



**ADOS**  
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Instrumentation and Control



**SENSOR FOR MEASURING THE  
CONCENTRATION OF TOXIC GASES**

# TOX 592



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## SENSOR FOR MEASURING THE CONCENTRATION OF TOXIC GASES

TOX 592

### Application

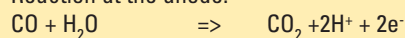
The ADOS TOX 592 gas sensor is suitable for continuous measurement of a concentration of toxic gas in air, over the range of 0 – 20 ppm to 0 – 5000 ppm.

### Fields of Application

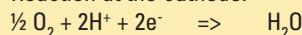
- In garages for measuring, control and warning, in conjunction with the FlexADOS 914 CP tested to VDI 2053 standards
- For monitoring at working places, to control the maximum concentration value e.g. in laboratories or motor test stands
- In private and collective shelters for monitoring the external or internal air

### Reaction

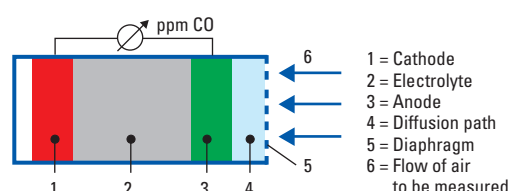
Reaction at the anode:



Reaction at the cathode:



Sensor Measurement Principle



### Function Example, CO-sensor

The ADOS TOX 592 CO gas sensor uses a method of measurement where the air to be measured is diffused in a chemical measuring cell.

The (H<sup>+</sup>)-ions and the electrons released, are consumed at the electrode in a cathode reaction.

The flow of current between anode and cathode, generated by this process, is directly proportional to the CO-concentration in the measured air.

The sensor current is amplified and applied via a 4-20 mA field-bus to an evaluation unit, e.g. FlexADOS 914 CP, where the measured variable is processed and indicated in ppm CO, together with any control and warning functions which may be necessary.

### Technical data

Measuring principle:	Electro-chemical reaction
Measurable substance:	Carbon monoxide
Measuring ranges:	0–150 ppm, 0–300 ppm, other ranges on request
Zero error:	< 10 ppm CO
Reading instability:	< 3 ppm CO
Accuracy:	± 3% of f.s.d.
Zero drift:	< 2% per year
Repeatability:	< 2% per year
Linearity:	< 2% of f.s.d.
Response time (t <sub>90</sub> ):	< 60 sec.
Cross sensitivity:	< 2% with integrated filter
Interface:	two-wire current interface 4–20 mA or LON <sup>®</sup> four-wire techniques, data transmission 78 kbps
Supply voltage:	15 V – 30 V dependent on maximum load: 100 Ohm – 500 Ohm
Ambient temperature:	-10 °C to +40 °C, with sensor temperature compensation
Humidity range:	10 – 99 %, non-condensing
Serviceable life of cell:	approx. 2 years
Protection class:	IP 54
Sensor dimensions:	diameter 80 mm, height 80 mm
Weight:	600 g
Test certificate:	To german standards, according to VDI 2053 in conjunction with FlexADOS 914 CP

### Gases and Measuring Ranges

Gas	Formula	Measuring Range
Carbon monoxide	CO	0 – 300 ppm
Ammonia	NH <sub>3</sub>	0 – 200 ppm
Nitrogen dioxide	NO <sub>2</sub>	0 – 30 ppm
Sulphur dioxide	SO <sub>2</sub>	0 – 50 ppm
Hydrogen sulphide	H <sub>2</sub> S	0 – 20 ppm
Ozone	O <sub>3</sub>	0 – 5 ppm

Other gases and measuring ranges on request.