cambridge sensotec

Rapidox 1100ZP & 1100ZR

Zirconia Oxygen Analyser

Description

The Rapidox 1100ZP is a special panel mountable version of the highly successful 1100Z bench unit.

Supplied with a 3mm thick anodised aluminium bezel that is 300mm wide and 4U high, the unit can be conveniently flush-mounted with all gas connections and cables at the rear. Similarly the Rapidox 1100ZR connections are also housed at the rear of the analyser, however this version remains bench mountable. The analyser can be returned to a standard 1100Z unit very quickly if ever required. Bezels up to 19" rack-mount size can be supplied upon request.

The analyser allows fast and accurate oxygen analysis over the range 1ppm to 100% O_2. The analyser provides continuous on-line oxygen analysis, with a typical response time less than 5 seconds for a 90% response to a step change in gas compositions.

The analyser is fitted with a zirconia oxygen sensor that is heated very accurately to allow oxygen ions to conduct. An internal pressure sensor compensates for small changes in gas pressure to keep the readings stable.

The analyser contains a powerful diaphragm pump that draws a gas sample at a flow rate set by the user between zero and 1.2 litres per minute. Alternatively the pump can be independently switched off and operated under flowing gas conditions.

The analyser includes two fully programmable alarm circuits (volt free contacts), programmable analogue outputs (0-10V and 4-20mA), easy calibration (using 2 or 3 user selectable gases), RS232 / RS485 communications and a full set of communications / data-logging software.

Features

- **Rapidox 1100ZP is supplied ready for panel mounting with 300mm x 4U aluminium bezel.**
- **Very fast measurement response (typically 4 seconds for a 90% response).**
- **Wide measurement range available (1ppm to 100% O_2).**
- **Accuracy ± 1% of the actual measured oxygen with a precision of ± 0.5%.**
- **Easy calibration procedure requiring any two or three gas mixtures (ordinary room air is usually one).**
- **Low maintenance, sensor life expectancy typically 17,500 hours.**
- **Powerful variable speed diaphragm pump fitted for sampling the gas.**
- **Large back-lit LCD display (16 x 2 characters).**
- **RS232, 0-10V and 4-20mA current loop outputs (both fully programmable).**
- **Fully programmable alarm circuits.**
- **Full data-logging software accessed via RS232 connection to a PC (RS485 available on request).**
- **PIN code protection**
- **Optional printer and peli-case available**

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Applications

- Laboratory scale furnace experiments where the control and monitoring of residual oxygen is critical
- Monitoring of the combustion process in lean-burn applications
- Monitoring vehicle emissions and pollution control
- Industrial processes using low oxygen environments. e.g. wave soldering under nitrogen, vacuum welding
- Sampling oxygen levels in rooms where asphyxiation may be a hazard
- e.g. In rooms containing liquid nitrogen dewars
- Control of critical oxygen atmospheres where high partial pressures are required
- Food production
- Testing the purity of inert gases such as argon and nitrogen

Panel Mount Spec

- Measuring 300 X 4U (300 X 177mm)
- The panel mount plate is made from 3mm thick anodised aluminium
- Please note different sizes can be supplied to order

Technical Data: Analyser

Voltage	90-260Vac, 50/60Hz
Analyser dimensions	250mm X 263mm X 150mm
Weight	3 kg
Display	16 x 2 character (9mm) back lit LCD
Warm up time	3-4 minutes at 20°C
Operating temperature	5°C to 35°C
Voltage outputs	0-10V linear, user-programmable
Current outputs	4-20mA linear, user-programmable
Digital outputs	RS232 (RS485 option available): data streamed on demand
Calibration	Requires 2 or 3 user selectable gas mixtures (air is a default)
Sample pump	24Vdc diaphragm pump

Technical Data: Sensor & Pump

Flow Rate	0 - 1.2 litres per minute (user selectable)
Noise level	44db (max) at 1 meter
Maximum inlet temperature	60°C
Life expectancy O_2	> 17,500 hours
O_2 sensor range	1ppm to100%
Response time O_2 (gas flow rate 1ltr.min^{-1})	Approximately 5 secs for a 90% step change
Accuracy O_2	±1% of the actual oxygen concentration
O_2 sensor stability	±2% of reading per month
Sample connections	6mm ID / 4mm OD nipple type

"I have been using a Rapidox 1100Z system for many years....This system works perfectly in a whole range of O_2 experiments. Moreover, I like its easy-to-use software and its good integrability in a more complex virtual lab programmed with LabVIEW" (Catalonia Institute for Energy Research-IREC)

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