SF6 LEAKMATE

User manual V1.0



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DECLARATION OF CONFORMITY

Name und Adresse des Herstellers / Manufacturer´s name and address ISM Deutschland GmbH, Laubach 30, D-40822 Mettmann, Germany

ISM Deutschland GmbH declare the conformity of the product

Bezeichnung / Product name: SF6-Lecksuchgerät / SF6-Leak Detector

Typ / Type:

SF6 LEAKMATE

Mit den folgenden Bestimmungen / with the following applicable regulations:

DIN EN 61326-1 VDE 0843-20-1:2013-07, Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen Gruppe 1, Klasse B (Störaussendung) / Electrical equipment for measurement, control and laboratory use – EMC requirements. Group 1, Class B equipment - (emissions section only)

DIN EN 61326-1 VDE 0843-20-1:2013-07, Elektrische Mess-, Steuer-, Regel- und Laborgeräte - EMV-Anforderungen (Störfestigkeit) / Electrical equipment for measurement, control and laboratory use – EMC requirements. Industrial location immunity - (immunity section only)

CFR 47:2008 Class A
Code of Federal Regulations: 15 Subpart B- Radio Frequency Devices - Unintentional Radiators.

Andere Richtlinien / Other Standards

EN ISO 9001: 2015 Qualitätsmanagementsysteme– Anforderungen / Quality Management System – Requirements

ISM Deutschland GmbH

C. VERLEY - CEO



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Introduction

The SF6 LEAKMATE is a highly sensitive, processor controlled SF_6 leak detector for mobile use, based on the proven detection principle of Negative Corona Discharge. It is small, lightweight, and easy to operate even for untrained personnel. With its audible and visual alarm indications and adjustable sensitivity, it is optimally suited for not only finding but also pinpointing SF_6 leaks down to approximately 1E-6 cc/s.

Warnings

In confined spaces, a severe SF_6 leak can flood the room to a concentration where oxygen is deprived to a dangerously low level. Entering such confined spaces poses serious danger of asphyxiation. Always ventilate such rooms before entering.

Do not operate the instrument with no sensor tip in place; there is risk of electric shock.

Commissioning

3.1. Battery Installation

Hold the instrument with the probe facing downwards, and the front panel towards you. With a firm press by thumb, slide the battery compartment door towards the back of the instrument, and remove it.

Batteries are inserted with the positive cap facing outwards, as indicated by the marking visible inside the battery compartment.

3.2. Installing / Replacing the Sensor Tip

WARNING: Do not power up the instrument when no sensor tip is in place. Doing so may pose hazard of electric shock.

Make sure the instrument is powered down before removing the sensor tip.

The sensor tip is installed by gently screwing it on hand-tight.

Only use sensor tips that are specified for this instrument. Using any other type of sensor tips, even if they may mechanically fit, will result in compromised detection performance.

Operation

4.1. Turn the detector on/off

Press the ON/OFF button to power up the detector. During the instrument's initialization phase, which takes about 5 seconds, all LEDs of the indicator bar will be lit. Then, the detector zeros itself to the ambient atmosphere and only the first LED will be lit, indicating the instrument is now ready for operation.

At this point, observe the colour of the first LED to check battery status:
Green = batteries are good
Orange = batteries are getting low, replace as soon as possible, Red = insufficient power for normal operation.

Press ON/OFF again to power down the detector.

4.2. Recommended Leak Detection Procedures

4.2.1. Principle of detection

The SF6 LEAKMATE is built for relative detection, i.e. it will respond to positive changes in SF_6 content of the sample air. Therefore, any background contamination is effectively suppressed. The RESET button is used to trigger zeroing manually should conditions change during detection.

4.2.2. Precautions

Be sure to ventilate any closed space before entering to remove potentially dangerous concentrations of SF_6.

Be sure to remove any oil, condensed water or other liquids from the device under test before you begin.

4.2.3. Spotting Leaks

Since the detector by design exhibits a certain level of response to the proximity of metal surfaces, please observe the following procedure.

After turning on, bring the sensor tip in touch with the component under test. Always approach surfaces at an angle, never flat on which would obstruct the air exchange in the sensor, and lead to false alarms.

Then, press RESET and start detecting.

The audible and visual alarms will respond to the presence of SF_6 now. Scan the surface at a speed of approx 25 mm / 1 inch per second or less. When an alarm occurs, reverse, and with slower movement find the spot of highest response. For big leaks, use the SENSITIVITY buttons to reduce the response as required so as to be able to find the peak concentration.

Maintenance

5.1. Cleaning

Maintenance restricts to cleaning the instrument with a damp cloth, use mild detergent if required. Do not use any solvents as they may be aggressive to the case material.

5.2. Sensor tip

The sensor tip may get contaminated over time, when a decay in sensitivity becomes apparent soak it in absolute alcohol for a few minutes, then dry it carefully with compressed air. Again, never use solvents; they may destroy the sensor tip. Always turn the instrument off before removing the sensor tip!

5.3. Batteries

Always unload the batteries from the instrument when it is stored for extended periods of time. Exhausted batteries may leak aggressive acid and damage the instrument.

Troubleshooting

The detector fails to turn on:

- Batteries may be too weak to enable normal operation. Change batteries.
- Under harsh environmental conditions, the pole connector in the battery compartment door may have become oxidized. Clean off any oxide and try again.

The detector won't respond to a known leak

- The sensor tip may be contaminated.
  Clean as pointed out above.
- The sensor tip is subject to aging and may be worn. Use a new sensor tip.

The detector gives false alarms

- The ambient atmosphere's content of detectable substances may have changed Press RESET to suppress any background levels that may be present.
- The sensor may be contaminated or worn out.
  Clean sensor as described above, or use new sensor.
- The sensor was brought in contact with a metallic surface.
  Press RESET while in contact with the specimen to readjust the detector.
- The air exchange in the sensor was obstructed.
  Always approach surfaces at an angle, never flat on. Press RESET to readjust the detector.

Technical Data

Detector Type	High Voltage Ionization
Sensitivity	approx. 1E-6 mbar l/s for SF_6
Response / Recovery Time	approx. 1s
Audio	Frequency keyed alarm sound
Display	7 pos. LED Bar, tricolour
Probe	355 mm long, flexible
Self-Diagnostics	No
Certifications	CE-Declaration of Conformity
Dimensions	330 x 280 x 125 mm incl. Case
Weight	2100 g incl. Case and Accessories

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