MEMBRAPOR SPECIFICATION SHEET

O2/M-100

Oxygen Gas Sensor in Mini Housing

MEASUREMENT

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 – 30 %
Maximum Overload	100 %
Inboard Filter	none
Output Signal	90 ± 24 µA/%
Resolution (Electronics dependent)	< 0.05 %
T90 Response Time	< 10 sec
Typical Baseline Range (in pure nitrogen)	0.1 %-equivalent
Maximum Zero Shift (+20°C to +40°C)	N.D.
Repeatability	< 2 % of signal
Output Linearity	Linear [1]
Gain	–

ELECTRICAL

Rec. Load Resistor	10 Ohm
Bias Voltage	-600 mV
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 ± 10%
Pressure Coefficient	N.D.
Humidity Effect	none

LIFETIME

Expected Operation Life	3 years in air [2]
Expected Long Term Output Drift in air	< ±4% signal / 3 years
Filter Life	–
Storage Life	6 months in container
Rec. Storage Temperature	5 °C – 20 °C
Warranty Period	12 months from date of dispatch

IMPORTANT NOTE

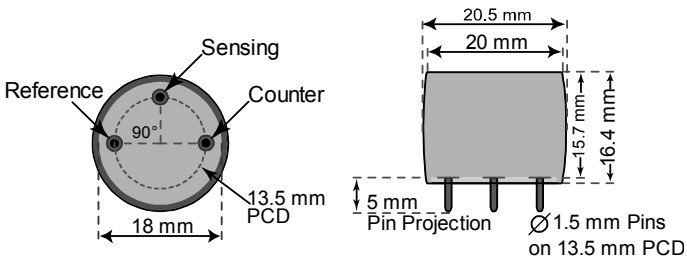
Performance data conditions: 20 °C, 50% RH, 1013 mbar

1) The output signal follows the relationship: S = K Ln (1/(1-C))

2) Lifetime is not limited by the consumption of internal components

3) Further information: See MEM2 Appl. Note Oxygen Sensor

Miniature-Size Outline Dimensions



± 0.10 mm

MECHANICAL

Weight	5.5 g
Position Sensitivity	None

APPLICATIONS

Safety and Environmental Control
Biogas applications
For Portable Devices

CROSS-SENSITIVITY DATA

The table below does not claim to be complete.

Interfering Gas	Conc. ppm	Reading %
H_2S	500	-0.02
SO_2	200	-0.01

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TEMPERATURE DEPENDENCE

The output of an electrochemical sensor varies with temperature. The graphs below show the variation in output with temperature for this type of sensor. The results are shown in the graphs as a mean for a batch of sensors . The sensitivity dependence is expressed as a percentage of the signal at 20 °C. The shift in baseline is shown in ppm referenced to 20 °C and a relative humidity of 50%.

Please note:
It is highly recommended to acquire the temperature dependence curves with the whole instrument. The sampling system, the humidity, the electronics, the interaction between the electronics and the sensor, all have a significant impact on the temperature dependence of the final measurement reading.

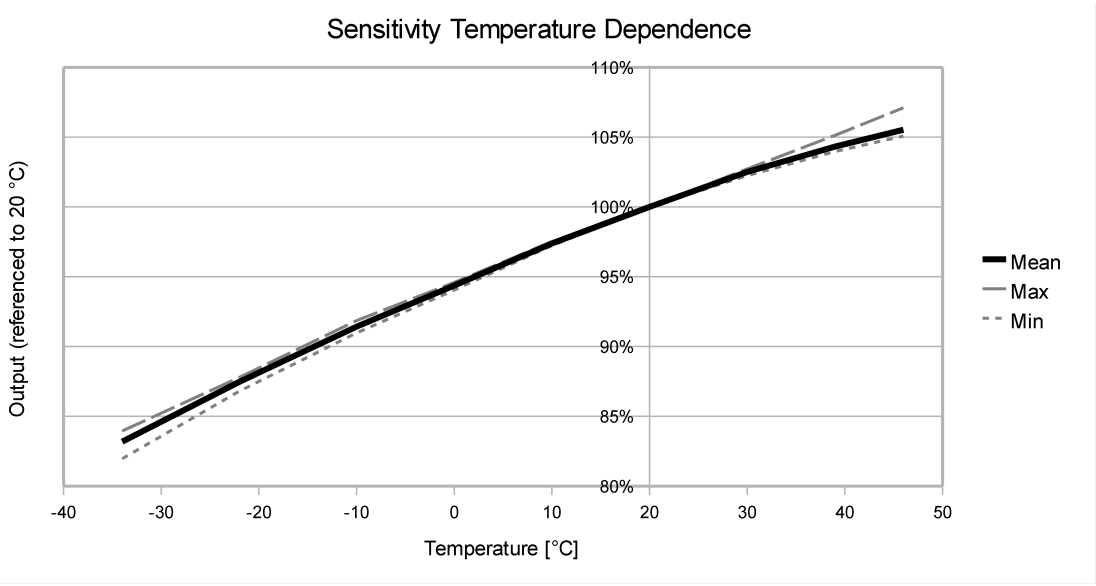

Figure 1: Sensitivity dependence expressed as a percentage of the signal at 20 °C. The result is shown along with confidence intervals corresponding to ±3 times the standard deviation.

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LINEARITY AND RESOLUTION

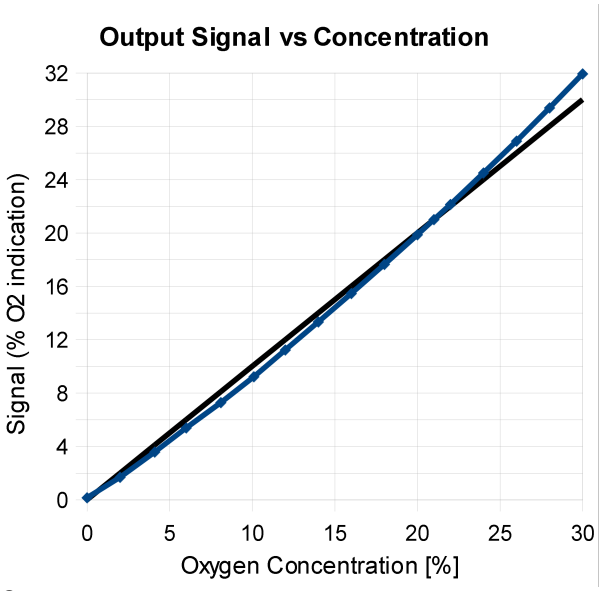

Figure 2: Linearity of O_2-Sensor

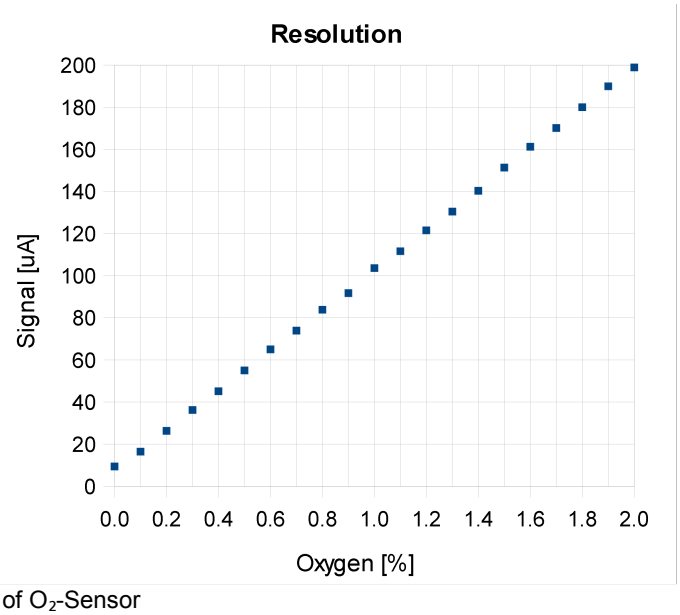

Figure 3: Resolution of O_2-Sensor

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