

SFA2000

SF₆ Gas Analyser



Introduction

- Methods fully compliant with all current IEEE Std C37.122.3-2011 requirements
- Internal Chilled mirror
- Up to 9 Gases (SF₆, SO₂, H₂S, HF, H₂, O₂, H₂O, CF₄, CO)
- Dew point sensor make sure the dryness of the gas

The SFA2000 SF₆ 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 SF₆ gas, through specially selected sensors. The modular configuration allows for up to eight compatible gases to be analysed, simultaneously, using one analyser. The SFA2000 is fully compatible with mixtures of SF₆, CF₄, N₂ and air, together with toxic contamination gases such as SO₂, H₂, HF, H₂S and CO. The unit also measures the water content of the gas in dewpoint or ppm to ensure dryness is acceptable.

The SFA2000 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 SFA2000 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 SF₆ 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 SFA2000 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 KGT for further information or to discuss.

Though highly configurable to suit individual customer requirements, the SFA2000 SF₆ 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
- Vehicle charger
- Inbuilt CIGRE & IEC Tests

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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. Tongue and Groove Self Sealing Couplings



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Specification

Ambient Operating Conditions	-20°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	300mm(H) x 650mm(W) x 500mm(D)
Weight	30kg (total instrument and case)

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SFA2000 SF₆ Gas Analyzer Configuration

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

ACCESSORIES	SPECIFICATION	ACCURACY	SFA2000
H ₂ O (Polymer)	-60°C to ±20°C dp (10 - 24,000ppmV) Reading is corrected to 1 atm and 20°C	±0.2°Cdp of reading	●
SO ₂ (Electrochemical)	0-100ppm OR 0-2000ppm	±0.3ul/L(< 10 ppm) ±3% of reading(≥ 10 ppm)	●
H ₂ S (Electrochemical)	0-100ppm	±0.3ul/L(< 10 ppm) ±3% of reading(≥ 10 ppm)	●
HF (Electrochemical)	0-10ppm	±0.2 ppm	●
H ₂ * (Electrochemical)	0-2,000ppm	±8ul/L(< 200 ppm) ±4% of reading(≥ 200 ppm)	optional
O ₂ * (Electrochemical)	0-30%	±1% accuracy	optional
SF ₆ (Infrared)	0-100%	±0.5% accuracy	●
CF ₄ (Infrared)	0-200ppm	±5% F.S.	optional
CO (Infrared)	0-1,000ppm	±5% F.S.	optional
Pump back components	—	—	optional

*A H₂ sensor is included in the factory standard configuration, which can be replaced with an O₂ sensor.

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

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