

SF6 6100 Portable Gas Analyser

The Rapidox SF6 6100 Portable is designed for controlling and monitoring the quality of SF6 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.

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.

Internal SF₆ gas pressure is recorded and logged by the analyser. All measured gases are analysed and data logged simultaneously with only a few minutes required to achieve a stable reading.

In order to accelerate the time taken in-between dew-point readings, a unique Rapidri system is fitted to analysers measuring H₂O. When not in use the sensor can be isolated via the 'Open-Close' valve.

The analyser is pre-programmed with all current IEC and CIGRE test configurations, with the ability to create customised test parameters. Modular design allows for bespoke sensor combinations upon request.

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



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

- Bespoke sensor combination
- 7" full-colour touch screen
- Lithium battery provides 8 hours of operation
- Heavy duty IP66 case
- Total weight 8.5kg
- Continuous data logging downloaded via USB
- Multi-language
- Charges on worldwide mains voltage
- Integrated thermal printer

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



2



3

- 1 Calibration Kit and Service
- 2 Gas Recovery Bag
- 3 Tongue and Groove Self Sealing Couplings

Specification

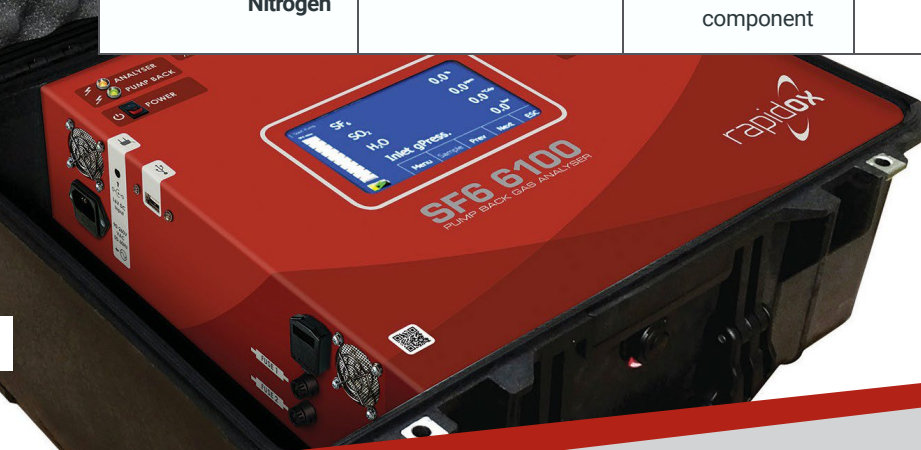
| | |
|------------------------------|--|
| Ambient Operating Conditions | -10°C to +40°C, 10-90% RH, 800-1100mbara |
| Warm-up Time | 3-4 minutes at 20°C |
| Voltage (Charging) | 90-260 VAC, 50/60Hz |
| Battery Life | In excess of 8 hours. 4-6 hour charge |
| Sample Connections | Special tongue and 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 |
| Gas Flow Range | 100-1,000ml .min ⁻¹ |
| Max Inlet Pressure | 10 Bar gauge |
| Optional Pump | 0-1 litres per minute |
| 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 | 180mm(H) x 480mm(W) x 360mm(D) |
| Weight | 8.5kg (Total instrument and case) |



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 |
|-----------------------------|--|--------------------------------------|------------------------------------|-----------|---|
| SF6 Sulphur Hexafluoride | 0-100% | ±0.5% accuracy | Every 12 months | > 5 years | Infrared (IR) |
| H2O 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 |
| SO2 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 |
| CF4* Tetrafluoromethane | 0-80% | ±1% of full reading | N/A | N/A | (measured by balance of SF6 + Air reading) |
| H2S 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 / N2 Nitrogen | 0-100% | full-scale based on oxygen component | Every 12 months | 2-3 years | Electrochemical O2 scaled to read as Air or Nitrogen |



* For analysers containing a CF4 sensor, the measurement of Air is also a requirement.

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

Rapidox 6100 Sensor Matrix

| Gas | SF ₆ | O ₂ | Air/N ₂ | CF ₄ | H ₂ O | SO ₂ | CO | H ₂ S | HF | CO / H ₂ S |
|----------------|-----------------|----------------|--------------------|-----------------|------------------|-----------------|----|------------------|----|-----------------------|
| 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 ₂ S |
| 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