Product Data Sheet

Sensoric AsH3 3E 1 F LT

Arsine (AsH₂) Gas Sensor with H₂S Filter Patent: US 7060169 B2

Key Features & Benefits:

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

Technical Specifications

MEASUREMENT

Operating Principle	
Measurement Range	C
Maximum Overload	2
Lower Detection Limit	<
	n

- Filter Filter Capacity Sensitivity Response Time (T_{qn}) Baseline Offset (clean air) Zero Shift (-40°C to +50°C) Repeatability Linearity
- 3-electrode electrochemical 0-1 ppm AsH 20 ppm < 30 ppb when using recommended electronics To remove H_aS 200 ppm hr 1400 ± 450 nA/ppm <30 Seconds < ±20 nA < ±40 ppb <2 % of signal <10% of full scale

recommended circuitry

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.



ELECTRICAL

Recommended Load Resistor | 1.5 k Ω **Bias Voltage** 0 V Resolution **Dependent on Electronics** < 15 ppb when using

MECHANICAL

Housing Material | PPO Norvl Weight 4.5 g **Orientation** Any

ENVIRONMENTAL

Typical Applications | Portable & fixed life safety **Operating Temperature Range:** Continuous Intermittent Operating Pressure Range **Operating Humidity Range** 10% to 95% RH non-condensing

-20°C to +40°C -40°C to +50°C Atmospheric ± 10%

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	
Expected Operating Life	
Storage Life	3 months in sealed container
Standard Warranty	10 months from date of despatch

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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 52 66 40 Fax ++49 (0) 228 5266439



Product Dimensions

*) Projection 0.6 - 1.25mm depending on gastype **) Projection up to 0.4mm for 4 Series ***) Projection up to 0,55mm for 7 Series

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<u>Poisoning</u>

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_2S	18.2	0
Chlorine, Cl ₂	0.85	< -0.05	Nitrogen Dioxide, NO ₂	10.1	-2.1
Diborane, B_2H_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.

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

limit over time.

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