



VOC/M-20

Volatile Organic Compounds Gas Sensor in Miniature Housing

Measurement

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 - 20 ppm
Maximum Overload	40 ppm
Inboard Filter	-
Output Signal ¹	<u>Alcohols</u> Isopropanol: 800 ± 400 nA/ppm (Reference) Methanol: 880 ± 400 nA/ppm Ethanol: 900 ± 250 nA/ppm <u>Aldehydes and Ketones</u> Formaldehyde: 3500 ± 500 nA/ppm Acetone: 280 ± 200 nA/ppm <u>Aromatic Hydrocarbons</u> Benzene: 400 ± 200 nA/ppm Toluene: 140 ± 40 nA/ppm Xylene (isomeric mix): 80 ± 30 nA/ppm <u>Organic acids</u> Formic acid: 1200 ± 200 nA/ppm Acetic acid: 25 ± 15 nA/ppm Commercial vinegar ² : 850 ± 900 <u>Unsaturated Hydrocarbons</u> Ethylene: 1400 ± 200 nA/ppm
Resolution (Electronics dependent)	< 0.1 ppm
T90 Response Time	< 40 s (Reference)
Typical Baseline Range (pure air, 20°C)	0.1 ppm to 1.5 ppm ³
Maximum Zero Shift (+20°C to +40°C)	N.D.
Repeatability	< 2 % of signal
Output Linearity	Linear
Gain	-

- 1 These output signal values were recorded at a bias voltage of + 300 mV between sensing and reference electrode. Further VOCs are listed in the cross sensitivity data table.
- 2 Gasphase concentration estimated according to Henry's law.
- 3 **Important Note:** Fresh sensors with bias need 24-72 h for stabilization of the baseline.

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Performance data: 20 – 25°C, 50% RH, 1013 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.



Electrical

Rec. Load Resistor	10 - 33 Ohm
Bias (V_Sens-V_Ref)	+ 300 mV (Reference) Variable, see MEM 9
Conformity to RoHS directive	RoHS Compliance

Environmental

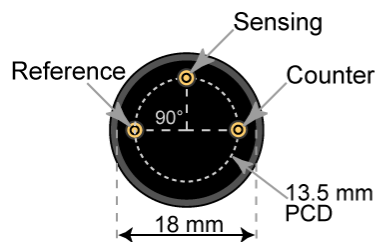
Relative Humidity Range	15 % to 90 % R.H. non-condensing
Temperature Range	-40 °C to 50 °C
Pressure Range	Atmospheric \pm 10%
Pressure Coefficient	N.D.
Humidity Effect	None

Lifetime

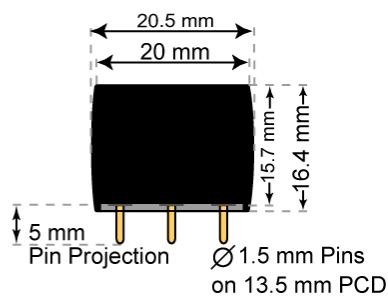
Expected Operation Life	> 3 years in air
Expected Long Term Output Drift in air	< 2 % signal loss per month
Filter Life	-
Storage Life	6 months in container
Rec. Storage Temperature	5°C - 20°C
Warranty Period	12 months from date of dispatch

Miniature-Size Outline Dimensions

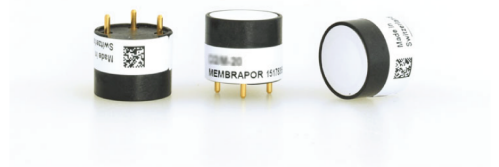
BOTTOM VIEW



SIDE VIEW



\pm 0.10 mm



Mechanical

Weight	5.5 g
Position Sensitivity	None

Applications

Emission Monitoring
For Portable Gas Detectors

Cross Sensitivity Data

The table below does not claim to be complete. Interfering gases should not be used for calibration. Please contact Memrapor AG for further support regarding cross sensitivities.

Interfering Gas	Concentration [ppm]	Reading Isopropanol [ppm]
CO	50	40
H ₂	200	0
H ₂ S	20	117
NO ₂	20	< 6
14% NaOCl	~20	0
Cleaning gasoline	35	0
2-Butanone	21	0
Fluorobenzene	25	0