

S-3A/I and S-3A/II Oxygen Analyzers

Introduction

The Applied Electrochemistry Model S-3A Oxygen Analyzer continuously measures the concentration of oxygen. There are two models: The S-3A/I Single-Channel Analyzer and the S-3A/II Dual-Channel Analyzer. Both instruments feature the same high accuracy, rapid response, and fine sensitivity.

Features:

- High accuracy at all oxygen concentrations
- Rapid response—ideal for accurate breath-by-breath measurements
- High sensitivity plus exceptional stability—capable of detecting changes of 0.001% oxygen at air composition
- Solid ceramic oxide sensing element for long term maintenance-free operation
- Single gas calibration (room air may be used)

Capabilities

A complete Model S-3A consists of a sensor, readout/control unit, and cable. When the sample gas is passed through the sensor, a voltage that is a function of the oxygen concentration of the gas is generated. This voltage is fed to the readout/control unit via a connecting cable.

The optional R-1 (Single Channel) or R-2 (Dual Channel) Flow Control Unit can be used to draw the sample through the sensor. Each flow control unit contains a pump, a needle valve, and a flowmeter for each channel. Other gas handling equipment can be used if preferred.

The Gold Standard in laboratory oxygen analysis for over 30 years, worldwide.



S-3A/I Single-Channel



S-3A/II Dual-Channel

Specifications

Speed of Response:

100 milliseconds to 90% of final value for a step change in oxygen concentration.

Accuracy:

$\pm 0.01\%$ O₂ on the %O₂ scale, equivalent accuracy on other scales, within working range

Working Range:

Calibration gas value $\pm 5\%$ of full scale value

Stability:

$\pm 0.01\%$ oxygen in 24 hours with constant temperature and pressure

Sensitivity:

$\pm 0.001\%$ oxygen or equivalent on other scales

Resolution:

Digital Display: ± 0.01 on each scale

Analog Output:

0-5V buffered output for 0-100% O₂

Sample Flow Rate:

10-300 ml/min, 50-125 ml/min recommended for most applications; for other flows, consult the factory

Flow Dependence:

$\pm 0.02\%$ O₂ at flow rates of 50-125 ml/min, calibrated at 20.61% O₂ and 95 ml/min

Additional Specifications for Model S-3A/II, Channel Δ (1-2)

Accuracy:

$\pm 0.003\%$ O₂

Stability:

± 0.003 in any 4 hour period

Resolution:

± 0.001 on the digital display

Analog Outputs:

Buffered analog output of 0-10V for 0-100% O₂ on channels 1 and 2; 0 to ± 10 V for 0 to $\pm 10\%$ O₂ on channel Δ (1-2)



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