



# Rapidox 1100-OPT-PPM Optical Oxygen Analyser

The Rapidox 1100-OPT-PPM uses the latest state-of-the-art optical oxygen gas sensor that has unparalleled performance in speed, accuracy, drift and sensor life for measurements in the parts per million oxygen range.



Optical oxygen sensors are virtually drift free and factory calibrated for life, meaning the lifetime cost of ownership is more economical compared with a traditional electrochemical sensor. These sensors are ideal for demanding low ppm oxygen applications where VOCs, flammable gases, CO, H<sub>2</sub> or He are present in the gas sample. The Rapidox 1100-OPT-PPM is ideal for applications such as measuring residual oxygen in hydrogen, helium and flammable gases. Configuration of the analyser allows for the instrument to be panel mounted with the gas fittings at either the front or rear.

The special low range optical sensor is based on luminescence quenching of a sensor dye. The dye is excited with red light, and the properties of the resulting luminescence are measured in the near infrared. The presence of molecular oxygen quenches the luminescence, changing its intensity, and is fully reversible.

This principle is very robust. It shows virtually no interference to other gases, has a very low drift, and the sensor is fully solid-state. It does not deplete over time, unlike galvanic oxygen sensors with their limited shelf life. Optics and electronics are hermetically sealed from the measured gas. For typical indoor environmental conditions, a five year operating life is expected.

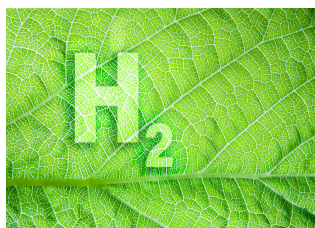
Please contact Cambridge Sensotec for further information or to discuss your requirements.









Though highly configurable to suit individual customer requirements, the Rapidox 1100 range possesses a number of standard features to enhance functionality.

- High-accuracy measurement in low ppm oxygen
- Low drift
- Factory calibrated
- Long life
- Fast response (t<sub>90</sub><10s)
- Digital output of oxygen partial pressure
- Temperature compensation
- Low power consumption
- Lead free, ROHS compliant

## Applications



-  Gas cylinder purity verification
-  Inert Gas Blanketing
-  Welding
-  Flammable Gas
-  Metal Manufacturing
-  Residual oxygen measurement in hydrogen and helium

## Accessories



- 1 Calibration Kit
- 2 Multiplex Sampling System
- 3 Gas Recovery Bag
- 4 Thermal Printer
- 5 Calibration Service
- 6 Gas Filters

## Specification

O <sub>2</sub> Sensor Range	0-2500ppm
O <sub>2</sub> Sensor Accuracy / Response	@1ppm ±0.15ppm, @100ppm ±0.8ppm, >200ppm ±1.5ppm / < 10 secs for a 90% response
O <sub>2</sub> Sensor Life Expectancy	Up to 5 years depending on 5 second sample frequency (user adjustable)
Ambient Operating Pressure	800-1200mbar absolute
Ambient Operating Temperature	0°C to 60°C
Max. Sample Gas Pressure	3bar gauge
Max. Sample Gas Temperature	40°C
Warm-up Time	3-5 minutes as standard
Supply Voltage	90-260 VAC, 50/60Hz
Voltage Outputs	0-10V, user programmable
Current Outputs	4-20mA, user programmable
Digital Outputs	RS232 (RS485 option available) Data streamed on demand. Modbus RTU/Ethernet
Calibration	Requires 2 user selectable gas compositions zero and span zero requires nitrogen 6.0 and span is typically 200ppm O <sub>2</sub> . Annual calibration recommended
Sample Connections	4mm ID/6mm OD nipple type. Rectus or Swagelok. Front or rear positioning
Display	20 x 4 character OLED
Analyser Dimensions	Bench: 150mm(H) x 247mm(W) x 250mm(D), Panel: 4U 177mm(H) x 300mm(W), Multiplex: 150mm(H) x 263mm(W) x 250mm(D)
Weight	3.5kg (4kg with bezel)
Pump Option	High frequency diaphragm pump. Variable speed 0-1.2 litres per minute
Ejector Option	Vacuum ejector fitted, running off 2 bar inlet pressure compressed air
Alarms	Two relay circuits. Fully user programmable