

## ZIROX Q-Probe SS23.BQ

### Properties

The main part of the Q-probe SS23 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.

The designation Q-probe points out that due to the probe signal the quotient of partial pressures of the reactive furnace gases (only with oxygen reacting gases) can be calculated. Water vapour and hydrogen or  $H_2O+CO_2$  und  $H_2+CO$  in the water gas equilibrium serve as an example.

The Q-probe 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.

### Applications

The Q-probe serves the monitoring of protective gases or the regulation of partial oxidation processes (redox-quotient, oxidation character  $K_O$ ) in heat treatment equipment for metallic materials. The probe is also used in nitriding or nitrocarburizing equipment. By combining Q-probe and QE-probe signals, the nitriding character  $K_N$  or carburizing character  $K_C$  can be adjusted and controlled (if necessary considering the unburnt gas mixture).



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Sensoren und Elektronik GmbH



**Technical Data**

Length.....	300...1800 mm
Diameter .....	25 mm
Weight .....	1...3.5 kg
Material.....	1.4841
Dimensions clamp head .....	75 x 80 x 60 mm
Clamps .....	3 x Phönix MBK 2.5/E
Protection degree .....	IP65
Range .....	0...1500 mV
Accuracy.....	< 5 % rel. error
Operating temperature .....	500...1100 °C
Thermocouple.....	Type B (800 °C corresponds to 3.2 mV)
Reference gas .....	Ambient air
Reference gas flow.....	5...10 l/h

Clamp assignment:

1	Ground	AGND
2	Sensor voltage	- $V_z$
3	Thermal voltage	+ $V_t$

*Mounting recommendation:* stuffing box or mechanical joint

