MEMBRAPOR

Specification Sheet

Volatile Organic Compounds Gas Sensor VOC/M-2000

VOC Gas Sensor in Miniature Housing

Key Features

- Long-life VOC sensor
- No replacement of sensor components

Applications

- Emission Monitoring
- For Portable Gas Detectors

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

Measurement

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 - 2000 ppm
Maximum Overload	4000 ppm
Inboard Filter	-
Output Signal	Alcohols Isopropanol: 45 ± 10 nA/ppm Methanol: 55 ± 10 nA/ppm Ethanol: 50 ± 10 nA/ppm Aromatic Hydrocarbons Xylene (isomeric mixture): 8 ± 4 nA/ppm Toluene: 2 ± 1 nA/ppm Benzene: None

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	Organic Acids Formic acid: 70 ± 20 nA/ppm Unsaturated Hydrocarbons Isobutylene (Reference): 70 ± 20 nA/ppm Ethylene: 80 ± 20 nA/ppm
Resolution (Electronics dependent)	< 3.0 ppm
T90 Response Time	< 100 s
Typical Baseline Range (pure air, 20°C)	0.1 ppm to 1.5 ppm [1)]
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) Fresh sensors with bias need 24 - 72 h for stabilization of the baseline.

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Electrical

Rec. Load Resistor	10 - 33 Ω
Bias (V_Sens-V_Ref)	Variable (see MEM9)
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	3-5 years in air, application based, see MEM1
Expected Long Term Output Drift	< 10 % 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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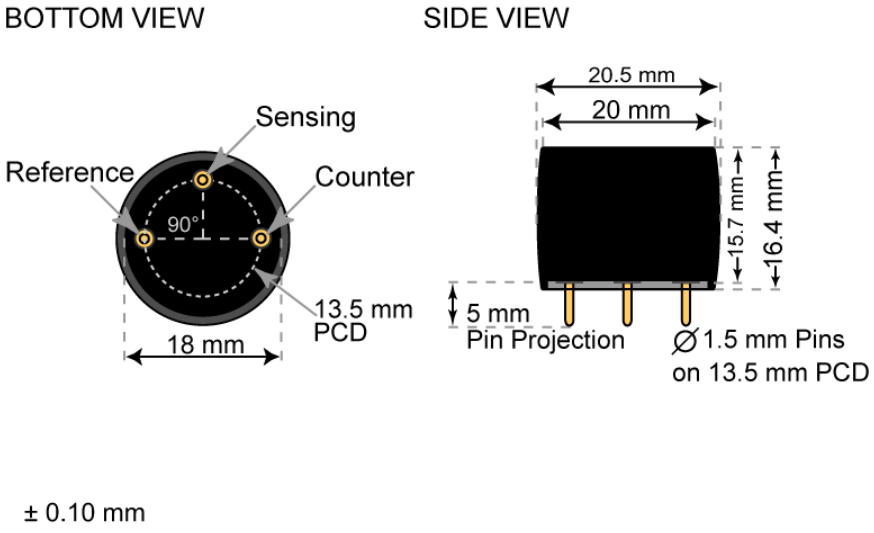
Miniature-Size Outline Dimensions



± 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	Cross-Sens. [%]
CO	40 - 50
H_2	0
H_2S	> 100
NO_2	< 20

Important Notes

• Exposure to any volatile organic compounds (VOCs) such as dichloromethane (DCM) and methyl ethyl ketone (MEK), that can dissolve the polycarbonate housing, should be avoided.

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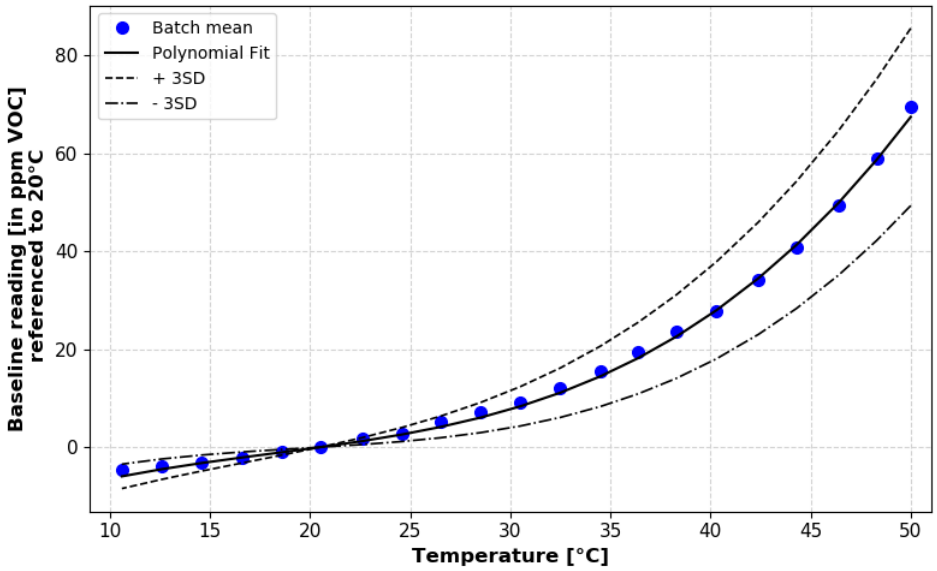
Temperature dependence

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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