SF6 LASERCHECK P3:atm

Gas Leak Detektor for SF6

APPLICATIONS

- Integral leak tightness tests on SF_6 filled components at atmospheric pressure
- Bag test - a simple plastic bag can be used as test chamber for the integral measurement
- Leak rate measurement on components under high pressure
- and many more.

FEATURES

- Ultra high sensitivity: Detection limit of 0.3ppb with SF_6 as tracer gas
- Designed for industrial use - applicable under harsh environmental conditions
- Measurement results independent of temperature and moisture
- Permanent self diagnostics
- Fully automated measurement
- Interfaces RS232 and optionally Profibus DP
- CO_2 laser

DETECTION IN PERFECTION.

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SF6 LASERCHECK P3:atm

ULTRA-HIGH SENSITIVE SF6 LEAK DETECTOR FOR INDUSTRIAL APPLICATIONS

SF6 LASERCHECK P3:atm is designed for the integral leak detection at atmospheric pressure. Therefore, very moderate requirements apply to the test chamber in which the component under test is enclosed during measurement. For many applications, a simple plastic bag will do fine.

Its novel principle of measurement (patent pending) not only enables SF LASERCHECK P3:atm to determine very small leak rates at reduced cycle times, but also makes it suitable for use in industrial environments. Contamination of the internal measuring chamber is compensated for as well as varying conditions of the component under test in terms of temperature and moisture level. The fully automated measuring process eliminates any influences by the operator. SF6 LASERCHECK P3:atm thus continuously delivers high precision measurements even under environmental conditions as found at production sites.

Its outstanding sensitivity makes SF6 LASERCHECK P3:atm capable of determining SF_6 concentrations in the ppb range. Its permanent self diagnostic monitors all vital system parameters, ensuring continued precision of measurement. SF6 LASERCHECK P3:atm is the perfect choice for quality control applications at production sites.

TECHNICAL DATA

Measuring range	1 ppb ... 3 ppm SF_6
Resolution	0,3 ppb
Measuring speed	15 ... 20 s
Test chamber volume	up to approx. 50 L *, plastic bags up to 1.000 L
Laser class	1;no protective measures required
Self diagnostics	continuous
Compressed air supply	5 ... 8 bar, dry, clean, and free of oil
Temperature range	15 °C ... 35 °C for operation, 0 °C ... 45 °C for storage
Interfaces	RS232 or Profibus DP
Dimensions (Instrument)	19 " x 6 HE X 520 mm
(Vacuum pump)	400 x 260 x 320 mm
Weight	approx. 30 kg (Instrument) approx. 17 kg (Vacuum pump)

** bigger test chambers possible with fresh air purge system.*

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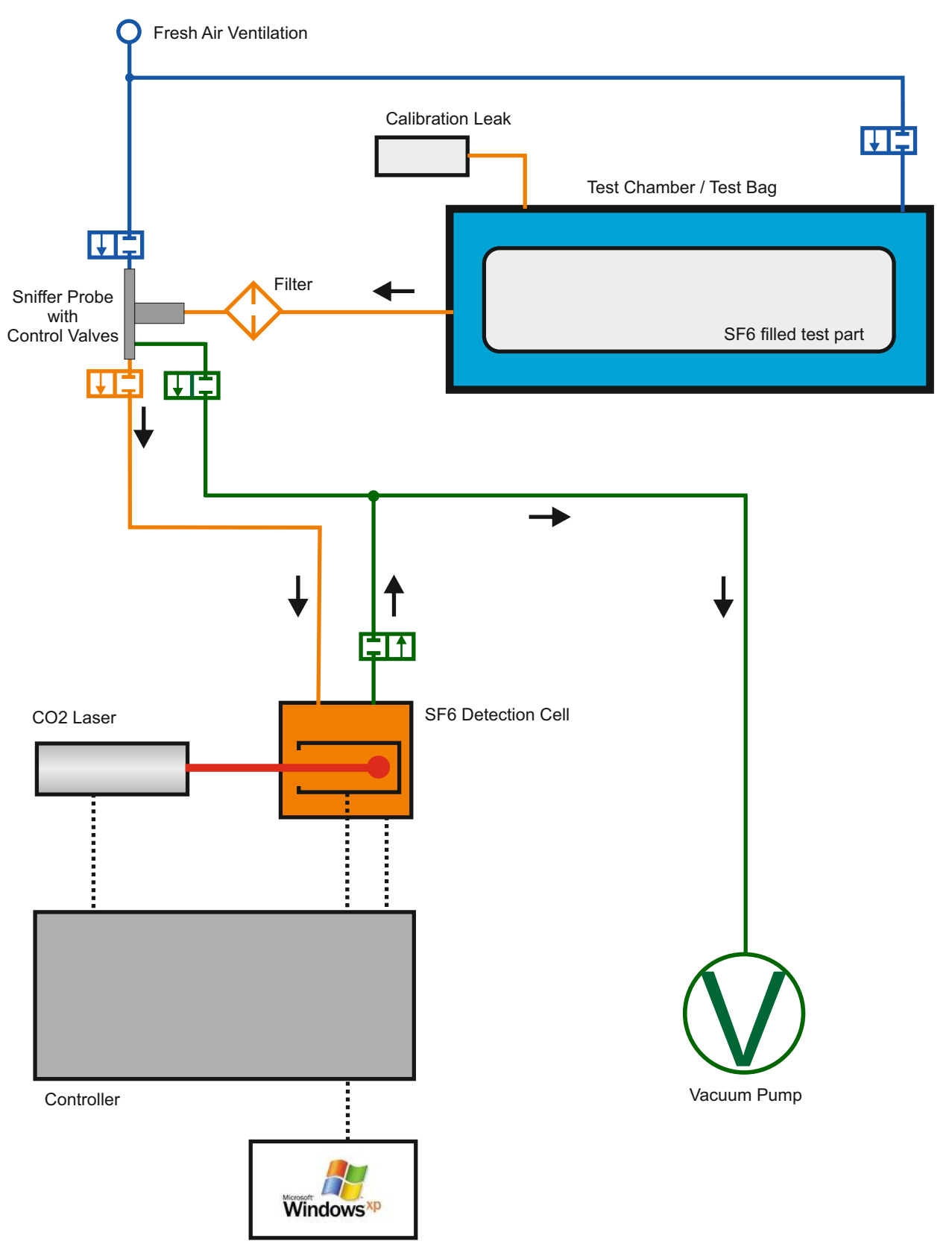
Fresh Air Ventilation
Calibration Leak
Test Chamber / Test Bag
Sniffer Probe
with
Control Valves
Filter
SF6 filled test part
CO2 Laser
SF6 Detection Cell
Controller
Vacuum Pump
Microsoft
Windows xp

SF6 LASERCHECK P3:atm

PRINCIPLE OF DETECTION

SF6 LASERCHECK P3:atm uses an advanced principle of photo-acoustic gas detection (patent pending), reaching a detection threshold as low as 0.3 ppb (parts per billion) at extremely low cross sensitivity and excellent long-term stability.

As tracer gas, the inert and non-toxic Sulphur Hexafluoride (SF_6) is used. A gas sample is transferred into the instrument's measuring chamber, where it is exposed to the pulsed beam of a wavelength-optimized CO_2 laser. The laser light is partially absorbed by the SF_6 molecules, turning part of its energy into heat. Due to the pulsation of the beam, a cyclic expansion of the gas can be observed in the presence of SF_6 molecules, which is detected as sound waves by highly sensitive microphones. The intensity of these sound waves is in a fixed ratio with the SF_6 concentration contained in the sample gas.

Unlike conventional absorption spectroscopy, the advanced principle used in SF6 LASERCHECK P3:atm makes it possible to determine, and compensate for, a beginning contamination of the internal measuring chamber. This ability accounts for its excellent long-term stability of measurement.

SYSTEM CHARACTERISTICS

SF6 LASERCHECK P3:atm is composed of a base unit, comprising the measuring cell, laser, and controller, and the atmospheric probe P3-SLS. Optionally, a leak simulator device named Pulseleak P3-PLA completes the system, providing fast and accurate fully automated calibration checks.

A personal computer running a custom control software serves as the man-machine interface. This software controls the measuring process, visualizes its results, and processes user inputs such as parameter settings. It also stores resulting data for evaluation. Statistic analysis of such data may reveal emerging problems in the production run. For many applications, no further process control devices are required.

TEST PROCEDURE

Integral measurement is actualized by placing the component under test, which is internally pressurized with tracer gas, in a sealed test chamber. Any tracer gas leaking from the component is trapped within this chamber, building up a concentration over the time of measurement. SF6 LASERCHECK P3:atm operates on gas samples taken from this test chamber.

Since measurement takes place at atmospheric pressure, very moderate requirements apply to the strength and air tightness of the test chamber. In many applications, plastic bags are used.

To ensure homogeneous distribution of possible leak gas, one or more suitable fans should be placed within the test chamber.

PRODUCT CONTENTS

1 pcs.	SF6 LASERCHECK P3:atm
1 pcs.	Operating and Evaluation Software
1 pcs.	Vacuum Pump
1 pcs.	Control Computer

Delivery time	3 - 4 weeks
Warranty	12 months

Distributor

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