

Technical Note: MRK-D-0035 Sensor head cross interference information for electrochemical sensors



The following information describes cross interferences for several of Aeroqual's sensor heads containing electrochemical sensor technology.

The tables describe the response of the sensor to different gases of different concentrations.

Nitrogen Dioxide Sensor (ENW)

Interference Gas	Concentration	Nitrogen Dioxide Sensor Reading (PPM)
Hydrogen Sulfide	1ppm	<-0.4
Chlorine	1ppm	1
Nitric Oxide	50ppm	<0.25
Sulfur Dioxide	20ppm	<-0.5
Carbon Monoxide	400ppm	<0.4
Hydrogen	400ppm	<0.4
Ethylene	50ppm	<0.05
Ammonia	20ppm	<0.02
Carbon Dioxide	1% volume	<0.001

Hydrogen Sulfide Sensor (EHS)

Interference Gas	Concentration	Hydrogen Sulfide Sensor Reading (ppm)
Nitrogen dioxide	10ppm	<-3
Chlorine	10ppm	<-2.5
Nitric Oxide	50ppm	<1
Sulfur Dioxide	20ppm	<2
Carbon Monoxide	400ppm	<6
Hydrogen	400ppm	<0.6
Ethylene	400ppm	<0.6
Ammonia	20ppm	<0.02

Sulfur Dioxide Sensor (ESO)

Interference Gas	Concentration	Sulfur Dioxide Sensor Reading (ppm)
Hydrogen Sulfide	20ppm	<0.02
Nitrogen dioxide	1ppm	<-1
Chlorine	10ppm	<-7
Nitric Oxide	50ppm	<2
Carbon Monoxide	1ppm	<0.04
Hydrogen	400ppm	<0.8
Ethylene	1ppm	<0.15
Ammonia	20ppm	<0.02

Carbon Monoxide Sensor (ECM)

Interference Gas	Concentration	Carbon Monoxide Sensor Reading (ppm)
Nitrogen dioxide	10ppm	<0.01
Chlorine	10ppm	<0.01
Nitric Oxide	50ppm	<0.05
Sulfur Dioxide	20ppm	<0.02
Ethylene	1ppm	<0.3
Ammonia	20ppm	<0.02
Hydrogen	180ppm @ 10 °C	<3.6
	180ppm @ 20 °C	<7.2
	180ppm @ 30 °C	<10.8

Chlorine Sensor (ECL)

Interference Gas	Concentration	Chlorine Sensor Reading (ppm)
Hydrogen Sulfide	20ppm	<-8
Nitrogen dioxide	1ppm	1
Nitric Oxide	50ppm	<0.25
Sulfur Dioxide	20ppm	<-0.5
Carbon Monoxide	400ppm	<0.4
Ethylene	400ppm	<0.4
Hydrogen	400ppm	<0.4

Ammonia Sensor (ENG)

Interference Gas	Concentration	Chlorine Sensor Reading (ppm)
Hydrogen Sulfide*	20ppm	1.4
Nitrogen dioxide*	20ppm	-4
Nitric Oxide*	20ppm	-0.2
Sulfur Dioxide*	20ppm	-1.4
Carbon Monoxide	300ppm	0
Chlorine	20ppm	-11
Carbon Dioxide	2%	0
Silane	10ppm	0
Hydrogen	200ppm	0

*Long term exposure and high concentrations may affect the performance characteristics

Formaldehyde Sensor (EF)

Interference Gas	Cross-Sensitivity (%)
Carbon Monoxide	10-18
Hydrogen	1-3
Interference from other reducing gases, such as alcohols	