ES1-HCHO-100-01

ES1-HCHO-100 Formaldehyde Gas Sensor

EC Sense • Formaldehyde • Amperometric, 3-electrode

The EC Sense ES1-HCHO-100 is an electrochemical gas sensor for Formaldehyde detection, with a 0 – 100 ppm range, 150 nA/ppm ± 100 nA/ppm sensitivity and T50 < 20 s, T90 < 120 s response. PPO housing at under 0.7 g in an ultra-compact SMD package — ideal for portable detectors and space-constrained modules Well suited to industrial safety, leakage detection and emission monitoring, with a designed lifetime of > 3 years.

Specifications

Operating Principle	Amperometric, 3-electrode
Bias Voltage	0 mV
Range	0 – 100 ppm
Maximum Overload	200 ppm
Resolution	0.1 ppm (16-bit ADC)
Sensitivity	150 nA/ppm ± 100 nA/ppm
Response Time	T50 < 20 s, T90 < 120 s
Repeatability	1 % Lower
Linearity	Linear
Zero Current	± 2 nA
Recommended Load	100 Ω
Warm-Up Time	< 60 s
Operating Temp.	-20 ℃ to +50 ℃
Operating Humidity	15-95% RH non-condensing
Operating Pressure	800 to 1200 hPa
Storage Temp.	0 °C to 20 °C (Optimum temp. 4 °C to 6 °C)
Housing	PPO
Weight	< 0.7 g
Long-Term Drift	< 5 %/year
Expected Lifetime	> 3 years
Zero Drift in Clean Air	< 0.2 ppm
Storage Life	12 months
Warranty	12 months

Key Features

- Detects with high selectivity a wide variety of gases

- Long lifetime > 3 years
- No-poisoning
- Typical warm-up time in seconds
- Fast response time
- nA power consumption
- Linear output
- No zero line drift
- Better signal to noise ratio
- Wide temperature range of -20 °C to +50 °C
- Excellent sensitivity at low temperatures
- No leakage
- Small size
- RoHS compliant

Typical Applications

- Industrial Safety
- Leakage Detection
- Emission Monitoring
- Indoor Air Quality

Calibration & Cross-Sensitivity

Calibrated with Formaldehyde standard gas. Cross-sensitivity to other gases may exist — see the cross-sensitivity table in the datasheet.