# DATA SHEET

## LuminOx O₂ Sensors

### Fluorescence-based Optical Series

### FEATURES
- Fluorescence–based optical technology, NOT electrochemical
- Contains no hazardous materials; RoHS & REACH compliant
- Connects directly to a microcontroller without any additional circuitry
- Factory calibrated
- High accuracy
- Maintenance free

### OUTPUT VALUES

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oxygen range (LOX-02)</td>
<td>0—25% O₂</td>
</tr>
<tr>
<td>Oxygen pressure range</td>
<td>0—300mbar ppO₂</td>
</tr>
<tr>
<td>Response time</td>
<td>T90 &lt; 30s (typical)</td>
</tr>
<tr>
<td>Accuracy ppO₂</td>
<td>&lt; 2% FS</td>
</tr>
<tr>
<td>Temperature</td>
<td>Indication only</td>
</tr>
<tr>
<td>Pressure (LOX-02)</td>
<td>±5mbar</td>
</tr>
<tr>
<td>O₂ (LOX-02)</td>
<td>Determined by ppO₂ &amp; pressure accuracy</td>
</tr>
<tr>
<td>Resolution ppO₂</td>
<td>0.1mbar</td>
</tr>
<tr>
<td>Temperature</td>
<td>0.1°C</td>
</tr>
<tr>
<td>Pressure (LOX-02)</td>
<td>1mbar</td>
</tr>
<tr>
<td>O₂ (LOX-02)</td>
<td>0.01%</td>
</tr>
<tr>
<td>Lifetime</td>
<td>&gt; 5 years</td>
</tr>
</tbody>
</table>

### BENEFITS
- Low cost
- Low power, long life due to non-depleting sensing principle
- Compact footprint

### TECHNICAL SPECIFICATIONS

- **Supply voltage (Vs)**: 4.5—5.5V DC
- **Supply current (Is)**: <7.5mA (streaming one sample per second), <20mA Peak
- **Output Type**: 3.3V TTL level UART
- **Temperature**:
  - Operating: -30°C to +60°C
  - Storage: -30°C to +60°C
- **Humidity**: 0—99% Rh (non-condensing)
- **Barometric pressure range**:
  - LOX-01: 100—1400mbar
  - LOX-02: 500—1200mbar

### NOTES
- 1) The sensor housing can be cleaned using a damp cloth. Do NOT immerse the sensor in any cleaning media.
- 2) At ambient conditions. All performance measurements are at STP unless otherwise stated. Following extreme temperature fluctuations, re-calibration may be required.

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**NOTES**

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- Compact footprint

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- Barometric pressure range:
  - LOX-01: 100—1400mbar
  - LOX-02: 500—1200mbar

**OUTPUT VALUES**

- Oxygen range (LOX-02): 0—25% O₂
- Oxygen pressure range: 0—300mbar ppO₂
- Response time: T90 < 30s (typical)
- Accuracy ppO₂: < 2% FS
- Temperature: Indication only
- Pressure (LOX-02): ±5mbar
- O₂ (LOX-02): Determined by ppO₂ & pressure accuracy
- Resolution ppO₂: 0.1mbar
- Temperature: 0.1°C
- Pressure (LOX-02): 1mbar
- O₂ (LOX-02): 0.01%
- Lifetime: > 5 years

**Need help? Ask the expert**

Tel: + 44 (0)1236 459 020 and ask for “Technical”
**OUTLINE DRAWING**

All dimensions shown in mm. Tolerances = ±0.5mm.

- **Bottom View**
- **Side View**
- **Top View**

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**ELECTRICAL INTERFACE**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vs (+5V)</td>
</tr>
<tr>
<td>2</td>
<td>GND (0V)</td>
</tr>
<tr>
<td>3</td>
<td>3.3V UART Sensor Transmit</td>
</tr>
<tr>
<td>4</td>
<td>3.3V UART Sensor Receive</td>
</tr>
</tbody>
</table>

**Connection:** Four gold-plated pins (0.64mm²) on a 2.54mm grid for PCB mounting via sockets or hand soldering using no-clean flux.

**Note:** Do NOT put the sensor through a PCB washing process.

**Note:** Always apply power to sensor pins 1 and 2 before attempting to communicate on pins 3 and 4.

The sensor should be treated as an electronic component and handled using the correct ESD handling precautions.

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**ORDER INFORMATION**

Generate your specific part number using the convention shown below. Use only the numbers that correspond to the sensor option you require — omit those you do not.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Measures 0—300mbar ppO₂ and temperature (°C)</td>
</tr>
<tr>
<td>02</td>
<td>Measures 0—300mbar ppO₂, 0—25% O₂, temperature (°C) and 500—1200mbar barometric pressure</td>
</tr>
</tbody>
</table>

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**General Note:** SST Sensing Ltd. reserves the right to make changes to product specifications without notice or liability. All information is subject to SST Sensing Ltd.’s own data and considered accurate at time of going to print.