



Arsine Gas Sensor AsH3/M-1

AsH3 Gas Sensor in Miniature Housing

Key Features

- Highly sensitive Arsine detection

Applications

- Safety and Process Control
- Discontinuous Measurement
- For Portable Gas Detectors

Measurement

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 - 1 ppm
Maximum Overload	5 ppm
Inboard Filter	-
Output Signal	3000 ± 600 nA/ppm
Resolution (Electronics dependent)	< 0.02 ppm
T90 Response Time	< 50 s
Typical Baseline Range (pure air, 20°C)	-0.03 ppm to 0.03 ppm
Maximum Zero Shift (+20°C to +40°C)	see Graph
Repeatability	< 2 % of signal
Output Linearity	Linear
Gain (Only applies to 4-Electrode sensors)	-

Performance data recorded at 20 – 25 °C, 30 - 50% RH, 900 - 1100 mbar

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Electrical

Rec. Load Resistor	10 - 33 Ω
Bias (V_Sens-V_Ref)	not recommended
Conformity to RoHS directive	RoHS Compliance

Environmental

Relative Humidity Range	15 % to 90 % RH non-condensing
Temperature Range	-40 °C to 50 °C
Pressure Range	Atmospheric
Pressure Coefficient	N.D.
Humidity Effect	None

Lifetime

Expected Operation Life	2 years in air
Expected Long Term Output Drift in air	< 5 % signal loss per month
Filter Life	not applicable
Storage Life	6 months in container
Rec. Storage Temperature	5°C - 20°C
Warranty Period	12 months from date of dispatch

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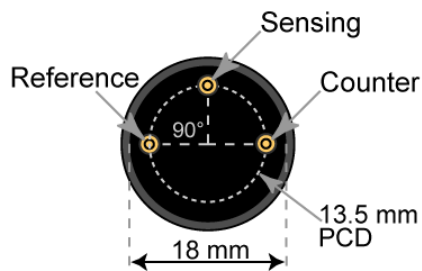
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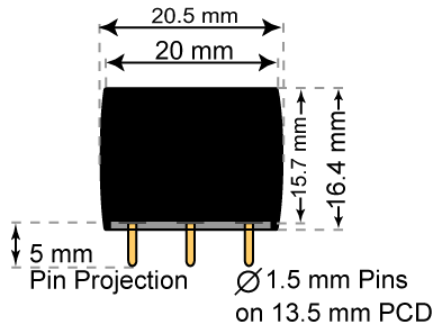
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Miniature-Size Outline Dimensions

BOTTOM VIEW



SIDE VIEW



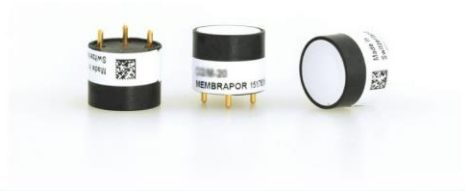
± 0.10 mm

Mechanical

Weight	5.5 g
Orientation	Any
Housing material	Polycarbonate

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Cross Sensitivity Data

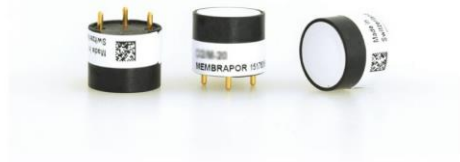
The table below does not claim to be complete. We recommend using the target gas for calibration purposes. Using surrogate (interfering) gases can result in inaccuracies in the final calibration. Please contact Membrapor AG for further support regarding cross sensitivities.

Interfering Gas	Concentration [ppm]	Reading [ppm]
C ₂ H ₄	20	0
CO	200	< 0.5
Cl ₂	20	-4
F ₂	7.7	< -0.9
H ₂	1000	0
H ₂ S	20	~21
HCl	20	< 0.1
HF	10	0
Isopropanol (C ₃ H ₇ OH) ¹⁾	1000	0.25
Methanol (CH ₃ OH) ¹⁾	960	< 0.1
NO	35	< 2
NO ₂	5	-1
PH ₃	1	0.53
SO ₂	5	1
SiH ₄	10	0.6

1) Exposure to high concentrations of alcohols can cause short-term transient signals.

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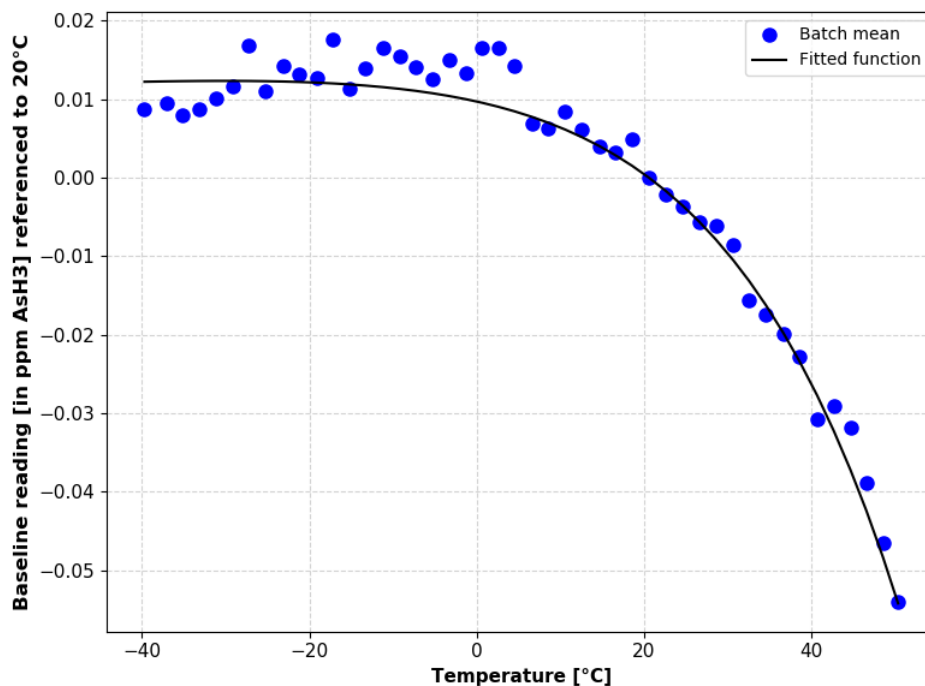


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Temperature dependence

The output of an electrochemical sensor varies with temperature. The graphs below show the temperature-dependent variation of baseline and sensitivity, respectively. The results shown here are raw data (batch average) without any post-processing steps. The sensitivity and baseline are referenced to the signal at 20°C (reference point).

Please note: It is highly recommended to acquire the temperature dependence curves with the whole instrument. The sampling system, the humidity, the electronics and the interaction between the electronics and the sensor have a significant impact on the temperature dependence of the final measurement reading.



Baseline shifted with respect to reference point at 20°C.

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