ES4-PH3-20-01

ES4-PH3-20 Phosphine Gas Sensor

EC Sense • Phosphine • Amperometric, 3-electrode

The EC Sense ES4-PH3-20 is an electrochemical gas sensor for Phosphine detection, with a 0 – 20 ppm range, 120 nA/ppm ± 40 nA/ppm sensitivity and T50 < 10 s, T90 < 30 s response. Standard ABS housing at about 6 g for easy pin soldering and fast integration into conventional gas-detection 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 – 20 ppm
Maximum Overload	50 ppm
Resolution	0.01 ppm (16-bit ADC)
Sensitivity	120 nA/ppm ± 40 nA/ppm
Response Time	T50 < 10 s, T90 < 30 s
Repeatability	1 %
Linearity	Linear
Zero Current	± 2 nA
Recommended Load	100 Ω
Warm-Up Time	< 60 s
Operating Temp.	-10 ℃ to +55 ℃
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	ABS
Weight	< 6 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 -10 °C to +55 °C
- Excellent sensitivity at low temperatures
- No leakage
- Small size
- RoHS compliant
- Easy Gas Sensor Solutions

Typical Applications

- Industrial Safety
- Leakage Detection
- Gas Manufacturing Process Monitoring
- Emission Monitoring
- Food Industry

Calibration & Cross-Sensitivity

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