



Process Oxygen Analysers

EC900

The EC900 offers unsurpassed accuracy, reliability and flexibility under the most demanding on-line operating conditions.

Unmatched Performance

Systech Illinois has long been recognised worldwide as a leader in oxygen analysis.

Utilising a variety of specially engineered electrochemical fuel cells, the EC900 Oxygen Analysers are designed to monitor oxygen within most industrial gases and atmospheres. These highly advanced instruments incorporate user-friendly software and the highest quality sensors to provide accurate, reliable results.

Whatever your measuring range, the EC900 series has an analyser to suit your needs.

Cabinetry & Mounting

Three different configurations to match your needs.

- NEMA 4X / IP66 waterproof and weatherproof
- 19in. rack mount
- Panel or bench mount

Operator Interface /Diagnostics

- User-friendly menu
- Read-only mode available
- Diagnostic capabilities
- Fault alarms

Outputs & Alarm Options

For charting, process control, or remote monitoring.

- USB and RS485, standard
- Analogue outputs (one or three channels), optional
- High / low alarms, optional
- Fault alarms, standard

Sampling Systems

- Bypass flowmeter
- Pressure regulator
- Sample pump
- Flow alarm



EC920



EC930



EC910

Contact Details

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Sensor Selection

No need to compromise! Now you can match sensor to application for the best possible reliability and performance. All sensors are manufactured to rigid tolerances and exacting production specifications.

Principle of Operation

The EC900 Oxygen Analysers use a variety of electrochemical fuel cells for the detection of oxygen. When oxygen diffuses to the cathode of the cell, a current output is produced directly proportional to the concentration of oxygen in the sample gas.

Specialising in trace oxygen measurements, Systech Illinois' sensors are used in applications from ppb up to 100% oxygen. In addition, sensors can be used on gas streams such as hydrogen, combustibles, hydrocarbons and inert gases.

All Systech Illinois' sensors are easily calibrated to ambient air. For ISO purposes and in specific applications, traceable calibration gases can be used to meet the most demanding quality assurance programmes.

Trace (part per million) Sensor

The trace sensor is designed for measuring 0.1ppm – 1% oxygen in most industrial gas streams. Can be calibrated to air. This sensor when used in a normal operating range typically lasts 3 – 5 years.

Sensor RACE™

The RACE™ Sensor is a breakthrough in electrochemical technology. Our patented design* prevents the sensor from being saturated by high levels of oxygen. With TURBOPURGE™ levels as low as 20ppm can be reached from ambient air within 2 minutes. This sensor is unaffected by hydrocarbons or volatile atmospheres making it the ideal choice in applications such as wavesolder and reflow ovens.

The RACE™ Sensor is maintenance-free, requires only occasional calibration and has no caustic electrolyte to monitor or replace. The RACE™

Sensor carries a 3 year limited warranty.

Percent Sensor

The Systech Illinois percent sensor is capable of accurate measurements from 0 – 100% oxygen.

Unlike most electrochemical sensors, this sensor is not affected by acid gases such as carbon dioxide.

* UK Patent no. 2324870. USA Patent no. 5929318

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Features & Benefits

- Specific to oxygen
- Ambient air or traceable gas calibration
- Microprocessor controlled functions
- Long life, maintenance-free, disposable oxygen sensors
- Fast response. Ultra fast response version also available
- This instrument has a 36 month warranty, which covers any faulty workmanship and normal component failure relating to electronic circuit cards
- Large, autoranging LED display
- Unaffected by vibration or position
- Sturdy, reliable construction with three sensor options
- Insensitive to sample flow rate - percentage through ppm

Options

High/Low Alarms	2 Volt-free changeover contacts. Rated 240V 3A
Analogue Outputs	Analogue output channels: scaleable 0-10V, 4-20mA or 0-20mA all isolated. Option for one channel or three.
Autocalibrate	Provision for remote cal start and autocal in progress
Sample Stream Options	Bypass flowmeter, sample pump, flow alarm, stainless steel sample system in place of brass/copper. Sample conditioning advice available.

Applications

Chemical/Petrochemical	Chemical Production High Purity Gas Production Hydrocarbon Refining Natural Gas Transmission
Curing	Electron Beam Ultraviolet
Electronics	Reflow / Wave Soldering Solder Powder Production Semiconductor Furnaces Gas Quality
Metals	Heat Treating / Annealing Steel Production Alloys and Powdered Metals
Pharmaceutical	Inert Packaging Vessel Blanketing Fermentation
Process	Ceramics Combustion Analysis Contact Lens Manufacturing Food Packaging Glass Fibre Optics Inert Gas Welding Lamp Manufacturing
General	Controlled Environments R & D Glove Boxes Oxygen Deficiency

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Technical Specification

Sensor Type	Trace	Race	Percent
Ranges	0.1ppm - 1%	0.1ppm - 30%	0.3% - 100%
Accuracy	>10ppm	±2% of reading at 20°C ±5% of reading over temperature range	±2% of calibrated value at 20°C ±1% of calibrated value over temperature range
	<10ppm	±2% of reading + 0.4ppm at 20°C ±5% of reading + 0.6ppm over temperature range	±2% over temperature + 0.4ppm at 20°C ±5% over temperature + 0.6ppm over temperature range
Response Time	90% within 30sec	Air to 20ppm within 2min	90% within 30sec
Measuring Cell Type	Electrochemical, percentage, trace and RACE™ Cell (US & UK) patents		

Operating Conditions

Sample Inlet Pressure	0.25 - 2 Barg, 3-30psi
Sample Flow Rate	Approximately 140 cc/min
Sample Temperature	-5 to 50°C
Ambient Temperature	-5 to 50°C, RH 0-99% non-condensing
Sample Connections	1/8" OD compression fittings, as standard
Communications	USB and RS485
Unsuitable Gases	Acid gases, corrosives and solvents in significant concentration

Power Requirements

Power Supply	90-260VAC, 50/60Hz, 40VA
Display Type	4-digit high-visibility LED

Weights & Dimensions

	Weight (kg)	Width (mm)	Depth (mm)	Height (mm)
EC910 Bench/Panel Mount	7.9	237	410	190
EC920 IP66/NEMA 4X	15.5	380	160	460
EC930 Rack Mount 4U - 19 inch Houses 1 or 2 Analyzers	9.7	484	410	178

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