Devices for determination of the SF_6 gas quality

For verification of several parameters in one operation

3-038R-R...
SF_6-Multi-Analyser with return system

This multi-functional device allows the determination of up to three quality parameters with only one measurement:

- SF_6 concentration (%)
- Moisture concentration
- SO_2 concentration (ppm_V)

The SF_6-Multi-Analyser is a battery operated, compact, user and maintenance-friendly device which guarantees high measuring accuracy. The unit allows different kinds of measurements and treatment of the measuring gas in one of the following ways:

- The measuring gas can be stored in an internal storage vessel and pumped back into the gas compartment (up to 10 bar p_e).
- For measurements at cylinders, vessels or gas compartments with higher pressure (max. inlet pressure 35 bar p_e) or if the measured gas should not be pumped back, a cylinder can be connected to the outlet (max. 10 bar p_e). It is not necessary to use a pressure reducer and to separate the de device from the cylinder or the gas compartment.
- An external gas collecting bag can be connected allowing continuous measurements (inlet pressure max. 35 bar p_e) without pumping the gas back. Afterwards it is possible to empty the external bag by using the SF_6-Multi-Analyser, a service cart or compressor unit.

If the sensors have to be calibrated they can easily be exchanged by the operator on site. The device is immediately ready for use without loss of time based on the “Plug & Play“ principle.

- No emissions of measuring gas
- Modular interchangeability of the sensors
- Easy and user friendly menu navigation via high quality 7“ capacitive colour touch screen
- Results of up to 500 measurements can be stored with name, date and time
- Battery and external power supply
- USB and LAN connection
- Adjustable user languages:
  DE, GB, FR, ES, IT, PT, CZ, PL, CN, JPN, RUS
- Compact design, easy handling and transportation (installed in trolley case)

Devices for determination of the SF_6 gas quality

3-038R-R...
SF_6-Multi-Analyser

Precise and correct results for subsequent measurements can be guaranteed by purging the measuring hose prior to each measurement.

Another big advantage of the SF_6-Multi-Analyser is its high precision. SF_6 humidity is measured at operating pressure. Thus very precise results are obtained during a short measuring time even in the critical dew point range (< -40 °C). The dew point at ambient temperature will be calculated.

The device is very maintenance friendly. The residual lifetime of the SO_2 electrochemical sensors is indicated automatically. A very practical and useful device.

Note:

Devices with gas return system:
The measuring gas is collected and can be stored in an internal or external storage vessel by means of a compresor.

After the measurement the stored measuring gas can be pumped back from the internal and external storage vessel (depressurised) into the gas compartment or a connected cylinder.

No SF_6 gas is released into the atmosphere!

Technical data:

Dimensions: L 406 mm, W 538 mm, H 269 mm
Weight with gas return system: approx. 25 kg
Input pressure: p_e 0.2 - 35 bar
Operating temperature: -10 °C to +50 °C
Ambient moisture: up to 90 % relative moisture, non condensing during operation
Operating voltage: 100-240 VAC, 50/60Hz
Number of measured values to be stored: max. 500
Interface: USB/LAN
Measuring time: variably calculated by the system, max. 15 minutes
Limit value vol.-%: adjustable from 0.0 to 99.9 vol.-%
Limit value dew point: adjustable from -60 °C to +20 °C
Limit value SO_2: adjustable from 0.0 to 499.9 ppm_V
Indication of moisture concentration in dew point °C or °F, referred to atmospheric or input pressure, reversible to indication in ppm_V, ppm_M
Input pressure indication in bar p_a or p_e, psi, kPa, MPa

Standard equipment:

Transport case; 6 m long connecting hose with DILO couplings DN8 and DN20; 2 m long connecting cable
USB stick with data file for evaluation and reading out of measured data
CD-ROM
1 operating manual (multilingual) on CD-ROM

3-038R-R...

SF_6-Multi-Analyser

Sensor data:

	Vol. %	Moisture	SO_2
Measuring principle	Velocity of sound	Electronic moisture measurement (capacitive)	Electrochemical reaction
Measuring range	0 - 100 vol-%	-60 to +20 °C	0 - 20 ppm_V 0 - 100 ppm_V 0 - 500 ppm_V
Measuring accuracy	±0.5 vol.-%	±2 °C (at > -40 °C) ±3 °C (at < -40 °C)	< ±2 % of measuring range
Measuring gas pressure	atm. pressure	gas compartment pressure	atm. pressure
Flow rate	0.3 - 0.5 l/h	16 - 17 l/h	1 - 3 l/h
Reaction time	< 2 min	< 5 min	< 20 s
Recommended calibration interval	every two years	every two years	every two years (lifetime)
Long term sensitivity drift			< 2 % per month
Overload protection	automatic	automatic	automatic

Ordering designations of the SF_6-Multi-Analyser:

Device with gas return system	**3-038R-R...**
Single measuring device for percentage measurement 0 - 100 vol. -%	**R101V0**
Single measuring device for moisture measurement -60 °C to +20 °C dew point temperature	**R102V0**
Two-in-one measuring device for percentage and moisture measurement	**R201V0**
Three-in-one measuring device for measurement of percentage, moisture and SO_2 with 0 - 20 ppm_V	**R301V0**
Three-in-one measuring device for measurement of percentage, moisture and SO_2 with 0 - 100 ppm_V	**R302V0**
Three-in-one measuring device for measurement of percentage, moisture and SO_2 with 0 - 500 ppm_V	**R303V0**

Options (please inquire separately):
All devices with percentage measuring system are additionally available for SF_6 concentrations in SF_6/CF_4 gas mixtures (measuring accuracy: ±2.0 vol. -%). Thus it is possible to switch over between the SF_6/N_2 and SF_6/CF_4 measurement.

Optional accessories at an extra charge:

External compressor for increase of pressure for application of the SF_6-Multi-Analyser in medium voltage switchgear with a pressure of < 0.3 bar p_e	**3-826-R003**
Discharge gas collecting bag	**B151R95**
Adapter kit for measuring devices	**Z340R42**
6 m long connecting hose with self-closing couplings (as extension hose)	**3-531-R060**
Additional operating manual on CD-ROM	**6-0004-R213**

Packing:

Packing for 3-038R-R...	**05-1990-R002**