

ZIROX Oxygen Probe SS31H

Properties

The main part of the oxygen probe SS31H is a potentiometric solid electrolyte cell (ZrO_2 sensor). Due to different oxygen concentrations at the electrodes (ambient air at reference electrode) a voltage arises which is proportional to the logarithm of the oxygen concentrations. From the cell voltage the oxygen concentration at the measuring electrode can be calculated based on the NERNST Law.

The SS31H is calibration-, drift- and maintenance-free. During measurements in reducing atmospheres falsifications of the gas composition do not occur from the cooling of the measuring gas in a suction line. The use of high-quality components and materials guarantees long-term stability.

If the fuel gas composition is known, it is possible to calculate the air factor λ , the CO -, CO_2 -, H_2 - and the H_2O -concentration. These values can be generated with an external electronic units (e.g. ZIROX electronic unit E2000).

Applications

The SS31H serves the process control and combustion optimization in power and heating plants as well as in incineration plants. It is a part of controlling oxidizing and reducing furnace gases in ceramic industries and used in heat treatment applications of metallic materials (Measurement in protection and inert gases).



Oxygen Probe SS31H

Sensoren und Elektronik GmbH



Technical Data

Length.....	300...1800 mm
Diameter	25 mm
Weight	1...3.5 kg
Material.....	1.4841
Dimension clamp head.....	75 x 80 x 60 mm
Clamps	5 x Phoenix MBK 2,5/E
Protection degree	IP52, IP 65 on request
Power supply	24 V
Heater resistance AC / DC	22 Ω
Heater current AC / DC	1.1 A
Heater power AC / DC.....	26 W
Heater control.....	Max. cycle time at PWM 500 ms
Range	0.01...20.6 vol% O ₂
Accuracy.....	< 5 % rel. error
Operating temperature	700...800 °C
Measuring gas temperature	0...800 °C
Offset	0 mV...+10 mV
Sensor voltage (5,0 vol%, 800 °C)	-33.1 mV
Thermocouple.....	Type B (800 °C corresponds to 3.2 mV)
Flow measuring gas	Max. 20 m/s
Reference gas	Ambient air
Flow reference gas	5...10 l/h

Clamp assignment:

1	Ground	AGND
2	Sensor voltage	- V _z
3	Thermal voltage	+ V _t
4	Heater	U _H
5	Heater	U _H

Mounting recommendation: stuffing box or mechanical joint

