

# Measuring system for laboratory analysis of decomposition products in SF<sub>6</sub> gas

## Model GFTIR-10

WIKA data sheet SP 62.17

FTIR analyser

### Applications

- Analysis of gas samples from SF<sub>6</sub> gas-filled equipment
- Laboratory evaluation with PC, software and database

### Special features

- Identification and precise quantification of the main decomposition products from SF<sub>6</sub> 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

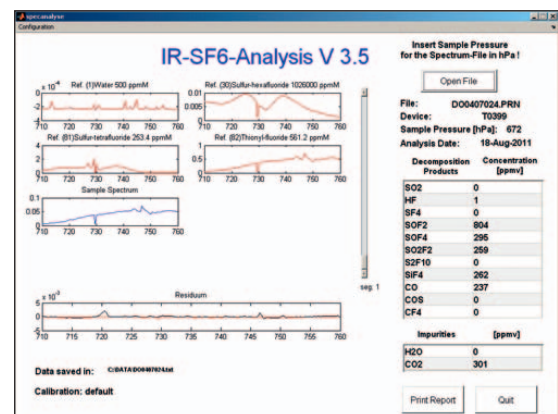
#### Non-destructive method of measurement

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 SF<sub>6</sub> 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 <sub>2</sub> )	10 ppm <sub>v</sub>
Hydrogen fluoride (HF)	0.5 ppm <sub>v</sub>
Sulphur tetrafluoride (SF <sub>4</sub> )	3 ppm <sub>v</sub>
Thionyl fluoride (SOF <sub>2</sub> )	10 ppm <sub>v</sub>
Thionyl tetrafluoride (SOF <sub>4</sub> )	5 ppm <sub>v</sub>
Sulphuryl fluoride (SO <sub>2</sub> F <sub>2</sub> )	3 ppm <sub>v</sub>
Disulphur decafluoride (S <sub>2</sub> F <sub>10</sub> )	2 ppm <sub>v</sub>
Silicon tetrafluoride (SiF <sub>4</sub> )	5 ppm <sub>v</sub>
Carbon monoxide (CO)	5 ppm <sub>v</sub>
Carbonyl sulphide (COS)	5 ppm <sub>v</sub>
Tetrafluoromethane (CF <sub>4</sub> )	3 ppm <sub>v</sub>
Hexafluoroethane (C <sub>2</sub> F <sub>6</sub> )	2 ppm <sub>v</sub>
Octafluoropropane (C <sub>3</sub> F <sub>8</sub> )	2 ppm <sub>v</sub>

## Sample volume

approx. 200 ml

## Measurement duration

approx. 3 minutes

## Spectral range

Possible wavenumber from 8,000 to 340 cm<sup>-1</sup>, with standard KBr beam splitter

## Resolution

< 0.5 cm<sup>-1</sup>

## 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 N<sub>2</sub> 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.

## Ordering information

Specification of the model is sufficient for ordering.

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