

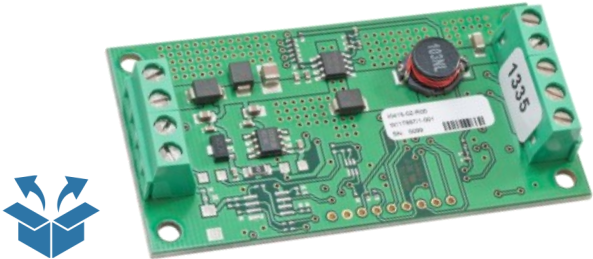
QUICK START GUIDE



Zirconia O₂ Sensors Zirconia Oxygen Sensor System

1. Unpack the interface board.

Always handle the interface board using the correct ESD handling precautions.



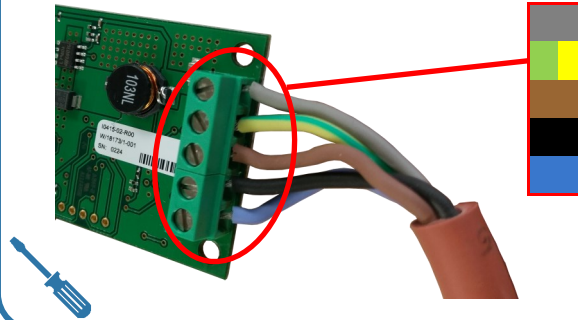
2. Unpack the oxygen sensor.



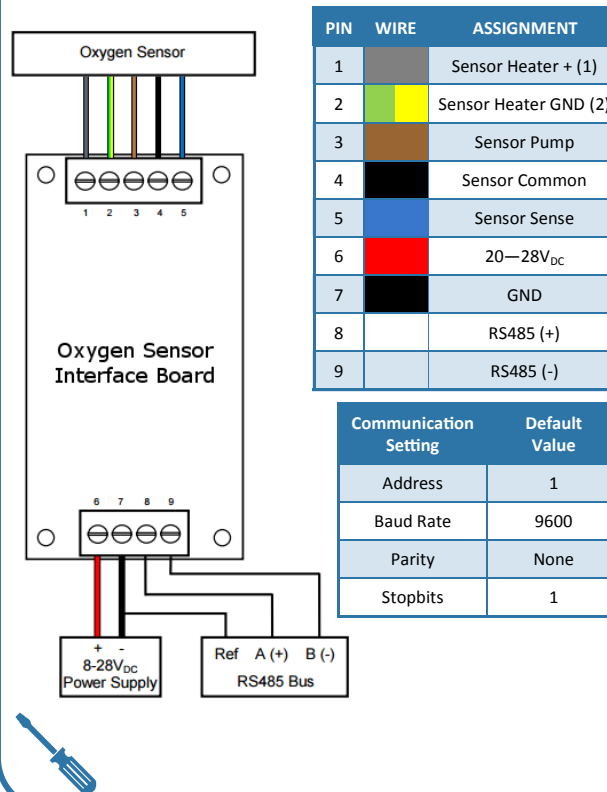
CAUTION: Position the sensor carefully, away from flammable materials. When your oxygen sensor is powered the sensor tip becomes EXTREMELY hot; **DO NOT TOUCH!**



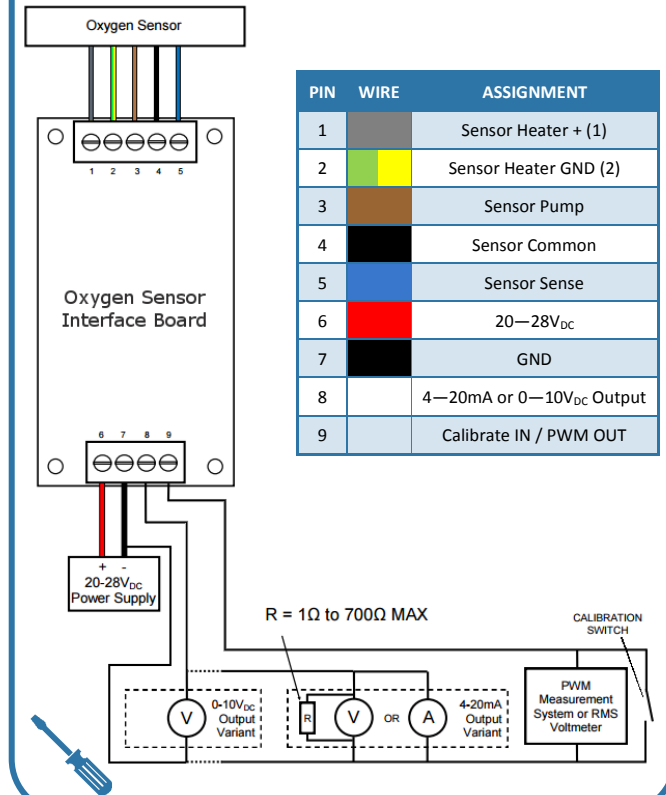
3. Attach sensor wires to interface board connections as shown. Refer also to connection information in **Step 4a or 4b.**



4a. RS485 variant: Connect power and input/output connections to the interface board.



4b. Analogue variants: Connect power and input/output connections to the interface board.



NOTE: Read *UG-004, OXY-LC User Guide* BEFORE proceeding. Quick Start Guide (this document) is for reference only.

5a. Apply 24V_{DC} to the board.

5b. Check status.

Step	Normal Status
Apply 24V _{DC}	<ul style="list-style-type: none"> Communication OK Supply current normal (< 1A) Valid O₂% reading after 1min
Switch sensor ON (RS485 variant)	<ul style="list-style-type: none"> Valid O₂% reading (15—25% O₂)
Sensor starts automatically after 1 min (Analogue variants)	<ul style="list-style-type: none"> Valid O₂% reading (15—25% O₂) 6—10V (0—10V output) 13.6—20mA (4—20mA output)

6a. First calibration; Place the sensor in the calibration gas, typically fresh air.

6b. Power up the board and leave for 5mins to allow the sensor output to stabilise (10mins if powering from cold).

6c. RS485 variant; Send the known calibration gas value to the *Calibration (%)* holding register (for fresh air input "2070" for 20.70% O₂) then set the *Calibration Control* holding register to "1".

NOTE: RS485 variant can be calibrated to any known concentration.

The *Calibration Status* input register remains at "1" until the calibration process is complete, at which point it will change to "2" (*Calibration Completed*).

6d. Analogue variants; Short CAL input to 0V.

When the switch is closed (min. 1sec) the interface will calibrate to 20.7% O₂ for calibration in fresh air.

6e. RS485 and Analogue variants;

Calibration is now complete.

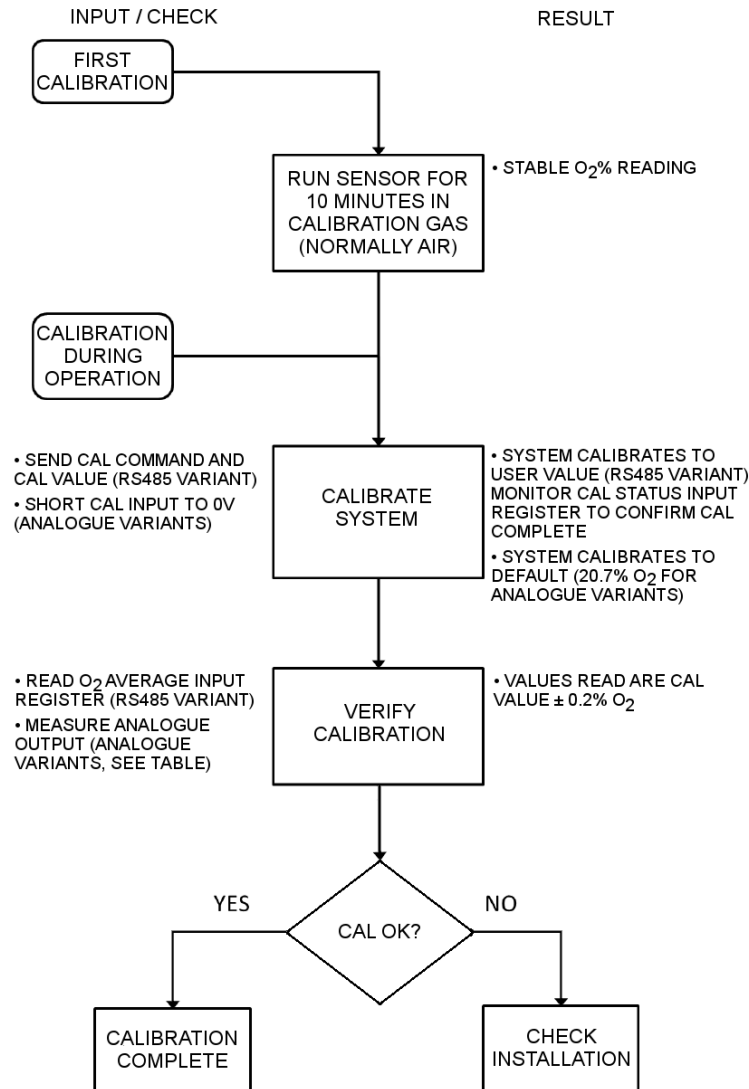
NOTE: New calibration values are retained on power loss.

The sensor and interface assembly is now set up and ready for use.

Analogue Variants; refer to output value table below.

NOTE: New sensors drift as they "burn-in"; refer to *AN-0050, Zirconia O₂—Sensor Installation, Operation and Compatibility Guide* for guidance.

Analogue Output Values		
O ₂ %	0—10V _{DC}	4—20mA
20.7%	8.28V	17.25mA
25%	10V	20mA
5%	2.0V	7.2mA
0.1%	0.04V	4.06mA



FAQs:

Q1: I have the RS485 Modbus variant interface board, how do I calibrate the system using other reference gases?

A1: Details of how to calibrate the system to other reference gases is contained in *UG-004, OXY-LC User Guide*. Refer also to *AN-0043, Zirconia O₂—Sensor Operating Principle and Construction Guide* and *AN-0050, Zirconia O₂—Sensor Installation, Operation and Compatibility Guide*.

Q2: How often do I need to calibrate the system?

A2: For best accuracy, it is recommended that calibration in fresh air is completed each time the sensor is powered up.

NOTE: The interface board has pressure compensation so the calibration interval can increase.

Q3: Can I extend the cable length?

A3: The maximum distance from sensor to interface is 1.1m unless otherwise agreed with SST. Refer to *AN-0050, Zirconia O₂—Sensor Installation, Operation and Compatibility Guide*.

Need help? Ask the expert

Tel: +44 (0)1236 459 020

and ask for "Technical"



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.

Zirconium dioxide sensors are damaged by the presence of silicone. Vapours (organic silicone compounds) from RTV rubbers and sealants are known to poison oxygen sensors and MUST be avoided.

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.

For detailed information on the sensor operation refer to *AN-0043, Zirconia O₂—Sensor Operating Principle and Construction Guide*.

For technical assistance or advice, please email:

technical@sstsensing.com

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.