

## HCL-A1 Hydrogen Chloride Sensor

Figure 1 schematic diagram of HCL-A1



function	sensitivity	Sensitivity in 25ppmHCl (nA/ppm)	50~140
	reaction time	t90 time from zero to 25ppmHCl (s)	< 300
	zero current	Equivalent ppm value in zero air	< $\pm 2.5$
	resolution ratio	RMS noise (equivalent ppm value)	< 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	0~6
	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 over the year, measured monthly	nd
	working life	Number of months to which the output has been reduced to 80% of the original signal (12-month guarantee)	nd
environment	-20°C sensitivity	25ppmHCl when, (output at -20°C/20°C output)%	65~90
	Sensitivity at 50°C	25ppmHCl when, (50°C output/20°C output)%	102~120
	-20°C when zero point	Change in equivalent ppm values with reference to 0°C 20	< 0~4
	50°C at zero point	Change in equivalent ppm values with reference to 20°C zero	< 1~5
cross sensitivity	H <sub>2</sub> S	Percentage sensitivity of gas measured at $\frac{1}{2}$ pHmH	< 250
	NO <sub>2</sub>	Percentage sensitivity of gas measured at $\frac{1}{2}$ pMNO	< -150
	Cl <sub>2</sub>	Percentage sensitivity of gas measured $\frac{1}{2}$ at ppmCl	< -20
	NO	Percentage of gas sensitivity measured at ppmNO	< 2
	SO <sub>2</sub>	Percentage sensitivity of gas measured at $\frac{1}{2}$ pM SO	< 0.1
	CO	Percentage of gas sensitivity measured at ppmCO	< 0.1
	H <sub>2</sub>	Percentage sensitivity of gas measured at $\frac{1}{2}$ pM H	< 0.1
	C <sub>2</sub> H <sub>4</sub>	Percentage sensitivity of gas measured at ppmC <sub>2,4</sub>	< 0.1
	NH <sub>3</sub>	Percentage sensitivity of gas measured at ppmNH <sub>3</sub>	< 0.1
CO <sub>2</sub>	Gas sensitivity percentage measured at 5%CO <sub>2</sub>	< 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	$\Omega$ ( recommend )	10~33
	bias voltage	mV	non-essential
	weight	g	< 6

Figure 2 Reaction at 25ppm HCl

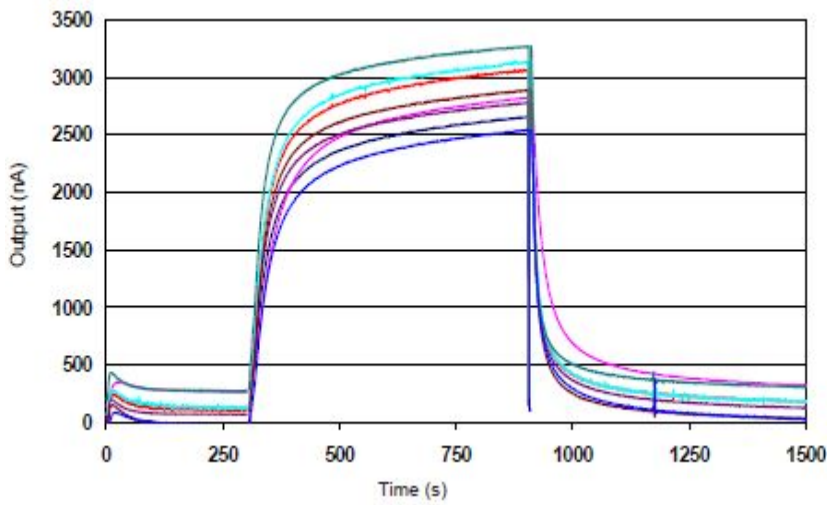


Figure 2 shows the typical reaction of the transmitter to 25 ppm HCl at 20°C.

Figure 3 Sensitivity Temperature Characteristics

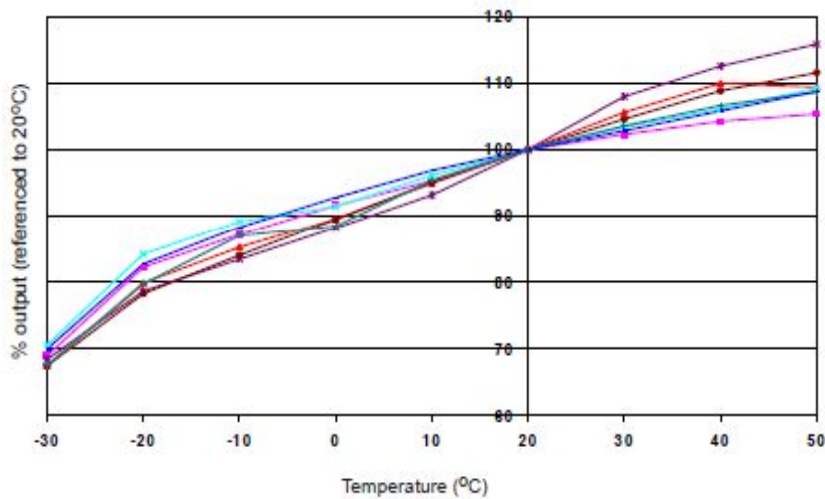


Figure 3 shows the change of sensitivity caused by temperature change.

Data taken from typical batch sensors.

Figure 4. Humidity Transient Response

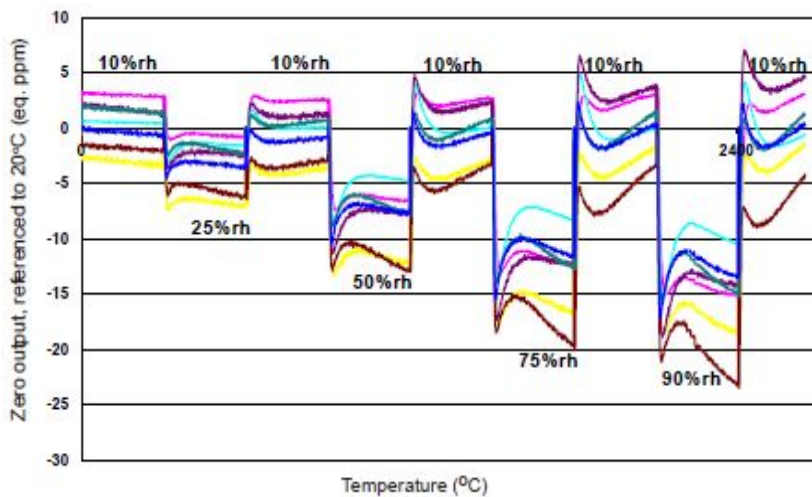


Figure 4 shows the transients produced by the sensor under a hierarchical humidity change of 10% to 90% rh.