

Ethylene Oxide Gas Sensor ETO/M-10

C₂H₄O Gas Sensor in Miniature Housing

Key Features

- Highly sensitive ETO measurement

Applications

- Sterilization Processes
- Safety and Process Control
- For Portable Gas Detectors

Measurement

| | |
|--|----------------------------------|
| Operation Principle | 3-Electrode Electrochemical |
| Nominal Range | 0 - 10 ppm |
| Maximum Overload | 20 ppm |
| Inboard Filter | - |
| Output Signal | 2250 ± 750 nA/ppm |
| Resolution (Electronics dependent) | < 0.05 ppm |
| T ₉₀ Response Time | < 100 s |
| Typical Baseline Range (pure air, 20°C) | 0.1 ppm to 1.0 ppm ¹⁾ |
| Maximum Zero Shift (+20°C to +40°C) | N.D. |
| 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.

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) | +300 mV |
| 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 | 2 years in air |
| Expected Long Term Output Drift in air | < 2 % signal loss per month |
| Filter Life | not applicable |
| 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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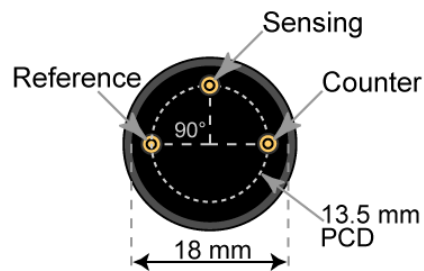
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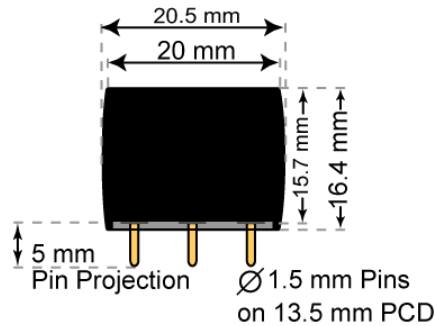
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Miniature-Size Outline Dimensions

BOTTOM VIEW



SIDE VIEW



± 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 | Concentration [ppm] | Reading [ppm] |
|--|---------------------|---------------|
| Acetone (C ₃ H ₆ O) | 300 | ~ 2 |
| Benzene (C ₆ H ₆) | 100 | ~ 10 |
| CO | 100 | 20 ± 10 |
| Ethanol (C ₂ H ₅ OH) | 30 | 21 |
| Formic Acid (HCOOH) | 42 | 42 ± 3 |
| H ₂ S | 20 | 40 ± 2 |
| Methyl Mercaptan (MM, CH ₃ SH) | 10 | ~ 12 |
| Tert-Butyl Mercaptan (TBM, (CH ₃) ₃ CSH) | 10 | ~ 11 |
| Toluene (C ₇ H ₈) | 30 | 6 |
| Xylene (C ₈ H ₁₀) | 25 | 5 |

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