

# User Manual

## SF6 GASCHECK 6000



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# 1 Remarks

## 1.1 Target group

This Instruction Manual is intended for operators who perform operation-specific settings on the **SF6 GASCHECK 6000**.

Safety instructions

Before you use the instrument, please read and comply with these instructions:

- Keep the Instruction Manual in a safe place.
- Only ISM employees may open the instrument or parts of it.
- There are no components in the instrument that require maintenance.
- Protect the instrument from moisture.
- Use the instrument only in dry places.
- Only use earthed systems that are without current.

## 1.2 Correct use

The SF6 GASCHECK 6000 leak detectors are intended only for detecting leaks and making measurements on components filled with **SF<sub>6</sub>**. Any other use is considered as incorrect.

## 2 General Specification

The **SF6 GASCHECK 6000** is the world's first truly automatic electronic leak detector requiring absolutely no operation intervention during the leak search process.

Controlled by an exclusive POWERSHIFT software, the SF6 GASCHECK 6000 continuously and automatically adjusts critical sensitivity related functions providing optimal leak searching results.

If your application requires a higher sensitivity and a calibrated measurement in [g/year], [ppm], or [cc/s] consider the **SF6 LEAKCHECK P1:p** leakdetector. For more information visit [www.ism-d.de](http://www.ism-d.de)



### 3 Features

The world's 1st truly automatic electronic leak detector for SF6

- Patented microprocessor controlled circuitry
- Exclusive POWERSHIFT™ software
- New state of the art Cold Cathode Diode (CCD) sensor
- Superior resistance to background contaminants
- Exclusive TACHOMETER style LED leak indicators
- Rugged, ergonomically correct housing fits comfortably in your hand
- Up to 75 hours or more of battery life with auto off feature
- Includes hard case, spare CCD sensor and 3 size "C" alkaline batteries



## 4 Operation Features

### TURNING THE INSTRUMENT ON

Click the START button once to turn the unit ON.

### RESETTING THE INSTRUMENT

At any time during operation, clicking the START button resets the instrument to its highest sensitivity level and balances it to ambient conditions.

### SWITCHING AUDIBLE ALARMS

The SF6 GASCHECK 6000 incorporates two user selectable audible alarm sounds. At any time during operation, simply double click the START button to toggle between the two audible alarm options. The instrument will store the current alarm setting when turned OFF, thus becoming the operation alarm the next time the instrument is powered up.

### TURNING THE INSTRUMENT OFF

At any time during operation, press and hold down the START button until the LED display turns OFF. This indicates that the unit has been shut down.

### SENSOR STATUS INDICATOR

If the sensor is damaged, every other one of the tachometer LED's will light up visibly notifying the user of the problem, and then the instrument turns itself OFF.

### LOW BATTERY INDICATOR

When the batteries reach approximately 10% of capacity, the rightmost tachometer LED will stay lit above the LO BAT legend.

### CONTROL

Single momentary push-button operates all functions of the unit:

- With the instrument OFF, click the START button once to turn it ON. The instrument is automatically calibrated and ready to search for leaks.
- With the instrument ON, holding the button down for 3 seconds turns the instrument OFF. Audible alarm setting is remembered.
- With the instrument ON, double clicking the button changes the audible alarm from high to low intensity and vice versa.
- With the instrument ON, clicking the button once resets the instrument to maximum sensitivity and nulls out any ambient contamination.

## 5 Serarching for leaks

The SF6 GASCHECK 6000 is fully automatic and need only be turned on to begin a leak search. All necessary sensitivity and calibration settings are automatically selected by the unit's advanced POWERSHIFT software providing optimal leak searching performance under any conditions.

1. Take care not to contaminate the detector probe tip if the part being tested is contaminated. If the part is particularly dirty, or condensate (moisture) is present, it should be wiped off with a dry shop towel or blown off with shop air. No cleaners or solvents should be used, since the detector may be sensitive to their ingredients.

2. Visually trace the entire SF6 GASCHECK 6000 containing system paying particular attention to all mechanical and welded joints. Each questionable area should be carefully checked with the detector. Always follow the SF6 containing system around in a continuous path so that no areas of potential leaks are missed. If a leak is found, always continue to test the remainder of the system.

4. At each area checked, the probe should be moved around the location at a rate no more than 1-2 in/s (25 to 50mm/s), and no more than .2" (5mm) from the surface, completely around the position. Slower and closer movement of the probe greatly improves the likelihood of finding a leak.

5. An apparent leak shall be verified at least once by blowing shop air into the area of the suspected leak, if necessary, and repeating the check of the area. In cases of very large leaks, blowing out the area with shop air often helps locate the exact position of the leak.

6. Following any service to the SF6 system, and any other service that disturbs the SF6 system, a leak test of the repair and of the service ports of the SF6 system should be done.

## 6 Operating tips

**WINDY CONDITIONS:** Locating leaks under windy conditions may severely impede the leak searching process. Even very large leaks may be impossible to find as the escaping gas is quickly dissipated into the atmosphere. If necessary, fabricate a gas trap using aluminum foil around joints or fittings or otherwise shield the search area from the wind.

**WHEN TO RESET THE UNIT:** It is necessary to reset the SF6 GASCHECK 6000 during a leak search if the unit becomes fully saturated, multiple leaks are present or during the leak verification process.

**LEAK VERIFICATION:** If a suspected leak is indicated, verify several times by moving the sensor away from the leak area, resetting the unit and then back to the suspected leak. If the instrument indicates a leak three consecutive times, then you have found a leak.



## 7 Maintenance

The SF6 GASCHECK 6000 Leak Detector is designed to require a minimal amount of field maintenance. Periodic replacement of the unit's sensor and batteries are the only maintenance needs.

**LOW BATTERY CONDITION:** When the batteries reach approximately 10% of capacity, the rightmost LED of the tachometer indicator (above the LO BAT symbol) will energize. The other seven LEDs will continue to function as indicators of the leak's relative size.

**CHANGING THE CCD SENSOR:** The CCD sensor assembly consists of metal and plastic components. Do not attempt to remove one component from the other. Do not use solvents or cleaning solutions for cleaning the sensor. It should be replaced when air vents become clogged. Eventually, the sensor will need to be replaced. This condition is usually indicated by abnormal or erratic performance. With the unit OFF, install the new sensor.



**CAUTION:**

HIGH VOLTAGE MAY BE PRESENT AT END  
OF PROBE WHEN SENSOR IS REMOVED.

## 8 Specifications

**SENSOR:** State of the art Cold Cathode Discharge Diode.

**TYPES OF GASES:** SF6.

**SENSITIVITY:** Fully automatic sensitivity selection with 6 visible LED range indicators. Maximum sensitivity allows detection of a 0.10 oz/yr (3 g/yr) leak of SF6.

**LEAK INDICATION AUDIBLE ALARMS:** Two user selectable audible alarm options (High and low intensity alarm tones).

**VISUAL ALARMS:** TACHOMETER bar graph display. Eight high intensity LEDs are arranged in a Tachometer-like display indicating leak intensity per the sensitivity range. GEARSHIFT display is arranged in a gearshift pattern. Seven LEDs indicate the current sensitivity range of the unit and subsequent leak size as follows:

### GEAR LEAK SIZE

**N** No Leak

**1 & 2** Small

**3 & 4** Medium

**5 & 6** Large

**OPERATING TEMPERATURE:** -18 to 60°C

**POWER:** Three size 'C' alkaline batteries

Continuous Operating battery life at 77°F (25°C):

High intensity alarm: 55 hrs

Low intensity alarm: 75 hrs

Because the instrument turns itself off after 10 min. of inactivity, the actual useful battery life may be longer than stated. See Maintenance section for LO BAT conditions.

**DIMENSIONS:** Instrument (Lx W xH): 10" x 2.3" x 2" 254mm x 59mm x 51mm.

**PROBE:** 14" (36.5cm) long, .25" (6.4mm) diameter, metal flex probe.

**WEIGHT:** 1 lbs. 2 oz. (500 grams)

## 9 Warranty & Repair Policy

**ISM** Deutschland GmbH guarantees that all products are free of manufacturing and material defects for two years. If the equipment should fail during the guarantee period it will be repaired or replaced (at our option) at no charge. This guarantee does not apply to equipment that has been altered, misused, or returned solely in need of field service maintenance. This repair policy does not include equipment that is determined to be beyond economical repair. All products being returned for warranty repair must be accompanied by an original bill of sale and customer contact information.

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