



## SENSOR FOR MEASURING THE CONCENTRATION OF TOXIC GASES

# TOX 592



ADOS GmbH

Instrumentation and Control

P.O. Box 500 444 · 52088 Aachen · FRG

Trierer Strasse 23 – 25 · 52078 Aachen · FRG

Tel: +49 (0) 2 41 / 97 69 - 0

Fax: +49 (0) 2 41 / 97 69 - 16

info@ados.de

www.ados.de



### 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

### Function Example, CO-sensor

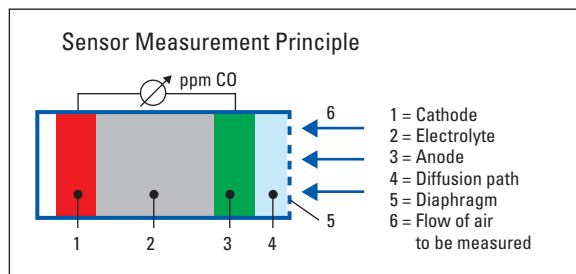
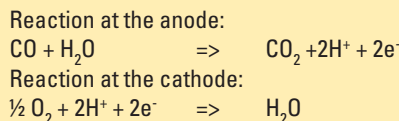
The ADOS TOX 592 CO gas sensor uses a method of measurement where the air to be measured is diffused in a chemical measuring cell.

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.

### Reaction



### 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<br>4-20 mA or LON® four-wire techniques,<br>data transmission 78 kbps |
| Supply voltage:                   | 15 V – 30 V<br>dependent on maximum load:<br>100 Ohm – 500 Ohm                                   |
| Ambient temperature:              | 14 °F to 104 °F, with sensor temperature compensation  |
| Humidity range:                   | 10 – 99 %, non-condensing  |
| Serviceable life of cell:         | approx. 2 years  |
| Protection class:                 | IP 54  |
| Sensor dimensions:                | diameter 3.1 inch,<br>height 3.1 inch  |
| Weight:                           | 1.3 lbs  |
| 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.