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OXYGEN GAS SENSOR 403 E O2

OPERATING INSTRUCTION

VN 10 04 03



Attention!

The devices may only be operated if this operating instruction has been understood and is applied. The annex "Safety for installers and operators" must be observed!

Sensoric

The sensor GMF 402 E is operated with electrochemical sensors, whose signal is converted to the measured current range of 4-20mA.

The measuring range of the gas sensor GMF 403 E O2 25 is 0..25 vol% O2. The measuring range of the gas sensor GMF 403 E O2 100 is 0..100 vol% O2.

The sensors provide a corresponding output signal, which can generate in an evaluation unit via a load resistor to ground an usable voltage signal.

Mounting

The sensor is suitable for a wall or ceiling mounting.

Sensor connection

In order to supply the gas sensor GMF 402 E an unregulated DC voltage from 12.5 - 30V is required. The maximum load at 12.5 volts ist 400 ohm.

The shielded cable JY (St) 2x2x0.8 mm can be used as sensor supply cable The wire colors can be assigned as follows :

red => +24V (KI 1), white => 4-20mA (KI 2), black => 0 V (KI 3), yellow => PE (KI 4)

Wenn der Messfühler auf Mauerwerk angebracht ist, wird der Beidraht am Auswertegerät mit der gelben Ader verdrillt und an Klemme 4 (Schutzleiter PE) angeschlossen. Der Beidraht ist im Kabel mit der Abschirmung verbunden.

Ist das Messfühlergehäuse auf geerdeten Stahlträgern angebracht, darf der Beidraht und die gelbe Ader für Klemme 4 (PE) nicht am Auswertgerät angeschlossen werden.

On the sensor GMF 402 the drain wire must be twisted with the yellow wire and have to connect to the metal case.

WICHTIG: When installing make sure that all the bar drain wire cannot come into contact with the circuit.

Adjustment

Electrochemical sensors must have been in operation about 1 hour, so that you can start with the adjustment. The test gas shall be the ambient temperature, that means the same temperature as the sensor.

Maintenance aids

Voltage meter 0-20 V Screwdriver Nitrogen or carbon dioxide to adjust the zero point Synthetic air for adjusting the gain Gas feed fittings (flow controller, flow meter 0-1 liters / min) Gas feed adapter

Adjustment zero point

1. The zero point is adjusted by moving the jumper plug to "N".

2. 4mA zero-point adjustment:

Set the trimmer "NP" so that you can measure at the measuring pin "MP2" a voltage of 0.40 volts. This corresponds to a measuring loop current of 4mA.

The jumper is replugged then to the operating position "B", that means the sensor signal is on now.

In addition zero gas (synthetic air) can be feeded in order to compensate the neutral current of the sensor. For this purpose the trimmer "**NP**" is readjusted until the voltage at the measuring pin "**MP2**" is again exactly 0:40 volts.

Span adjustment

Enter now for a oxygen concentration and set the voltage to the measuring pin "**MP2**" with the trimmer "**V**" to the corresponding value.

If the measurement range of the sensor is 25 vol% O2, the following settings are required:

- i.e. for synthetic air with 20.5% oxygen by volume: 1.712 volts
- i.e. for ambient air with 20.9% oxygen by volume: 1.738 volts

The value is generally calculated using the following formula: kUmess (MP2) = 1.6Volt * Oxygen concentration / range + 0.4 volts

The zero point is not affected by the change in the gain setting.

Connection diagram and position of the potentiometer of the GMF 403 E



Readjusting for oxygen at 21 vol% O2 (fresh air): Poti V trimm up to MP2 measured 1,75 volts

Commissioning

The setting of the sensor has to be checked during commissioning by a test gas feeding.

Maintenance

To maintain the functional reliability a maintenance at certain intervals is required. The maintenance interval can be read off on the inspection sticker on the evaluation unit. There is a maximum of 1/2 year.

Decommissioning

Is the sensor for longer than 4 weeks off, it must be checked after a week uptime with test gas or be recalibrated.

Subject to technical changes

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