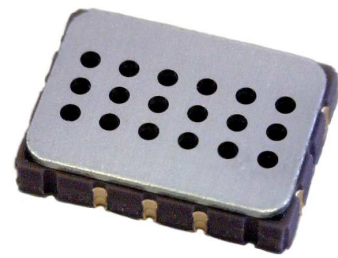




The MiCS-4514 is a compact MOS sensor with two fully independent sensing elements on one package.

The MiCS-4514 is a robust MEMS sensor for the detection of pollution from automobile exhausts.



## Features

- Smallest footprint for compact designs (5 x 7 x 1.55 mm)
- Robust MEMS sensor for harsh environments
- High-volume manufacturing for low-cost applications
- Short lead-times

## Detectable gases

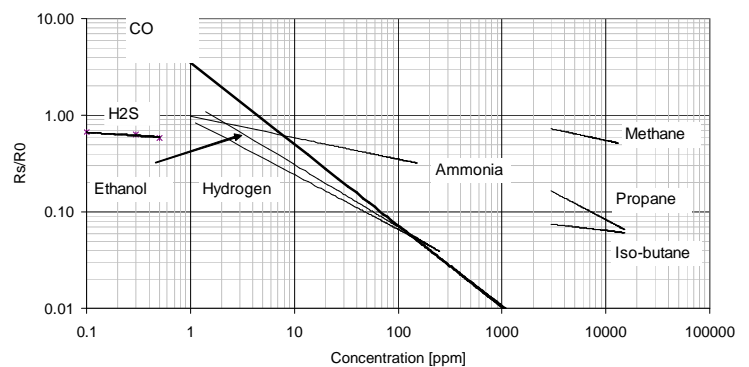
- |                    |                                  |              |
|--------------------|----------------------------------|--------------|
| • Carbon monoxide  | CO                               | 1 – 1000ppm  |
| • Nitrogen dioxide | NO <sub>2</sub>                  | 0.05 – 10ppm |
| • Ethanol          | C <sub>2</sub> H <sub>5</sub> OH | 10 – 500ppm  |
| • Hydrogen         | H <sub>2</sub>                   | 1 – 1000ppm  |
| • Ammonia          | NH <sub>3</sub>                  | 1 – 500ppm   |
| • Methane          | CH <sub>4</sub>                  | >1000ppm     |

For more information please contact:

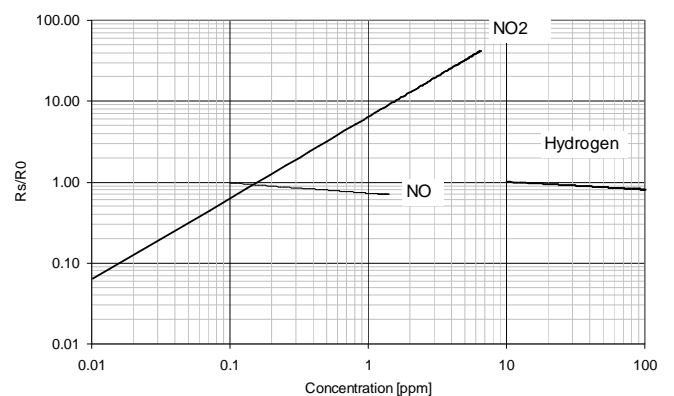
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RED sensor, continuous power ON, 25°C, 50% RH



OX sensor, continuous power ON, 25°C, 50% RH

## Performance RED sensor

Characteristic RED sensor	Symbol	Typ	Min	Max	Unit
Sensing resistance in air (see note 1)	$R_0$	-	100	1500	k $\Omega$
Typical CO detection range	FS		1	1000	ppm
Sensitivity factor (see note 2)	$S_{60}$	-	1.2	50	-

## Performance OX sensor

Characteristic OX sensor	Symbol	Typ	Min	Max	Unit
Sensing resistance in air (see note 1)	$R_0$	-	0.8	20	k $\Omega$
Typical NO <sub>2</sub> detection range	FS		0.05	10	ppm
Sensitivity factor (see note 3)	$S_R$	-	2	-	-

### Notes:

1. Sensing resistance in air  $R_0$  is measured under controlled ambient conditions, i.e. synthetic air at  $23 \pm 5^\circ\text{C}$  and  $50 \pm 10\%$  RH for RED sensor and synthetic air at  $23 \pm 5^\circ\text{C}$  and  $\leq 5\%$  RH for OX sensor. Sampling test.
2. Sensitivity factor is defined as  $R_s$  in air divided by  $R_s$  at 60 ppm CO. Test conditions are  $23 \pm 5^\circ\text{C}$  and  $50 \pm 10\%$  RH. Indicative values only. Sampling test.
3. Sensitivity factor is defined as  $R_s$  at 0.25 ppm NO<sub>2</sub>, divided by  $R_s$  in air. Test conditions are  $23 \pm 5^\circ\text{C}$  and  $\leq 5\%$  RH. Indicative values only. Sampling test.

### IMPORTANT PRECAUTIONS:

Read the following instructions carefully before using the MiCS-4514 described here to avoid erroneous readings and to prevent the device from permanent damage.

- The sensor must be reflow soldered in a neutral atmosphere, without soldering flux vapours.
- The sensor must not be exposed to high concentrations of organic solvents, silicone vapours or cigarette-smoke in order to avoid poisoning the sensitive layer.
- Heater voltage above the specified maximum rating will destroy the sensor due to overheating.
- This sensor is to be placed in a filtered package that protects it against water and dust projections.
- SGX sensortech strongly recommends using ESD protection equipment to handle the sensor.