

Rapidox 3100Z

Bench multigas analyser, one to three gases



RAPIDOX 3100Z

Gas analysis with independent temperature input

amperis

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Precision analysis of up to three gases for process, research and laboratory work.

Product overview



Rear panel: programmable outputs, alarms, type K input and communications

Precision analysis for one to three gases

The Rapidox 3100Z range comprises single-, dual- and triple-gas bench analysers aimed at process, research and development work, widely used by universities and research institutes. Typical configurations combine oxygen with one or two further gases; measurable gases include O₂, CO₂, CO, H₂, H₂O, C₂H₄, Cl₂, CH₄, N₂O, NO, NH₃, SO₂ and O₃, with the oxygen channel served by a zirconia sensor (10E-20 ppm to 30 %, ± 1 % accuracy).

The test-gas flow is adjusted with the flow gauge and needle valve on the front panel. An optional long-life pump draws the sample at a user-set rate of 0-1 L/min, and can be switched off to operate under flowing gas conditions. A type K thermocouple input measures temperature independently up to 1,250 °C, displayed and logged simultaneously with the gas analysis.

All models include four fully programmable alarm circuits (volt-free contacts), programmable analogue outputs per sensor, easy calibration with user-selectable gases, RS232/RS485 Modbus RTU communications and complete data-logging software. The instrument complies with EMC Directive 2004/108/EC and carries UL/ETL certification UL-61010-1.

Features and advantages

- Bench version or 19" rack-mounted version.
- Fast, accurate response enhanced by an internal pressure sensor.
- Simple user calibration with the appropriate calibration gas.
- Low-maintenance sensors with long life expectancy.
- Four programmable alarms: high/low, open or closed relays.
- Programmable digital and analogue outputs (0-5 V and 4-20 mA).
- Software with full instrument control, live graphing and Excel-compatible logging.
- Worldwide mains voltage (90-260 V AC) and password protection.

Configurations for laboratory, process and manufacturing atmospheres.

Applications and accessories

Applications

- Glove boxes and inert-gas blanketing.
- Metal heat treatment and manufacturing.
- Research and development: universities and institutes.
- Biogas, syngas and combustion processes.
- Chemical, food, medical and pharmaceutical industries.
- General gas analysis duties. 2

Accessories

- Calibration kit and calibration service.
- Thermal printer.
- Multiplex sampling system.
- Gas recovery bag.
- Gas filters.



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TECHNICAL SPECIFICATION

Oxygen sensor	Zirconia, 10E-20 ppm to 30 %, ± 1 % accuracy
Other gas sensors	According to the sensor matrix of the range (O ₂ , CO ₂ , CO, H ₂ , H ₂ O, C ₂ H ₄ , Cl ₂ , CH ₄ , N ₂ O, NO, NH ₃ , SO ₂ , O ₃)
Temperature sensor	Type K thermocouple, 0-1,250 °C, ± 1 °C accuracy
Max. gas temperature	60 °C
Ambient operating pressure	900-1,100 mbar (absolute)
Ambient operating temperature	5 °C to 35 °C
Warm-up time	2-5 min at 20 °C
Supply voltage	90-260 V AC, 50/60 Hz
Voltage outputs	0-5 V linear, user-programmable
Current outputs	4-20 mA linear, user-programmable
Digital outputs	RS232 (RS485 optional), Modbus RTU, data streamed on demand
Sample connections	4 mm ID / 6 mm OD nipple type, Rectus or Swagelok, front positioned
Display	Four-line OLED display
Analyser dimensions	Bench: 150 mm (H) × 350 mm (W) × 263 mm (D); rack: 132 mm (H) × 482 mm (W) × 365 mm (D)
Weight	5 kg (bench); 6.5 kg (rack)
Pump option	0-1 L/min, user-selectable



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