



Solid Polymer Electrochemical Gas Sensing Technology

ES1-NO₂-1000-01 Nitrogen Dioxide Gas Sensor
Datasheet

Easy Gas Sensor







ES1-NO₂-1000 Nitrogen Dioxide Gas





» Part Number

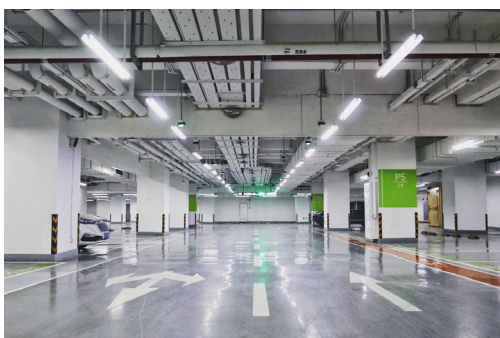
01-ES1-NO₂-1000-01

» Futures

-  Extreme linear response up to high concentration
-  Fast response time
-  Low noise
-  No electrolyte leakage
-  Low cost at large volumes
-  Individually calibrated (including test report)

» Typical Applications

-  TLV Monitoring
-  Parking Garages



» Technical Specifications

Performance

| | |
|------------------------------|--|
| Sensitivity | 10 nA/ppm ± 3 nA/ppm |
| Zero Current | ± 2nA |
| Range | 0-1000 ppm |
| Maximum Overload | 5000 ppm |
| Resolution (16Bit ADC) | 0.1 ppm |
| Response Time | T ₅₀ < 10s, T ₉₀ < 30s |
| Repeatability | 1 % |
| Lower Detectable Limit (LDL) | 2 ppm |
| Linear Range | 1000 ppm |

Environment

| | |
|-----------------------------|---------------------------|
| Operating Temperature Range | -40 to +55°C |
| Operating Humidity Range | 15-95 %RH. Non-condensing |
| Operating Pressure Range | 800 to 1200 hPa |
| Storage Temperature | 0 to 20°C |

Operation

| | |
|---------------------------|---------------------------|
| Operating Principle | Amperometric, 3-electrode |
| Bias Voltage | 0 mV |
| Recommended Load Resistor | 100 Ω |
| Warm Up Time | < 60 s |

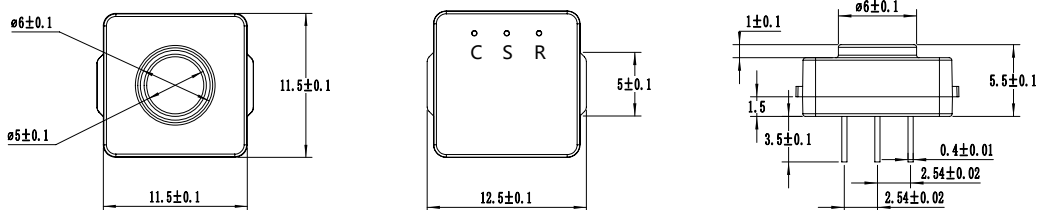
Lifetime

| | |
|-------------------------|------------------|
| Long-Term Drift | < 1 %/month |
| Expected Lifetime | > 3 years in air |
| Zero Drift in Clean Air | < 0.2 ppm |
| Storage Life | 12 months |
| Warranty | 12 months |

Housing

| | |
|------------------|--------|
| Housing Material | PPO |
| Weight | < 0.7g |

» Dimensions



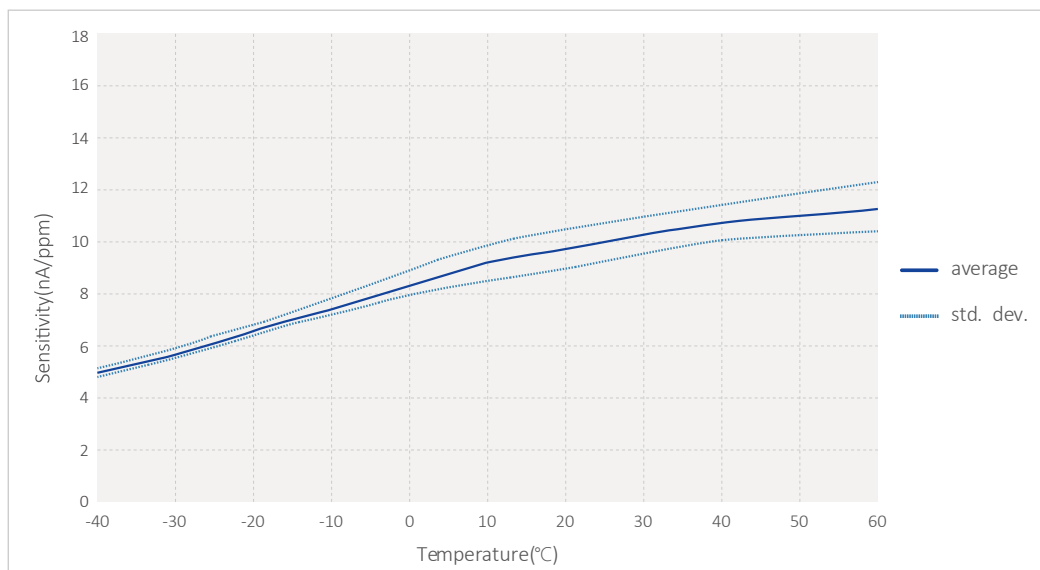
» Cross Sensitivity

| Gas | Formula | Test Concentration | Sensor Reading |
|-------------------|---------------------------------|--------------------|----------------|
| Ammonia | NH ₃ | 50ppm | 0ppm |
| Carbon Dioxide | CO ₂ | 1000ppm | 0ppm |
| Carbon Monoxide | CO | 300ppm | 0ppm |
| Methane | CH ₄ | 1%vol | 0ppm |
| Hydrogen | H ₂ | 3000ppm | 0ppm |
| Hydrogen Cyanide | HCN | 10ppm | 0ppm |
| Isopropanol | C ₃ H ₈ O | 1000ppm | n.e |
| Sulphur Dioxide | SO ₂ | 5ppm | 0ppm |
| Hydrogen Sulphide | H ₂ S | 15ppm | 0ppm |
| Nitric Oxide | NO | 35ppm | 0ppm |

Note:

- 1) The above interference factors may vary due to different sensors and service life, please refer to the actual test results.
- 2) This table is not complete for all cross gases, other gas please contact with us.

» Temperature Curve



Note: The above parameters are the test results at a temperature of 25°C, a relative humidity of 50%RH and a normal pressure environment. The performance of the sensor is different under different environmental conditions. If you have any questions, please contact us.

Disclaimer

The EC Sense performance data stated above is based on data obtained under test conditions using the EC Sense gas distribution system and AQS test software. In the interest of continuous product improvement, EC Sense reserves the right to change design features and specifications without notice. We are not responsible for any loss, injury or damage caused by this. EC Sense assumes no responsibility for any indirect loss, injury or damage resulting from the use of this document, the information contained therein or any omissions or errors herein. This document does not constitute an offer to sell. The data it contains are for informational purposes only and cannot be considered a guarantee. Any use of the given data must be evaluated and determined by the user to comply with federal, state and local laws and regulations. All specifications outlined are subject to change without notice.

 **Warning**

EC Sense sensors are designed for use in a variety of environmental conditions. However, due to the principles and characteristics of solid polymer electrochemical sensors and to ensure normal use, users must strictly follow this article during storage, assembly and operation of the module. General-purpose PCB circuit board application methods and illegal applications / violation of the application will not be covered by the warranty. Although our products are highly reliable, we recommend checking the module's response to the target gas prior to utilization to ensure on-site use. At the end of the products service life, please do not discard any electronics in the domestic waste, instead follow the local governments electronic waste recycling regulations for disposal.



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