Sensoric AsH_3 3E 1 LT

Hydride Gas Sensor

Patent: US 7060169 B2

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 (available with H_2S filter 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

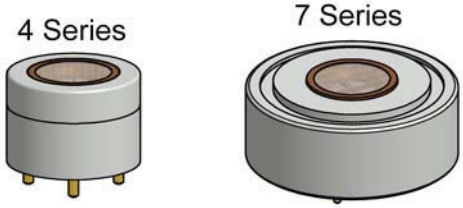
Long Term Output Drift	< 5% per 6 months
Expected Operating Life	2 years in normal use
Storage Life	3 months in sealed container
Standard Warranty	10 months from date of despatch

Part Numbers

AsH_3 3E 1 LT	Part Number
Mini	0731-337-30009
4-Series	0731-337-30049
7-Series	0731-337-30079
Classic-Series	0731-337-30069
Smart	0731-337-30259
Transmitter	0731-337-30659

Orders should be placed through Sensoric Gas Sensors in Bonn.

Available in:



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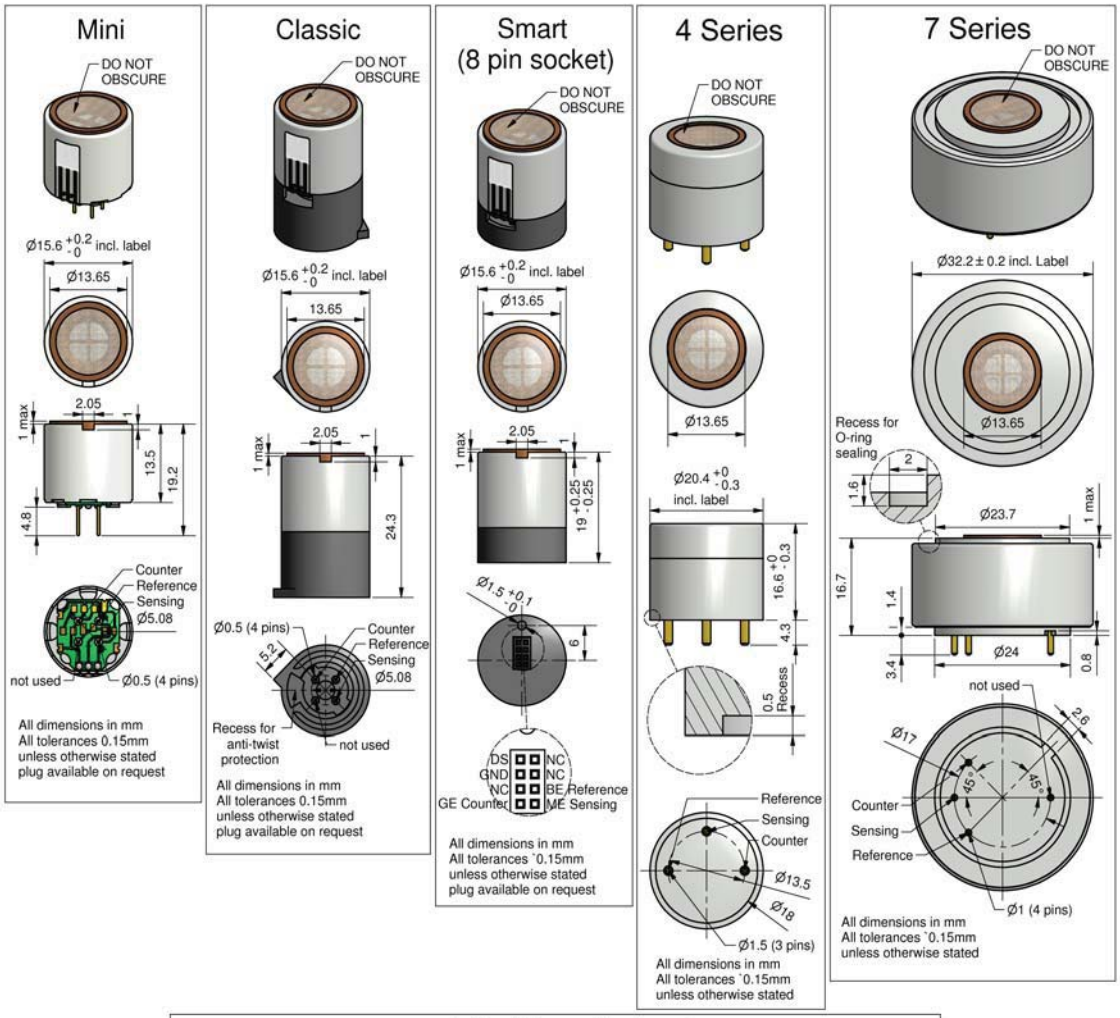
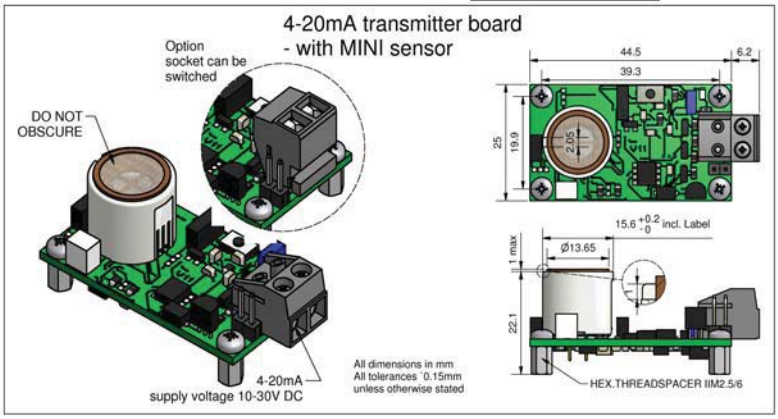
Sensoric Sensors are designed and manufactured in Germany
Justus-von-Liebig-Str. 22,D-53121 Bonn, Germany.
Tel ++49 (0) 228 53 66 40 Fax ++49 (0) 228 5366439

Product Dimensions





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 presure using Sensoric recommended circuitry. For sensor performance data under other conditions, refer to the Characterisation Note and Operating Principles.

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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 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)	Reading (ppm AsH_3)
Carbon Monoxide	85	0
Hydrogen, H_2	3,100	0
Nitrogen Dioxide, NO_2	10	2
Propan-2-ol, C_3H_5OH	25,000	0
Hydrogen Sulfide, H_2S	18	10.8
Sulfur Dioxide, SO_2	18	5.4
Chlorine Cl_2	0.85	0.24
Hydrogenchloride HCl	7.8	1
Hydrogenfluoride HF	7.2	0
Hydrogencyanide HCN	12.6	0.7
Silane, SiH_4	4.3	0.7
Hydrogen Selenide, H_2Se	0.8	0.24
Diborane, B_2H_6	0.2	0.28
Phosphine, PH_3	0.2	0.24

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.

WARNING: By the nature of the technology used, any electrochemical or catalytic bead sensor can potentially fail to meet specification without warning. Although City Technology makes every effort to ensure the reliability of our products of this type, where life safety is a performance requirement of the product, and where practical we recommend that all sensors and instruments using these sensors are checked for response to gas before use.

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