AsH3 3E 1 LT

Arsine (AsH_3) 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
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

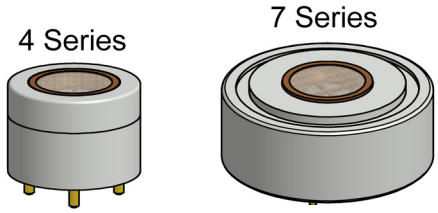
LIFETIME

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 LT	Part Number
4 Series	0731-337-30049
7 Series	0731-337-30079

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 recommended circuitry. For information on sensor performance under other conditions, refer to the Operating Principles.

Poisoning

Sensors 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 sensors as the solvent may cause crazing of the plastic.

Cross Sensitivity Table

Whilst sensors 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)
Ammonia, NH_3	108	<0.1
Carbon Dioxide, CO_2	5000	0
Carbon Monoxide, CO	85	0
Chlorine, Cl_2	0.85	-0.2
Diborane, B_2H_6	0.2	0.3
Hydrocarbons, CH_4	18000	0
Hydrogen, H_2	3100	<0.05
Hydrogen Chloride, HCl	6.8	0.7
Hydrogen Cyanide, HCN	12.6	0.7

Gas	Conc. Used (ppm)	Reading (ppm AsH_3)
Hydrogen Fluoride, HF	7.2	0
Hydrogen Selenide, SeH_2	0.85	0.3
Hydrogen Sulfide, H_2S	18.1	11.5
Nitrogen Dioxide, NO_2	10.1	-2.2
Phosphine, PH_3	0.18	0.3
Propan-2-ol, C_3H_7OH	20000	<0.05
Silane, SiH_4	4.4	0.7
Sulfur Dioxide, SO_2	17.8	4.9

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.