DATA SHEET

LuminOx O₂ Sensors

Luminescence-based Optical Series

FEATURES

- Luminescence-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>Output Type</th>
<th>Supply Voltage</th>
<th>Operating Temp</th>
<th>Output Digital</th>
<th>Response Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital</td>
<td>4.5 - 5.5 V</td>
<td>-30°C to +60°C</td>
<td>TTL</td>
<td>&lt; 30 secs</td>
</tr>
</tbody>
</table>

OUTPUT VALUES

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

TECHNICAL SPECIFICATIONS

- Supply voltage (Vₛ): 5VDC
  - (4.5VDC min. — 5.5VDC max.)
- Supply current (Iₛ): <7.5mA (streaming one sample per second), <20mA Peak
- Output Type: 3.3V TTL level UART (5V tolerant)
- Temperature Operating: -30°C to +60°C
  - Storage: -30°C to +60°C
- Humidity: 0—99% Rh (non-condensing)
- Barometric pressure range: 500—1200mbar

BENEFITS

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

NOTES

a) The sensor housing can be cleaned using a damp cloth. Do NOT immerse the sensor in any cleaning media.

b) 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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**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.

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**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>

* 5V tolerant.

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

**Note:** If hand soldering, recommended iron temperature is 370°C for < 3s per pin.

**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**

Specify the part number shown below when ordering.

L O X - 0 2

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**CAUTION**

Do not exceed maximum ratings and ensure sensor(s) are operated in accordance with their requirements. Carefully follow all wiring instructions. Incorrect wiring can cause permanent damage to the device. Do NOT use chemical cleaning agents. Failure to comply with these instructions may result in product damage.

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**INFORMATION**

As customer applications are outside of SST Sensing Ltd.’s control, the information provided is given without legal responsibility. Customers should test under their own conditions to ensure that the equipment is suitable for their intended application.

For technical assistance or advice, please email: sales@sstsensing.com

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