



Hydrogen Gas Sensor H2/VA-1000

H2 Gas Sensor in Vantage Housing

Key Features

- Highly reliable and selective H2 detection
- Replaceable Filter

Applications

- Hydrogen Energy Storage
- H2 Detection in H2/CO-Mixtures
- Medical Applications

Measurement

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 - 1000 ppm
Maximum Overload	2000 ppm
Inboard Filter	To remove CO
Output Signal	27 ± 12 nA/ppm ¹⁾
Resolution (Electronics dependent)	< 1.8 ppm
T90 Response Time	< 40 s
Typical Baseline Range (pure air, 20°C)	-10.0 ppm to 10.0 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)	-

1) H2 sensors lose >10% of their initial sensitivity within the first month after production, until they stabilize to the value listed above.

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.



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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 60 °C
Pressure Range	Atmospheric
Pressure Coefficient	N.D.
Humidity Effect	None

Lifetime

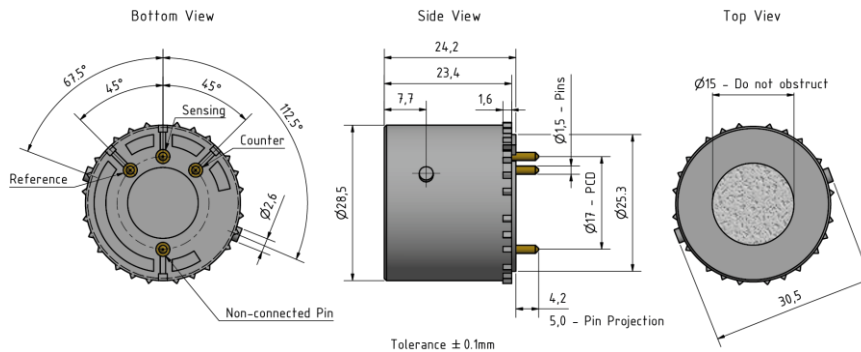
Expected Operation Life	>3 years in air
Expected Long Term Output Drift in air	< 2 % signal loss per month after stabilization
Filter Life	>1 year in air
Storage Life	6 months in container
Rec. Storage Temperature	5°C - 20°C
Warranty Period	12 months from date of dispatch

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Mechanical

Weight	16 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	700	0
H ₂ S	20	0
NO ₂	20	0
O ₃	80	0
SO ₂	50	<2

Important Notes

- The CO cross sensitivity in the table is valid for temperatures >10 °C.
- At -10 °C 700 ppm CO gives a reading of 7 ppm.
- Disinfection solutions containing alcohols and other VOCs must be avoided.

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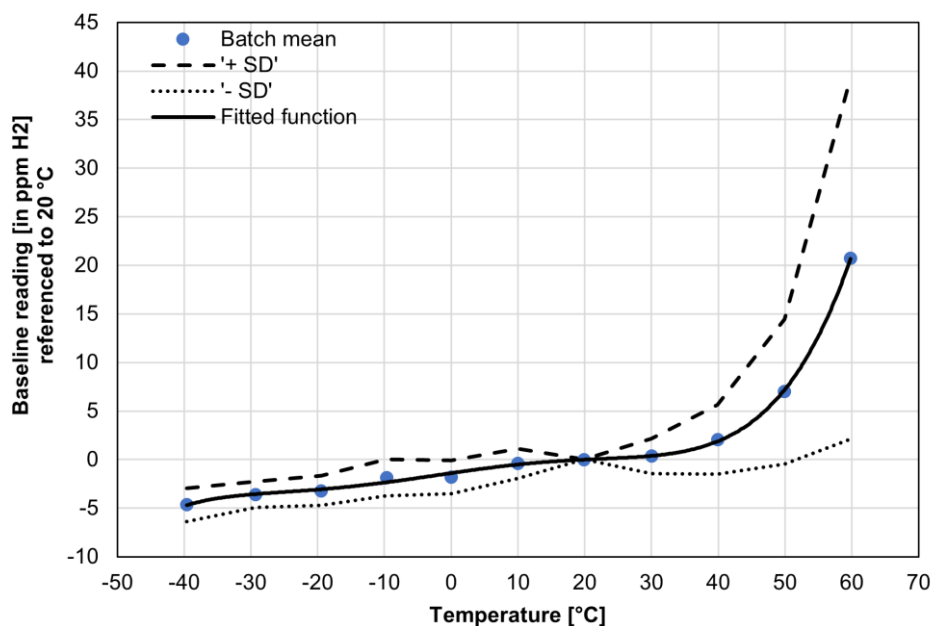


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Temperature dependence

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.



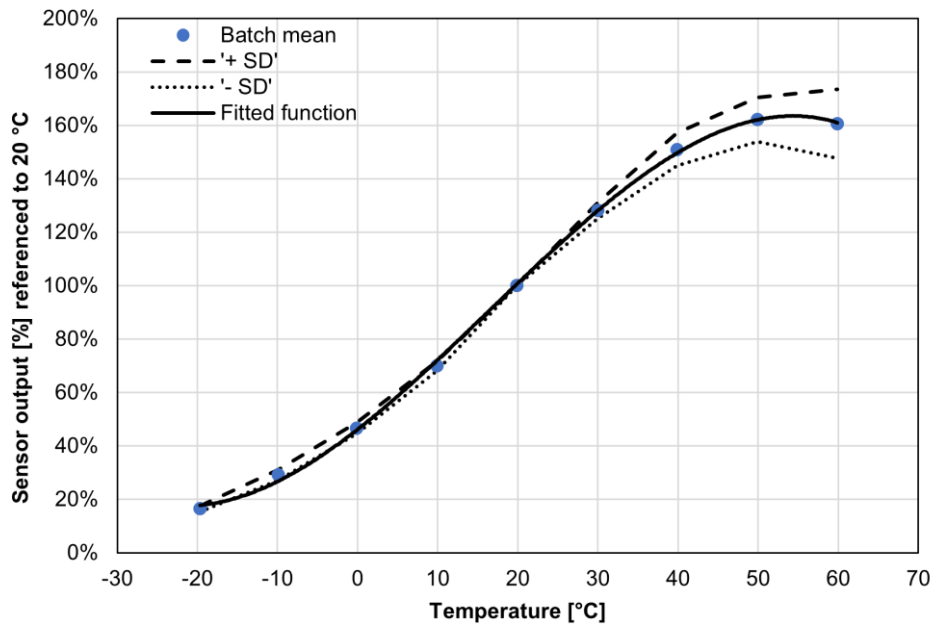
Baseline shifted with respect to reference point at 20°C.

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

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