



# SF<sub>6</sub>-Leak Pointer

## Operating Manual (original version)

Type-No.: 3-033-R002



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## SF<sub>6</sub>-LeakPointer | 3-033-R002

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Please read this operating instruction before putting the device into operation. Thus operating faults can be avoided. In case of non-observance of the operating instruction the manufacturer cannot assume any liability or warranty.

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### 1. General information

#### 1.1 Safety notes and symbols used

In the following operating manuals specific safety warnings are given in order to draw your attention to residual risks which cannot be avoided during the operation of the device.

These residual risks contain dangers for

- Persons
- Product and machine
- The environment

The symbols used in the operating manuals should draw your attention specially to the safety notes:



This symbol refers to risks for persons (danger to life, danger of injury)



This symbol refers to risks for machines, material and the environment.



This symbol refers to electric shock

The most important aim of the safety notes is to prevent personal injuries.

- If the warning sign „**Danger**“, appears, danger from machines, materials and the environment are not excluded.
- If the warning sign „**Warning**“, appears, there is no danger for persons.

The corresponding symbol which is used cannot replace the text of the safety note.

Therefore the complete text must always be read.



This symbol is not for safety notes, but for information to understand the device better.

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### 1.2 Obligation to exercise due care

The device has been designed and constructed bearing in mind the standards to be observed as well as additional technical specifications.

Safe use of the machine can only be achieved if all the necessary measures are followed.

The operator has to ensure that

- the SF<sub>6</sub>-LeakPointer is only used for the purposes for which it is intended.
- the SF<sub>6</sub>-LeakPointer is only operated in accordance with the instructions and in good condition and that the safety devices are regularly checked.
- complete and legible operating manuals are available on site.
- only qualified personnel operates or repairs the device.
- this personnel is regularly instructed in safety procedures and environmental protection and that this personnel is fully aware of the complete operating manuals and particularly in the safety notes.
- the safety and warning notes mounted on the SF<sub>6</sub>-LeakPointer are legible and not removed.



**The parts inside the SF<sub>6</sub>-LeakPointer are under dangerous voltage. Therefore do not open the case in any case.**

### 1.3. Transport

The device should only be transported in the suitable box and transportation instructions of the local country have to be considered.

### Installation



Only operate the device indoors or in dry places outdoors.

The ambient temperature during operation of the device should be in the range of -20°C to +50 °C.

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### 2. Overview - SF<sub>6</sub>-LeakPointer

The SF<sub>6</sub>-LeakPointer is the world's first truly automatic electronic SF<sub>6</sub> leak detector requiring absolutely no operation intervention during the leak search process. Controlled by an internal software, the SF<sub>6</sub>-LeakPointer continuously and automatically adjusts critical sensitivity related functions providing optimal leak searching results under any conditions.

### 2.1 Technical data



SF<sub>6</sub>-LeakPointer

#### Dimensions of the device:

Length (L):	254 mm / 10"
Width (B):	59 mm / 2.3 "
Height (H):	51 mm / 2"
Weight:	0.5 kg / 1lbs. 2 oz.



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### Dimensions with case:

Length (L): 300 mm / 11.8"  
Width (B): 230 mm / 9.1 "  
Height (H): 75 mm / 3"

Weight with case and accessories: 1.2 kg / 2lbs. 9 oz.

### Dimensions of the probe: (metal flex)

Length (L): 365 mm / 14"  
Diameter: 6.4 mm / 0.25"

### General data:

Sensor:	State of the art Cold Cathode Discharge Diode
Response time T90:	approx. 1s
Recovery time:	approx. 1s
Ambient moisture:	up to 90% relative moisture, non-condensing during operation
Operating temperature:	-20° - +50 °C / -4 to 122 °F
Sensitivity:	Fully automatic sensitivity selection with 6 visible LED range indicators. Maximum sensitivity allows detection of approx. 5 g/yr.
Audible alarms:	Two user selectable audible alarm options (High and low intensity alarm tones)



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Visual alarms:

TACHOMETER bar graph display. Eight high intensity LEDs are arranged in a Tachometer-like display indicating leak intensity per 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

Power:

Three size 'C' alkaline batteries (NEDA/ANSI 14A)

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

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.

## **2.2 Standard accessories**

- 1 Carrier case
- 3 1.5 V alkaline batteries
- 1 Spare sensor
- 1 Operating manual (multilingual) on CD-ROM

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### 3. Description and operation of the device

#### 3.1 Features

The main features of the SF<sub>6</sub>-LeakPointer are:

- First truly automatic electronic leak detector.
- High sensitive SF<sub>6</sub> detection.
- Patented microprocessor controlled circuitry.
- Exclusive software controlling automatically all sensitivity related settings, simplifying user operation.
- New state of the art Cold Cathode Diode (CCD).
- Superior resistance to background contaminants.
- Exclusive TACHOMETER style LED leak indicators.
- Rugged, ergonomically correct housing fits comfortably in your hand.
- Up 75 hours and more of battery life with auto off feature.
- Includes hard case, spare CCD sensor and 3 size “C” alkaline batteries.
- Certified to CE



**High Output Alarm Speaker**

**8 LED Tachometer Display**  
Enables user to pinpoint the exact location of a leak source.

**LED display for Leak Sizing**  
Allows user to determine the approximate size of a leak.

**One Button Operation**  
For reset, change audible alarm, and shut off.





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### **3.2 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 SF<sub>6</sub>-LeakPointer 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 instruments will store the current alarm setting when turned OFF, thus becoming the operation alarm the next time the instrument is powered on.

#### **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.



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### 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 settings 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.

### **3.3 Searching for Leaks**

The SF<sub>6</sub>-LeakPointer 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 installed software providing optimal leak searching performance under any conditions.

Recommended Leak Search Procedure Notes:

- 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 sensitive to their ingredients.
- Visually trace entire SF<sub>6</sub>-filled equipment to be investigated and look for signs of damage and corrosion on all components. Each questionable area should be carefully checked with the detector controls, service points with caps in place, brazed or welded areas, and areas around attachment points and hold-down on lines and components.
- Always follow the SF<sub>6</sub>-filled equipment 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 equipment.
- At each area checked, the probe should be moved around the location at a rate no more than 25 to 500 mm/s (1-2 in/s), and no more than 5 mm (0.2") from the surface, completely around the position. Slower and closer movement of the probe greatly improves the likelihood of finding a leak.



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### **3.4 Operating Tips**

#### **UNDER 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 foils around joints or fittings or otherwise shield the search area from the wind.

#### **WHEN TO RESET THE UNIT**

It is necessary to reset the SF<sub>6</sub>-LeakPointer 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.

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### 4. Maintenance

The SF<sub>6</sub>-LeakPointer 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, the old sensor can be removed by screwing off and the new one can be screwed on afterwards. DILO recommends that you always have a spare sensor available for replacement in the field.



**Warning**

Only authorized personnel should carry out maintenance works in accordance with maintenance instructions and regulations for the prevention of accidents.

In case of non compliance this could result in considerable damage to the equipment.