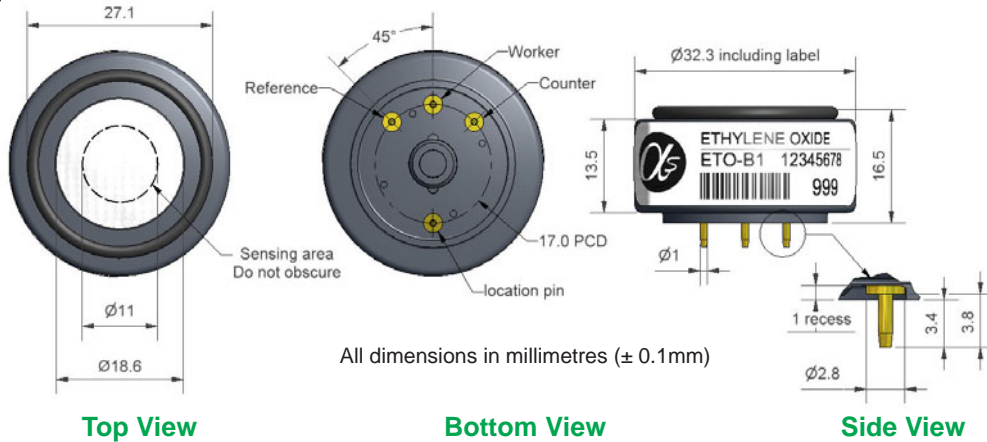


ETO-B1 Ethylene Oxide Sensor



PATENTED

Figure 1 ETO-B1 Schematic Diagram



Technical Specification

PERFORMANCE	Sensitivity	nA/ppm in 20ppm EtO	1500 to 2500	
	Response time	t ₉₀ (s) from zero to 20ppm EtO	<300	
	Zero current	ppm equivalent in zero air	<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	100 to 500	
	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) @ 40ppm EtO	30 to 45	
	Sensitivity @ 50°C	(output @ 50°C/output @ 20°C) @ 40ppm EtO	115 to 145	
	Zero @ -20°C	ppm equivalent change from 20°C	+2 to +6	
	Zero @ 50°C	ppm equivalent change from 20°C	+2 to +5	
	CROSS SENSITIVITY	H ₂ S sensitivity	% measured gas @ 20ppm	<200
NO ₂ sensitivity		% measured gas @ 10ppm	<35	
Cl ₂ sensitivity		% measured gas @ 10ppm	<-3	
NO sensitivity		% measured gas @ 50ppm	<80	
SO ₂ sensitivity		% measured gas @ 20ppm	<40	
CO sensitivity		% measured gas @ 40ppm	<25	
H ₂ sensitivity		% measured gas @ 400ppm	<0.5	
C ₂ H ₄ sensitivity		% measured gas @ 80ppm	<100	
NH ₃ sensitivity		% measured gas @ 25ppm	<0.1	
HCHO sensitivity		% measured gas @ 4ppm	90	
CO ₂ sensitivity	% measured gas @ 5% volume	<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 is above reference electrode potential)	300	
	Weight	g	<13	



NOTE: all sensors are tested at ambient environmental conditions, with 10 ohm load resistor, unless otherwise stated. As applications of use are outside our control, the information provided is given without legal responsibility. Customers should test under their own conditions, to ensure that the sensors are suitable for their own requirements.

ETO-B1 Performance Data

Technical Specification

Figure 2 Sensitivity Temperature Dependence

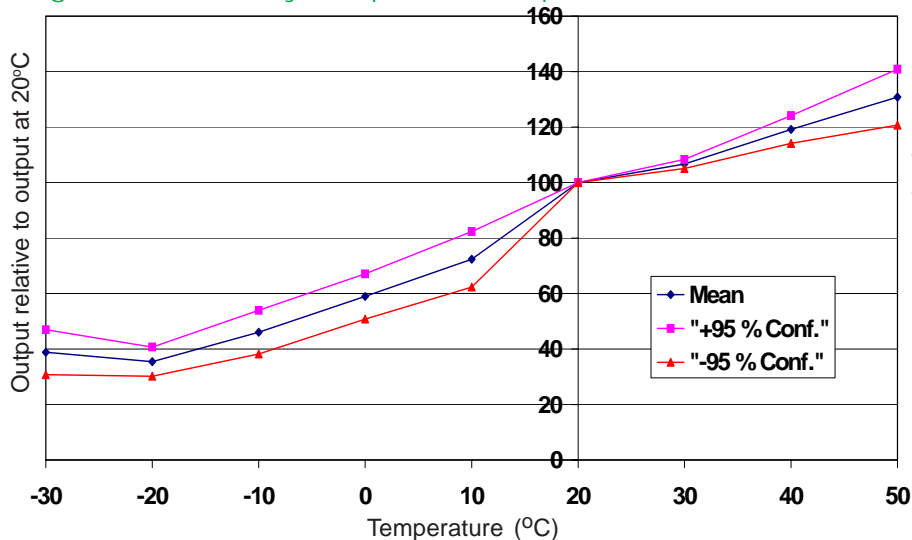


Figure 2 shows the variation in sensitivity caused by changes in temperature.

This data is taken from a typical batch of sensors. The mean and $\pm 95\%$ confidence intervals are shown.

Figure 3 Zero Temperature Dependence

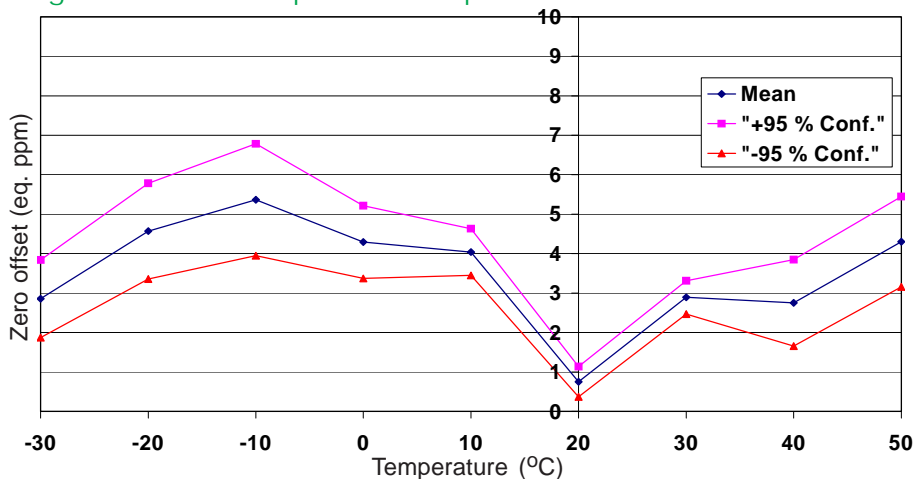
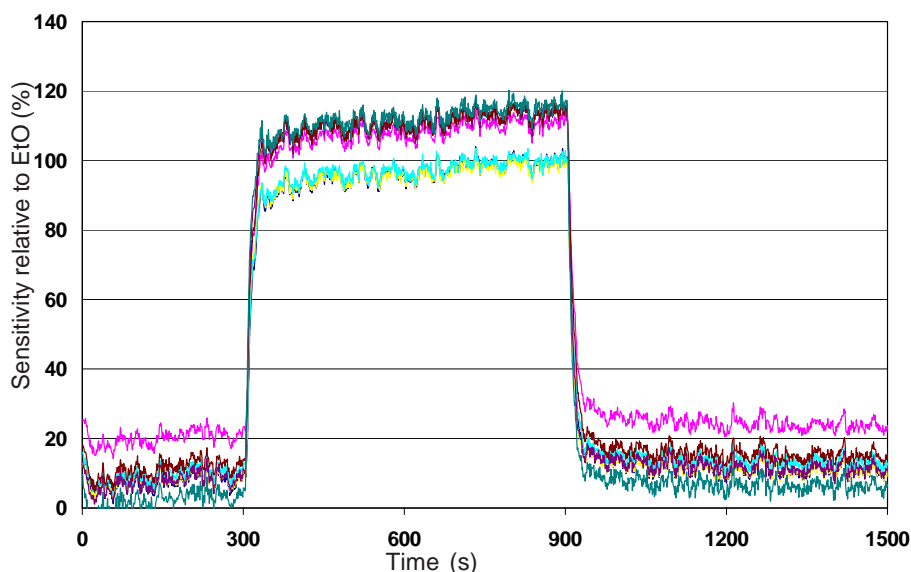


Figure 3 shows the variation in zero output caused by changes in temperature expressed as ppm gas equivalent.

This data is taken from a typical batch of sensors. The mean and $\pm 95\%$ confidence intervals are shown.

Figure 4 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.