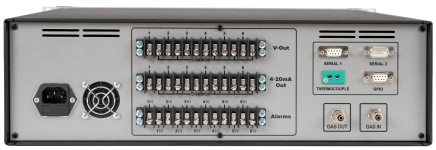
Rapidox SF6 6100 Bench Gas Analyser

The Rapidox SF6 6100 Bench mountable gas analyser is designed for controlling and monitoring the quality of SF6 gas within a range of laboratory and field-based applications. These include medical testing, laboratory-based research and development, and the analysis of SF6 gas present in medium and high voltage gas insulated electrical equipment.



Exceptional accuracy and stability are provided when measuring the purity of SF6 gas, through specially selected sensors. The modular configuration allows for up to eight compatible gases to be analysed, simultaneously, with one analyser.

SF6 SO2 and H2O (dew point) gases are simultaneously analysed and data-logged to an exceptionally accurate standard. A gas output nozzle allows for the analyser to be attached to the Rapidox Gas Recovery Bag, ensuring that all sampled SF6 gas is recovered.

The Rapidox SF6 6100 Bench analyser is available as a complete instrument with swing carry handle or as a 19" cabinet rack mount format for industrial applications. Options include a set of genuine DN8 and DN20 fittings with a stainless steel braided hose (self-sealing couplings), and a separate thermal printer.

An optional pump enables two modes of operation. For SF6 sources at atmospheric pressure or below, the pump is activated to draw a sample through the analyser. Alternatively, the pump can be deactivated when sampling SF6 from a pressurised gas compartment up to 10 bar on the inlet. Gas flow is regulated manually via a rotary knob on the fascia and displayed electronically on the screen.

Please contact Cambridge Sensotec for further information or to discuss your requirements.

Though highly configurable to suit individual customer requirements, the Rapidox SF6 6100 Bench possesses a number of features to enhance functionality.

- Low maintenance sensors
- Easy calibration procedure
- Digital outputs
- Optional variable speed pump
- Fully programmable analogue outputs
- Powerful Rapidox software
- Operates on worldwide mains voltage
- Password protection
- Two fully programmable alarms

SF6 Gas

SF6 is an extremely stable, non-flammable and highly electronegative gas with excellent dielectric properties. It is commonly used in medium and high-voltage electrical equipment as an electrical insulator, arc-quenching and cooling medium.

However, SF6 is classified as a greenhouse gas and must be kept within a closed circuit to avoid any deliberate release into the atmosphere. The international Kyoto agreement protocol has mandated reductions to harmful emissions amongst its member states.

For the power transmission and distribution network, SF6 technology remains essential. To protect personnel, equipment and the environment regular SF6 analysis should be adopted within the maintenance schedule. The early identification of any decomposition products and moisture within the SF6 gas will help avoid unnecessary shutdowns, outages and failures, in addition to reducing maintenance expenditures.

Accessories

1 Calibration Kit and Service

2 Gas Recovery Bag

3 Sampling Kit

Specification

Ambient Operating Conditions	Temperature 0°C to 40°C, Humidity 10 - 90% RH, Pressure 900 to 1100 mbar absolute
Warm-up Time	3-4 minutes at 20°C
Sampling	Timed or Continuous Sampling Modes
Voltage	90-260 VAC, 50/60Hz
Voltage Outputs	0-10V linear, user programmable
Sample Connections	Rectus style closed coupled fitting
Current Outputs	4-20mA linear, user programmable
Digital outputs	RS232 (RS485 option available). Data streamed on demand, Modbus RTU / Ethernet
Max Inlet Pressure	10 Bar gauge (protected)
Optional Pump	0-1 litres per minute
Calibration	Zero and span calibration with user selectable gas compositions
Display	7" (180mm) full-colour LCD with touchscreen operation; resolution 0.01ppm or 0.01%
Analyser Dimensions	Rack Mount: 132mm(H) x 482mm(W) x 365mm(D) Benchtop: 180mm (H) x 570mm (W) x 345mm (D)
Alarms	Relay circuits, user programmable
Data Output/Optional Printer	Excel compatible data via USB memory stick / Optional thermal printer
Weight	Rack Mount: 6.5kg Benchtop: 6.5kg

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Rapidox SF6 6100 Portable Sensor Specification

The modular configuration allows for up to eight compatible gases to be analysed simultaneously with one analyser.

SENSOR	SPECIFICATION	ACCURACY	CALIBRATION	LIFE SPAN	SENSOR TYPE
SF_6 Sulphur Hexafluoride	0-100%	±0.5% accuracy	Every 12 months	> 5 years	Infrared (IR)
H_2O Dew Point	-60°C to ±20°Cdp (10 - 24,000ppmV) Reading is corrected to either RT or 20°C	±2°Cdp of reading	Every 12 months by Sensor Exchange	2-3 years	Polymer
SO_2 Sulphur Dioxide	0-100ppm OR 0-500ppm	±2% full-scale	Every 12 months	2-3 years	Electrochemical
HF Hydrogen Fluoride	0-10ppm OR 0-30ppm	±2% full-scale	Every 12 months (Using HCl gas)	2-3 years	Electrochemical
CF_4* Tetrafluoromethane	0-80%	±1% of full reading	N/A	N/A	(measured by balance of SF_6 + Air reading)
H_2S Hydrogen Sulphide	0-100ppm	±2% full-scale	Every 12 months	2-3 years	Electrochemical
CO Carbon Monoxide	0-1,000ppm	±2% full-scale	Every 12 months	2-3 years	Electrochemical
Air	0-100%	±5% full-scale based on oxygen component	Every 12 months	2-3 years	Electrochemical O_2 scaled to read as Air

*** For analysers containing a CF_4 sensor, the measurement of Air is also a requirement.**

All sensor replacements to be carried out by Cambridge Sensotec or approved repair agents.

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Rapidox 6100 Sensor Matrix

Gas	SF_6	O_2	Air	CF_4	H_2O	SO_2	CO	H_2S	HF	CO / H_2S
Sensor Type	IR	EC	EC	Balance	Polymer	EC	EC	EC	EC	EC
Life (Month)	60	36	36	N/A	36	36	36	36	36	36
Cal (Month)	12	12	12	N/A	12	12	12	12	12	12
0 - 100%	■		■							
0 - 80%				■						
0 - 60%										
0 - 30%		■								
0 - 5,000ppm							■			
0 - 2,000ppm						■	■	■		
0 - 1,000ppm							■	■		CO
0 - 500ppm						■	■	■		■
0 - 200ppm								■		■
0 - 150ppm						■		■		
0 - 100ppm						■				H_2S
0 - 50ppm										■
0 -20ppm									■	
0 -10ppm									■	
-60°C to +20°C					■					

Note: Not all sensor combinations are possible due to interference and cross-sensitivity effects. Please contact Cambridge Sensotec for advice.

Key: IR = Infra-Red Sensor EC = Electrochemical Sensor