EC Sensor Cross-sensitivity

Gas type	Part Number	Gas Type Applied	Concentration	Unit	Reading	Unit
O_2	XNXXS01SS XNXXS01FM	Carbon Dioxide	5	%vol	0.1	%vol (change O_2 reading) per %vol CO_2
HCl	XNXXSR1SS	Carbon monoxide	2000	ppm	0	ppm HCl
		Hydrogen	20000		0	
		Chlorine	5		5.6	
		Nitrogen dioxide	5		0.9	
		Propan-2-ol	500		0	
		Methanol	500		0	
		Hydrogen fluoride	5		6.7	
		Hydrogen suflfide	25		-3.6	
		Sulphur dioxide	50		22.4	
		Arsine	1		0	
		Phosphine	1		-0.14	
		Diborane	1		-1.3	
H_2S (Low Range)	XNXXSH3SS	Ammonia	50	ppm	0	ppm H_2S
		Carbon Monoxide	100		<2	ppm H_2S
		Carbon Dioxide	5000		0	ppm H_2S
		Chlorine	0.5		0	ppm H_2S
		Ethylene	100		0	ppm H_2S
		Hydrogen	100		0	ppm H_2S
		Hydrogen Sulfide	10		10	ppm H_2S
		Nitrogen Monoxide	25		0	ppm H_2S
		Nitrogen Dioxide	3		0	ppm H_2S
		Sulfur Dioxide	2		0	ppm H_2S

Gas type	Part Number	Gas Type Applied	Concentration	Unit	Reading	Unit
H_2S	XNXXSH1SS XNXXSH1FM	Ammonia	50	ppm	0	ppm H_2S
		Carbon Monoxide	100		<2	ppm H_2S
		Carbon Dioxide	5000		0	ppm H_2S
		Chlorine	0.5		0	ppm H_2S
		Ethylene	100		0	ppm H_2S
		Hydrogen	100		0	ppm H_2S
		Hydrogen Sulfide	10		10	ppm H_2S
		Nitrogen Monoxide	25		0	ppm H_2S
		Nitrogen Dioxide	3		0	ppm H_2S
		Sulfur Dioxide	2		0	ppm H_2S
H_2S (High Range)	XNXXSH2SS	Ammonia	50	ppm	0	ppm H_2S
		Carbon Monoxide	100		<2	ppm H_2S
		Carbon Dioxide	5000		0	ppm H_2S
		Chlorine	0.5		0	ppm H_2S
		Ethylene	100		0	ppm H_2S
		Hydrogen	100		0	ppm H_2S
		Hydrogen Sulfide	10		10	ppm H_2S
		Nitrogen Monoxide	25		0	ppm H_2S
		Nitrogen Dioxide	3		0	ppm H_2S
		Sulfur Dioxide	2		0	ppm H_2S

Gas type	Part Number	Gas Type Applied	Concentration	Unit	Reading	Unit
CO	XNXXSC1SS XNXXSC1FM	Acetone	1000	ppm	0	ppm CO
		Acetylene	40		80	ppm CO
		Ammonia	100		0	ppm CO
		Carbon Monoxide	100		100	ppm CO
		Chlorine	2		0	ppm CO
		Ethanol	2000		3	ppm CO
		Ethylene	100		85	ppm CO
		Hydrogen	100		20	ppm CO
		Hydrogen Sulfide	25		0	ppm CO
		Iso-Propanol	200		0	ppm CO
		Nitrogen Monoxide	50		8	ppm CO
		Nitrogen Dioxide	800		20	ppm CO
		Sulfur Dioxide	50		0.5	ppm CO
SO_2	XNXXSS1SS	Carbon Monoxide	300	ppm	<3	ppm SO_2
		Hydrogen Sulfide	15		0	ppm SO_2
		Nitrogen Monoxide	35		0	ppm SO_2
		Nitrogen Dioxide	5		~-5	ppm SO_2
SO_2	XNXXSS2SS	Carbon Monoxide	300	ppm	<3	ppm SO_2
		Hydrogen Sulfide	15		0	ppm SO_2
		Nitrogen Monoxide	35		0	ppm SO_2
		Nitrogen Dioxide	5		~-5	ppm SO_2
NH_3	XNXXSA1SS	Alcohols	1000	ppm	0	ppm NH_3
		Carbon Dioxide	5000		0	ppm NH_3
		Carbon Monoxide	100		0	ppm NH_3
		Hydrocarbons		% range	0	ppm NH_3
		Hydrogen	10000	ppm	0	ppm NH_3
		Hydrogen Sulfide	20		2	ppm NH_3

Gas type	Part Number	Gas Type Applied	Concentration	Unit	Reading	Unit
NH_3 (High Range)	XNXXSA2SS	Alcohols	1000	ppm	0	ppm NH_3
		Carbon Monoxide	100		0	ppm NH_3
		Chlorine	5		0	ppm NH_3
		Nitrogen Dioxide	10		0	ppm NH_3
		Sulfur Dioxide	20		-40	ppm NH_3
		Hydrogen	3000		0	ppm NH_3
		Hydrogen Sulfide	20		20	ppm NH_3
Cl_2	XNXXSL2SS	Carbon Dioxide	20000	ppm	0	ppm Cl_2
		Hydrogen Chloride	9		1.25	ppm Cl_2
		Hydrogen Sulfide	25		-16.3	ppm Cl_2
		Nitrogen Dioxide	50		1.25 (transient)	ppm Cl_2
		Sulfur Dioxide	50		9.1	ppm Cl_2
Cl_2 (High Range)	XNXXSL1SS	Carbon Dioxide	20000	ppm	0	ppm Cl_2
		Hydrogen Chloride	9		1.25	ppm Cl_2
		Hydrogen Sulfide	25		-16.3	ppm Cl_2
		Nitrogen Dioxide	50		1.25 (transient)	ppm Cl_2
		Sulfur Dioxide	50		9.1	ppm Cl_2
ClO_2	XNXXSX1SS	Refer To Cl2	Refer to Cl_2	Refer to Cl_2	Refer to Cl_2	Refer to Cl_2
NO	XNXXSM1SS	Carbon Monoxide	300	ppm	0	ppm NO
		Sulfur Dioxide	5		0	ppm NO
		Nitrogen Dioxide	5		<1.5	ppm NO
		Hydrogen Sulfide	15		~1.5	ppm NO
NO_2	XNXXSN1SS	Carbon Monoxide	300	ppm	0	ppm NO_2
		Hydrogen Sulfide	15		~ -1.2	ppm NO_2
		Sulfur Dioxide	5		0	ppm NO_2
		Nitrogen Monoxide	35		0	ppm NO_2
		Chlorine	1		~1	ppm NO_2

Gas type	Part Number	Gas Type Applied	Concentration	Unit	Reading	Unit
H_2	XNXXSG1SS	Carbon Monoxide	300	ppm	≤ 60	ppm H_2
		Hydrogen Sulfide	15		<3	ppm H_2
		Sulfur Dioxide	5		0	ppm H_2
		Nitrogen Monoxide	35		»10	ppm H_2
		Nitrogen Dioxide	5		0	ppm H_2
		Chlorine	1		0	ppm H_2
		Hydrogen Cyanide	10		»3	ppm H_2
		Hydrogen Chloride	5		0	ppm H_2
		Ethylene	100		»80	ppm H_2
H_2 (High Range)	XNXXSG2SS	Ammonia	100	ppm	0	ppm H_2
		Arsine	0.2	ppm	0	ppm H_2
		Carbon Dioxide	1000	ppm	0	ppm H_2
		Carbon Monoxide	100	ppm	150	ppm H_2
		Chlorine	1	ppm	0	ppm H_2
		Ethylene	500	ppm	yes; n/d	ppm H_2
		Hydrogen Cyanide	20	ppm	0	ppm H_2
		Hydrogen Sulfide	20	ppm	4	ppm H_2
		Iso-Propanol	1100	ppm	yes; n/d	ppm H_2
		Methane	1	%	0	ppm H_2
		Nitrogen Dioxide	10	ppm	-40	ppm H_2
		Ozone	0.25	ppm	0	ppm H_2
		Sulfur Dioxide	5	ppm	0	ppm H_2

Gas type	Part Number	Gas Type Applied	Concentration	Unit	Reading	Unit
HF	XNXXSF1SS	Carbon Monoxide	2000	ppm	0	ppm HF
		Hydrogen	20000	ppm	0	ppm HF
		Chlorine	5	ppm	5.8	ppm HF
		Nitrogen Dioxide	5	ppm	0.65	ppm HF
		Iso-Propanol	500	ppm	0	ppm HF
		Methanol	500	ppm	0	ppm HF
		Hydrogen Fluoride	5	ppm	5	ppm HF
		Hydrogen Sulfide	25	ppm	-3.6	ppm HF
		Sulfur Dioxide	50	ppm	28.3	ppm HF
		Arsine	1	ppm	0	ppm HF
		Phosphine	1	ppm	-0.14	ppm HF
		Diborane	1	ppm	-1.3	ppm HF
PH_3	XNXXSP1SS	Carbon Monoxide	2000	ppm	<10	ppm PH_3
		Hydrogen	5000	ppm	<10	ppm PH_3
		Chlorine	1	ppm	-70	ppm PH_3
		Nitrogen Dioxide	8	ppm	-860	ppm PH_3
		Ethanol	2000	ppm	<10	ppm PH_3
		Iso-Propanol	1000	ppm	<10	ppm PH_3
		Hydrogen Chloride	10	ppm	<10	ppm PH_3
		Hydrogen Fluoride	10	ppm	<10	ppm PH_3
		Hydrogen Sulfide	0.5	ppm	70	ppm PH_3
		Ammonia	100	ppm	1050 (transient)	ppm PH_3
		Sulfur Dioxide	50	ppm	550 (transient)	ppm PH_3
		Silane	1	ppm	364	ppm PH_3
		Arsine	1	ppm	680	ppm PH_3
		Diborane	1	ppm	454	ppm PH_3
		Germane	1	ppm	454	ppm PH_3

Gas Type	Part Number	Gas Type Applied	Concentration	Unit	Reading	Unit
HCN	XNXXSY1SS	Carbon Monoxide	300	ppm	<15	ppm HCN
		Hydrogen Sulfide	15	ppm	~90	ppm HCN
		Sulphur Dioxide	20	ppm	40 < x$ < 75	ppm HCN
		Nitric Oxide	35	ppm	-28 < x$ < 0	ppm HCN
		Nitrogen Dioxide	5	ppm	-20 < x$ < -10	ppm HCN
		Ethylene	100	ppm	<25	ppm HCN
F_2	XNXXSU1SS	Carbon Dioxide	20000	ppm	0	ppm F_2
		Hydrogen Chloride	9	ppm	1.25	ppm F_2
		Hydrogen Sulfide	25	ppm	-16.3	ppm F_2
		Nitrogen Dioxide	50	ppm	1.25 (transient)	ppm F_2
		Sulphur Dioxide	50	ppm	9.1	ppm F_2
EtO	XNXXSE1SS	Ethanol	-	-	~55	% of EtO
		Toluene	-	-	~20	% of EtO
		Methyl-ethyl-ketone	-	-	~10	% of EtO
		Carbon Monoxide	-	-	~40	% of EtO
O_3	XNXXSZ1SS	Bromine, Iodine	-	-	yes; n/d	ppm O_3
		Carbon Dioxide	5000	ppm	0	ppm O_3
		Carbon Monoxide	100	ppm	0	ppm O_3
		Chlorine	1	ppm	1.2	ppm O_3
		Chlorine Dioxide	1	ppm	1.5	ppm O_3
		Hydrazine	3	ppm	-3	ppm O_3
		Hydrogen	3000	ppm	0	ppm O_3
		Hydrogen Sulfide	20	ppm	-1.6 [1)]	ppm O_3
		Nitrogen	100	%	0	ppm O_3
		Nitrogen Dioxide	10	ppm	6	ppm O_3

Notes

- The figures of cross-sensitivity are typical values and art not to be used as a basis for cross-calibration.
- Do not scale cross-sensitivities (they may not be linear).
- For some cross-interferents breakthrough may occur if gas is applied a longer time period.
- There are many gases and vapors that can poison electrochemical cells. It is difficult to give a complete and exclusive list of all species which will have an effect on the sensors. However, these are some common substances which must be avoided:
- Airborne greases - These may block gas access into the sensors and therefore reduce sensitivity.
- Silicone compounds - These are often found in sprays, aerosols, lubricants, polishes, adhesives, sealants, zebra strip, cleaning agents, and floor waxes. These compounds tend to reduce the sensitivity of the sensors and generally will have a permanent effect.
- Solvents and organic vapors - Many organic vapors will damage the sensors. Some common ones are IPA, toluene, xylene, other benzene derivatives, petrol, and diesel. It is difficult to give a full list of organic vapors, as there are so many of them. Generally, any organic vapor must be avoided.