MEMBRAPOR

Specification Sheet

Diborane Gas Sensor B2H6/C-1

B2H6 Gas Sensor in Compact Housing

Key Features

• Detection of low B2H6 Concentration

Applications

• Safety and Process Control
• For Use in Semiconductor Industry

For further information about usage of Membrapor sensors, see application note MEM1.

Measurement

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 - 1 ppm
Maximum Overload	3 ppm
Inboard Filter	-
Output Signal	900 ± 300 nA/ppm
Resolution (Electronics dependent)	< 0.05 ppm
T90 Response Time	< 30 s
Typical Baseline Range (pure air, 20°C)	-0.2 ppm to 0.3 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
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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	-20 °C to 50 °C
Pressure Range	Atmospheric
Pressure Coefficient	N.D.
Humidity Effect	None

Lifetime

Expected Operation Life	3-5 years in air, application based, see MEM1
Expected Long Term Output Drift	< 20 % signal loss per year
Filter Life	not applicable
Storage Life	6 months in container
Recommended Storage Temperature	-10°C - 30°C
Warranty Period	3 years from date of dispatch

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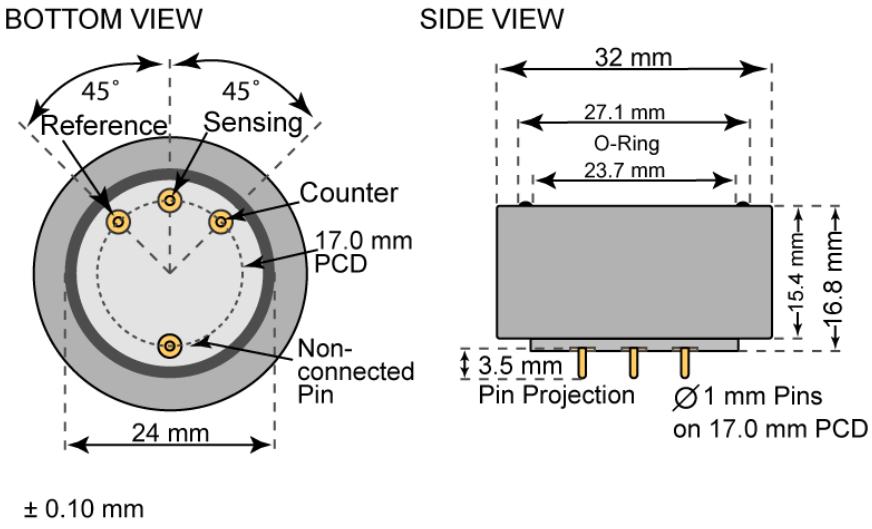
Compact-Size Outline Dimensions



± 0.10 mm

Mechanical

Weight	13 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]
CO	100	4
Cl_2	20	-18
H_2	2000	4
H_2S	20	70
HCl	10	5
HF	17	0
NH_3	30	0
NO_2	20	-25
SO_2	10	11

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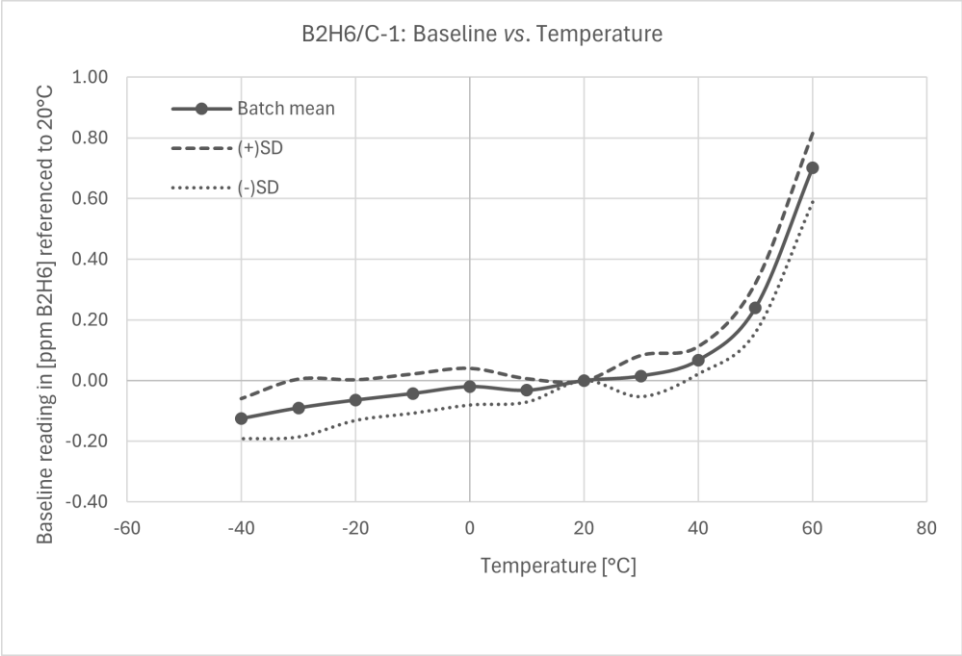
Temperature dependence

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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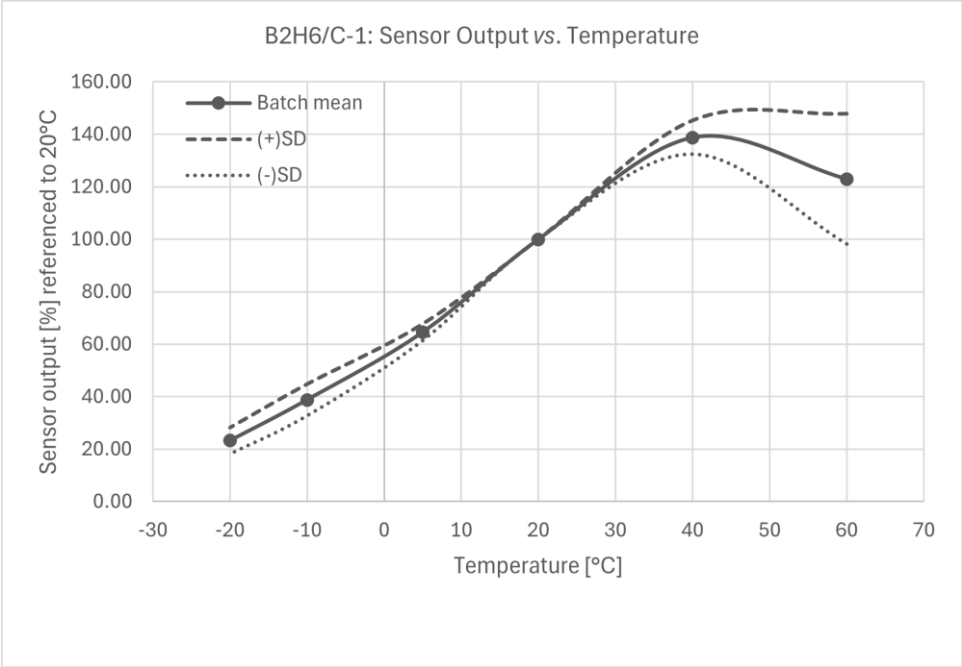

Sensitivity dependence expressed as a percentage of the output signal at reference point at 20 °C.

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