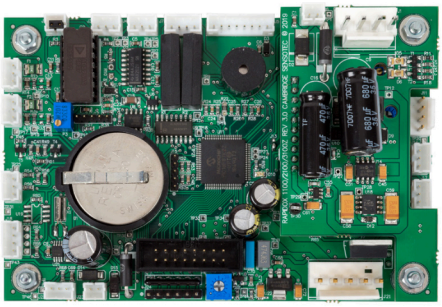
Rapidox 2100-OEM-RSB-SIL1

Designed to meet the requirements of functional safety SIL1 as defined in IEC standard 61508/61511 (high demand applications), the Rapidox 2100 OEM-RSB is a special miniaturised 24V circuit board version of our existing high-performance zirconia oxygen (O_2) analyser.



The compact design (4.5" x 3.0") allows integration into the tightest of spaces. The board is fitted with a ultra-reliable and robust cabled zirconia sensor, which is ideal for providing fast and accurate remote in-situ gas analysis over the the full oxygen range 10^{-20}ppm to 30%O_2.

Zirconia oxygen sensors are extremely rugged & reliable and particularly suitable for monitoring inert atmospheres and aggressive industrial applications directly within manufacturing processes such as additive manufacturing (3D-printers), soldering ovens and furnaces. High temperature (650°C) and vacuum applications are particularly suited to this model. The analyser has both auxiliary sensor and temperature (type K) inputs for connecting additional sensors such as pressure, vacuum and dewpoint and can also monitor local ambient temperature and humidity conditions for improved stability.

The OEM analyser is supplied in four packages to meet the demands of any customer: a basic circuit board, a custom DIN rail enclosure and a full metal enclosure with or without local display and keypad. All versions meet the requirements of SIL1. The sensor cable can be made to any length up to 25m and there are a choice of sensor mounting options including aluminium and stainless manifolds as well as vacuum fittings (ISO-KF and CF). It has fully programmable analogue (voltage and current) outputs and pairs of alarm relays as well as RS232 / RS485 digital signaling as standard. In addition to the standard Rapidox digital communications protocol and software, Modbus-RTU is included as standard. The analyser is designed specifically for seamless integration to PLC systems as part of a Safety Instrument System (SIS).

New Features for this model:

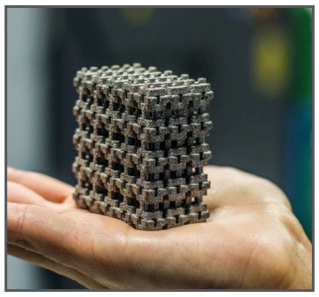
- Meets the requirements of SIL1 high demand functional safety under IEC 61508/61511.
- Special pre-calibrated sensors for quick and easy swap out - no cal gas needed and unit can remain in situ.
- 24V power requirement (20W).
- Bespoke DIN rail mountable enclosure with ultra bright OLED screen & keypad.
- Extended sensor range down to $10E^{-26}$ppm for applications such as hydrogen dewpoint measuring.
- New high speed planar zirconia sensor using 60%less power with faster warm up and response time.

The Rapidox 2100-OEM-RSB has a compact design which allows integration into the tightest of spaces with high performance specifications; and a wide choice of options.

- Zirconia sensor supplied with bespoke cable
- Miniature 4.5" x 3" circuit board with DIN rail mount enclosure options
- Fast and accurate measurement of oxygen
- Pre-calibrated sensors for uninterrupted service
- Meets the IEC requirements of SIL1 high demand use

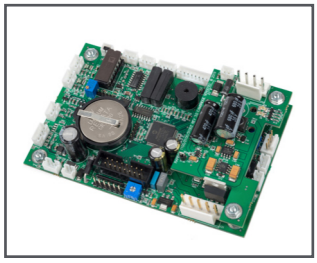
- Fully programmable analogue and digital outputs
- Data logging software
- Two programmable alarms
- Type K thermocouple option
- 24Vdc 20W power
- Password protected menu system

Applications

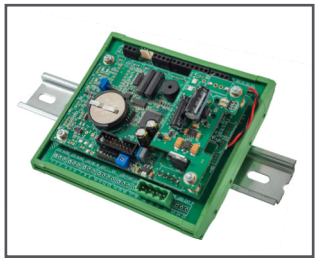


- Additive Manufacturing
- Metal Powder Processing
- Combustion Ovens
- Forming Gas
- Glove Boxes
- Inert Gas Blanketing
- Solder Reflow Ovens
- Metal Heat Treatment
- Research and Development
- Manufacturing

Scope of supply



1 Rapidox 2100-OEM-RSB-SIL1



2 Rapidox 2100-OEM-DIN-SIL1

3 Rapidox 2100-OEM-ENC-SIL1

4 Rapidox 2100-OEM-INS-SIL1

All versions are supplied with a zirconia sensor on a 2m cable as standard. The OEM-INS is shown with optional panel surround.

Specification

Supply Voltage	24V VDC +/0.1V
Power	30W
Enclosure Dimensions	132 x 80 x 70 mm
Circuit Board Dimensions	4.5" x 3" (114mm x 76mm)
Weight	<0.5kg in enclosure, OEM board 120g
Din Rail Option	Board & 2 enclosed options
Ambient Operating Temperature	5-35°C 0-95%RH non condensing
Ambient Operating Pressure	800 to 1200mbar absolute
Warm-up Time	1-2 minutes at 20°C
Sensor Cable	2m high temp as standard. Any length up to 25m available on request
Display	OLED display & keypad on enclosure version
Sample connections	Nipple or swagelok
O_2 Sensor Range	10^{-20}ppm to 100%zirconia version. 10^{-26} extended range available on request
O_2 Sensor Accuracy	±1%of the actual measured oxygen content OR 0.5ppm (whichever is the greater)
O_2 Sensor Response	4 seconds for a T90 step change @1L per min flow
O_2 Sensor Life Expectancy	>17,000 hours
Calibration	Any two or three gases - Pre calibrated Sensors Available
Voltage Outputs	0-5V (0-10V on request)
Current Outputs	4-20mA
Digital Outputs	RS232 / RS485 & Modbus RTU
Max Sample Gas Pressure	Up to 10 bar gauge (200bar burst pressure)
Max Sample Gas Temperature	650°C
Alarm	2 alarm relay circuits, fully user-configurable
Functional Safety	Meets the requirements of SIL1 under IEC 61508/61511

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