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
- 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)
- This instrument has a 36 month warranty which covers any faulty workmanship and normal component failure relating to electronic circuit cards

Conforms to European Directives:
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 0% 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.

**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**

<table>
<thead>
<tr>
<th>Time after saturation of sensor with Air</th>
<th>O2 level</th>
<th>RACE™</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1000 ppm</td>
<td>30 secs</td>
<td>20 secs</td>
</tr>
<tr>
<td></td>
<td>10 ppm</td>
<td>8 mins</td>
<td>3 mins</td>
</tr>
<tr>
<td></td>
<td>1 ppm</td>
<td>24 hours</td>
<td>10 mins</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>RACE™</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranges</td>
<td>0.1ppm - 30%</td>
</tr>
<tr>
<td>Accuracy: &gt;10ppm</td>
<td>±2% of reading at 20°C</td>
</tr>
<tr>
<td></td>
<td>±5% of reading over temperature range</td>
</tr>
<tr>
<td>&lt;10ppm</td>
<td>±2% over temperature + 0.4ppm at 20°C</td>
</tr>
<tr>
<td></td>
<td>±5% over temperature + 0.6ppm over temperature range</td>
</tr>
<tr>
<td>Response Time</td>
<td>Air to 20ppm within 2min. 0.1ppm to Air in less than 20 seconds.</td>
</tr>
<tr>
<td>Measuring Cell Type</td>
<td>RACE™ Cell (US &amp; UK) patents</td>
</tr>
</tbody>
</table>

### 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       | O₂ 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.