



# Solid Polymer Electrochemical Gas Sensing Technology

ES1-HCHO-5-01 Formaldehyde Gas Sensor  
Datasheet

## Easy Gas Sensor







# ES1-HCHO-5 Formaldehyde Gas





### » Part Number

01-ES1-HCHO-5-01

### » 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
-  Indoor Air Aquality



### » Technical Specifications

#### Performance

Sensitivity	35 nA/ppm ± 20 nA/ppm
Zero Current	± 2nA
Range	0-5ppm
Maximum Overload	100ppm
Resolution (16Bit ADC)	0.01ppm
Response Time	T <sub>50</sub> < 20s, T <sub>90</sub> < 120s
Repeatability	1 % Lower
Lower Detectable Limit (LDL)	≤ 0.05ppm
Linear Range	5 ppm

#### Environment

Operating Temperature Range	-20 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

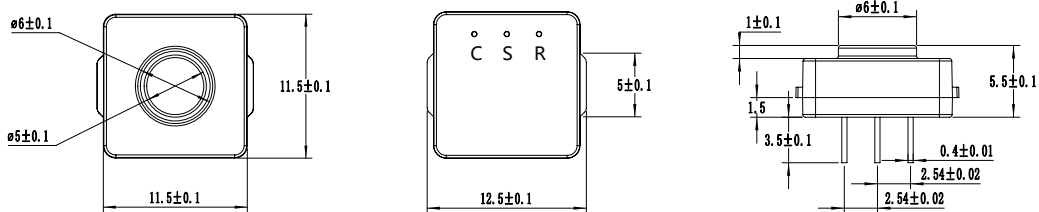
#### Lifetime

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



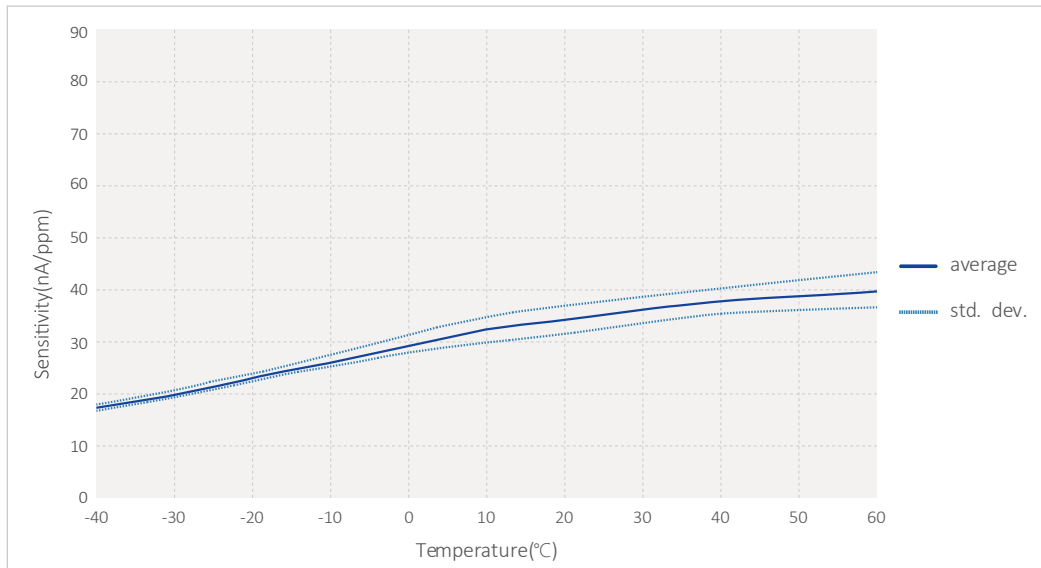
## »» Cross Sensitivity

Gas	Formula	Test Concentration	Sensor Reading
Carbon Dioxide	CO <sub>2</sub>	5000ppm	0ppm
Ammonia	NH <sub>3</sub>	100ppm	0ppm
Methane	CH <sub>4</sub>	10000ppm	0ppm
Toluene	C <sub>7</sub> H <sub>8</sub>	50ppm	0ppm
Benzene	C <sub>6</sub> H <sub>6</sub>	50ppm	0ppm
Ethanol	C <sub>2</sub> H <sub>6</sub> O	100ppm	0ppm
Ethylene	C <sub>2</sub> H <sub>4</sub>	100ppm	0ppm
Hydrogen	H <sub>2</sub>	100ppm	< 3ppm
Hydrogen	H <sub>2</sub>	20000ppm	< 50ppm
Hydrogen Cyanide	HCN	20ppm	< 1ppm
Sulphur Dioxide	SO <sub>2</sub>	10ppm	< 1ppm
Nitrogen Dioxide	NO <sub>2</sub>	10ppm	0ppm
Chlorine	Cl <sub>2</sub>	20ppm	0ppm
Hydrogen Chloride	HCl	5ppm	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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