

HZIR-2000 SF6 Quantitative Leak Detector

USER MANUAL

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1 Function introduction

SF6 double infrared quantitative leak detector is mainly used for leak detection about SF6 related products in electric power industry, which include GIS and SF6 insulated circuit breaker and SF6 gas inflatable ring network cabinet, etc. The equipment focus on various advantages in one, fully considers the characteristics of field application, and it is designed to be light weight, portable, non-radioactive, does not need argon, rapid response, high precision, high sensitivity and is not affected by the environment gas.

SF6 quantitative leak detector adopts double liquid crystal display, it can display SF6 concentration in real time and operation is very simple. Besides, it has built-in rechargeable lithium battery, AC/DC.

SF6 quantitative leak detector is easy to operate and carry, and it can detect the minimum concentration of SF6 gas in the air. The main technical structure characteristics of the instrument are its sensitivity, response time and stability, furthermore, it can against humidity and toxic gases. Based on the technological principle of the double wave non-dispersive infrared, SF6 gas leakage infrared leak detector provides a reliable and high accurate performance and features of less maintenance. SF6 gas leakage infrared leak detector has a significant development to detect and identify the minimum leakage of SF6 gas equipment indoor and outdoor. For its different video alarm levels, it is the best tool to reduce environmental pollution and SF6 gas leakage.

Main applications: 1, GIS Switchgear; 2, SF6 circuit breakers, switchgear; 3, SF6-related electrical equipment.

2 Technical indicators

Measuring principle: double wave dispersive infrared spectrometer (NDIR)

Detection Range: 0 ~ 1500 PPM SF6

Sensitivity: 1 PPM

Repeatability: 0.3%

Storage temperature rating: - 40 ~ + 70 °C

Operating environment:

temperature: - 10 ~ + 60 °C

relative humidity: ≤90%RH



Sampling method: built-in solenoid diaphragm pumps, automatic suction

Alarm: sound and light alarm

Operating voltage: 220VAC \pm 10% 50Hz, AC and DC, continuous working hours

Weight: Console: 2.5 kg, pistol: 0.5kg

3 Features

Non radioactive material, easy to store and transport

less maintenance (maintenance once every five years) and no wear and tear parts

not bound by moisture content

it has particle filter for protecting the sensor

not bound by the contaminants

internal pump fast response time, only 1 second

no consumables

high sensitivity, can detect the PPMV SF6 gas in the air dropped to 1 ppmv

4 Structures

The SF6 gas infrared leak detector consists of a host, a hand-held detection gun, a carrier tape, a battery charger and so on.

5 Application Operation

5.1 Boot

Press the switch on the lower left of front panel for about 10 seconds, to open the SF6 gas infrared leak detector. Then the host screen will display "8" from left to right in turn. After hearing a sound of "di", successfully boot. Pistol display enter the countdown 60 seconds and the instrument enter the calibration initialization, the instrument can begin to measure after the calibration.

5.2 Measurement

Through carrier tape over one's shoulder to carry the instrument, and use the hand-held detection gun of the instrument to detect every detecting point of device which filled with SF6 gas indoor and outdoor. There is a complete pump in the host, and it can inhale surrounding air from pistol nozzle orifice to the internal sensor.

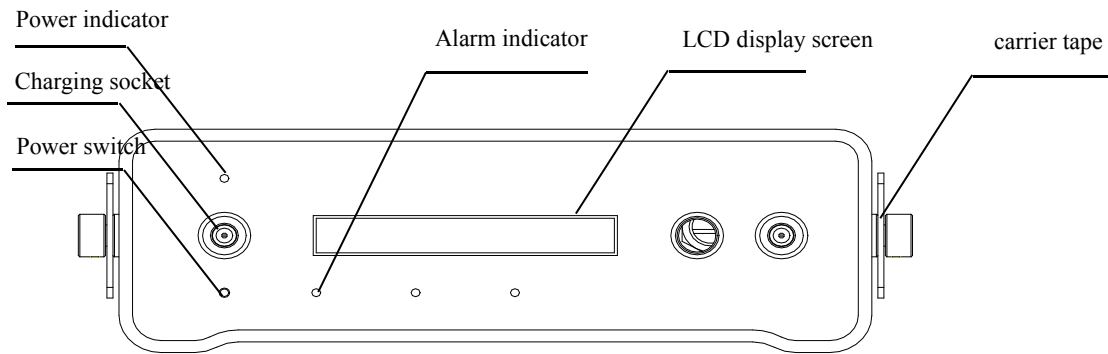


5.3 Shutdown

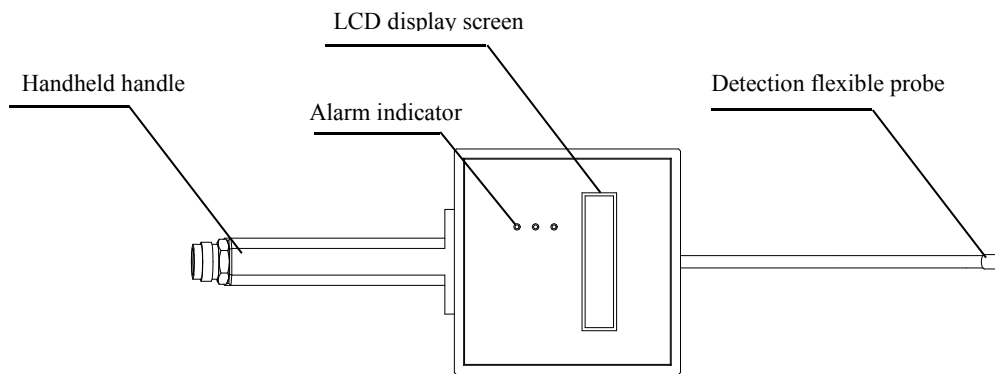
Press the switch on the lower left of front panel for about 10 seconds, to turn off the SF6 gas infrared leak detector. After hearing a sound of “di”, successfully shutdown.



6 Introduction of the instrument panel functions



Instrument host diagram



Detection pistol diagram

7 Leakage rate calculation

Use a sealed bag to bind up the suspected leak part or the whole part (like the figure below), And place a certain amount of time, nnsert the probe into the bag after a while to detect the concentration of SF6 gas in the bag. The leakage rate of detected part can be calculated according the formula following:

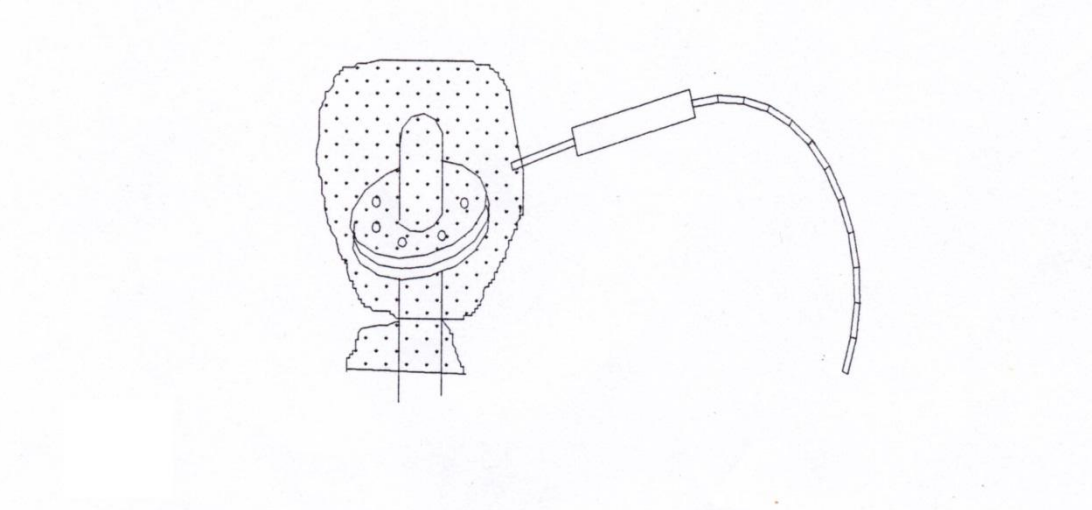
$$Q=VM/(T \times 10^{-6})(L/H)$$

Q~~ leakage rate

V~~ volume of the bag - volume of the detected part

M~~ the reading of the instrument

T~~ leaving time



8 Notes for use

8.1 The use matters needing attention

- (1) Avoid violent vibration to prevent damaging the instrument.
- (2) Check whether the battery power is adequacy or not frequently, it should be charged when the battery is low, and the battery must be filled for long-term storage.

8.2 Equipment maintenance

- (1) If the instrument does not to be used for a long tine, it must be fully charged for storage.
- (2) The calibration cycle is one year at normal situation, and it should based on specific conditions.
- (3) How long it will take for charging once generally? And when the chargeing is over?

Charging time are different according to actual electric quantity, it can be fully charged at 2~3 hours usually. The charge indicator is red when charging, and the charging circuit is equipped with the overcharge protection device, when the battery is enough, the charging process automatically end and charging indicator light changed from red to yellow.