

ZIROX Electrolysis Device SGM5EL

Properties

The electrolysis device SGM5EL is based on the approved zirconia solid electrolyte technology. It serves the convenient dosing or removal of oxygen from protective gases (N₂, Ar) or reactive gas flows (e.g. inert gas N₂/H₂) either to produce gases with defined oxygen concentration or gases with a requested reduction force.

The SGM5EL is a combination of a complex cell module with a control unit. Main parts of the cell module are an electrolysis cell and a potentiometric measuring cell. The potentiometric cell enables the exact measurement of the oxygen concentration adjusted by the electrolysis cell.

The required cell temperature is guaranteed by means of an electrical heater.

Besides its use as a test gas generator, the SGM5EL can be used for the solid electrolyte coulometry. In this case the cell voltage of the potentiometric cell is kept constant as a set point of a control circuit. The resulting current of the electrolysis cell is proportional to the oxygen transposition with the gas flow. With the current-time-integral the substituted amount of oxygen can be determined quantitatively.

Applications

- Production of defined test gases, e.g. for sensor tests
- Examination of oxygen permeation of polymers (e.g. foils)
- Controlled outgassing of reactors
- Calibration and monitoring of TA-Systems (TG, DTA, TMA, DSC)
- Examination of the decomposition gases in thermal analyses



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Sensoren und Elektronik GmbH



Technical Data

Range (Measuring cell)	20.64*10 ⁴ ...0.5 vol-ppm O ₂ , up to 10 ⁻²⁴ vol-ppm possible
Carrier gas (for electrolysis)	Protective gas (N ₂ , Ar, CO ₂) or inert gas
Accuracy	Rel. error <5%
Test gas flow	5...10 l/h
Max. test gas pressure	100 mbar over pressure
Max. test gas temperature.....	80 °C at gas input
Pressure drop over cell module.....	Approx. 1 kPa (100 mm WS) at 10 l/h
Dimensions (T x B x H)	Electronic unit: 320 x 240 x 90 mm ³ Cell module: 262 x 119 x 119 mm ³
Weight	Electronic unit: 2.5 kg Cell module: 1.5 kg
Gas connection.....	3 mm Swagelok®, others on request
Protection degree	Electronic unit: IP 30 Cell module: IP 20
Operating conditions	10...40 °C, max. 80 % rel. humidity
Storing conditions	-20...60 °C, max. 95 % rel. humidity
Interface.....	RS232
Power supply	110...230 V/50 ... 60 Hz
Power consumption.....	50 VA
Keypad	6 keys (4 keys with explanation; ESC; enter-key)
Display.....	LCD dot-matrix

