Bieler+Lang

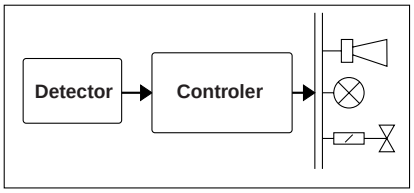
Gasmonitor CO-324

Carbon Monoxide Detector

Data Sheet

Gas Detection and Warning Systems

Applications/ Set-up



The detector Gasmonitor CO-324 in conjunction with an evaluation system has the following functions:

- Measurement and display of the carbon monoxide concentration
- Control of outputs to counter an increase in gas concentration.

A warning installation consists of the following components:

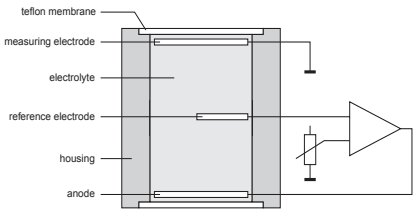
- A sensor
- An evaluation system
- Controllable devices such as fans and illuminated warning signs

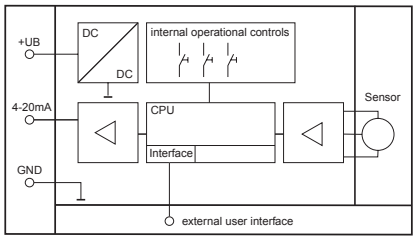
Product Features

- Measurement principle: electro-chemical measurement cell
- 4-20 mA interface
- One-man calibration using a manual control unit (accessory) or directly at the detector
- Easy replacement of the sensor
- Field of application: CO-monitoring in multi-storey carparks etc.
- Tested to VDI 2053

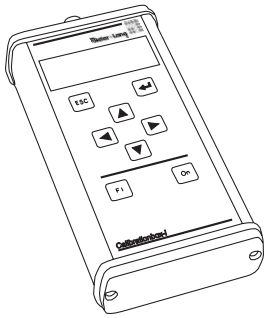
How It Works

- **Three-electrode sensor for toxic gases**
  The electrodes are immersed in an electrolyte. A protective Teflon membrane prevents dust and moisture from entering the cell. A capillary diffusion barrier ensures that only a limited quantity of measurement gas can enter the cell. This also has the effect of minimising the influence of pressure. An electro-chemical reaction (charge transfer) occurs at the measurement electrode. The result of this is that the potential relationships in the sensor change. These changes in potential are measured in comparison with a reference electrode. The counter electrode is controlled by a potentiostat (controlled diffusion), so as to compensate for the changes in potential in the cell. The oxygen required enters the cell from ambient air.





- **Electronics**
  The electronics operate the sensor potentiostat. The analogue measurement signal is amplified and digitalised. The microprocessor reads this information continuously and carries out temperature compensation. Then the reading is converted into a 4-20 mA current output signal. The present reading can also be displayed on the optional Calibrationbox-i manual control unit.



- **Calibration**
  <u>Calibration and basic initialising of the sensor with the control unit.</u>
  For basic initialising of the sensor, the optional Calibrationbox-i is required. By means of a menu-guided calibration procedure, the measurement range, zero setting, and signal amplification can be set at the touch of a button. All calibration parameters are saved and can be read into a computer system for further processing.

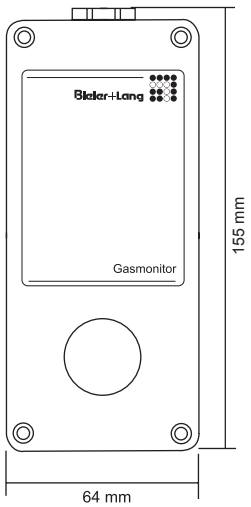
  <u>Calibration of the sensor without a control unit.</u>
  Using the three buttons on the detector the current zero setting and the measurement signal can be adjusted within preset limits. A normal, commercially-available voltmeter is also needed.
  Please note: to change the measurement range and for basic initialising, you need the optional Calibrationbox-i manual control unit.

Technical Data

Designation	Gasmonitor CO-324
Detectable gas	CO (carbon monoxide)
Measurement range	0 - 300 ppm CO (standard), or 0 - 150 ppm
Measurement principle	Electro-chemical measurement cell
Measurement signal	4 - 20 mA
Supply voltage	9 - 30 V
Resolution	1 ppm
Linearity	< 3 ppm
Response time T90	< 20 seconds
Temperature range	-10°C to +40°C
Humidity range	15-90% rel. humidity
Pressure range	900 - 1100 mbar
Max. cable length	1000 m
Connection cable	3-conductor, screened (e.g.: J-Y(St)Y2x2x0.8)
Suitable evaluation devices	GMC 8364 GMC 8022
Drift (10 weeks) - zero setting - detectable gas	 < 1.4 ppm < 4 %
Cross-sensitivity - Benzene (1000 ppm) - Carbon dioxide (5000 ppm) - Nitrogen monoxide (20 ppm) - Nitrogen dioxide (50 ppm) - Water vapour (11mg/l)	 0 ppm CO 3 ppm CO -1 ppm CO 2 ppm CO 0 ppm CO
Sensor warm-up time	30 minutes on initial commissioning
Anticipated useful life of detector	At least 2 years

Mechanical Data

Designation	Gasmonitor CO-324
Degree of protection	IP 54
Housing material	Aluminium
Weight	400 g
Dimensions (H x B x D)	155 x 64 x 34 mm
Cable entry	Cable gland, sealing range 5 - 10 mm
Connection terminals	Three poles, 0.5 – 1.5 mm



Expert Assessment

Gasmonitor CO-324:
VDI 2053 (Ventilation of garages and tunnels)
Test marking: M-G1093-00/08,
TÜV SÜD Automotive GmbH

Safety Standards

Compliance with the following standards ensures equipment with the highest level of safety:

- EN 61000-6-3
  Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments (IEC 61000-6-3:2006)

- EN 50270 Electromagnetic compatibility - Electrical apparatus for the detection and measurement of combustible gases, toxic gases or oxygen

The sensor complies with the interference immunity requirements for industrial environments (Type 2) and the radio-frequency interference radiation requirements for residential zones (Types 1 and 2).

Accessories

- Test gas set
- Calibration gases
- Calibrationbox-i manual control unit

Service

Everything from a single supplier - from system design to installation of your new gas warning system. This is backed up with comprehensive coverage by our sales and service network. Ask us about regional representatives in your area. And after purchase our service technicians are ready and willing to help and advise.

Bieler + Lang GmbH
Gas Detection and Warning Systems

PO Box 1129, D-77842 Achern
Von-Drais-Straße 31, D-77855 Achern

Telephone +49 (0) 78 41 / 69 37 - 0
Telefax +49 (0) 78 41 / 69 37 - 99
E-mail info@bieler-lang.de

Internet www.bieler-lang.de

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