DATA SHEET



Oxygen Measurement System





- Fast response zirconium dioxide (ZrO₂) sensor in conjunction with the OXY-LC oxygen sensor interface board
- Long life, non-depleting technology
- Integral heating element
- High accuracy
- Linear output signal







Gas Temp









Analogue Output





Response **Time**

DESIGN • MANUFACTURE • CUSTOMISE • CONFIGURE



BENEFITS

- No reference gas required
- No need for temperature stabilisation
- Variety of probe mounting positions available; 28mm, 45mm & 55mm
- M18x1.5 screw mounting

TECHNICAL SPECIFICATIONS

Supply voltage

RS485 output variant: 8-28V_{DC} 20-28V_{DC} Analogue output variants:

Supply current 600mA max. at 24VDC

1.2A max. at $12V_{DC}$ Digital output RS485 (Modbus RTU) 4-20mA; load 600Ω max Analogue output

> 0— $10V_{DC}$; load $10k\Omega$ min < 6kΩ

> > 0-10m/s

M18 x 1.5

-100°C to +250°C

260-1260mbar absolute

Pump impedance at 700°C¹

Permissible gas temperature Gas flow rate²

Operating pressure limits³ Mounting thread

OUTPUT VALUES

Oxygen range (analogue output) 0.1—25% O₂

or 0.1-100% O₂

Oxygen range (Modbus RTU) 0.1—100% O₂ Accuracy after calibration 0.5% O₂

0.5% O₂ Accuracy after calibration Output resolution 0.01% O₂

Response time (10-90% step) < 4s

Initial warm up time (till stable output) 5—10mins

Output inactive start up delay (heater warm up)

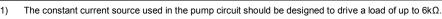
From OFF to ON mode: 60s

From Standby to ON mode (RS485 only): 20s

> Need help? Ask the expert Tel: + 44 (0)1236 459 020



and ask for "Technical"



- 2) With baffle fitted to shield the sensor from direct cooling and pollution by the flue gas; refer to DS0122 ZrO2 Screw Fit Probe Datasheet for fitment details.
- 3) Sensor and interface for correct barometric pressure compensation.





The Oxygen Measurement System is a complete solution consisting of a zirconium dioxide oxygen sensor and interface PCB. Dimensional overview given below; full specifications for each, including complete outline drawing and electrical interface details can be found:

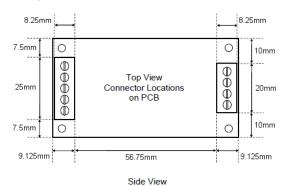
- DS0122 ZrO₂ Screw Fit Probe Datasheet
- DS0058 OXY-LC Oxygen Sensor Interface Datasheet

Contact technical@sstsensing.com for details.

Interface Board layout



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



Maximum
Component Heights

10mm

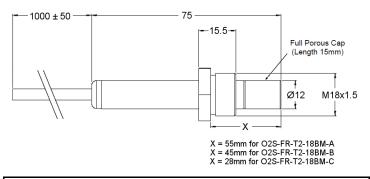
1.6mm PCB
Thickness

62mm

KEY

= Area with Components

Sensor layout



ORDER INFORMATION

Referring to the tables below will allow you to tailor a system to suit your specific requirements.

For example: Ordering part numbers *OXY-LC-A25-455* and *O2S-FR-T2-18BM-C* will create a system that has a 4—20mA analogue output from the board and a sensor probe that has a length of 28mm from the sensor tip to the beginning of the M18x1.5 screw mount.

Interface Board

PCB Part Number	O₂ Measure Range	Output Type	Heater Voltage
OXY-LC-485	0.1% and 100%	Modbus RTU	Configurable
OXY-LC-A25-455	0.1 to 25%	Current: 4—20mA	4.55V _{DC}
OXY-LC-V25-455	0.1 to 25%	Voltage: 0—10V _{DC}	4.55V _{DC}
OXY-LC-A100-455	0.1 to 100%	Current: 4—20mA	4.55V _{DC}
OXY-LC-V100-455	0.1 to 100%	Voltage: 0—10V _{DC}	4.55V _{DC}

Sensor

Sensor Part Number	Probe Length	
O2S-FR-T2-18BM-A	55mm	
O2S-FR-T2-18BM-B	45mm	
O2S-FR-T2-18BM-C	28mm	

Q 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.



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 application note AN0043 Operating Principle and Construction of Zirconium Dioxide Oxygen Sensors.

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

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.



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

SST Sensing:

ZrO2-System-485 O2S-FR-T2-18BM-B O2S-FR-T2-18BM-C O2S-FR-T2-18BM-A ZrO2-System-A25 ZrO2-System-V25