



ETO/C-20

Ethylene Oxide Gas Sensor in Compact Housing

Measurement

Operation Principle	3-Electrode Electrochemical
Nominal Range	0 - 20 ppm
Maximum Overload	40 ppm
Inboard Filter	-
Output Signal	2500 ± 600 nA/ppm
Resolution (Electronics dependent)	< 0.1 ppm
T90 Response Time	< 100 s
Typical Baseline Range (pure air, 20°C)	0.1 ppm to 1.5 ppm
Maximum Zero Shift (+20°C to +40°C)	N.D.
Repeatability	< 2 % of signal
Output Linearity	Linear
Gain	-

Electrical

Rec. Load Resistor	10 Ohm
Bias (V_Sens-V_Ref)	+300 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	2 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

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

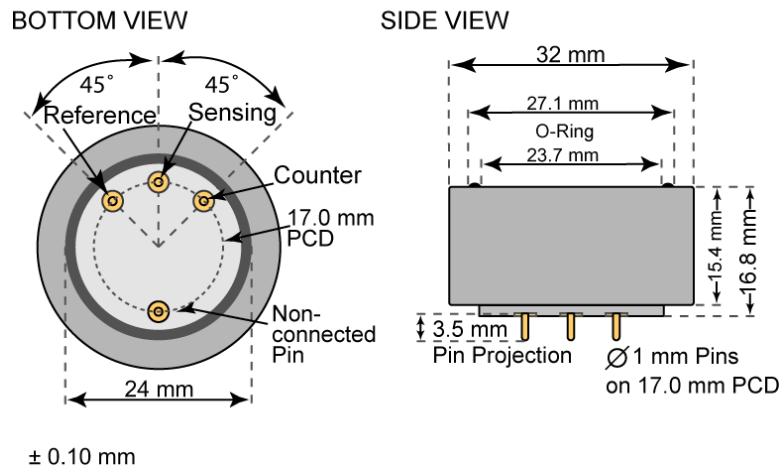
For further information about usage of Membrapor sensors, see application note MEM1.

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Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.



Compact-Size Outline Dimensions



Mechanical

Weight	13 g
Position Sensitivity	None

Applications

Sterilization Processes
Fruit Ripening

Cross Sensitivity Data

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

Interfering Gas	Concentration [ppm]	Reading [ppm]
Aromatic Hydrocarbons	30	< 15
CH ₂ O	5	10
CO	100	45
Ethanol	30	21
H ₂	200	2
H ₂ S	20	~60
Formic Acid	42	42 ± 3
Acetic Acid	16	0
MeOH	80	~55
NH ₃	80	0

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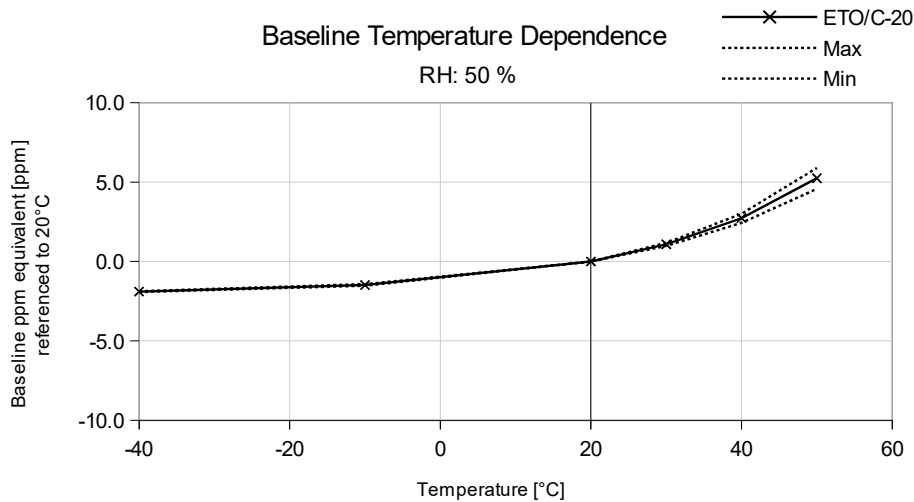
NO	50	40
NO ₂	5	0
Benzene	100	~10
Toluene	30	6
Acetone	300	~2
Xylene	25	5

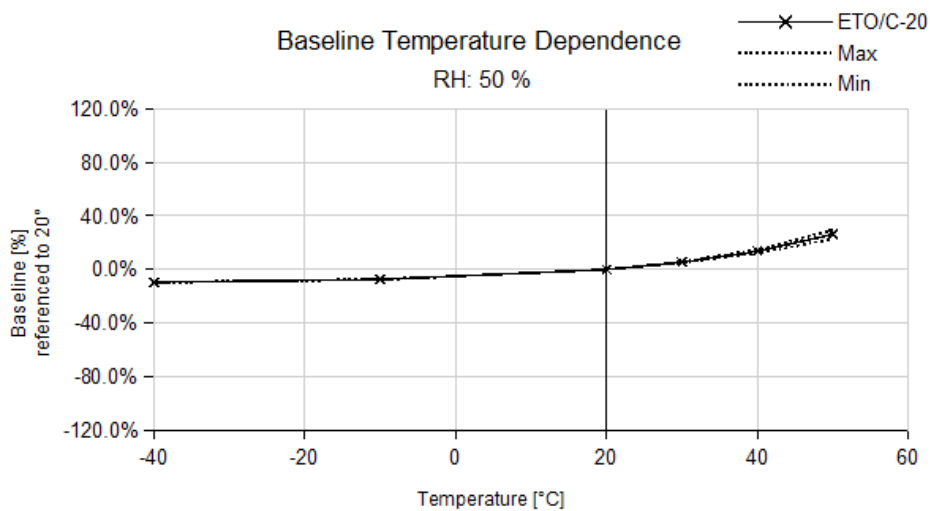
Temperature dependence

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.





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