ECO-SURE (2E) CO SENSOR + 4-20mA p.c.b.

Approved by TÜV according to VDI 2053 for OEM applications with CO monitoring systems for underground car parks

Fig. 1 ECO-Sure CO sensor + 4-20 mA p.c.b.

Features & Benefits

- TÜV approval according to VDI 2053 systems
- Signal 4 – 20 mA standard interface
- Pre-calibrated on 0 – 300 ppm CO in air allowing direct integration with system
- Two wire cabling reduces installation costs
- Signal testable at pins on p.c.b allowing one man testing and calibration
- Automatic zero adjustment meaning reduced maintenance effort
- Accessories: fixing ring, sinter metal disc and sensor holder allow easy assembly with wall mounting boxes.
- Test gas cap suitable for applying test gas

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SPECIFICATION

Detection principle:	Electrochemical
Operation:	continuous
Gas entry:	by diffusion
Measuring range:	0 – 300 ppm CO in air
Reproducibility:	< 3ppm
Response time t90:	< 60 sec
Cross sensitivity:	< 2% on 300 ppm CO according VDI 2053
Linearity:	< 2% on 300 ppm CO according VDI 2053
Temperature range:	-10°C to +40°C
Humidity range:	15 - 95% relative humidity
Power supply:	20 – 28 V d.c.
Signal:	4 – 20 mA, max. load 300W
Zero adjustment:	automatic
Sensitivity adjustment:	via potentiometer
R.F.I. :	according EN 50 081-1 resp. EN 50 082-2 B
Storage temperature:	0 – 20 °C
Mechanical design:	CO Sensor plugged onto p.c.b. terminals on p.c.p, vertically or horizontally pluggable
Dimensions:	21 mm Æ, 30 nun high incl. terminals
Weight complete:	approx. 10g
Sensor housing material:	Noryl 110

Accessories:

Fixing ring	suitable for assembling into wall mounting box
Sinter metal disc	to be fitted between fixing ring and sensor holder
Test gas cap	to fit onto fixing ring
Sensor holder	with O-ring for ECO-Sure
Test gas cap	suitable for applying test gas

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Fig. 1 ECO-Sure CO sensor + 4-20 mA p.c.b.

Fig. 2 ECO-Sure CO sensor + 4-20 mA p.c.b. with sensor holder, screwed to blue installation ring and plugged-in test gas cap; or for installation into wall mounting housing

Fig. 3 Components from left to right: test gas cap, installation ring, sinter metal disc, sensor holder, ECO-Sure CO sensor with O-Ring + 4-20 mA p.c.b. and plugable terminal block

Fig. 4 Sensor holder with half-fitted ECO-Sure sensor

Fig. 5 Test gas cap

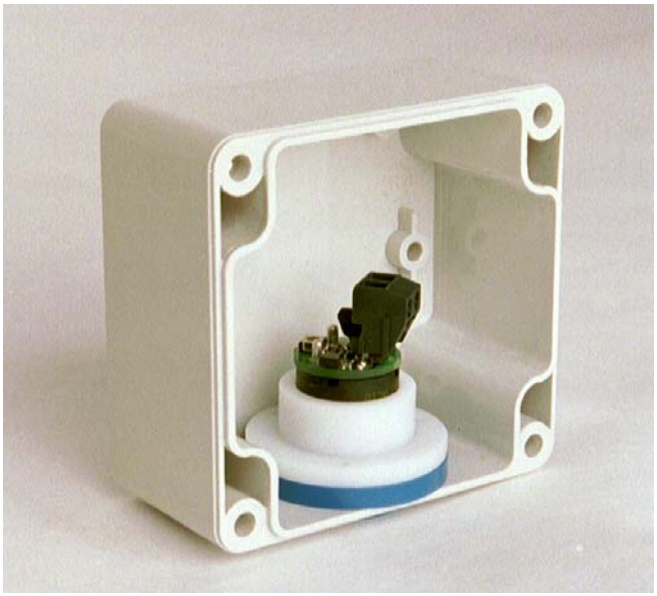

Fig. 6 ECO-Sure CO sensor + 4-20 mA p.c.b. fitted into sensor holder / installation ring and as an example, built into Bopla wall mounting housing

ECO-SURE (2E) CO SENSOR + 4-20mA p.c.b.

Questions and answers

? Which components are TÜV approved according to VDI 2053

! The ECO-Sure CO sensor in conjunction with the 4-20 mA p.c.b.

? Does an existing TÜV certificate on a complete CO monitoring system become invalid if a manufacturer undertakes a sensor change in favour of ECO-Sure + 4-20 mA p.c.b.

! No, the TÜV that has issued the original certificate will rewrite the original certificate.

? How does the automatic zeroing circuit work

! This is a company secret

? Which cross-sensitivities are to be expected with the ECO-Sure CO sensor

! The cross-sensitivity on the ECO-Sure CO sensor has been tested by TÜV according to the requirements of VDI 2053 and shows a cross-sensitivity to other gases in an underground car park that is much lower than tolerated.

? What does “ECO-Sure” mean

! 1) **ECO** means cost effective

2) **Sure** is its relationship to the new “SureCell” technology of the manufacturer. It has the highest possible performance at extreme high and low atmospheric humidities, and a reproducible temperature profile and high quality sealings to prevent leaks.

? Are the terminals marked with + resp. -

! There is free choice on the polarity

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Questions and answers

? Why is there a sinter metal disc with the accessories

! The sinter metal disc protects the CO sensor from dust and splash water and restrains test gas turbulence within the test gas cap. Furthermore, the sinter metal disc protects the CO sensor from vandalism

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? Is the usage of the sinter metal disc mandatory

! No, instead of the sinter metal disc, any other protection against dust and water can be used, for example a Goretex disc

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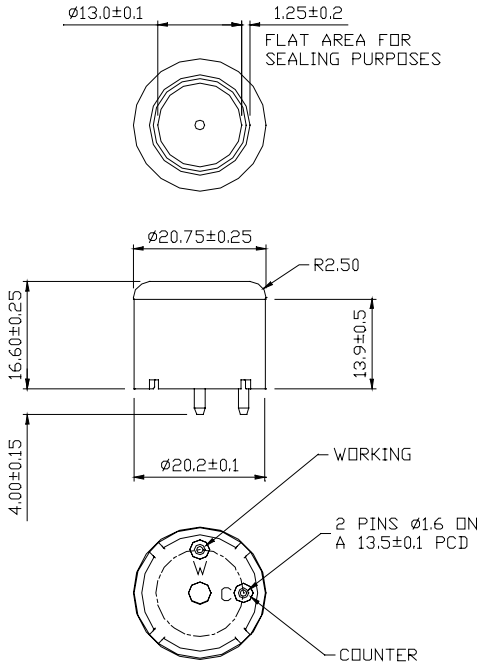
Tips + Tricks

When using the test gas cap for regular testing resp. calibration, a test gas flow of 0.5 l/min is recommended.

For glueing the CO sensor into the installation ring, a glue which is free from hydrocarbons and solvents has to be used.

When the ECO-Sure CO sensor is plugged into the 4-20 mA p.c.b., the CO sensor is perfectly stabilised. However, if the CO sensor is separated from the 4-20 mA p.c.b. for any reason, the CO sensor has to be left without power for a time period of 2 – 3 hours for stabilisation purposes before replugging the CO sensor back into the 4-20 mA p.c.b.

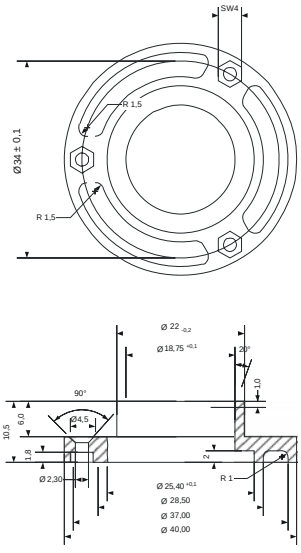


ECO-Sure CO sensor top surface with gas entry hole

ECO-Sure CO sensor side view

ECO-Sure CO sensor back view with connecting plugs

Fig. 7 ECO-Sure CO sensor dimensions



Werkstoff :
Novodur PH-AT571 CF (blau)

Fig. 8 Installation ring

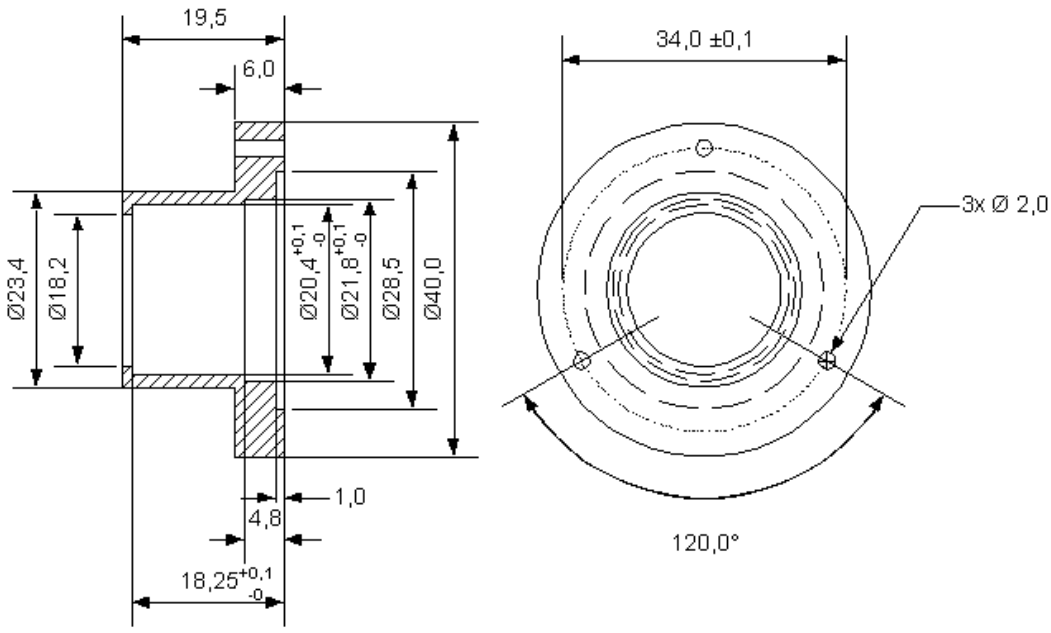


Fig. 9 Sensor holder

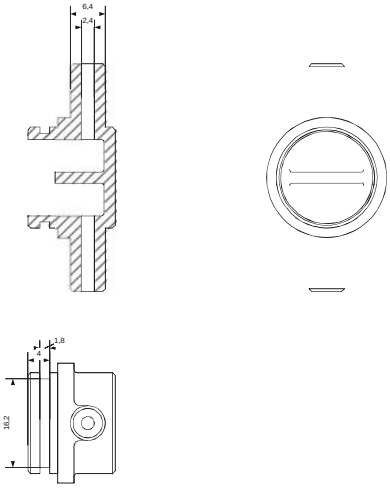


Fig. 10 Test gas cap