

ETO-A1 Ethylene Oxide Sensor



Figure 1 Schematic Diagram of ETO-A1



function	sensitivity	Sensitivity in 20ppmEtO (nA/ppm)	2000~3200
	reaction time	Time from zero to 20ppmEtO (s)	< 150
	zero current	Equivalent ppm value in zero air	± 0.6
	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	200
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 is reduced to 80% of the original signal (12 months guaranteed)	> 24
environment	-20°C sensitivity	400ppmCO when, (output at -20°C/ output at 20°C)%	35~65
	Sensitivity at 50°C	400ppmCO when, (50°C output/20°C output)%	110~140
	-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 20°C zero	< 2~4
cross sensitivity	H ₂ S	Gas sensitivity percentage at 20ppmH ₂ S	< 200
	NO ₂	Gas sensitivity percentage ₂ measured at 10ppmNO	< 50
	Cl ₂	Sensitivity percentage of gas measured ₂ at 10ppmCl	< -1
	NO	Gas sensitivity percentage measured at 50ppmNO	< 80
	SO ₂	Gas sensitivity percentage ₂ at 20ppmSO	< 50
	CO	Gas sensitivity percentage measured at 400ppmCO	< 30
	H ₂	Gas sensitivity percentage measured at 400ppmH ₂	< 0.5
	C ₂ H ₄	Gas sensitivity percentage measured at 80ppmC ₂ H 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	°C	-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°C (to be kept in the original container)	6
	load resistance	Ω (recommend)	10~47
	bias voltage	mV (working electrode potential greater than reference electrode potential)	300
	weight	g	< 6

Figure 2 Sensitivity Temperature Characteristics

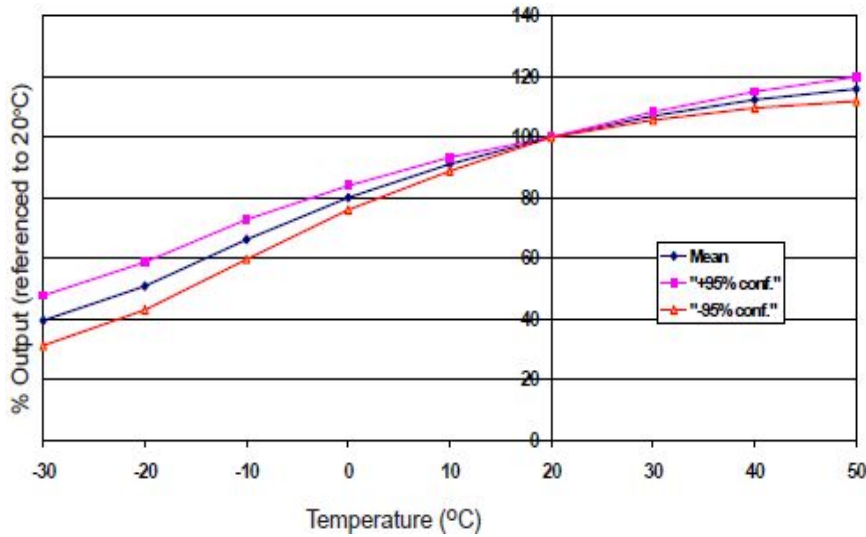


Figure 2 shows the change in sensor sensitivity caused by temperature changes.

Data were collected from a typical batch of sensors. Figure 2 shows the percentage output (reference 20°C) mean and $\pm 95\%$ confidence interval.

Figure 3 Zero Temperature Characteristics

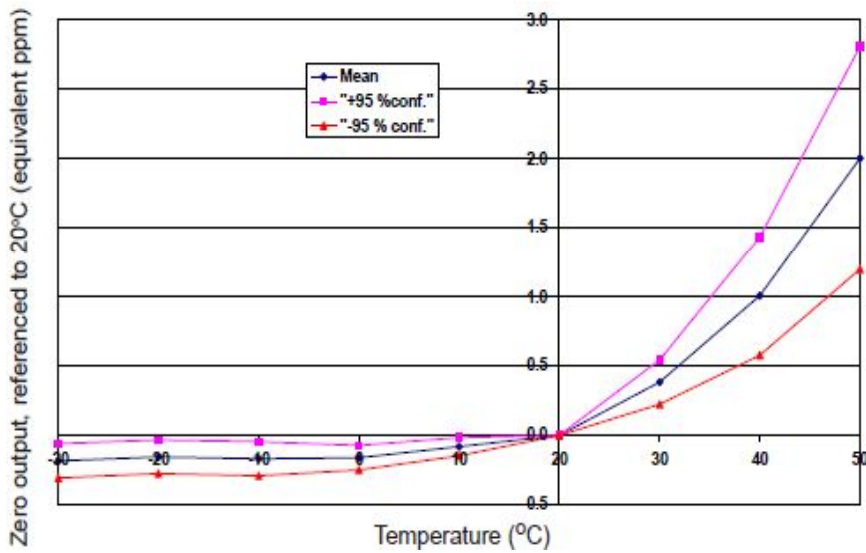
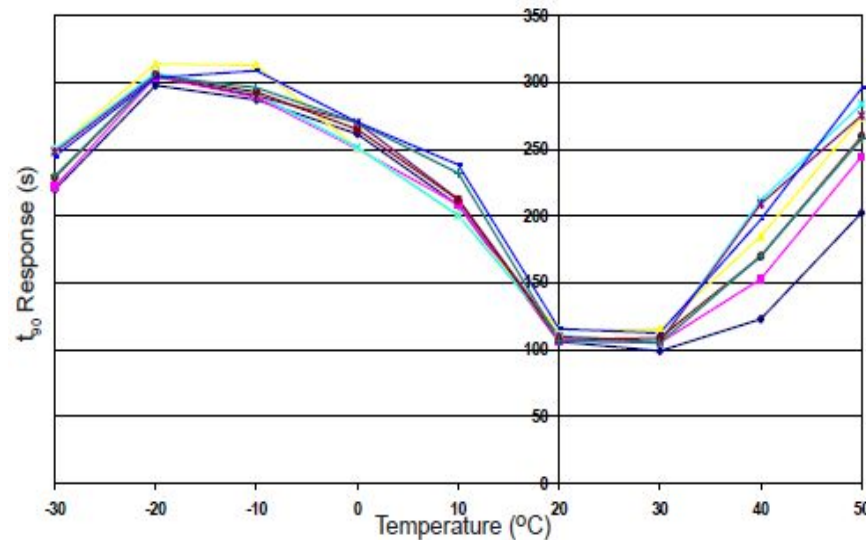


Figure 3 shows the change in zero point output caused by temperature changes, expressed as equivalent ppm values, with reference to the zero point at 20°C.

Data is taken from a typical batch of sensors.

Figure 4 Response Time Temperature Characteristics



The reaction time depends on the gas characteristics and the electrochemical characteristics of the sensor.

The diffusion of VOC is very slow at low temperature.

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