MEMBRAPOR

Specification Sheet

# 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) | - |



Phone: +41 43 311 72 00
Fax: +41 43 311 72 01
E-Mail: info@membrapor.ch
Website: www.membrapor.ch

Membrapor AG
Birkenweg 2
CH-8304 Wallisellen
Switzerland

**Performance data recorded at 20 – 25 °C, 30 - 50% RH, 900 - 1100 mbar**
For further information about usage of Membrapor sensors, see application note MEM1. The data contained in this document is for guidance only. Membrapor AG accepts no liability for any consequential losses, injury or damage resulting from the use of this document or from any omissions or errors herein. Customers should test under their own conditions to ensure that the sensors are suitable for their own requirements.

MEMBRAPOR

Specification Sheet

# Arsine Gas Sensor AsH3/M-1

## 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 |



Phone: +41 43 311 72 00
Fax: +41 43 311 72 01
E-Mail: info@membrapor.ch
Website: www.membrapor.ch

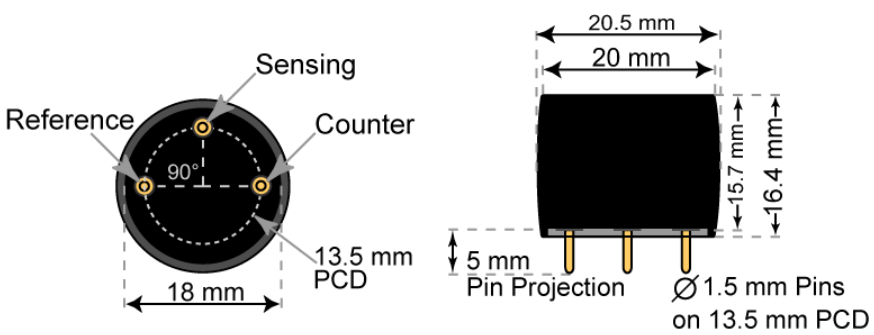
Membrapor AG
Birkenweg 2
CH-8304 Wallisellen
Switzerland

MEMBRAPOR

Specification Sheet

# Arsine Gas Sensor AsH3/M-1

**Miniature-Size Outline Dimensions**




± 0.10 mm

## Mechanical

| | |
|---|---|
| Weight | 5.5 g |
| Orientation | Any |
| Housing material | Polycarbonate |




Phone: +41 43 311 72 00
Fax: +41 43 311 72 01
E-Mail: info@membrapor.ch
Website: www.membrapor.ch

Membrapor AG
Birkenweg 2
CH-8304 Wallisellen
Switzerland

# Arsine Gas Sensor AsH3/M-1

## 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] |
|---|---|---|
| $C_2H_4$ | 20 | 0 |
| CO | 200 | < 0.5 |
| $Cl_2$ | 20 | -4 |
| $F_2$ | 7.7 | < -0.9 |
| $H_2$ | 1000 | 0 |
| $H_2S$ | 20 | ~21 |
| HCl | 20 | < 0.1 |
| HF | 10 | 0 |
| Isopropanol ($C_3H_7OH$) [1)] | 1000 | 0.25 |
| Methanol ($CH_3OH$) [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.



Phone: +41 43 311 72 00
Fax: +41 43 311 72 01
E-Mail: info@membrapor.ch
Website: www.membrapor.ch

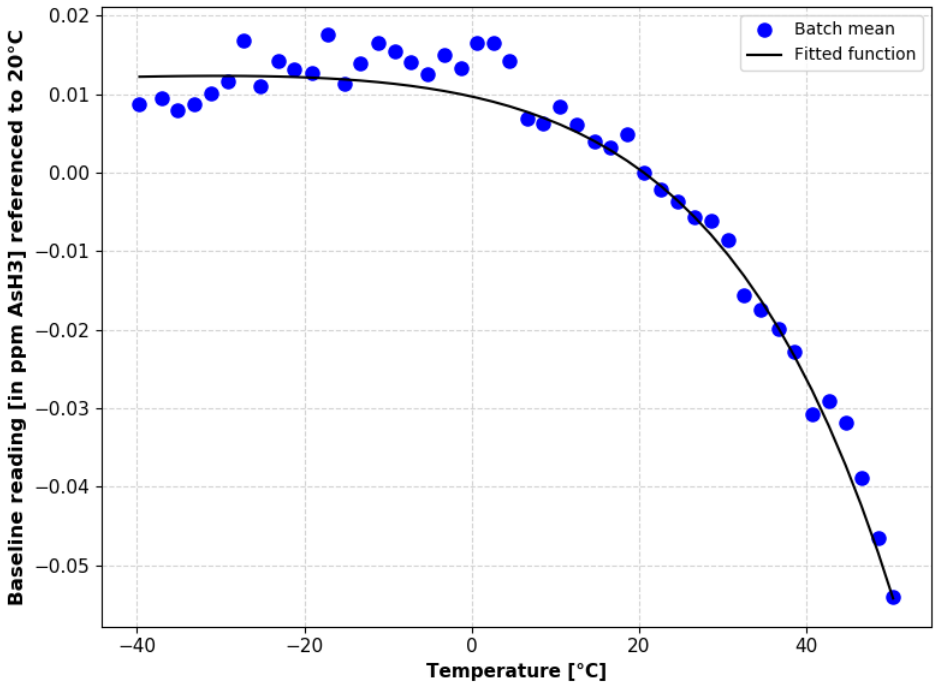
Membrapor AG
Birkenweg 2
CH-8304 Wallisellen
Switzerland

**Performance data recorded at 20 – 25 °C, 30 - 50% RH, 900 - 1100 mbar**
For further information about usage of Membrapor sensors, see application note MEM1. The data contained in this document is for guidance only. Membrapor AG accepts no liability for any consequential losses, injury or damage resulting from the use of this document or from any omissions or errors herein. Customers should test under their own conditions to ensure that the sensors are suitable for their own requirements.

# Arsine Gas Sensor AsH3/M-1

## 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.



Phone: +41 43 311 72 00
Fax: +41 43 311 72 01
E-Mail: info@membrapor.ch
Website: www.membrapor.ch

Membrapor AG
Birkenweg 2
CH-8304 Wallisellen
Switzerland