

# DATA SHEET

## LuminOx O<sub>2</sub> 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<sup>1</sup>

|                               |   |  |                                  |                                       |
|-------------------------------|---|--|----------------------------------|---------------------------------------|
| <b>Housing</b><br><br>COMPACT | <b>Supply Voltage</b><br><br>4.5 - 5.5 V<br>VOLTAGE | <b>Operating Temp</b><br><br>-30°C to +60°C<br>TEMPERATURE | <b>Output Digital</b><br><br>TTL | <b>Response Time</b><br><br>< 30 secs |
|-------------------------------|---|--|----------------------------------|---------------------------------------|

### BENEFITS

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

### OUTPUT VALUES<sup>2</sup>

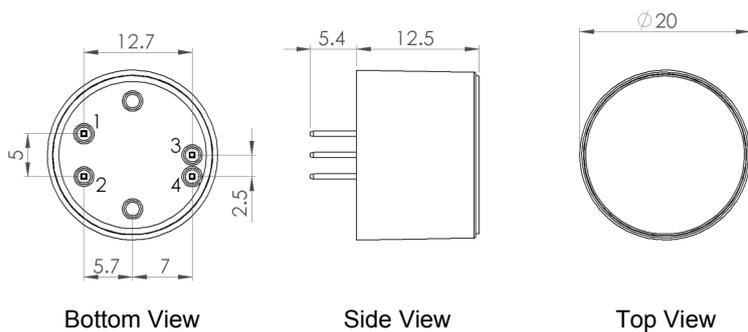
|                         |  |
|-------------------------|--|
| Oxygen range (LOX-02)   | 0—25% O <sub>2</sub>                               |
| Oxygen pressure range   | 0—300mbar ppO <sub>2</sub>                         |
| Response time           | T <sub>90</sub> < 30s (typical)                    |
| Accuracy                |  |
| ppO <sub>2</sub>        | < 2% FS  |
| Temperature             | Indication only                                    |
| Pressure (LOX-02)       | ±5mbar   |
| O <sub>2</sub> (LOX-02) | Determined by ppO <sub>2</sub> & pressure accuracy |
| Resolution              |  |
| ppO <sub>2</sub>        | 0.1mbar  |
| Temperature             | 0.1°C  |
| Pressure (LOX-02)       | 1mbar  |
| O <sub>2</sub> (LOX-02) | 0.01%  |
| Lifetime                | > 5 years  |

### TECHNICAL SPECIFICATIONS

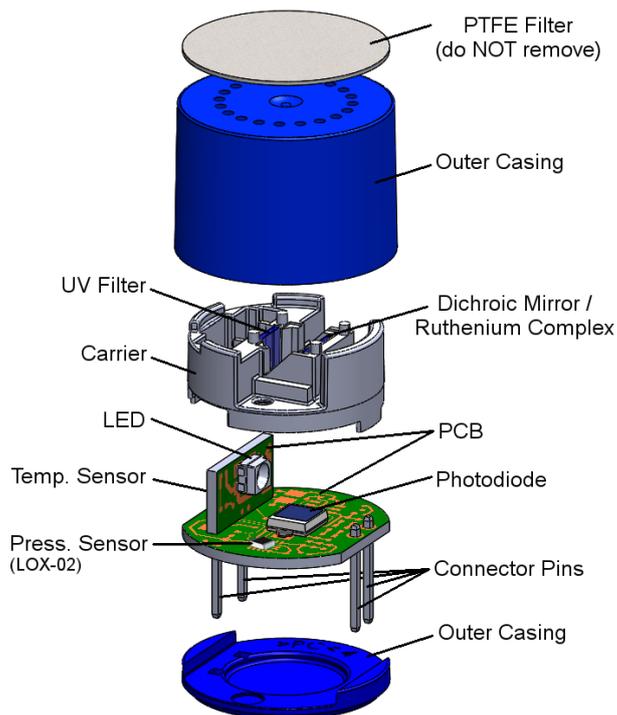
|                           |  |
|---------------------------|--|
| Supply voltage (Vs)       | 4.5—5.5V <sub>DC</sub>                               |
| Supply current (Is)       | <7.5mA (streaming one sample per second), <20mA Peak |
| Output Type               | 3.3V TTL level UART                                  |
| 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   |

## OUTLINE DRAWING

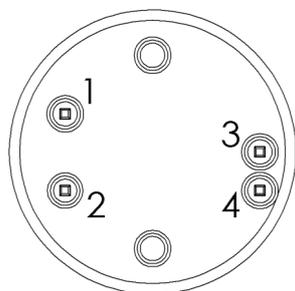
All dimensions shown in mm. Tolerances = ±0.5mm.



## SENSOR CONSTRUCTION



## ELECTRICAL INTERFACE



| Pin | Designation               |
|-----|---------------------------|
| 1   | Vs (+5V)                  |
| 2   | GND (0V)                  |
| 3   | 3.3V UART Sensor Transmit |
| 4   | 3.3V UART Sensor Receive  |

**Connection:** Four gold-plated pins (0.64mm<sup>2</sup>) 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.

## 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.

L O X - X X

| Type  |
|---|
| <b>01</b><br>Measures 0—300mbar ppO <sub>2</sub> and temperature (°C)   |
| <b>02</b><br>Measures 0—300mbar ppO <sub>2</sub> , 0—25% O <sub>2</sub> , temperature (°C) and 500—1200mbar barometric pressure |

### 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.**

### 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.

**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.

