ZIROX Oxygen Measuring Device SGM5T

Properties

The compact precision meter SGM5T contains the approved calibration- and drift-free ZIROX zirconia measuring cell as well the process electronics (for cell heater control, flow monitoring, cell signal processing, calculations and signal output, e.g. oxygen concentration, air factor λ, redox-quotient or H_2O/H_2-ratio).

A microprocessor changes the cell signal to the oxygen concentration according to the NERNST equation. The value is displayed and generated as an analog current signal (option: digital interface RS232, software for measuring value recording and storage is available).

Additionally, the electronics can process and output the signals of another optionally integrable sensor (e.g. CO_2, humidity or pressure sensor with standard interface).

Applications

In various technological processes under protective or inert gases oxygen traces are detrimental for the product quality. Precondition for detection and prevention of problems is the fast and precise measurement of oxygen or the determination of the reducing force of inert gases.

With the increasing introduction of quality assurance systems, e.g. ISO 9000, a constant monitoring and documentation of quality parameters becomes more important. With the SGM5T, the user gets several possibilities for process optimization (soldering and welding processes, heat treatment of metallic surfaces, microelectronic production, food packing technology).

For the monitoring of reducing gases further parameters (redox-quotient, air factor λ, H_2O/H_2-ratio or CO_2/CO-ratio) can be determined with special calculation methods.

SGM5T

ZIROX
Sensoren und Elektronik GmbH

Technical Data

Range	2.0 · 10^5…0,1 vol-ppm, (20.6…10^{-4} vol%),
	Measurements up to 10^{-20} vol-ppm on request (reducing conditions),
	Range up to 100 vol% on request
Signal output	4-20 mA (0-5 V, 0-10 V on request)
Accuracy at normal pressure	Rel. error < 3% for 2 · 10^5... 10 ppm Rel. error < 5% for 10 ... 0.1 ppm
Gas flow	5...10 l/h
Max. measuring gas pressure	100mbar overpressure, at higher pressures a pressure reduction is required (e.g. by hand-operated needle valve), (more than 1 kPa overpressure: an error correction is required)
Max. measuring gas temperature	80°C at gas input
Pressure drop over measuring cell	Approx. 1 kPa (100 mm WS) at 10 l/h
Dimensions (D x W x H)	320 mm x 240 mm x 90 mm
Weight	4 kg
Protection degree	IP 30
Operating conditions	10…40 °C, rel. humidity < 80% at 20 °C
Storage conditions	-20…60 °C, rel. humidity < 95% at 20 °C
Power supply	
Voltage	110…230 V/50...60 Hz
Power consumption	30 VA
Heater measuring cell	24 V DC, ca. 15 W (internally controlled)
Keypad and display	
Keypad	6 Foil keys (4 keys with explanation, ESC, enter-key)
Display	LCD dot-matrix
Digital interface	RS232