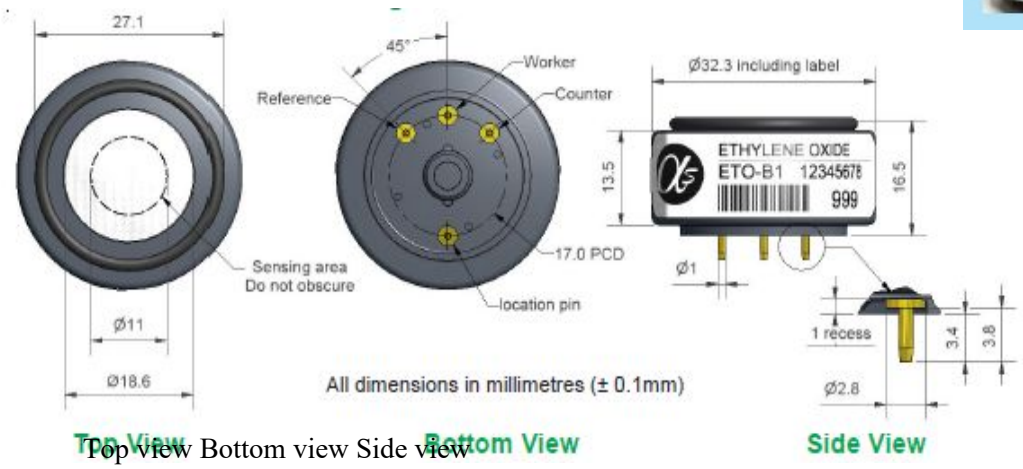
ETO-B1 Ethylene Oxide Sensor

Figure 1 schematic diagram of ETO-B1



Top view Bottom view Side view

function	sensitivity	Sensitivity in 20ppmEtO (nA/ppm)	2000~3200
	reaction time	Time to 20ppmEtO from zero (s)	< 200
	zero current	Equivalent ppm value in zero air	< -0.6~+0.75
	resolution ratio	RMS noise (equivalent ppm value)	< 0.1
	range	Measuring limits (ppm) that guarantee product performance	100
	degree of linearity	The ppm value of the full scale error is linear from 0 to 40ppm	5~10
	overload	Maximum ppm value of gas pulse stabilized reaction	500
life span	zero drift	Equivalent ppm values that change in the laboratory air from year to year	nd
	sensitivity drift	Percentage change in laboratory air year on year, measured twice a month	nd
	working life	Number of months to which the output has been reduced to 80% of the original signal (24-month guarantee)	> 24
environment	-20°C sensitivity	40ppmEtO when, (output at-20°C/ output at 20°C)%	30~50
	Sensitivity at 50°C	40ppmEtO when, (50°C output/20°C output)%	115~145
	-20°C when zero point	Change in equivalent ppm values with reference to 20°C zero	< ±0.5
	50°C at zero point	Change in equivalent ppm values with reference to 0°C 20	< 2~5
cross sensitivity	H_2S	Gas sensitivity percentage at 20ppmH_2S	< 200
	NO_2	Gas sensitivity percentage $_2$ at 10ppmNO	< 35
	Cl_2	Sensitivity percentage of gas measured $_2$ at 10ppmCl	< -3
	NO	Gas sensitivity percentage measured at 50ppmNO	< 80
	SO_2	Gas sensitivity percentage $_2$ at 20ppmSO	< 40
	CO	Gas sensitivity percentage measured at 40ppmCO	< 25
	H_2	Gas sensitivity percentage measured at 400ppmH_2	< 0.5
	C_2H_4	Gas sensitivity percentage measured at 80ppmC_2H_4	< 100
	NH_3	Gas sensitivity percentage $_3$ at 25ppmNH	< 0.1
	HCHO	Gas sensitivity percentage measured at 4ppmHCHO	90
	CO_2	Gas sensitivity percentage $_2$ measured at 5%CO	< 0.1
key parameter	temperature range	℃	-30~50
	pressure limit	kPa	80~120
	Humidity range	Percentage of continuous relative humidity	15~90
	Storage period	Number of months for preservation from 3 to 20℃ (to be kept in the original container)	6
	load resistance	Ω（recommend）	10~33
	bias voltage	mV (working electrode potential greater than reference electrode potential)	300
	weight	g	< 13

Figure 2 Sensitivity Temperature Characteristics

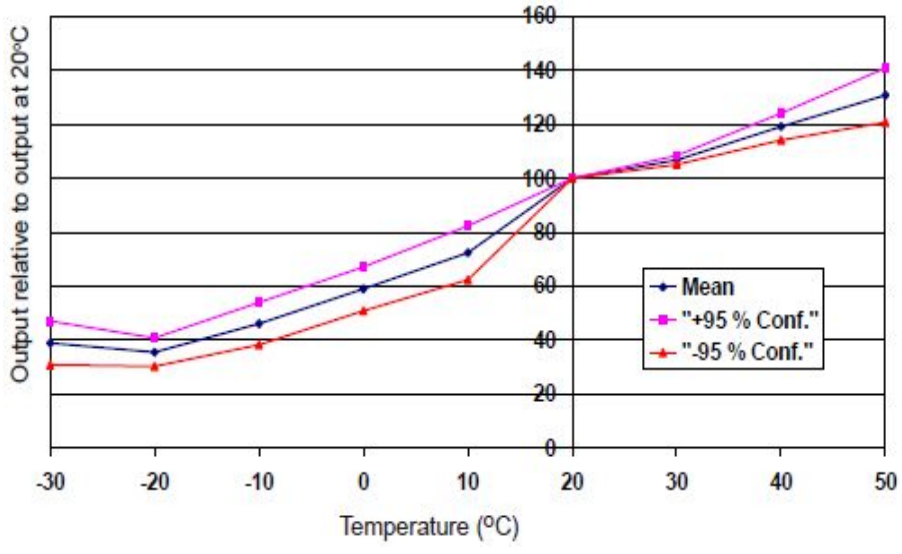


Figure 2 shows the change in transducer sensitivity caused by temperature changes.

The data are collected from a typical batch sensor. Figure 2 shows the mean of the percentage output (reference 20°C) and± the 95% confidence interval.

Figure 3 Zero Temperature Characteristics

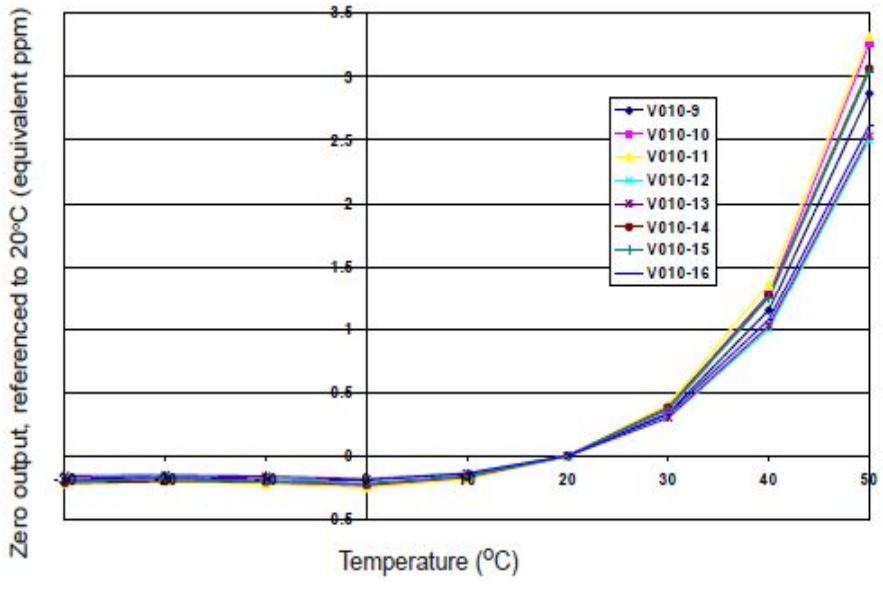
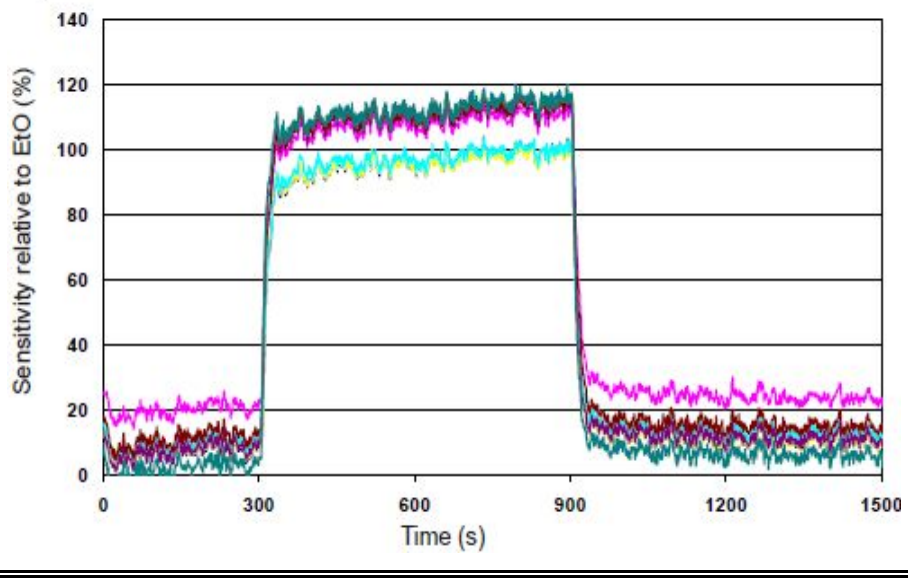


Figure 3 shows the change in zero point output caused by temperature changes, expressed as equivalent ppm values, with reference to the zero point at 20°C.

Data is taken from a typical batch of sensors.

Figure 4 Cross Sensitivity Study of Formaldehyde at 3.8 ppm



ETO-B1 can react with most electrochemically active VOCs.

300mV bias is best for ethylene oxide, but it needs to be adjusted when measuring other VOCs.

Figure 4 shows the reaction of formaldehyde by the sensor when a 300mV bias is applied.