

Dear Client,

Thank you for purchasing our XP-1A Handheld SF6 Leak Detector. Please read the manual in detail prior to first use, which will help you use the equipment skillfully.



Our aim is to improve and perfect the company's products continually, so there may be slight differences between your purchase equipment and its instruction manual. You can find the changes in the appendix. Sorry for the inconvenience. If you have further questions, welcome to contact with our service department.



The input/output terminals and the test column may bring voltage, when you plug/draw the test wire or power outlet, they will cause electric spark. PLEASE

**CAUTION RISK OF ELECTRICAL SHOCK!**

## ◆ **SERIOUS COMMITMENT**

All products of our company carry one year limited warranty from the date of shipment. If any such product proves defective during this warranty period we will maintain it for free. Meanwhile we implement lifetime service. Except otherwise agreed by contract.

## ◆ **SAFETY REQUIREMENTS**

Please read the following safety precautions carefully to avoid body injury and prevent the product or other relevant subassembly to damage. In order to avoid possible danger, this product can only be used within the prescribed scope.

*Only qualified technician can carry out maintenance or repair work.*

--To avoid fire and personal injury:

### **Use Proper Power Cord**

Only use the power wire supplied by the product or meet the specification of this produce.

### **Connect and Disconnect Correctly**

When the test wire is connected to the live terminal, please do not connect or disconnect the test wire.

### **Grounding**

The product is grounded through the power wire; besides, the

ground pole of the shell must be grounded. To prevent electric shock, the grounding conductor must be connected to the ground.

Make sure the product has been grounded correctly before connecting with the input/output port.

### **Pay Attention to the Ratings of All Terminals**

To prevent the fire hazard or electric shock, please be care of all ratings and labels/marks of this product. Before connecting, please read the instruction manual to acquire information about the ratings.

### **Do Not Operate without Covers**

Do not operate this product when covers or panels removed.

### **Use Proper Fuse**

Only use the fuse with type and rating specified for the product.

### **Avoid Touching Bare Circuit and Charged Metal**

Do not touch the bare connection points and parts of energized equipment.

### **Do Not Operate with Suspicious Failures**

If you encounter operating failure, do not continue. Please contact with our maintenance staff.

### **Do Not Operate in Wet/Damp Conditions.**

### **Do Not Operate in Explosive Atmospheres.**

### **Ensure Product Surfaces Clean and Dry**

## — **Security Terms**

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Warning: indicates that death or severe personal injury may result if proper precautions are not taken

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Caution: indicates that property damage may result if proper precautions are not taken.

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# Content

I. Overview .....	6
II. Features .....	6
III. Instrument composition .....	7
IV. Preparation .....	7
V. Operation instruction .....	8
VI. Leakage preparation .....	10
VII. Precautions .....	10
VIII. Application .....	11
IX. Maintenance .....	11
X. Technical parameters .....	12

## **I. Overview**

Micro-tech central processing unit is the core of the product; its digital signal processing capabilities can better manage the circuit and deal with the detection signal. Due to extensive use of integrated circuits reduce the quantity of circuit elements 40%, greatly improve the reliability and efficiency. Microprocessor can monitor probes and battery voltage with 4000 times per second, tiny signal can also be captured, in any circumstance can work stable and reliable.

The detector adds some convenience features: sensitivity increase 64-fold, tri-color light emitting diode in a progressive manner indicated a wide range of degree of leakage. It is also used to display the sensitivity level and battery; touch keyboard all operations; avant-garde slim type design greatly facilitates the user to use and maintain;

Before using the equipment must read this manual carefully! After reading this manual, if you have any questions or suggestions, please feel free to contact us!

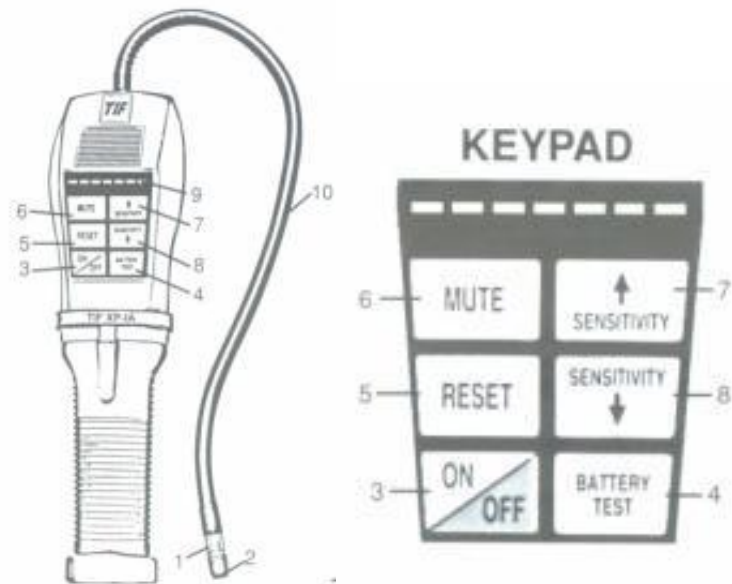
## **II. Features**

1. Adopt microprocessor control with advanced digital signal processing capabilities.
2. Three -color video display.
3. Seven-gear sensitivity setting, maximum enhanced 64 times.
4. Touch Keyboard.
5. Adjust sensitivity at any time.
6. Automatic battery test function.
7. Battery voltage indication.
8. Detect R134a, R12, R22.
9. Can detect all halogen refrigerants.

- 10. Vacuum mechanical pump sampling; provide positive draft for the probe.
- 11. With gradient function.
- 12. Wireless, portable, just need two batteries.
- 13. 35 cm flexible stainless steel probe rod.

### III. Instrument composition

- 1. Probe
- 2. Probe guards
- 3. Power switch
- 4. Battery test
- 5. Reset
- 6. Audio gradient
- 7. Sensitivity increase
- 8. Sensitivity reduce
- 9. LED indication
- 10. Flexible probe



### IV. Preparation

#### Battery install

As shown, remove battery cover at the bottom of the product; insert the battery, the negative electrode outward (toward the direction of the battery compartment cover). See figure 2.



## V. Operation instruction

### 1. Power indicate/ battery test

The instrument has two ways to indicate the battery status.

One is permanent state. By leftmost LEDs indicate battery.

Specific instructions are as follows:

GREEN: normal battery power.

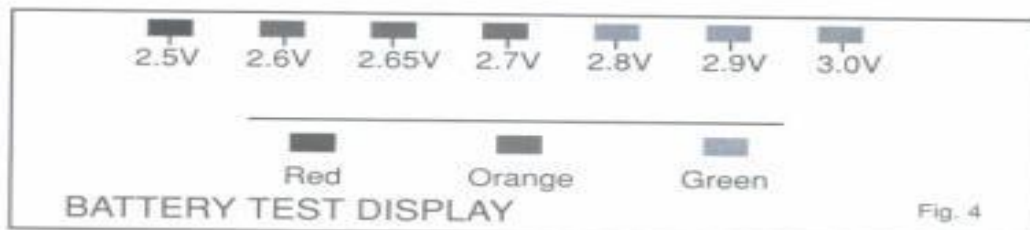
ORANGE: low battery, battery should be replaced as soon as possible.

RED: battery power is low, unable to work.



Another is battery test status. Press the battery test button to test the battery. Three-color light-emitting diodes indicates the actual battery voltage.

(See figure 4)



If you press and hold the Battery Test button, display the battery voltage. Release the battery test button to return to the normal state.

### 2. Automatic circuit / Reset function

The instrument has an automatic circuit, and a reset button, the instrument can ignore environmental levels of refrigerant.

Automatic circuit - when you turn on the switch, the instrument ignores refrigerant concentration of the environment, is set to zero. Only when the concentration is greater than this level it warning.

Note: If the probe in leak position switched on, the leak cannot be



measured.

Reset function - Press the reset, clear reset function. When you press the reset button, the instrument will be reset to zero, ignoring the presence of refrigerant around the probe. Such operations can be detected at higher concentrations. The instrument is reset to a clean air can be adjusted to the maximum sensitivity. When you press the reset button, light-emitting diodes (except the leftmost outer) will turn orange, about one second to confirm the reset operation.

### 3. Sensitivity adjustment

The instrument has a seven-gear adjustable sensitivity. Press the button to increase or decrease the sensitivity, the corresponding sensitivity is indicated by LEDs. "Beep" may indicate the frequency difference sensitivity.

When turned on, the instrument automatically identified as the 5th gear.

Press the key to increase/ reduce sensitivity key, you can adjust the sensitivity.

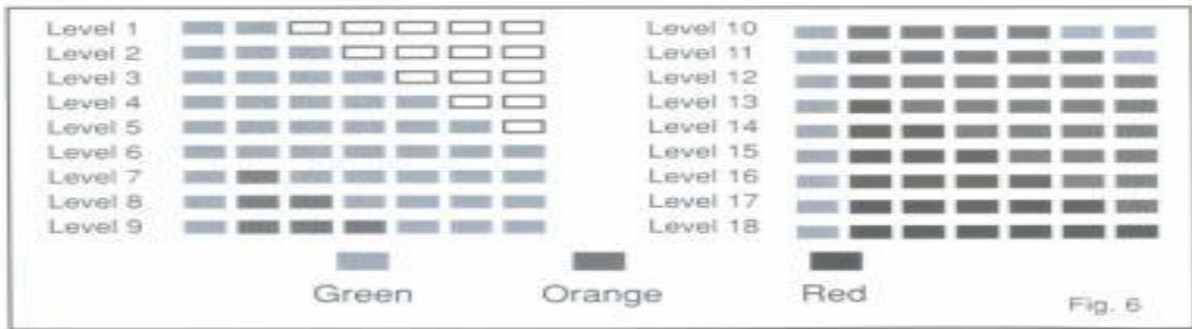
When you press the button to adjust, the light-emitting diode display in red.

\* Each increase (or decrease), indicate the relative sensitivity change doubled, which makes this the largest increase instrument sensitivity 64 times.



### Alarm

The instrument has 18 alerts, thus clearly indicating the relative leak volume and strength. Progressive indication can be used to locate the leak point. Because the increased alert level indicates that the source of the leak is approaching (at the highest concentration). Each level by the corresponding the red, green and orange light-emitting diodes, said one (see Figure 6).



First, the green from left to right, then orange, and replace green individually. Finally, from left to right in red, orange is replaced individually.

## VI. Leakage preparation

1. Open the battery switch, the light-emitting diode displays reset indication 2 seconds (left green light, other light orange).
2. By observing the light emitting diode to check battery power.
3. When turned on, the product default sensitivity is level 5; you can hear the interval stable "beep" sound, if necessary, change the sensitivity by sensitivity adjustment key.
4. When gas leak is found, "beep" will be rapid; the arc tube will also change according to changes in the way light emission concentration.
5. Spiritual sensitivity can be adjusted at any time when in operation, and does not affect the test.
6. As before the leak source is located, has the highest warning (red light emitting diode 1 Green 6). Should reset button reset to zero reference level.
7. To ensure accurate and reliable measurement, you can often reset operation.

## VII. Precautions

1. Only when the leak could not be detected, increase sensitivity. When the instrument cannot be reset by "Reset", the sensitivity can be reduced.
2. In heavily polluted areas, the instrument should be reset in time to

eliminate the environmental impact of the instrument. Do not move the probe when reset. The instrument can be reset as many times as needed.

3. Windy areas, even a large leak is also difficult to find. In this case, the best blocking potential leak area.

4. Alarm may come if contact with moisture or solvents probe, therefore, check for leaks to avoid contact with them.

## VIII. Application

This instrument applies:

1. Other systems and storage / recovery containers leak. Applies all halogenated (including chlorine and fluorine) refrigerants work / include, but are not limited to:

CFCS e.g.R12,R11,R500,R503etc...

HCFCs e.g.R22,R123,R124,R502etc...

HFCs e.g.R134a,R404a,R125etc...

Other mixtures may also be detected, such as the AZ-50, HP 62, MP39etc.

2. Hospital disinfection equipment has detected ethylene oxide leak (detected carrying the halogen gas).

3. Detect SF6 of high voltage circuit breaker.

4. Detecting most of chlorine, fluorine and bromine gas (halogen gas).

5. Detection equipment for dry cleaners, such as carbon tetrachloride.

6. Detecting a halogen gas extinguishing system.

## IX. Maintenance

**Warning: Be sure to turn off the power before replacing the probe, it may cause a slight electric shock!**

Keep the probe clean: use the protective cover to prevent dust, moisture, grease blocking probe. This product is forbidden to use when protective cover

removed

Before using this product, you have to check the probe and shield are free from dust or grease.

**Clean:**

1. Remove the protective cover.
2. Use industrial towel or compressed air to clean the cover.
3. If the probe is dirty, it can be immersed in a mild detergent such as alcohol for a few seconds, then use industrial towel or compressed air to clean.

**Note: Never use gasoline, turpentine, mineral oil, solvents, because they will be left on the probe and reduces instrument sensitivity.**

**Replace probe:** probe total failure finally, in need of replacement. As the probe life is directly related to conditions and frequency of use, therefore difficult to forecast the exact replacement time. When an alarm or instability in the clean, pure air, the probe should be replaced.

**Replace probe steps:**

1. Confirm that the product is turned off.
2. Counterclockwise unscrew the old probe.
3. Clockwise install the alternate probe in the accessory case.

## **X. Technical parameters**

1. Power supply: DC 3V, two alkaline batteries.
2. Maximum sensitivity: R12, R22, R134a are approved by (14 g / year).
3. Sensitivity limit: Less than 3 g / year for halogen refrigerants.
4. Usage time of probe: About 20 hours.
5. Temperature: 0°C-52°C.
6. Usage of battery: About 30 hours under normal use.
7. Working method: Continuous, unlimited.
8. Response time: instantaneous.
9. Reset time: 1s

10. Warm-up time: about 2s.
11. Weight: 560 g.
12. Dimension: 22.9×6.5×6.5cm.
13. Length of probe rod: 35.5cm.