

OXY-FLEX XZR100 Series

Oxygen Transmitter

PST offers a compact and cost-effective zirconia transmitter to measure oxygen-closed systems, such as ventilation pipes, boiler exhaust flues, and many more applications.

The unit can be configured to output measuring ranges of 0-25% O₂ or 0-100% O₂. The entire measurement range is linear in both cases. The outputs can be configured to 4-20mA and 0-10Vdc outputs or an RS232 serial communications interface.

The oxygen sensor element is mounted in the tip of the stainless-steel probe and protected by a sintered steel cap.



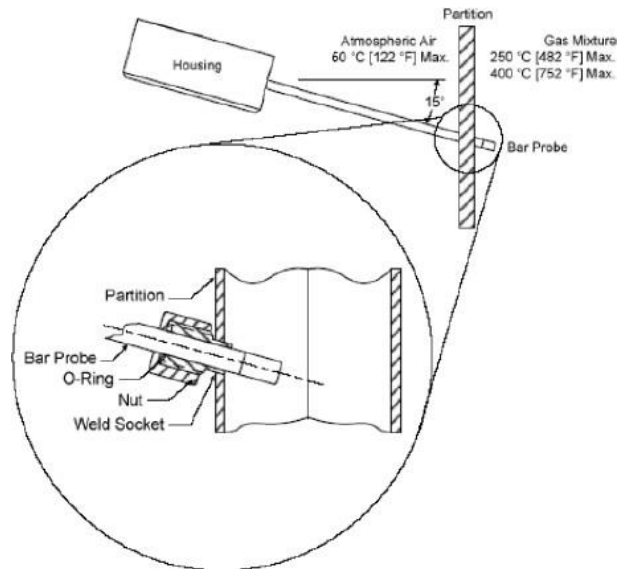
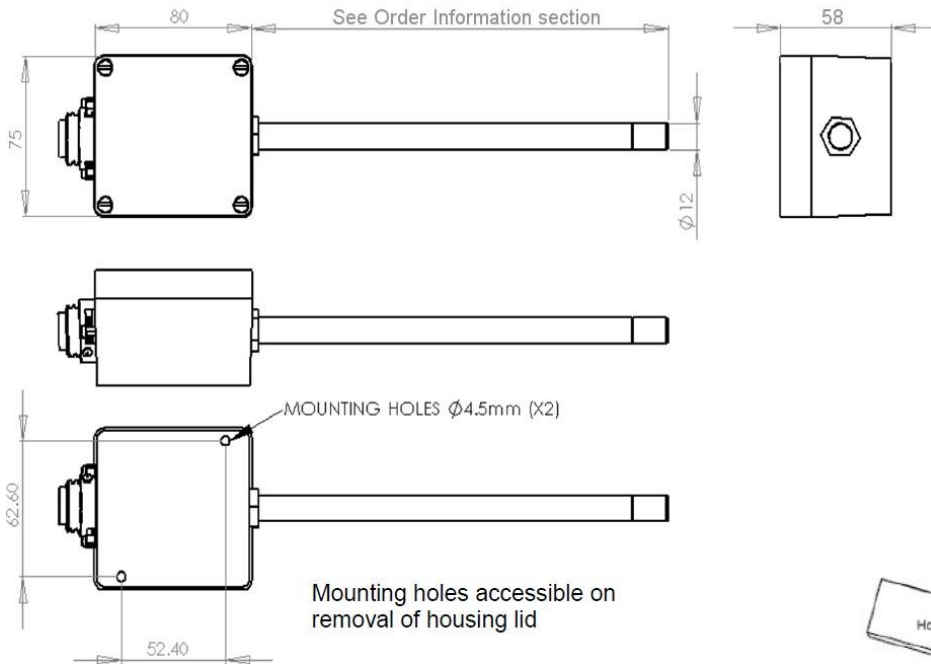
Features

- Selectable output measuring ranges; 0-25% O₂ or 0-100% O₂ or fully adjustable via RS232
- Zirconium dioxide technology
- Can be calibrated in fresh air (20.7% O₂) or in any other known O₂ concentration
- Various probe lengths available
- Works in gas temperatures from -100 to 400°C
- Configurable outputs; 4-20mA and 0-10Vdc or RS232 comms interface

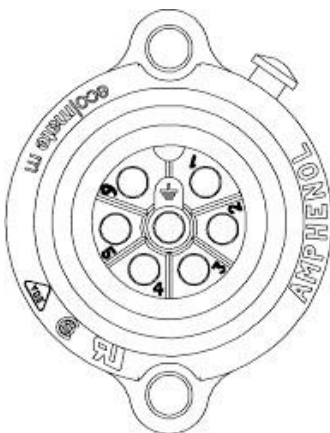
Benefits

- Long life, non-depleting technology
- No reference gas required
- Removes the need for customers to implement their own electronics
- No need for temperature stabilization
- Transmitter with linear output signal enables easy integration
- Externally triggered automatic or manual single-point calibration, removing any effect of barometric pressure
- Can be used in high-pressure and temperature environments
- No need for an external heater supply
- Full technical and application support available

XZR100 with Aluminum housing



XZR Connections

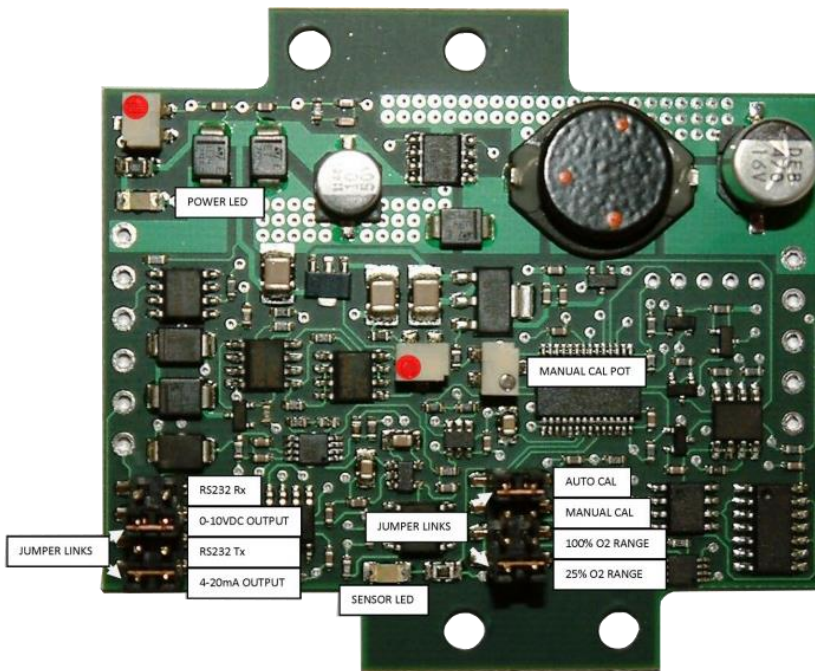
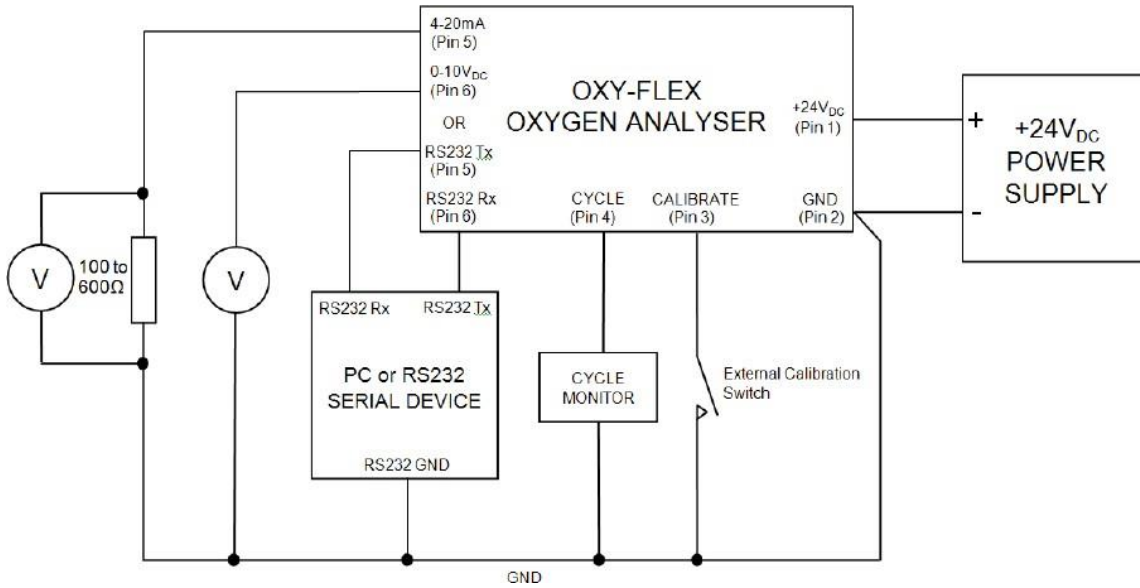


Sensor Connection	
Pin Number	Assignment
1	24V _{DC} ± 10%
2	GND
3	Calibrate
4	Cycle
5	4-20mA / RS232 Tx (see note)
6	0-10V _{DC} / RS232 Rx (see note)
CENTRE	Housing / Probe Earth

Housing: Amphenol Ecomate C016
 30C006 100 12 Mating Connector:
 Binder 99-4218-00-07
NOTE: Mating connector also supplied.

NOTE: Output pins 5 and 6 are both referenced to the supply GND (pin 2). Due to high current flow in the supply GND, when monitoring the 0–10V_{DC} output (pin 6) it is recommended that a separate GND wire for the measurement system is taken from pin 2. This removes errors due to voltage drops in the power supply connections. Assignment of output pins 5 and 6 selectable by altering the position of the jumper links on the PCB; see PCB LAYOUT below.

Circuit Diagram and PCB layout



Technical Specifications

Performance	
Measurement Technology	Zirconia
Gas	Oxygen
Measurement Range ^{b)}	0.1 ^{a)} ...25 % or 0.1 ^{a)} ...100 %
Accuracy after calibration	1 % O ₂
Response Time (T10-90)	< 15 seconds
Repeatability	< 0.5 %
Gas Flow Rate	0...10 m/sec
Permissible gas temperature	
Standard:	-100°C to +250 °C
High:	-100°C to +400 °C
Permissible acceleration	
Repetitive	5g
Incidental	30g

Electrical Input / Output	
Supply Voltage	24 V DC, ±10 %
Supply Current	<1A Operating @ 24 V DC <2A Start-up @ 24 V DC
Analog Outputs	0...10 V _{DC} ; load 10kΩ min 4...20 mA; load 600Ω max
Digital Output	RS232 (0.1 ^{a)} ...100% O ₂)
Accuracy after calibration ^(c,d)	1% O ₂
Repeatability after calibration ^(c)	0.5% O ₂
Output Resolution	
Analogue 4-20mA	0.01mA
Analogue 0-10V _{DC}	0.01V
Digital RS232	0.01% O ₂

Mechanical Specifications	
Warm Up time	60s
Output stabilization time	~180s

Housing temperature limits Conditions	
Ambient Temperature	-10...+85 °C (14...+185 °F)



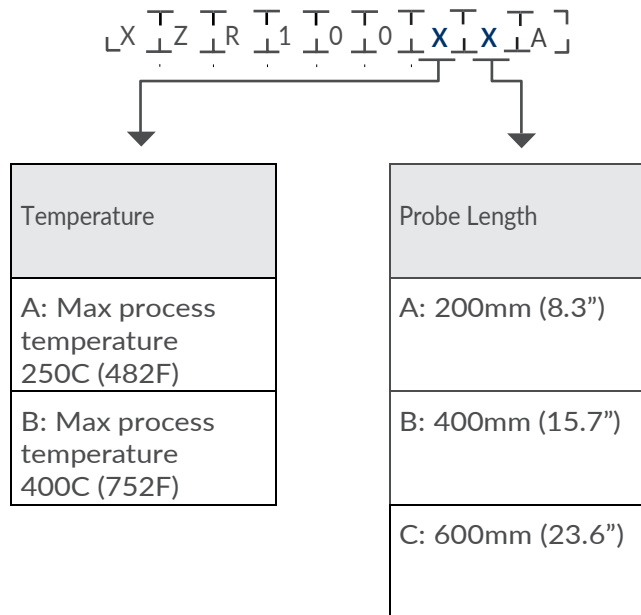
Warning: Probe tip can be hot, do not touch



- ^{a)} Prolonged operation below 0.1% O₂ can damage the sensing element
- ^{b)} Range selectable by altering the position of the jumper links on the PCB
- ^{c)} Assuming barometric pressure (BP) remains constant
- ^{d)} As the O₂ sensor measures the partial pressure of oxygen (PPO₂) within the measurement gas deviations in the barometric pressure from that present during calibration will cause readout errors proportional to the change. E.g., if the sensor reads 21% O₂ at 1013.25mbar and the barometric pressure increases by 1%, the sensor readout will also increase by 1% to 21.21% O₂.

Order Information

Generate your specific part number using the convention shown below. Use only those letters and numbers corresponding to the switch and output options you require.



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 PST 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.

PST adopts a continuous development program which sometimes necessitates specification changes without notice.

For technical assistance or enquiries on other sensor options, please contact uk.sst.sales@processsensing.com