EC900 Process Oxygen Analysers

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

Technical Specifications

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Trace</th>
<th>Race</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranges</td>
<td>0.1ppm - 1%</td>
<td>0.1ppm - 30%</td>
<td>0.3% - 100%</td>
</tr>
<tr>
<td>Accuracy: &gt;10ppm</td>
<td>±2% of reading at 20°C ±1% of calibrated value at 20°C</td>
<td>±2% of reading at 20°C ±1% of calibrated value at 20°C</td>
<td>±0.3% of calibrated value at 20°C ±1% of calibrated value over temperature range</td>
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<tr>
<td>&lt;10ppm</td>
<td>±2% of reading + 0.4ppm at 20°C ±0.6ppm over temperature range</td>
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</tr>
<tr>
<td>Measuring Cell Type</td>
<td>Electrochemical, percentage, trace and RACE™ Cell (US &amp; UK) patents</td>
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</tr>
</tbody>
</table>

Operating Conditions

- Sample Intel 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 flow meter, sample pump, flow alarm, stainless steel sample system in place of brass/copper. Sample conditioning advice available.
- Nitrosave: O₂ measurement and control system EC9600.

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 industrial process industries, headspace analysers for monitoring gas flushing of food products and our range of permeation analysers.

Features & Benefits

- Specific to oxygen
- Large, autoring LED display
- Ambient air or traceable gas calibration
- Unaffected by vibration or position
- Microprocessor controlled functions
- Sturdy, reliable construction with three sensor options
- Long life, maintenance-free, disposable oxygen sensors
- Insensitive to sample flow rate - percentage through ppm
- 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
Unmatched in High Performance On-Line Oxygen Analysis

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

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
- 19 in. rack mount
- Panel or bench mount

Operator Interface / Diagnostics
- User-friendly menu
- Read-only mode available
- Diagnostic capabilities
- Fault alarms

Optional Nitrosave Feature
- Control of Nitrogen or flushing gas
- Reduced gas consumption
- Improved productivity
- Reduced product wastage
- Better quality control
- Integrated electronics with analyser
- Control hardware available

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

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.

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.

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.

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