

EC903 RACE™ Cell Oxygen Analysers



The EC903 offers rapid ppm trace oxygen measurement with automatic isolation protection from exposure to air



Features & Benefits

- Automatic ppm sensor protection from exposure to air
- Trace ppm oxygen measurement in inert and flammable gas mixtures
- Wall, panel or bench top enclosure options
- Large, autoranging display
- This instrument has a **36 month warranty** which covers any faulty workmanship and normal component failure relating to electronic circuit cards
- Ultra fast response from air to ppm levels
- Designed for nitrogen purge processes
- Long life, maintenance-free, oxygen sensors
- Nitrogen supply control option to save on purge costs (Nitrosave)

Conforms to European Directives:

Electromagnetic Compatibility Directive 2004/108/EC Low Voltage Directive 73/23/EEC

Unmatched in electrochemical ppm oxygen analysis

Applications

Gas Quality

Trace Oxygen in Inert Gases
Nitrogen Generators

Curing

Nitrogen Purging
Curing Ovens
UV Printer Systems

Electronics

Reflow / Wave Soldering
Solder Powder Production
Semiconductor Fabrication
Gas Quality

Metals

Heat Treating / Annealing
Steel Production
Alloys and Powdered Metals
Welding

Pharmaceutical

Inert Packaging
Nitrogen Blanketing
Fermentation

Process

Ceramics
Contact Lens Manufacturing
Food Packaging
Glass Fibre Optics
Lamp Manufacturing
Glove Boxes

Unmatched RACE™ cell performance

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

Utilising our patented design of specially engineered RACE™ cells, the EC903 Oxygen Analysers are designed to monitor trace oxygen within most industrial gases and atmospheres. These highly advanced instruments provide rapid ppm response times in inert and flammable gases even when going from % to ppm oxygen levels, while offering full protection from exposing the trace ppm sensor to air.

Cabinetry & Mounting

Three different configurations to match your needs.

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

Operator Interface /Diagnostics

- User-friendly menu
- Data downloading
- Diagnostic capabilities
- Fault alarms

Optional Nitrosave Feature

- Control of Nitrogen or flushing gas
- Reduced nitrogen costs
- Improved productivity
- Reduced product wastage
- Better quality control

Outputs & Alarm Options

For charting, process control, or remote monitoring.

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

Sampling Systems

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

RACE™ Cell Sensor Selection

No need to compromise! Now you can match sensor to application for the best possible reliability and performance.

EC923



EC933



EC913



Nitrosave Oxygen Control System



Sensor RACE™ Cell

The RACE™ cell is a breakthrough in ppm oxygen electrochemical measuring 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.

Response Time - RACE™ V Standard Sensor

T ₉₀ time after saturation of sensor with Air		
O ₂ level	RACE™	Standard
1000 ppm	20 secs	30 secs
100 ppm	45 secs	8 mins
10 ppm	3 mins	2 hours
1 ppm	10 mins	24 hours

This table shows the response time, from air to pure nitrogen, of the standard and RACE™ sensors.

Trace (part per million) Sensor

The trace ppm 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.

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

EC903 RACE™ Cell Oxygen Analysers



EC913

Bench/Panel Mount
190H x 237W x 410D (mm)
7.9 kg



EC923

IP66/NEMA 4X
Wall Mount/Weatherproof
460H x 380W x 160D (mm)
15.5kg



EC933

Rack Mount 4U - 19 inch
Houses 1 or 2 Analysers
178H x 484W x 410D (mm)
9.7kg (single unit)

Technical Specifications

Sensor Type	RACE™
Ranges	0.1ppm - 30%
Accuracy: >10ppm	±2% of reading at 20°C ±5% of reading over temperature range
<10ppm	±2% over temperature + 0.4ppm at 20°C ±5% over temperature + 0.6ppm over temperature range
Response Time	Air to 20ppm within 2min. 0.1ppm to Air in less than 20 seconds.
Measuring Cell Type	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	90-260 VAC, 50/60 Hz, 40 VA
Display Type	4-digit high-visibility LED
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.
Nitrosave	O ₂ measurement and nitrogen supply control system EC9500.

Systech Illinois have over 30 years experience of providing analysis solutions for a wide range of industries. From our manufacturing plants in the UK and U.S. we produce gas analysers for many critical process gas industries.

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