

Measuring system for laboratory analysis of decomposition products in SF₆ gas Model GFTIR-10

FTIR analyser

Applications

- Analysis of gas samples from SF₆ gas-filled equipment
- Laboratory evaluation with PC, software and database

Special features

- Identification and precise quantification of the main decomposition products from SF₆ gas
- Resistant against highly-corrosive gases
- Non-destructive method of measurement
- Factory calibrated, high long-term stability of the system



Measuring system for laboratory analysis, model GFTIR-10

Description

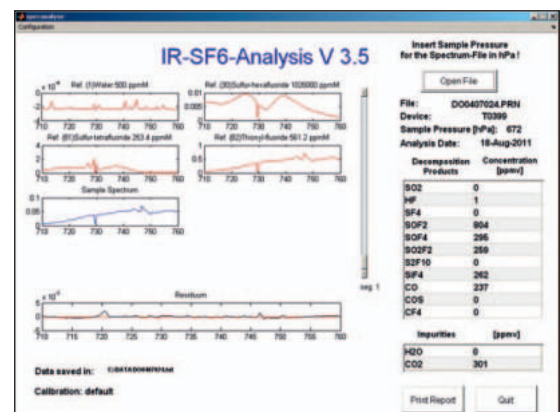
Non-destructive method of measurement

The advantage of the GFTIR-10 is the non-destructive determination of the most-important decomposition products, which are also able to quantify high concentrations of reactive and highly-corrosive substances.

The measuring system of the GFTIR-10 consists of a spectrometer and a PC, with specially-developed analysis software and substance database. This measuring system enables trained laboratory staff to provide precise information about the composition of the respective SF₆ gas sample.

Analysis as a service

WIKA offers the analysis with the GFTIR-10 as a service as well. The customer's samples can be analysed in their own bottles or special evacuated gas cylinders can be sent in order to take a sample on site. The advantage for the customer is a detailed report of the composition of their sample, performed by an expert.



WIKA "IR-SF6-Analysis" analysis software

Specifications

Measuring principle

The measuring system uses Fourier Transform Infrared Spectroscopy (FTIR). The infrared spectroscopy enables the simultaneous determination of several different chemical components by means of their unique spectra.

Decomposition products

Decomposition product	Detection limit
Sulphur dioxide (SO ₂)	10 ppm _v
Hydrogen fluoride (HF)	0.5 ppm _v
Sulphur tetrafluoride (SF ₄)	3 ppm _v
Thionyl fluoride (SOF ₂)	10 ppm _v
Thionyl tetrafluoride (SOF ₄)	5 ppm _v
Sulphuryl fluoride (SO ₂ F ₂)	3 ppm _v
Disulphur decafluoride (S ₂ F ₁₀)	2 ppm _v
Silicon tetrafluoride (SiF ₄)	5 ppm _v
Carbon monoxide(CO)	5 ppm _v
Carbonyl sulphide (COS)	5 ppm _v
Tetrafluoromethane (CF ₄)	3 ppm _v
Hexafluoroethane (C ₂ F ₆)	2 ppm _v
Octafluoropropane (C ₃ F ₈)	2 ppm _v

Sample volume

approx. 200 ml

Measurement duration

approx. 3 minutes

Spectral range

Possible wavenumber from 8,000 to 340 cm⁻¹, with standard KBr beam splitter

Resolution

< 0.5 cm⁻¹

Interferometer

RockSolid, permanently set, high stability

Optics

Gold-plated mirror

Mirror speed

3 speeds, 2.2 ... 20 kHz (1.4 ... 12.7 mm/s opd)

Detector

Liquid N₂ cooled MCT detector

Aperture wheel

11 positions, fixed diameters of 250 µm ... 6 mm

Power supply

AC 85 ... 265 V, 45 ... 67 Hz, 70 W

Interface

Ethernet interface

Dimensions

W x H x D: 665 x 281 x 434 mm

Weight

37 kg

Spectroscopy software

OPUS

Service interval

Every 1 to 2 years

Scope of delivery

- Model GFTIR-10 measuring system
- Powerful desktop PC incl. Microsoft® Windows® operating system
- WIKA "IR-SF6-Analysis" analysis software with database

Windows is a registered trademark of Microsoft Corporation in the United States and other countries.