

Rapidox 6100 Portable

Portable SF₆ gas analyser



RAPIDOX 6100

SF₆ purity, moisture and by-products, on site

amperis

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Field analyser for verifying the condition of SF₆ in medium- and high-voltage gas-insulated equipment.

Product overview



Rapidox 6100 Portable in its heavy-duty IP66 case



Integrated thermal printer: test reports on demand

How it works

The Rapidox 6100 Portable checks the condition of SF₆ on site in medium- and high-voltage gas-insulated switchgear and cells. Purity readings rely on specially selected sensors that combine outstanding accuracy with long-term stability, and the modular architecture lets one instrument analyse up to eight compatible gases at the same time: SF₆, H₂O (dew point), SO₂, HF, CF₄, H₂S, CO and O₂/N₂ (air), depending on configuration.

Every selected gas is measured and logged simultaneously, and a stable result is reached within a few minutes; the internal pressure of the SF₆ sample is registered alongside the readings. Through the gas outlet nozzle the analyser couples to a gas recovery bag, so all the sampled SF₆ is captured instead of being released. Units fitted with an H₂O sensor add the Rapidri drying system, which shortens the wait between successive dew-point readings; a dedicated valve isolates the sensor while the unit is idle.

All current IEC and CIGRE test configurations come pre-installed, custom test parameters can be defined by the user, and bespoke sensor combinations are available on request.

Features and advantages

- Simple to operate and configure, with sensor packages tailored to each order.
- 7" (18 cm) full-colour touch screen, soft menu keys and alphanumeric keypad.
- Lithium battery for up to 8 h of field work; charges on any worldwide mains voltage.
- Heavy-duty IP66 case; complete weight of only 8.5 kg.
- Continuous data logging, viewable in real time; MS Excel-compatible download via USB memory stick.
- Editable test locations and user names, with password protection.
- Integrated thermal printer and multi-language user interface.



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Regular SF₆ analysis protects personnel, equipment and the environment.

SF₆ gas and applications



1) Calibration kit



2) Gas recovery bag



3) Tongue-and-groove self-sealing couplings

A stable gas under watch

Sulphur hexafluoride (SF₆) combines exceptional dielectric strength with chemical stability: it is non-flammable, strongly electronegative and works as insulating, arc-quenching and cooling medium, which is why it fills much of today's medium- and high-voltage equipment.

At the same time SF₆ is classified as a greenhouse gas, so it must remain inside a closed circuit and never be vented deliberately; international agreements such as the Kyoto Protocol commit member states to reducing these emissions.

Because SF₆ technology remains essential to power transmission and distribution, routine gas analysis belongs in every maintenance schedule: identifying moisture or decomposition products early protects personnel, equipment and the environment, avoids unnecessary shutdowns, outages and failures, and reduces maintenance expenditure.

Applications

- Quality and purity checks of SF₆ in MV and HV gas-insulated switchgear, cells and circuit breakers.
- Gas verification against IEC and CIGRE criteria during commissioning and routine maintenance.
- Zero-loss sampling wherever the analysed gas must be recovered (recovery-bag connection).

Accessories

- Calibration kit and service.
- Gas recovery bag.
- Tongue-and-groove self-sealing couplings.



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TECHNICAL SPECIFICATION

Ambient operating conditions	-10 °C to +40 °C, 10-90 % RH, 800-1,100 mbar (absolute)
Warm-up time	3-4 min at 20 °C
Voltage (charging)	90-260 V AC, 50/60 Hz
Battery life	Over 8 h; 4-6 h charge
Sample connections	Special tongue-and-groove self-sealing couplings (compatible with leading brands)
Data outputs	MS Excel-compatible data via USB memory stick
Data storage	4 GB internal memory, approximately 1 year of continuous monitoring
Gas flow range	100-1,000 mL/min
Max. inlet pressure	10 bar (gauge)
Optional pump	0-1 L/min
Display	7" (180 mm) full-colour LCD touch screen with soft menu keys
Printer	Integrated thermal printer, results printed on demand
Analyser dimensions	180 mm (H) × 480 mm (W) × 360 mm (D)
Weight	8.5 kg (total instrument and case)



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SENSOR SPECIFICATION

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

Sensor	Measuring range	Accuracy	Calibration	Life span	Sensor type
SF ₆ (sulphur hexafluoride)	0-100 %	±0.5 %	Every 12 months	> 5 years	Infrared (IR)
H ₂ O (dew point)	-60 °C to +20 °C dp at P(atm) (10-24,000 ppmV); reading corrected to RT or 20 °C	±2 °C dp of reading	Every 12 months, by sensor exchange	2-3 years	Polymer
SO ₂ (sulphur dioxide)	0-100 ppm or 0-500 ppm	±2 % full-scale	Every 12 months	2-3 years	Electrochemical
HF (hydrogen fluoride)	0-10 ppm or 0-30 ppm	±2 % full-scale	Every 12 months (using HCl gas)	2-3 years	Electrochemical
CF ₄ * (tetrafluoromethane)	0-80 %	±1 % of reading	n/a	n/a	Balance of SF ₆ + air reading
H ₂ S (hydrogen sulphide)	0-100 ppm	±2 % full-scale	Every 12 months	2-3 years	Electrochemical
CO (carbon monoxide)	0-1,000 ppm	±2 % full-scale	Every 12 months	2-3 years	Electrochemical
O ₂ / N ₂ (air / nitrogen)	0-100 %	Full-scale, based on the oxygen component	Every 12 months	2-3 years	Electrochemical O ₂ scaled to read as air or nitrogen

* For analysers containing a CF₄ sensor, the measurement of air is also required.
All sensor replacements must be carried out by Amperis or approved repair agents.



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