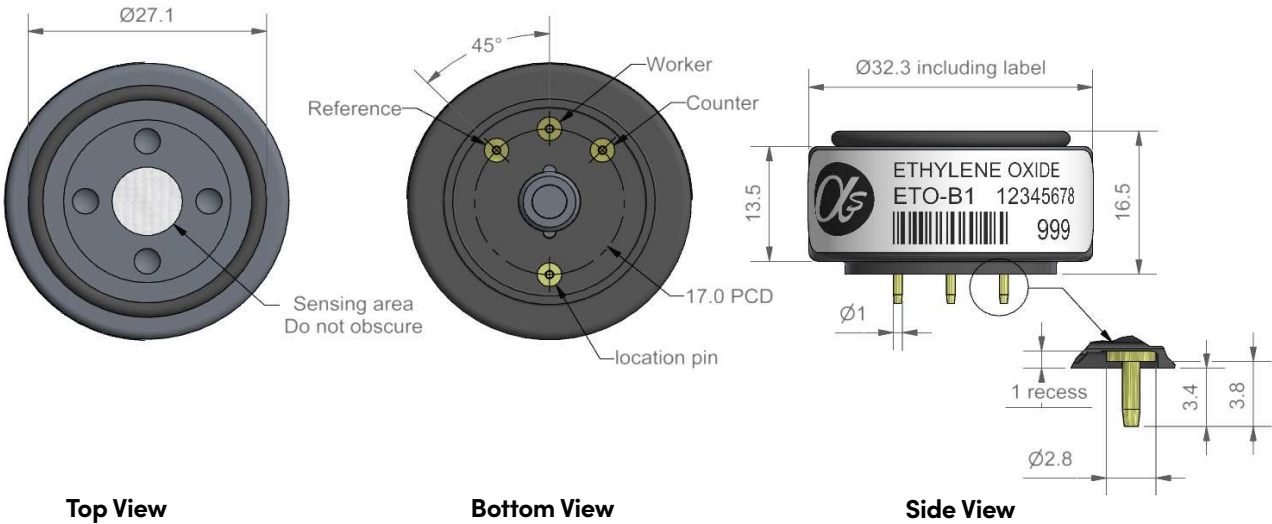


ETO-B1 Ethylene Oxide Sensor



Dimensions are in millimetres (± 0.1 mm).

Performance	Sensitivity		nA/ppm in 20ppm EtO	2,000 to 3,400	
	Response time		t90 (s) from zero to 20ppm EtO	< 200	
	Zero current		ppm equivalent in zero air	< -0.6 to +1	
	Resolution		RMS noise (ppm equivalent)	< 0.1	
	Range		ppm EtO limit of performance warranty	100	
	Linearity		ppm error at full scale, linear at zero, 40ppm EtO	5 to 10	
	Overgas limit		maximum ppm for stable response to gas pulse	500	
Lifetime	Zero drift		ppm equivalent change/year in lab air	nd	
	Sensitivity drift		% change/year in lab air, twice monthly test	nd	
	Operating life		months until 80% original signal (24-month warranted)	> 24	
Environmental	Sensitivity @ -20°C		(% output @ -20°C/output @ 20°C) @ 50ppm CO	20 to 50	
	Sensitivity @ 50°C		(% output @ 50°C/output @ 20°C) @ 50ppm CO	120 to 160	
	Zero @ -20°C		ppm equivalent change from 20°C	< ± 0.5	
	Zero @ 50°C		ppm equivalent change from 20°C	< +2 to +5	
Cross Sensitivity	H ₂ S	sensitivity	% measured gas @ 20ppm	H ₂ S	< 200
	NO ₂	sensitivity	% measured gas @ 10ppm	NO ₂	< 35
	Cl ₂	sensitivity	% measured gas @ 10ppm	Cl ₂	< -3
	NO	sensitivity	% measured gas @ 50ppm	NO	< 80
	SO ₂	sensitivity	% measured gas @ 20ppm	SO ₂	< 40
	CO	sensitivity	% measured gas @ 40ppm	CO	< 25
	H ₂	sensitivity	% measured gas @ 400ppm	H ₂	< 0.5
	C ₂ H ₄	sensitivity	% measured gas @ 80ppm	C ₂ H ₄	< 100
	NH ₃	sensitivity	% measured gas @ 25ppm	NH ₃	< 0.1
	HCHO	sensitivity	% measured gas @ 4ppm	HCHO	90
	CO ₂	sensitivity	% measured gas @ 5% volume	CO ₂	< 0.1
Key Specifications	Temperature range		°C	-30 to 50	
	Pressure range		kPa	80 to 120	
	Humidity range		% rh continuous	15 to 90	
	Storage period		months @ 3 to 20°C (stored in original container)	6	
	Load resistor		Ω (recommended)	10 to 33	
	Bias voltage		mV (working electrode potential above reference electrode potential)	300	
	Weight		g	< 13	



Figure 1 Sensitivity Temperature Dependence

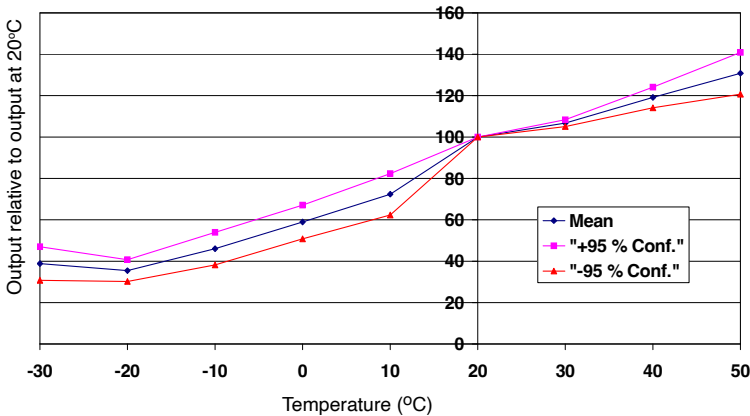


Figure 1 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors.

The mean and $\pm 95\%$ confidence intervals are shown.

Figure 2 Zero Temperature Dependence

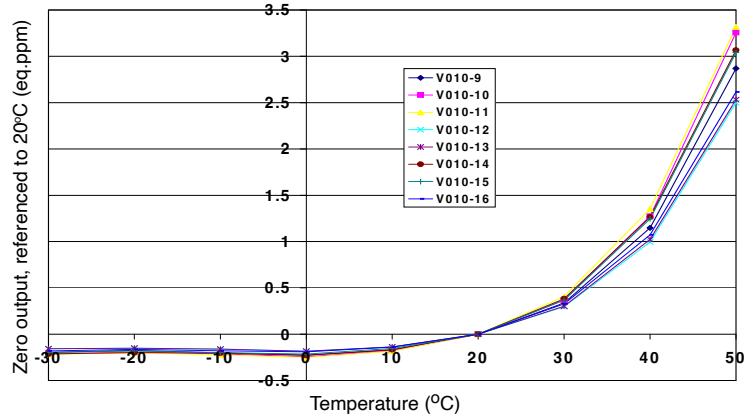
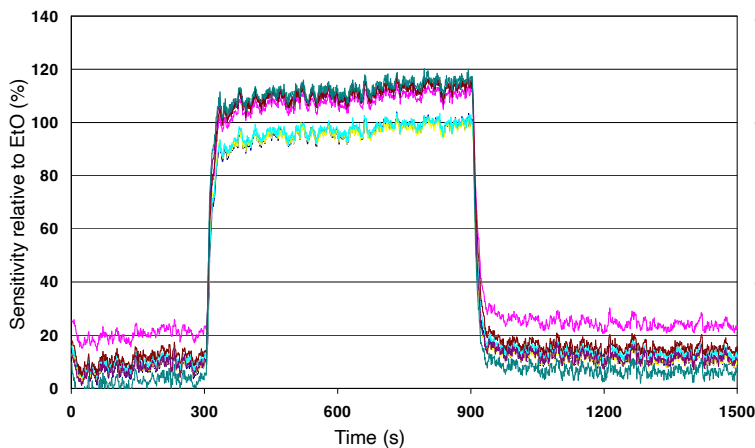


Figure 2 shows the variation in zero output caused by changes in temperature, expressed as ppm gas equivalent, referenced to zero at 20°C.

This data is taken from a typical batch of sensors.

Figure 3 Cross Sensitivity Study to 3.8 ppm Formaldehyde



The ETO-B1 responds to most VOCs that are electrochemically active.

The bias voltage of +300mV is optimum for Ethylene Oxide but needs adjusting when measuring other VOCs.

Response to formaldehyde with +300mV bias is shown.