Luminescence-based Optical Series

Optical Oxygen Sensors - LuminOx Evaluation Interface Board

Description

Developed and manufactured by SST, the LuminOx family is a range of factory calibrated oxygen sensors which measure ambient oxygen levels using the principle of Luminescence quenching by oxygen.

The LuminOx Evaluation Interface Board (LOX-EVB) offers customers the ability to test the LuminOx sensors with ease. The interface simultaneously provides three outputs; RS232 (serial interface voltage levels); RS485 (Modbus RTU) port allows multiple sensors to be addressed on a bus; 0-5V analog output for basic measurements of oxygen only.

- The interface simultaneously provides three outputs:
  RS232 (serial interface voltage levels)
  RS485 (Modbus RTU) port allows multiple sensors to be addressed on a bus
  0...5V analogue output for basic measurements of oxygen only
- Operating Temperature: 0°C...+45°C
- Allows quick and easy evaluation of the LuminOx sensor [a]

Specifications

Technical Specifications	
Supply voltage (Vs)	4.75...5.25V_{DC}
Supply current (Is)	<50mA
Output Type	RS232, RS485 (Modbus RTU) and 0...5V
Temperature	Operating: 0...+45°C
	Storage: 0...+60°C
Compatible Sensors	
LuminOx sensor compatibility	LOX-02, LOX-02-S, LOX-02-F
Resolution	
Digital outputs	0.01% / 0.1mbar
Analogue output	0.01V

Electrical Interface

Pin	Designation
1	Vs (+5V_{DC})
2	GND (0V)
3	0...5V GND (0V)
4	0...5V Signal
5	RS232 Rx
6	RS232 Tx
7	RS232/RS485 GND (0V)
8	RS485 A (+)
9	RS485 B (-)

Suitable Applications

- Analog output for LuminOx optical oxygen sensors
- Evaluation board for simple interface to control and data logging systems

Order Information

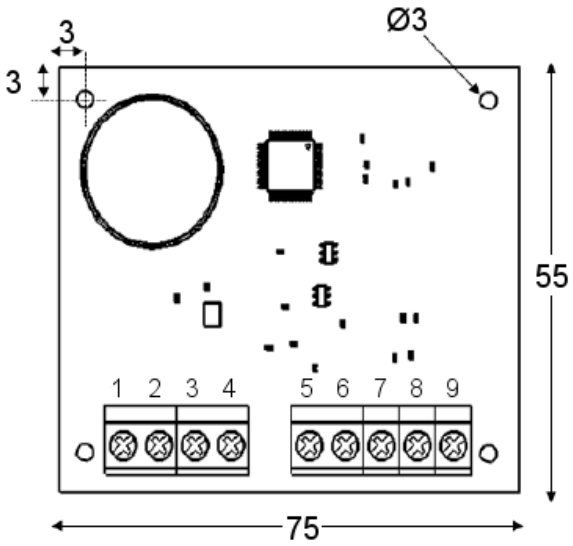
Specify the part number shown below when ordering.

L O X - E V B

[a] LuminOx sensor sold separately.

Outline Drawing

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



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

1. RS232 Rx & Tx and RS485 A & B (pins 5, 6, 8 and 9) are referenced to the RS232/RS485 GND (pin 7). A connection should be made between pin 7 and the reference or common connection of the RS232 serial port or RS485 Bus.

2. Care should be taken when connecting the RS485 A & B connections to your system. The EIA-485 signalling specification states that signal A is the inverting or '-' pin and signal B is the non-inverting or '+' pin. This is in conflict with the A & B naming used by a number of differential transceiver manufacturers, including the transceiver used in the LOX-EVB interface. Therefore always ensure the '+' of the LOX-EVB interface is connected to the '+' input of the RS485 Bus and the '-' of the LOX-EVB interface is connected to the '-' input of the RS485 Bus.

Caution	**Information**
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.**	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. **For technical assistance or advice, please email: sensors@dwyeromega.com**