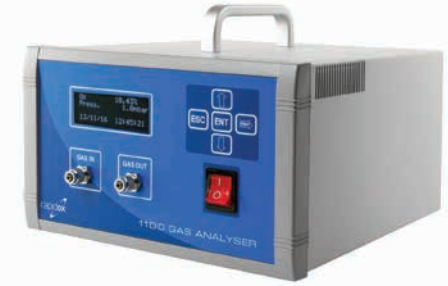
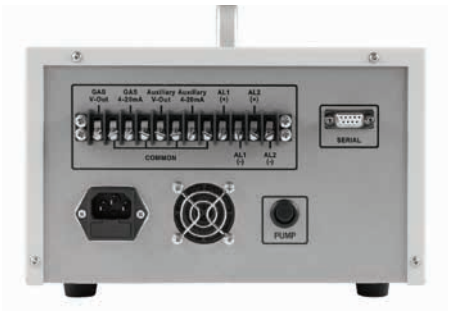
1100-OPT-MAX Oxygen Analyser

The Rapidox 1100-OPT-MAX uses two cutting-edge optical gas sensors working in tandem to deliver the World's first truly full-scale optical oxygen gas analyser. This compact instrument can measure oxygen levels from as low as 0.1ppm up to 100%, offering exceptional performance in speed, accuracy, stability and sensor longevity.





The **Rapidox 1100-OPT-MAX** is ideal for challenging applications such as measuring ppm levels of oxygen in hydrogen, helium and flammable gases, as well as high levels of oxygen in concentrators, incubators and glove boxes.

The high and low range oxygen sensors switch over automatically using a hysteresis function to optimise readings with the switching point adjustable by the user. Optical oxygen sensors are virtually drift free and factory calibrated for life, meaning the lifetime cost of ownership is more economical compared with other sensor types. These sensors are ideal for demanding high oxygen applications where VOC's, flammable gases, CO, H_2 or He are present in the gas sample.

The optical oxygen sensor technology 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 in the gas quenches the luminescence, thus changing its intensity which produces a calibrated oxygen measurement. This principle is very robust, shows virtually no interferences to other gases and has a very low drift. It does not deplete over time, unlike galvanic oxygen sensors with their limited shelf life as the optics and electronics are hermetically sealed from the measured gas. For typical indoor environmental conditions a 5-10 year operating life is expected.

- **High-accuracy measurement from 0.1ppm to 100% oxygen**
- **Low drift**
- **Factory calibrated**
- **Long life**
- **Fast response**
- **Digital output of oxygen partial pressure**
- **Temperature compensation**
- **Low power consumption**
- **Lead free, ROHS compliant**

Applications

- Residual oxygen measurement in hydrogen and helium
- Flammable Gas
- Inert Gas Applications
- Gas Cylinder Purity Verification
- Metal Manufacturing
- Welding
- Incubators
- Oxygen Concentrators
- Glove Boxes
- Exhaust Gas Measurement

Specification

Max Gas Pressure	500-1500mbar absolute
Max Gas Temperature	50°C
O_2 Sensor Range	High Range Sensor 0.1-100%; Low Range Sensor 0-2500ppm
O_2 Sensor Accuracy / Response	High range: ±1% of full scale; Low range: 1ppm ±0.15ppm; 100ppm ±0.8ppm; >200ppm ±1.5ppm; High Range: < 2 secs for a 90% response; Low range: < 10 secs for a 90% response
O_2 Sensor Life Expectancy	Between 5 & 10 years depending on sample frequency
Operating Temperature	0°C to 40°C
Warm-up Time	3-5 minutes as standard
Voltage	90-260VAC, 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	High Range: Factory calibrated – near zero drift Low Range: Requires 2 user selectable gas compositions zero and span zero requires nitrogen 6.0 and span is typically 200ppm O_2. Annual calibration recommended
Sample connections	4mm ID / 6mm OD nipple type Rectus or Swagelock Front or rear positioning
Display	20 x 4 character OLED
Analyser Dimensions	Bench: 150mm(H) x 247mm(W) x 250mm(D) Panel: 300 x 4U (177mm(H) x 300mm(W)) Multiplex: 150mm(H) x 263mm(W) x 250mm(D)
Weight	3.5kg (4kg with bezel fitted)
Pump Option	Mains type diaphragm pump. Variable speed 0-1.2 litres per min
Ejector Option	Vacuum ejector fitted, running off 2 bar inlet pressure
Alarm	Relay circuits. Fully user programmable

Accessories

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

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Due to continuous product development necessary changes to specifications may be made without prior notice. Issue no: D11-415-1

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