



# 2100Z Oxygen Analyser

The Rapidox 2100Z is a high-performance oxygen (O<sub>2</sub>) analyser fitted with a rugged long-life zirconia sensor on a remote cable, together with a type K thermocouple sensor; allowing direct measurement of oxygen and temperature in the sample gas. The analyser provides fast and accurate analysis over the low ppm oxygen range in harsh environments up to 650°C.



Zirconia oxygen sensors are particularly suitable for monitoring inert atmospheres and aggressive industrial applications such as solder reflow ovens where flux gases are present. The sensor head operates at high temperature, and is particularly suitable for oven and kiln applications, including metal heat treatment processing. It has also been used successfully in the additive manufacturing (3D metal printing) industry where oxygen and humidity need to be carefully controlled in the process. The sensor is also used in high vacuum applications such as silicon chip manufacture.

As well as a type K thermocouple sensor which is fitted as standard, a range of optional auxiliary pressure, vacuum and dew-point sensors are available allowing multiple measurements in one instrument. A vast array of special fittings, filters and manifolds are available for both oxygen and auxiliary sensors to make this a completely versatile instrument that can be installed almost anywhere. Depending on the application the sensors can be located up to 25 meters from the analyser using optional sensor extension cables.



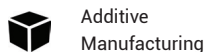
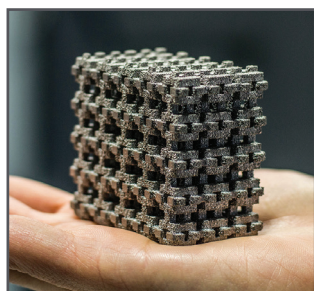
The instrument can be panel mounted or supplied within a wall mountable, IP65 weatherproof housing. The oxygen sensor can then be positioned remotely, in either a separate cabinet or as a standalone sensor. A printer option is also available.

All Rapidox analysers come with Windows software that allows for remote configuration and monitoring of readings, as well as a full data-logging package that includes live-time graphing of each sensor channel.

For customers requiring seamless integration into their product or process, the Rapidox 2100 can be supplied as an OEM solution. Please contact Cambridge Sensotec for further information.

- Low maintenance zirconia sensor
- 10E<sup>-20</sup>ppm to 30% range
- Fully configurable software
- Fast & accurate response
- Simple calibration procedure
- Fully programmable outputs
- Data logging
- Type K Thermocouple
- Two programmable alarms
- Operates on worldwide mains voltage
- Password protection

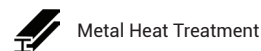
## Applications



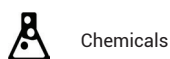
Additive Manufacturing



Gas



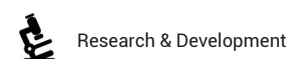
Metal Heat Treatment



Chemicals



Glove Boxes



Research & Development



Combustion



Manufacturing



Vacuum

## Accessories



1



2



3



4



5



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- 1 Calibration Kit
- 2 Multiplex Sampling System
- 3 Oxygen Sensor
- 4 Wall Mount Cabinet
- 5 Auxiliary Pressure & Dewpoint Sensor
- 6 Vacuum CF50 & ISOKF25

## Sensor Specification

O <sub>2</sub> Sensor Range & Accuracy	10E <sup>-20</sup> ppm to 30% (auto-ranging) ±1% of the actual oxygen concentration or 0.5ppm whichever is greater
O <sub>2</sub> Sensor Response & Life Expectancy	Approximately 4 sec for a 90% response, > 17,500 hours operation
Oxygen Sensor Cable	2m high temperature sheathed cable as standard. Fully shielded with a quick release plug. Extension cables available up to 25m total length
Max Gas Temperature	650°C
Sample Gas Flow Rate	0.1 to 4 Litres per min (1 Litre per min recommended) Static gas and vacuum conditions also allowed
Max Working Pressure & Min Working Pressure	10 bar, 200 bar burst pressure, Vacuum tight down to below 10E <sup>-4</sup> Torr (0.0013 mbar gauge)
Thermocouple	Type K, range 0-1250°C, ±1°C
Optional Pressure Sensor	-1 to 0 bar vacuum, 0-5 and 0-10 bar gauge pressure as standard. Supplied on 2m cable. High precision versions available
Optional H <sub>2</sub> O Sensor	-100°C to +20°Cdp. Supplied on 2m cable with sample chamber

## Analyser Specification

Supply Voltage	90-260VAC, 50/60Hz
Power Consumption	30W (max)
Analyser Dimensions	250mm X 263mm X 150mm (without optional handle kit fitted) Panel Mount: 300mm wide X 4U high
Weight	3.5kg (Including sensor)
Display	20 x 4 character OLED
Warm-up Time	60 seconds at 20°C
Operating Temperature & Operating Pressure	5°C to 35°C, 900-1100 mbar absolute
Voltage Outputs	0-5V (user-configurable) into minimum 5kΩ
Current Outputs	4-20mA current loop (user-configurable) into maximum 500Ω
Digital Outputs	RS232 (RS485 option available): data streamed on demand/ Modbus RTU / Ethernet
Alarms High and Low	Relay circuits. Fully user programmable
Sample Connections	4mm ID / 6mm OD nipple type connected to metal manifold. Rectus or Swagelok options, front or rear positioning
Calibration	Up to five user-selectable gas compositions (air is default)
Fuse	T2A H250V 5 x 20mm glass