



Solid Polymer Electrochemical Gas Sensing Technology

ES4-H₂-1000-01 Hydrogen Gas Sensor
Datasheet

Easy Gas Sensor






ES4-H₂-1000 Hydrogen Gas









» Part Number

01-ES4-H₂-1000-01

» Futures

-  Strong signal to noise
-  Fast response time
-  No electrolyte leakage
-  Short warm up time
-  Low cost at large volumes

» Typical Applications

-  Ambient Monitoring
-  Very Sensitive Leak Detection
-  Battery Produce
-  Semiconductor
-  Data Center Protect
-  Propellent Detection



» Technical Specifications

Performance

Sensitivity	11 nA/ppm ± 3 nA/ppm
Zero Current	± 100nA
Range	0-1000ppm
Maximum Overload	2000ppm
Resolution (16Bit ADC)	0.1ppm
Response Time	T ₅₀ < 10s, T ₉₀ < 30s
Repeatability	1%
Lower Detectable Limit (LDL)	≤ 2ppm
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

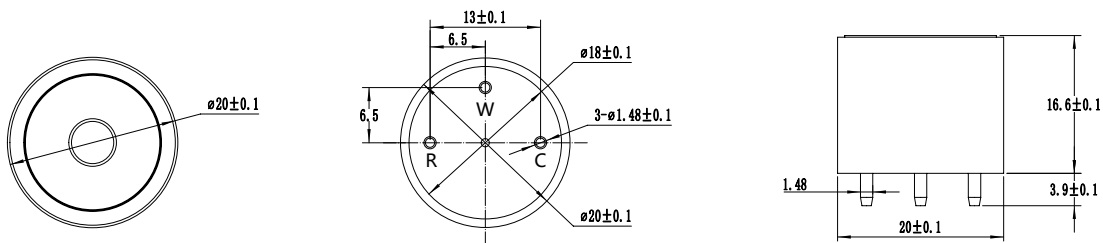
Lifetime

Long-Term Drift	< 1 %/month
Expected Lifetime	> 5 years in air
Zero Drift in Clean Air	< 10 ppm
Storage Life	12 months
Warranty	12 months

Housing

Housing Material	PPO
Weight	< 6g

» Dimensions



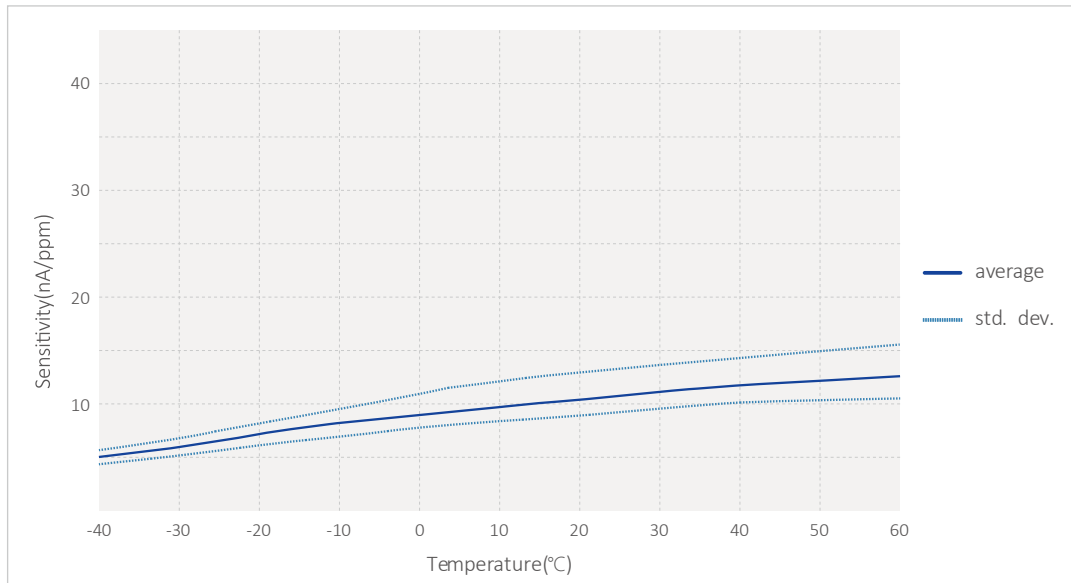
» Cross Sensitivity

Gas	Formula	Test Concentration	Sensor Reading
Ammonia	NH ₃	50ppm	0ppm
Carbon Dioxide	CO ₂	1000ppm	0ppm
Carbon Monoxide	CO	200ppm	1000ppm
Chlorine	Cl ₂	5ppm	0ppm
Methane	CH ₄	1%vol	0ppm
Hydrogen Cyanide	HCN	10ppm	0ppm
Isopropanol	C ₃ H ₈ O	1000ppm	0ppm
Nitric Oxide	NO	25ppm	0ppm
Nitrogen Dioxide	NO ₂	10ppm	0ppm
Hydrogen Chloride	HCl	20ppm	0ppm
Hydrogen Fluoride	HF	3ppm	0ppm
Hydrogen Sulphide	H ₂ S	10ppm	0ppm
Silane	SiH ₄	5ppm	0ppm
Sulphur Dioxide	SO ₂	10ppm	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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