to other gases.

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.

Attention

Use of the Sensoric range sensors requires complete understanding of the instructions. Before using Sensoric range sensors please carefully read 'Application Notes' which can be found at www.citytech.com under the heading '*Support' -> 'Application Notes' -> 'Sensoric'*

Product Safety Data Sheets (PSDS) can be obtained at www.citytech.com under the heading '*Support' -> 'Product Safety Datasheets'*

For further assistance on sensor selection and use, please contact a member of the Technical Sales team.

Hydrogen Cyanide

Sensoric HCN 3E 30 F

Sensoric HCN 3E 30 F

FEATURES

Amperometric 3 electrode sensor cell
Very stable zero reading
Very selective
Highly sensitive
Fixed organic gel electrolyte

TYPICAL APPLICATIONS

TLV-monitoring, leakage detection
portable & fixed point applications
Gold mining

PART NUMBER INFORMATION

MINI	1639-231-30009
SENSORIC CLASSIC	1639-231-30069
CTL 4 series adaptation	1639-231-30049
CTL 7 series adaptation	1639-231-30079

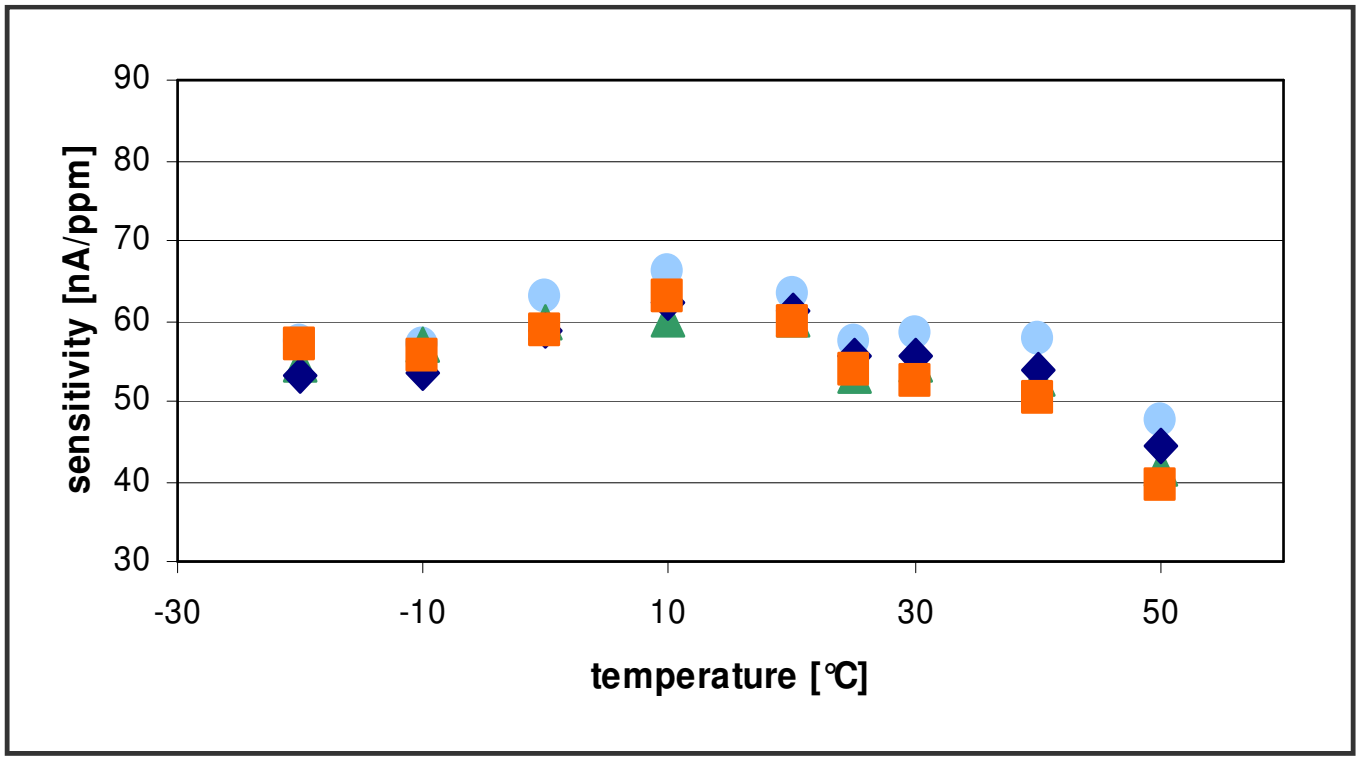
Sensoric HCN 3E 30 F

TECHNICAL SPECIFICATIONS

Measuring Range	0 – 30 ppm[1)]
Sensitivity Range	60 nA/ ppm ± 15 nA/ ppm
Zero Current at 20 °C	< ± 15 nA
Resolution at 20 °C	< 0.2 ppm
Bias Potential	0 mV
Linearity	< 5% full scale
Response Time at 20 °C	
t50	< 25 s calculated from 2 min. exposure time
t90	< 50 s calculated from 2 min. exposure time
Long Term Sensitivity Drift	< 5% per month
Operation Conditions	
Temperature Range	-40 °C to +40 °C
Humidity Range	15–95% r.H., non–condensing
Effect of Humidity	no effects
Sensor Life Expectancy	> 18 months
Warranty	12 months

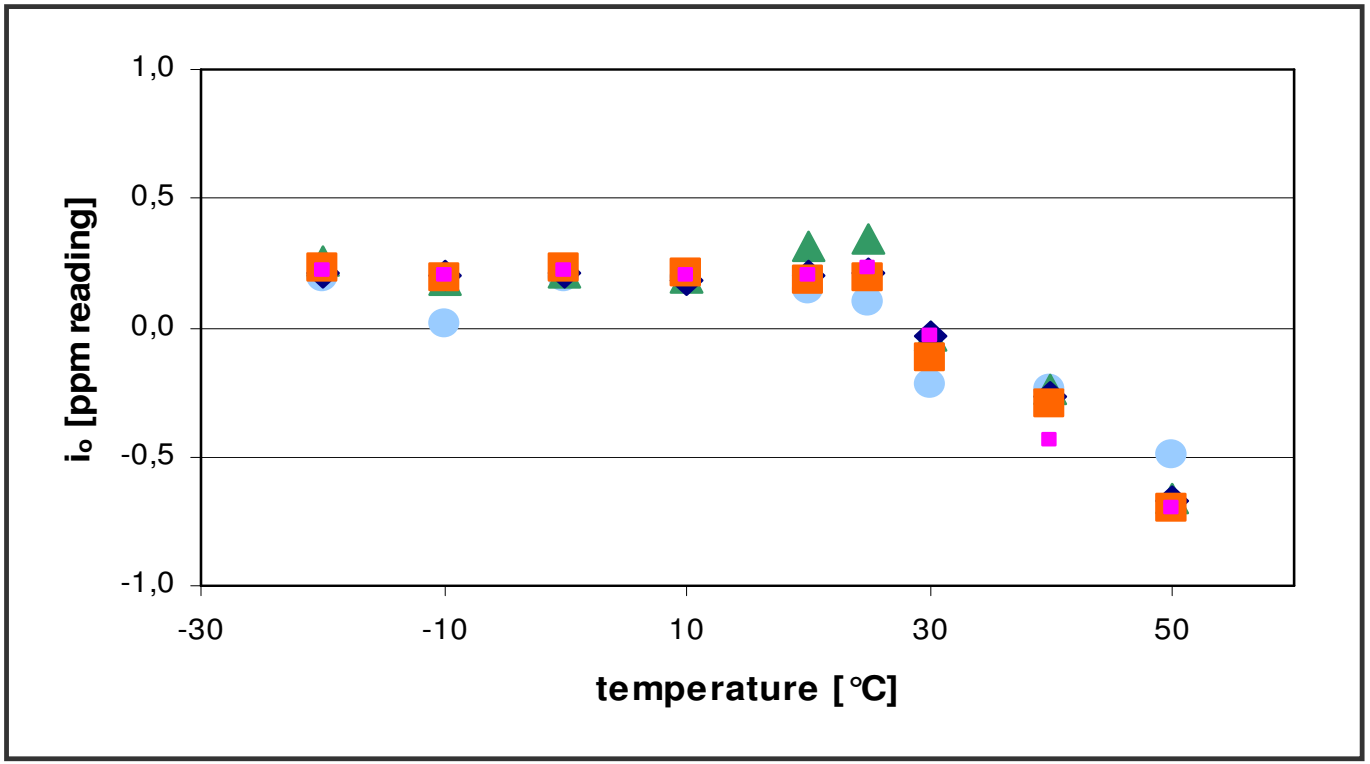
Sensoric HCN 3E 30 F

OUTPUT vs. TEMPERATURE:



Sensoric HCN 3E 30 F

ZERO READING vs. TEMPERATURE:



Sensoric HCN 3E 30 F

CROSS SENSITIVITIES AT 20 °C

Gas	Concentration	Reading [ppm]
Alcohols	1000 ppm	0
Carbon Dioxide	5000 ppm	0
Carbon Monoxide	100 ppm	0
Hydrocarbons	% range	0
Hydrogen	10000 ppm	0
Nitric Oxide	100 ppm	-5
Nitrogen Dioxide	10 ppm	-7
Hydrogen Sulfide	20 ppm	0[1]

1) Short gas exposure in minute range; after filter saturation: approx. 40 ppm reading.

Notes:
1. Interference factors may differ from sensor to sensor and with life time. It is not adviseable to calibrate with interference gases.
2. This table does not claim to be complete. The sensor might also be sensitive to other gases.

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.

Attention

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Product Safety Data Sheets (PSDS) can be obtained at www.citytech.com under the heading '*Support' -> 'Product Safety Datasheets'*

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