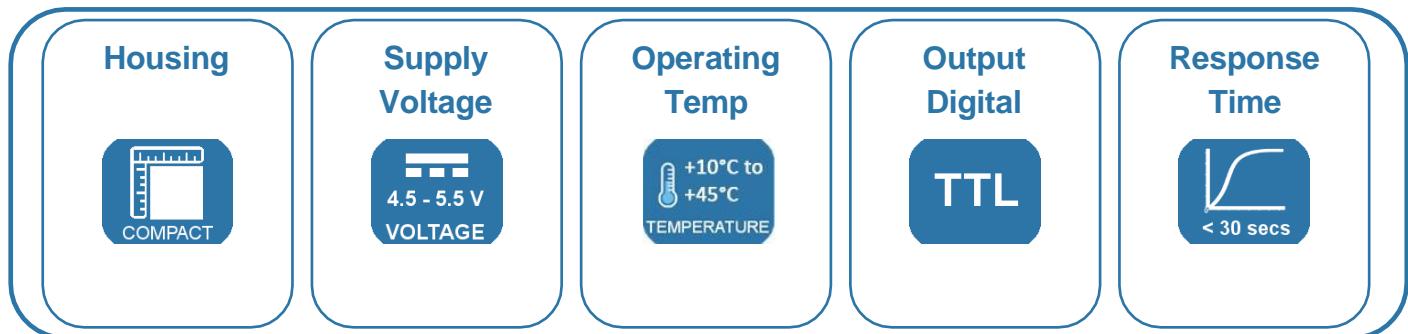


# Fluorescent O<sub>2</sub> Sensor User Manual

## 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<sup>a</sup>



### BENEFITS

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

### OUTPUT VALUES<sup>b</sup>

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

### TECHNICAL SPECIFICATIONS

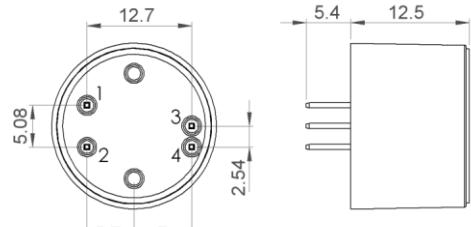
Supply voltage (Vs)	5V <sub>DC</sub> (4.5V <sub>DC</sub> min. — 5.5V <sub>DC</sub> max.)
Supply current (Is)	<7.5mA (streaming one sample per second), <20mA Peak
Output Type	3.3V TTL level UART (5V tolerant)
Temperature	
Operating:	+10°C to +45°C
Storage:	-30°C to +60°C
Humidity	0—99% Rh (non-condensing)
Barometric pressure range	
LOX-01	100—1400mbar
LOX-02	500—1200mbar

### NOTES

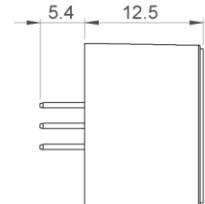
- a) The sensor housing can be cleaned using a damp cloth. Do NOT immerse the sensor in any cleaning media.
- b) At ambient conditions. All performance measurements are at STP unless otherwise stated. Following extreme temperature fluctuations, re-calibration may be required.



All dimensions shown in mm. Tolerances =  $\pm 0.5\text{mm}$ .



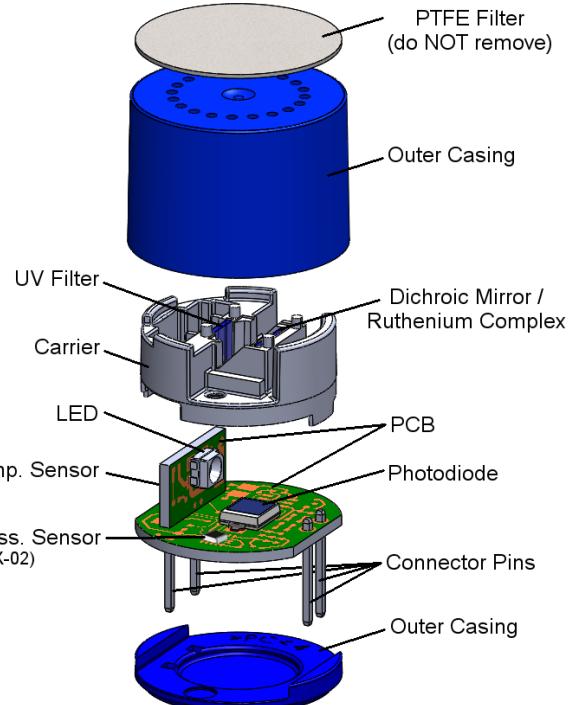
Bottom View



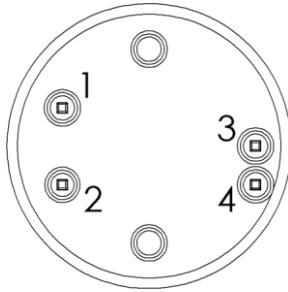
Side View



Top View



## ELECTRICAL INTERFACE



Pin	Designation
1	V <sub>s</sub> (+5V)
2	GND (0V)
3	3.3V UART* Sensor Transmit
4	3.3V UART* Sensor Receive

\* 5V tolerant.

**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:** 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.



## SENSOR CONSTRUCTION

### 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.**

**These products must not be used in safety applications where product failure could cause injury or risk to life**