



DEVICES FOR THE DETERMINATION OF THE SF₆ GAS QUALITY

For continuous monitoring of the gas quality

B169R...

SF₆ gas monitoring system

The device is used to monitor and record the quality of the SF₆ gas in a gas compartment. The following quality parameters can be determined with only one measurement:

- » SF₆ volume percentage (%)
- » Moisture concentration (°C atmosphere, °C pressure, °F atmosphere, °F pressure, ppm_v, ppm_w)
- » SO₂-Konzentration (ppm_v)

The user can select between three measurement modes:

- » Continuous measurement
- » Pulse measurement with automatic measurement data recording
- » Single measurement



For the measurement, the gas compartment is equipped with two partially separated couplings. The gas is taken from one of the two couplings, temporarily stored in the internal gas collecting bag of the gas monitoring system and then pumped back into the gas compartment through the second coupling after the measurement has been taken. Alternatively, the gas outlet coupling of the device can also be connected to an external vessel where the gas is collected after the measurement.

The gas monitoring system is characterised by simple and user-friendly handling and easy maintenance. All gas sensors are easily accessible and can be replaced by the user according to the „plug & play“ principle. The device is operated via a 3.5" colour touch screen with intuitive menu navigation.

Due to the use of self-closing couplings, SF₆ cannot escape into the atmosphere either during measurement or when pumping back. The gas monitoring system is available as a stand-alone system or as a component of an SF₆ service cart (installation).

If the SF₆ gas is to be stored in the liquid form after measurement, we offer to equip the system with a more powerful compressor (B100R30, final pressure 50 bar p_g) instead of the standard compressor (B100R20, final pressure 9 bar).

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- Inlet pressure max. 50 bar p_e
- Storage of up to 500 measurement results with name, date and time assignment
- Adjustable user languages: DE, EN, FR
- Selectable pressure and moisture units
- LAN connection and SD cards slot
- Export of measurement data as CSV file

Technical data:

Dimensions: Width: 600 mm Height: 550 mm Depth: 430 mm
Weight: 40 kg
Inlet pressure: 1.5 - 50 bar p _e
Operating temperature: -10 °C to +50 °C
Ambient moisture: up to 90 % relative moisture, non condensing during operation
Operating voltage: (dependant on integrated compressor) Order no. B169RX0X (B100R20 compressor): 85-264 V AC, 47-63 Hz order no. B169RX5X (B100R30 compressor): 220-240 V AC, 50-60 Hz
Number of measured values to be stored: max. 500
Interface: LAN
Limit value vol.-%: adjustable from 0.0 to 99.9 vol.-%
Limit value moisture concentration: adjustable from -60 °C to +20 °C, -76 to +68 °F, 10 to 24000 ppm _v , 1.23 to 2959 ppm _w
Limit value SO ₂ : adjustable from 0.0 to 499.9 ppm _v (dependant on the integrated SO ₂)
Indication of moisture concentration in °C or °F, referred to atmospheric or inlet pressure, reversible to indication in ppm _v ppm _w
Inlet pressure indications in bar p _a , bar p _e , psi p _a , psi p _e , kPa p _a , kPa p _e , MPa p _a , MPa p _e

Sensor data:

	Vol. %	Moisture	SO ₂
Measuring principle	Velocity of sound	Electronic dew point measurement	Electrochemical reaction
Measuring range	0-99.9 vol.-%	-60 to +20 °C -76 to +68 °F 10 to 24000 ppm _v 1.23 to 2959 ppm _w	0 to 20 ppm _v 0 to 100 ppm _v 0 to 500 ppm _v
Measuring accuracy	±0.5 vol.-%	±2 °C (at > -40 °C) ±3 °C (at < -40 °C)	< ±2 % of measuring
Measuring gas pressure	Atmospheric pressure	Atmospheric pressure	Atmospheric 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	2 years	2 years	2 years (lifetime)
Long term stability			< 2 % signal loss per month



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Standard equipment:

2 m long connecting hoses with DILLO couplings DN8
Operating instructions

Ordering designations of the SF₆ gas monitoring system:

Order no. B169...	Percentage measurement	Moisture measurement	SO ₂ measurement	Installation / stand-alone	Compressor
R101	Yes	No	No	Installation	B100R20
R104	Yes	No	No	Stand alone	B100R20
R151	Yes	No	No	Installation	B100R30
R154	Yes	No	No	Stand alone	B100R30
R201	Yes	Yes	No	Installation	B100R20
R204	Yes	Yes	No	Stand alone	B100R20
R251	Yes	Yes	No	Installation	B100R30
R254	Yes	Yes	No	Stand alone	B100R30
R301	Yes	Yes	20 ppm _v	Installation	B100R20
R302	Yes	Yes	100 ppm _v	Installation	B100R20
R303	Yes	Yes	500 ppm _v	Installation	B100R20
R304	Yes	Yes	20 ppm _v	Stand alone	B100R20
R305	Yes	Yes	100 ppm _v	Stand alone	B100R20
R306	Yes	Yes	500 ppm _v	Stand alone	B100R20
R351	Yes	Yes	20 ppm _v	Installation	B100R30
R352	Yes	Yes	100 ppm _v	Installation	B100R30
R353	Yes	Yes	500 ppm _v	Installation	B100R30
R354	Yes	Yes	20 ppm _v	Stand alone	B100R30
R355	Yes	Yes	100 ppm _v	Stand alone	B100R30
R356	Yes	Yes	500 ppm _v	Stand alone	B100R30

Options (please inquire separately): All devices with percentage measuring system are additionally available for SF₆ concentrations in SF₆/CF₄ gas mixtures (measuring accuracy: ±2.0 vol. -%). Thus it is possible to switch over between the SF₆/N₂ and SF₆/CF₄ measurement.

