

Key Features & Benefits:

- Excellent stability
- Resistant to drying out
- Reliable in continuous flow applications

Technical Specifications

MEASUREMENT

Operating Principle	3-electrode electrochemical
Measurement Range	0-1 ppm AsH ₃
Maximum Overload	20 ppm
Lower Detection Limit	< 30 ppb when using recommended electronics
Filter	To remove H ₂ S
Filter Capacity	200 ppm hr
Sensitivity	1400 ± 450 nA/ppm
Response Time (T ₉₀)	<30 Seconds
Baseline Offset (clean air)	< ±20 nA
Zero Shift (-40°C to +50°C)	< ±40 ppb
Repeatability	<2 % of signal
Linearity	<10% of full scale

ELECTRICAL

Recommended Load Resistor	1.5 kΩ
Bias Voltage	0 V
Resolution	Dependent on Electronics < 15 ppb when using recommended circuitry

MECHANICAL

Housing Material	PPO Noryl
Weight	4.5 g
Orientation	Any

ENVIRONMENTAL

Typical Applications	Portable & fixed life safety
Operating Temperature Range:	
Continuous	-20°C to +40°C
Intermittent	-40°C to +50°C
Operating Pressure Range	Atmospheric ± 10%
Operating Humidity Range	10% to 95% RH non-condensing

INTRINSIC SAFETY DATA

Maximum at 2000ppm	<0.2 mA at 100 ppm
Maximum o/c Voltage	<500 mV
Maximum s/c Current	<1.0 A

LIFETIME

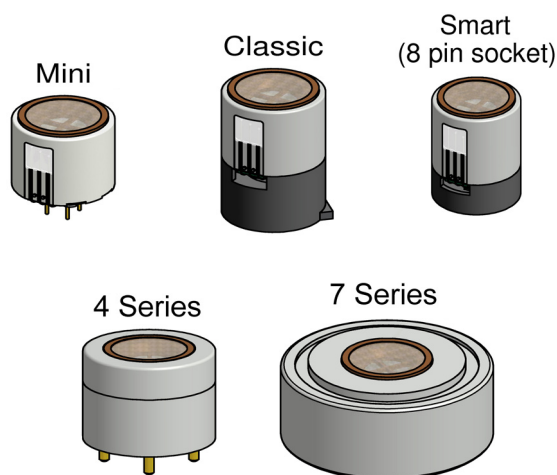
Long Term Output Drift	<5% per 6 months
Expected Operating Life	2 years in normal use
Storage Life	3 months in sealed container
Standard Warranty	10 months from date of despatch

Part Numbers

AsH3 3E 1 F LT	Part Number
Mini	0731-237-30009
4 Series	0731-237-30049
7 Series	0731-237-30079
Classic	0731-237-30069
Smart	0731-237-30259
Transmitter	0731-237-30659

Orders should be placed through Sensoric Gas Sensors in Bonn.

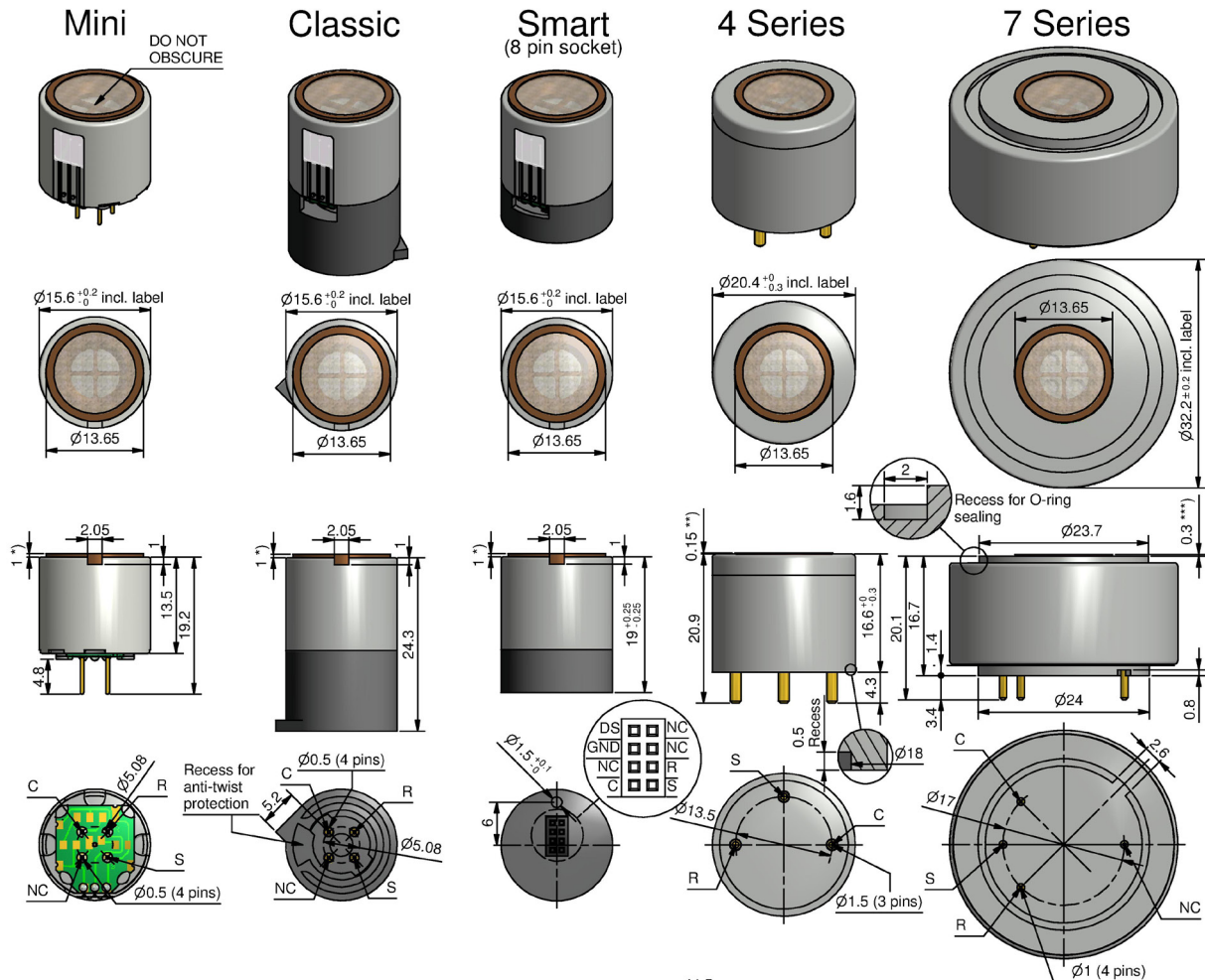
Available in:



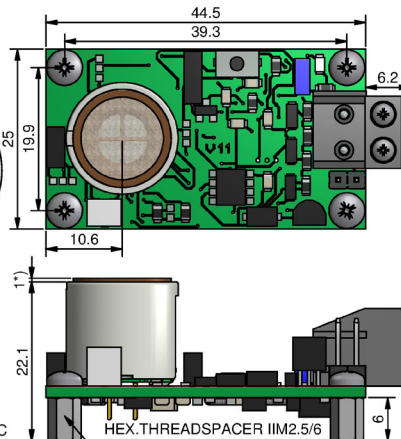
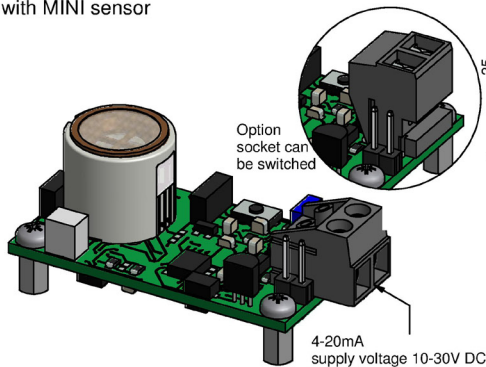
IMPORTANT NOTE: Connection should be made via PCB sockets only. Soldering to pins will render your warranty void.

All performance data is based on conditions at 20°C, 50%RH and ambient pressure using Sensoric recommended circuitry. For information on sensor performance under other conditions, refer to the Operating Principles.

Product Dimensions



4-20mA transmitter board with MINI sensor



Scale for all products 1:1

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

S Sensing
C Counter
R Reference
NC not connected

Plugs and customized adaptations available on request

Important Note: Connection should be made via PCB sockets only. Soldering to the pins will render your warranty void.

*) Projection 0.6 - 1.25 mm depending on gastype

**) Projection up to 0.4 mm for 4 Series

***) Projection up to 0.55 mm for 7 Series

Poisoning

Sensoric cells 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 Sensoric cells as the solvent may cause crazing of the plastic.

Cross Sensitivity Table

Whilst Sensoric cells 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	Conc. Used (ppm)	Reading (ppm AsH ₃)	Gas	Conc. Used (ppm)	Reading (ppm AsH ₃)
Ammonia, NH ₃	108	<0.1	Hydrogen Fluoride, HF	7.2	0
Carbon Dioxide, CO ₂	5000	0	Hydrogen Selenide, SeH ₂	0.85	0
Carbon Monoxide, CO	85	0	Hydrogen Sulfide, H ₂ S	18.2	0
Chlorine, Cl ₂	0.85	< -0.05	Nitrogen Dioxide, NO ₂	10.1	-2.1
Diborane, B ₂ H ₆	0.2	0.01	Phosphine, PH ₃	0.18	0.25
Hydrocarbons, CH ₄	18000	0	Propan-2-ol, C ₃ H ₇ OH	20000	<0.05
Hydrogen, H ₂	3100	<0.05	Silane, SiH ₄	3.5	0.6
Hydrogen Chloride, HCl	7.9	0	Sulfur Dioxide, SO ₂	17.8	0
Hydrogen Cyanide, HCN	12.6	0.4			

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.

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. No liability is accepted for any consequential losses, injury or damage resulting from the use of this document or from any omissions or errors herein. The data is given for guidance only. It does not constitute a specification or an offer for sale. 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.

Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time.

Key Features & Benefits:

- Excellent stability
- Resistant to drying out
- Reliable in continuous flow applications

Technical Specifications**MEASUREMENT**

Operating Principle	3-electrode electrochemical
Measurement Range	0-1 ppm AsH ₃
Maximum Overload	20 ppm
Lower Detection Limit	<30 ppb when using recommended electronics
Filter	None
Sensitivity	1400 ± 450 nA/ppm
Response Time (T₉₀)	<30 Seconds
Baseline Offset (clean air)	< ±20 nA
Zero Shift (-40°C to +50°C)	< ±40 ppb
Repeatability	<2% of signal
Linearity	<10% of full scale

ELECTRICAL

Recommended Load Resistor	1.5 kΩ
Bias Voltage	0 V
Resolution	Dependent on Electronics <15 ppb when using recommended circuitry

MECHANICAL

Housing Material	PPO Noryl
Weight	4.5 g
Orientation	Any

ENVIRONMENTAL

Typical Applications	Portable & fixed life safety
Operating Temperature Range:	
Continuous	-20°C to +40°C
Intermittent	-40°C to +50°C
Operating Pressure Range	Atmospheric ± 10%
Operating Humidity Range	10% to 95% RH non-condensing

INTRINSIC SAFETY DATA

Maximum at 2000ppm	<0.2 mA at 100 ppm
Maximum o/c Voltage	<500 mV
Maximum s/c Current	<1.0 A

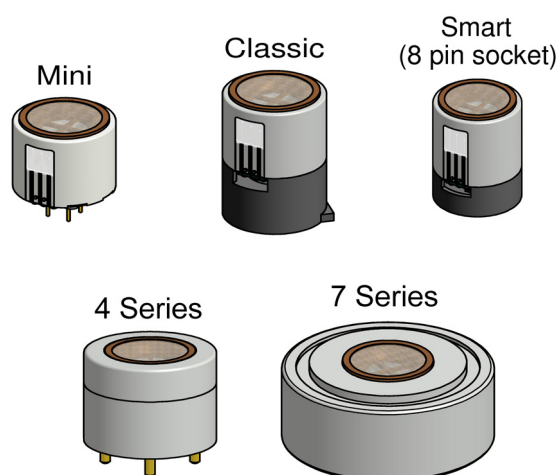
LIFETIME

Long Term Output Drift	<5% per 6 months
Expected Operating Life	2 years in normal use
Storage Life	3 months in sealed container
Standard Warranty	10 months from date of despatch

Part Numbers

AsH3 3E 1 LT	Part Number
Mini	0731-337-30009
4 Series	0731-337-30049
7 Series	0731-337-30079
Classic	0731-337-30069
Smart	0731-337-30259
Transmitter	0731-337-30659

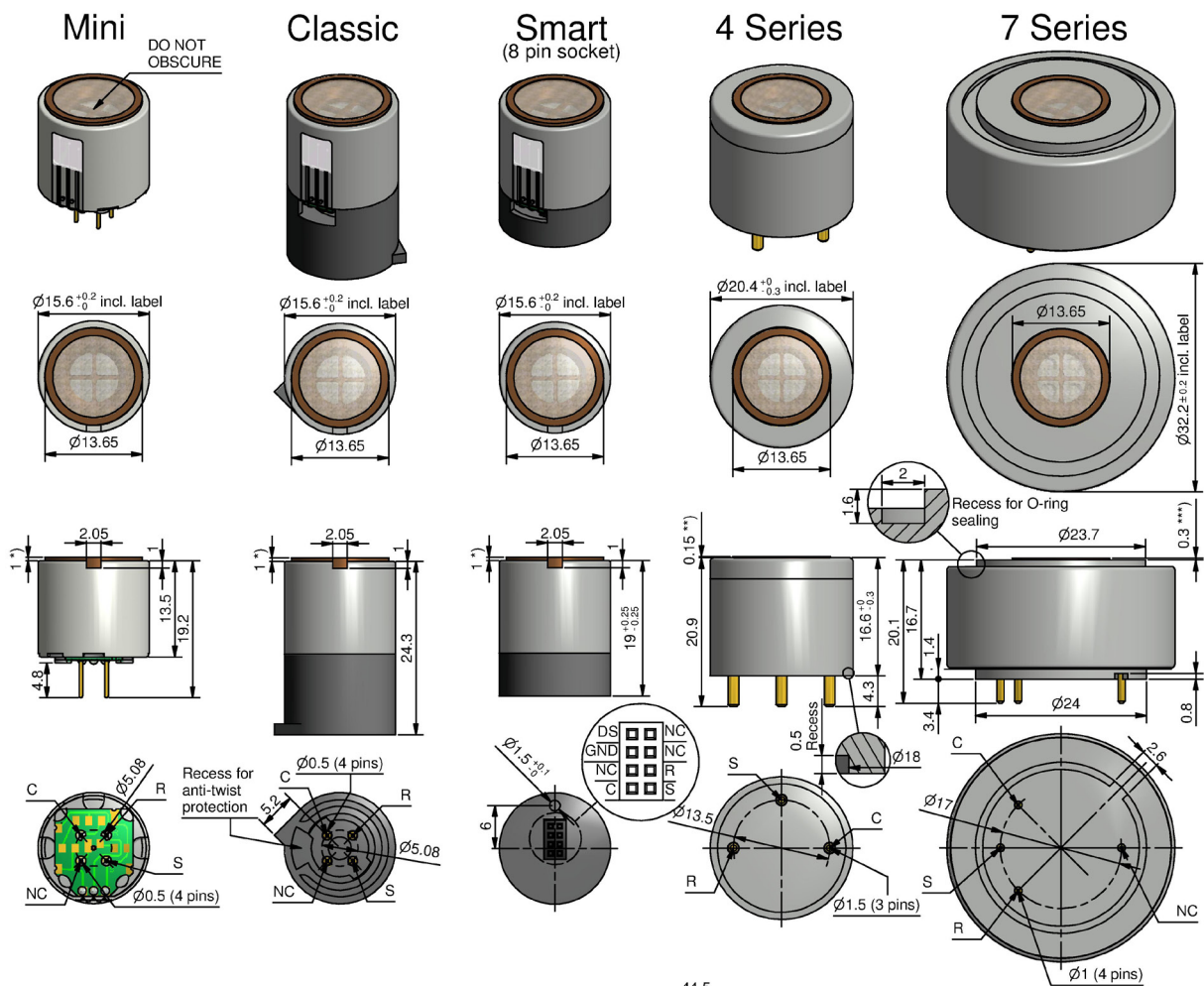
Orders should be placed through
Sensoric Gas Sensors in Bonn.

Available in:

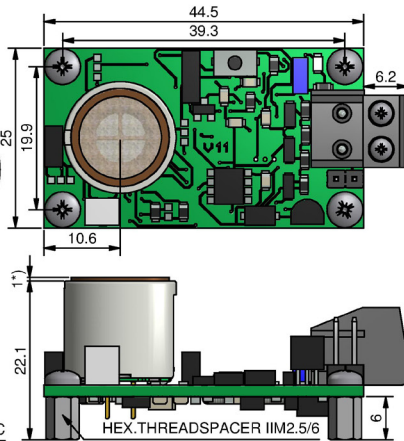
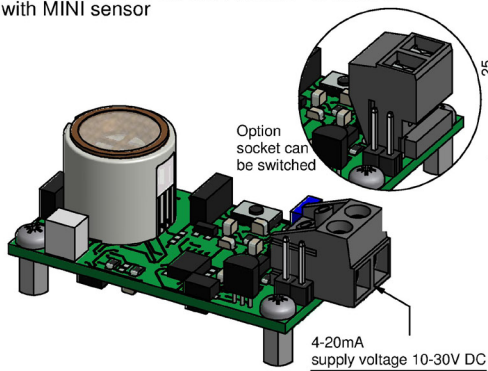
IMPORTANT NOTE: Connection should be made via PCB sockets only. Soldering to pins will render your warranty void.

All performance data is based on conditions at 20°C, 50%RH and ambient pressure using Sensoric recommended circuitry. For information on sensor performance under other conditions, refer to the Operating Principles.

Product Dimensions



4-20mA transmitter board with MINI sensor



Scale for all products 1:1

All dimensions in mm
All tolerances $\pm 0.15\text{mm}$
unless otherwise stated

S Sensing
C Counter
R Reference
NC not connected

Plugs and customized adaptations available on request

Important Note: Connection should be made via PCB sockets only. Soldering to the pins will render your warranty void.

*) Projection 0.6 - 1.25mm depending on gastype

***) Projection up to 0.4mm for 4 Series

***) Projection up to 0,55mm for 7 Series

Poisoning

Sensoric cells 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 Sensoric cells as the solvent may cause crazing of the plastic.

Cross Sensitivity Table

Whilst Sensoric cells 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	Conc. Used (ppm)	Reading (ppm AsH ₃)	Gas	Conc. Used (ppm)	Reading (ppm AsH ₃)
Ammonia, NH ₃	108	<0.1	Hydrogen Fluoride, HF	7.2	0
Carbon Dioxide, CO ₂	5000	0	Hydrogen Selenide, SeH ₂	0.85	0.3
Carbon Monoxide, CO	85	0	Hydrogen Sulfide, H ₂ S	18.1	11.5
Chlorine, Cl ₂	0.85	-0.2	Nitrogen Dioxide, NO ₂	10.1	-2.2
Diborane, B ₂ H ₆	0.2	0.3	Phosphine, PH ₃	0.18	0.3
Hydrocarbons, CH ₄	18000	0	Propan-2-ol, C ₃ H ₇ OH	20000	<0.05
Hydrogen, H ₂	3100	<0.05	Silane, SiH ₄	4.4	0.7
Hydrogen Chloride, HCl	6.8	0.7	Sulfur Dioxide, SO ₂	17.8	4.9
Hydrogen Cyanide, HCN	12.6	0.7			

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.

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. No liability is accepted for any consequential losses, injury or damage resulting from the use of this document or from any omissions or errors herein. The data is given for guidance only. It does not constitute a specification or an offer for sale. 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.

Performance characteristics on this data sheet outline the performance of newly supplied sensors. Output signal can drift below the lower limit over time.