SF6 6100 Pump Back Gas Analyser

The Rapidox SF6 6100 Pump Back is a fully-automatic zero-emissions SF6 gas analyser, designed for controlling and monitoring the quality and purity of gas used in high voltage switchgear, circuit breakers and transformers.

Exceptional accuracy and stability are provided when measuring the purity of SF_6 gas, through specially selected sensors. The modular configuration allows for up to eight compatible gases to be analysed, simultaneously, using one analyser. The Rapidox is fully compatible with mixtures of SF_6 CF_4, N_2 and air, together with toxic contamination gases such as SO_2, HF, H_2S and CO. The unit also measures the water content of the gas in dewpoint or ppm to ensure dryness is acceptable.

The Rapidox SF6 6100 is housed neatly into a tough Peli transport case supplied with special tongue and groove self sealing couplings, which are compatible with famous brands. Once powered and connected, the Rapidox automatically removes a small quantity of gas from the electrical equipment, controlled with an auto gas pressure sensing function. A vacuum purge cycle and internal gas storage system ensures that no air can contaminate the gas sample and that no SF_6 gas is able to escape during the testing period.

All measured gases are analysed and data-logged simultaneously with only a few minutes required to achieve a stable reading. A powerful 10 bar compressor, with a separate lithium battery power supply, then returns the gas to the electrical equipment at high pressure. Results are displayed on screen and printed using the inbuilt thermal printer. The Rapidox has multiple safety features built in to ensure the cycle is completed correctly without gas loss or cross contamination.

The analyser is pre-programmed with all current IEC and CIGRE test configurations, with the ability to create customised test parameters.

Please contact Cambridge Sensotec for further information or to discuss

Though highly configurable to suit individual customer requirements, the Rapidox SF_6 6100 Pump Back has a number of standard features to enhance functionality.

- Modular sensor choice
- 7" full-colour touchscreen
- Vacuum line purge
- Walk away timer
- Auto abort function
- Auto clean function
- Fully automatic testing and data logging
- Gas cylinder testing mode
- Multi language
- Vehicle charger
- Inbuilt CIGRE & IEC Tests

SF_6 Gas

SF_6 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, SF_6 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, SF_6 technology remains essential. To protect personnel, equipment and the environment regular SF_6 analysis should be adopted within the maintenance schedule. The early identification of any decomposition products and moisture within the SF_6 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 Tongue and Groove Self Sealing Couplings

Specification

Ambient Operating Conditions	-10°C to +40°C, 10-90% RH, 800-1100mbara
Warm-up Time	3-4 minutes at 20°C
Voltage (Charging)	90-260 VAC, 50/60Hz
Battery Life	Up to 8 hours. 4-6 hour charge
Sample Connections	Special tongue and groove self sealing couplings (compatible with famous brands)
Data Outputs	Excel compatible data via USB memory stick
Data Storage	4GB internal data storage allowing for approximately 1 year of continuous monitoring
Compressor	Up to 10 Bar with up to 25 cycles per battery charge
Measurement Time	8 minutes
Pressure Range	0.5-10 Bar; displayed on screen
Gas Flow Rate	$0.5l.min^{-1}$
Max Inlet Pressure	10 Bar gauge
Display	7" (180mm) full-colour LCD touch screen interface with soft menu keys
Printer	Integrated thermal printer allows output of results on demand
Analyser Dimensions	270mm(H) x 560mm(W) x 450mm(D)
Weight	21kg (total instrument and case)

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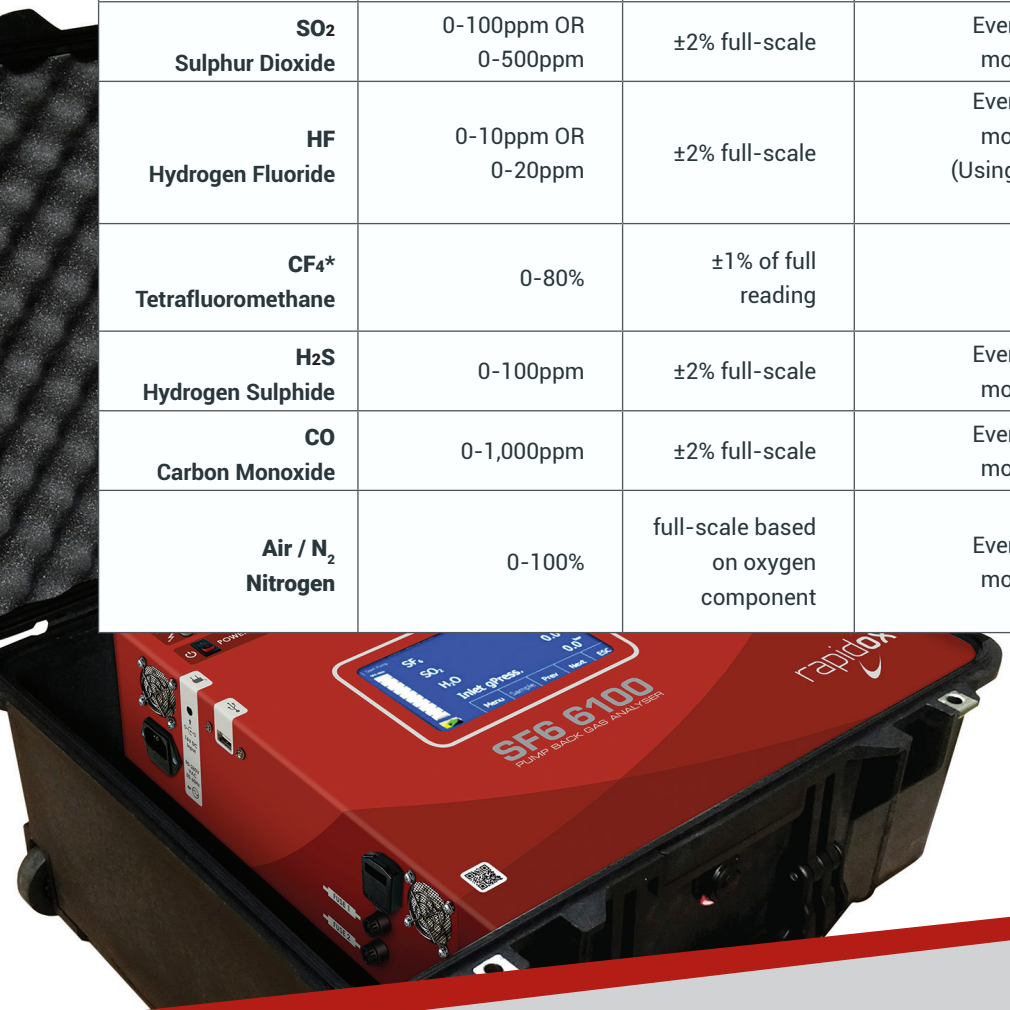
cambridge sensotec

rapidoxSF6
advancing excellence in gas analysis

Rapidox SF6 6100 Pump Back 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 @Patm (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 0-20ppm	±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 / N_2 Nitrogen	0-100%	full-scale based on oxygen component	Every 12 months	2-3 years	Electrochemical O_2 scaled to read as Air or Nitrogen



*** 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

Sensor Range	SF_6	O_2	Air	CF_4	H_2O Cdp	SO_2	CO	H_2S	HF	H_2S / CO
0 - 100%	■		■							
0 - 80%				■						
0 - 30%		■								
0 - 5,000ppm							■			
0 - 2,000ppm						■	■	■		
0 - 1,000ppm							■	■		■
0 - 500ppm						■	■	■		■
0 - 200ppm								■		■
0 - 100ppm						■				■
0 - 50ppm										■
0 -20ppm									■	
0 -10ppm									■	
-60°C to +20°C					■					