

FNIRSI™

SFD-02

V1.0

FORMALDEHYDE DETECTOR INSTRUCTION MANUAL



※Please read this instruction manual carefully before using the product and keep it properly.

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1. Safety Requirement

1.1 Environmental Requirement

Precautions

- Avoid direct sunlight, high temperature, open flames, corrosive gases, damp or dusty environments to prevent equipment malfunction.
- Always place the equipment on a stable and solid surface. Never place it on soft surfaces such as carpets or blankets.
- Ensure that ventilation openings are not obstructed to prevent overheating of the equipment.

Keep away from the following items

- Heater: Avoid risk of overheating or fire.
- Air conditioners, ventilation equipment: Prevent condensation from causing short circuits.
- Water sources, chemicals, solvents: Leaks may damage the equipment or cause fires.
- Strong magnetic equipment: Prevent magnetic fields from interfering with the normal operation of the device.



Do not dispose of used batteries or devices with household waste; dispose of them according to national or local regulations.

2.Product Overview

2.1 Product Introduction

FNIRSI SFD-02 Formaldehyde Tester is an air quality testing instrument designed for formaldehyde and TVOC concentration monitoring in indoor environments such as homes and offices. It not only displays formaldehyde concentration, TVOC concentration, humidity, time and other data in real time, but also provides formaldehyde hazard assessment and historical record query functions. With multiple intelligent functions, SFD-02 helps users effectively understand air quality and ensure the safety and health of the indoor environment.

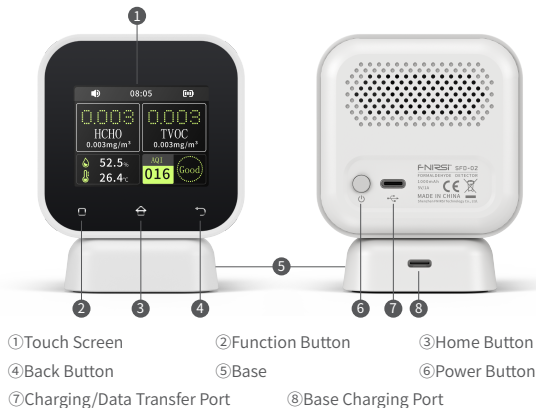
The main features of the product are:

- Real-Time Monitoring:** Real-time display of formaldehyde concentration, TVOC concentration, air humidity and current time, to fully understand the air quality status.
- Air Quality Assessment:** Provides formaldehyde hazard assessment function to help users identify potential health risks in the air.
- Historical Recording:** Supports historical data recording of formaldehyde concentration and TVOC concentration, allowing users to view changes in air quality over a period of time.
- Spatial Average:** Calculates the spatial average for formaldehyde and TVOC, aiding users in more accurately assessing air quality.
- Formaldehyde removal calculator:** Intelligently calculates formaldehyde removal time, cost and required materials based on house area, house type, average formaldehyde content and formaldehyde removal method.
- Alarm Threshold Setting:** Users can set alarm thresholds for formaldehyde and TVOC according to their needs. If these thresholds are exceeded, the device immediately alerts, ensuring indoor air safety.

● **Calendar Function:** Displays the current date, time, and humidity, providing convenient time management functionality.

The SFD-02 formaldehyde tester integrates precise monitoring and intelligent analysis, providing a comprehensive and scientific air quality management solution for your living and working environment.

2.2 Product Description



2.3 Home Page Description



①Volume

②Time

③Battery level

④Formaldehyde Concentration

⑤TVOC Concentration

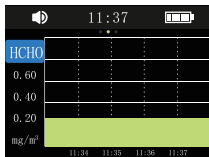
⑥Humidity

⑦Date

⑧Hazard Assessment

2.4 Record Drawing Page Description

In the formaldehyde concentration curve interface, users can intuitively view the changing trend of formaldehyde concentration over a period of time. The curve is generated by continuously recording the value of time as the horizontal axis and formaldehyde concentration as the vertical axis, which clearly reflects the fluctuation of air quality. The curve will be automatically updated according to the real-time monitoring data to help users keep track of air quality changes at any time.



※Click **【Formaldehyde】** to switch (Formaldehyde measurement) to **【TVOC】** (Indoor organic gaseous substances) measurement.

2.5 Historical Record Monitoring Interface

This interface provides users with detailed records of formaldehyde concentration over a period of time and the calculated average values, facilitating the assessment of long-term air quality conditions.



※The monitoring time must be longer than 1 hour, and the measured data will be of reference significance.

2.6 Function Page Description

Toolbox:

•Formaldehyde Removal Calculator:

Calculate the time, cost and materials for formaldehyde removal based on house area, house type, average formaldehyde amount and formaldehyde removal method.

•**Alarm Threshold Settings:** Set the alarm threshold of formaldehyde concentration and TVOC concentration. When the set quotation threshold is exceeded, the buzzer will sound an alarm.

•**Perpetual Calendar:** Displays the currently set date, time, and air humidity.



Sound and light settings: adjust the sound and brightness settings.



System clock: set the system date and time.



Standby settings: set the standby time, never, 5 minutes, 15 minutes, 30 minutes. When the inactivity time exceeds the set standby time, the system enters the 2.7 sleep interface.



Scheduled shutdown: set the scheduled shutdown, never, 30 minutes, 60 minutes, 90 minutes. When the inactivity time exceeds the set time, the device automatically shuts down.



Language settings: switch between Simplified Chinese and English.



Factory Reset:Click Reset to Factory Settings, then click Confirm to Reset to Factory Settings.



About:Brand information, version number.



2.7 Sleep Interface

If there is no operation during the set sleep time, the sleep interface will be entered. The expression on the sleep page will change with the formaldehyde safety level.

The higher the concentration, the more unhappy the expression. Click the  key to exit.



3. Technical Specifications

3.1 Model Parameters

Screen Material	2.4-inch tempered glass touch HD color
Backlight	Backlight brightness adjustable
Power Supply	TYPE-C (5V/2A)
Battery	1000mAh
Language	Chinese, English
Product Size	≈75x45x95mm
Bare Weight	≈193g

3.2 Technical Parameters

Parameter	Formaldehyde	TVOC
Range	0-2000PPM	0-10mg/m ³
Detection Hardware	Electrochemistry	Semiconductors
Preheat Time	5S	120S

3.3 Formaldehyde Level Classification

Level	Range
Excellent	0mg/m ³ -0.08mg/m ³
Good	0.08mg/m ³ -0.1mg/m ³
Mild	0.1mg/m ³ -0.2mg/m ³
Moderate	0.2mg/m ³ -0.3mg/m ³
Severe	0.3mg/m ³ or above

4.Operation Guide

- ① Press and hold the power button on the back of the machine to turn it on, and then jump to the home page.
- ② Swipe left to enter the history drawing page.
- ③ Swipe left again to enter the history monitoring interface.
- ④ Click the  key to enter the function interface and use related functions and parameter settings.
- ⑤ Click the  key to return to the previous interface.
- ⑥ Click the  key to return to the home page.
- ⑦ Wait for a period of time without operation to automatically enter the sleep page, click the  key to exit.

5.Quick Start Guide

Step 1: Power on and Preparation

- ① Press and hold the power button to power on, wait for the screen to light up and complete system initialization.
- ② Place the tester in the test environment, away from direct ventilation and strong light exposure areas, and keep it still for at least 2 minutes to ensure accurate data.



Step 2: Real-Time Measurement of Air Quality

- ① After the instrument is turned on, the main interface will display:

- Formaldehyde concentration (unit: mg/m^3)
- TVOC concentration (unit: mg/m^3)
- Humidity and time

- ② Carefully observe the formaldehyde concentration value on the screen:

- When the formaldehyde concentration is lower than $0.08\text{mg}/\text{m}^3$, the air quality is safe.
- Above $0.08\text{mg}/\text{m}^3$, it means that the environment may have health risks.



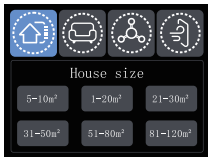
Step 3: Calculate the Time and Cost of Formaldehyde removal

- ① Enter the function page: select the formaldehyde removal calculator function.



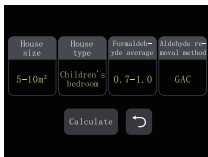
② Enter the actual parameters according to the prompts:

- House area (unit: m²)
- House type
- Average formaldehyde concentration measured currently
- Select formaldehyde removal method



③Click **【Start Calculation】**, the system will automatically calculate:

- Estimated time required
- Approximate cost



Step 4: Set Formaldehyde and TVOC Alarm Thresholds

①Enter the toolbox and select the alarm threshold function.



②Enter the formaldehyde concentration alarm value (recommended: 0.08mg/m³) and TVOC concentration alarm value (recommended: 0.30mg/m³).

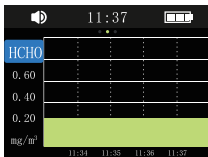


③Click  , the system will activate threshold monitoring:

- When exceeding the standard, the device will sound an alarm to remind the user to deal with it in time.

Step 5: View Historical Data and Spatial Average Values

① Swipe right from the main page to view the curve of formaldehyde concentration changes over time.



② Swipe right again to get the average formaldehyde and TVOC concentrations over a period of time to evaluate the overall air quality.



Step 6: Optimize settings

① Sound and light settings: adjust the alarm volume and screen brightness as needed.



② Standby settings: It is recommended to set it to 15 minutes to save power.



- ③ Timed shutdown: Set it to 30 minutes for easy automatic shutdown.



6. Troubleshooting

When the device does not work properly, refer to the following methods for simple troubleshooting. If the problem still cannot be solved, please contact technical support.

6.1 Device Cannot be Turned On

Possible causes:

- Low power
- Poor contact between the battery or power supply

Solution:

- ①Use TYPE-C data cable to connect the device and charge it, and observe whether the screen lights up.
- ②Check if the power port is loose, try reinserting the cable and charging for 10 minutes before attempting to turn on the device again.
- ③If the device still cannot be turned on, please contact technical support.

6.2 Abnormal Display of Formaldehyde or TVOC concentration

Possible causes:

- The device has not completed preheating
- Test environment interference (such as strong wind, smoke or volatile gases)
- Sensor is contaminated

Solution:

- ①①Make sure the device is left for 2 minutes after turning on to complete preheating.
- ②Move the device to an environment with normal air circulation and no strong odor and retest.

6.3 Touch screen is not sensitive or fails

Possible causes:

- The screen is covered with oil and dust
- The system is temporarily stuck

Solution:

- ①Gently wipe the screen surface with a soft non-woven cloth or wet tissue.
- ②Press and hold the power button for 10 seconds to force shutdown, then restart.
- ③If the problem persists, select Restore Factory Settings in the main menu:
 - Click the menu icon and go to Settings > Restore Factory Settings.
 - Confirm and wait for the device to restart.

6.4 Alarm Function Not Working

Possible causes:

- The alarm threshold is set incorrectly

Solution:

Click the menu icon, enter Toolbox > Alarm Threshold, check whether the threshold is set correctly, and save it after readjustment.

6.5 Time or Date Display Error

Possible causes:

- The system clock is not set correctly
- The device loses power multiple times in a short period of time

Solution:

- ① Click the menu icon, enter Settings > System Clock, and manually adjust the time and date.
- ② If the problem occurs frequently, please contact technical support to replace the battery or check the device status.

7.Maintenance

Cleaning The Exterior of The Device

- Frequency: Clean once a month, depending on the use environment.
- Method: Use a soft cloth to gently wipe the surface of the device. Avoid using chemical cleaners, especially those containing alcohol or strong acids and alkalis to avoid damaging the casing or screen.
- Precautions:
 - Clean the dust around the vents and buttons regularly to keep the device well ventilated and heat-dissipated.
 - Ensure that no liquid, dust or debris enters the device interface.

Check The Battery and Power Supply

- Battery Maintenance: For instruments with built-in batteries, check the health of the battery regularly. Avoid complete battery discharge. It is recommended to charge regularly and avoid not using the device for a long time.
- Battery Replacement: If the battery shows excessive attenuation (such as failure to charge normally or extremely fast discharge), it should be replaced in time.

Storage and Carrying

- **Storage Environment:** The instrument should be stored in a dry and ventilated environment, avoiding high temperature, high humidity or drastic temperature changes. Avoid placing it in direct sunlight.
- **Carrying:** Be careful to avoid falling when using, especially during carrying. It is recommended to use a protective case or a special bag for carrying.

Software Update

- Check the device regularly for new firmware updates. The latest firmware can fix known bugs and improve device performance.
- Ensure the correct operation steps when updating, use the officially released firmware files, and avoid power outages or other interference.

Factory Reset

- If the device is abnormal or does not work properly, try to restore the factory settings. After restoring the settings, the device will clear all custom configurations and return to the initial state.
- For methods to restore factory settings, please refer to the user manual or contact the manufacturer's customer service.

7.Contact US

Any FNIRSI's users with any questions who comes to contact us will have our promise to get a satisfactory solution +an extra 6 months warranty to thanks for your support!

By the way, we have created an interesting community, welcome to contact FNIRSI staff to join our community.

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9.Warranty Instructions

Thank you for choosing our products. The warranty period of this product starts from the date of sale. During the product warranty period, if the product is installed and used in normal environment and conditions according to the product manual, and the fault is caused by defects in the raw materials and processing, you can enjoy free repair service according to the contents of this warranty. Please keep this warranty card properly as a warranty certificate. If it is lost, it will not be reissued.

Paid repair service will be implemented in the following cases:

- Failure to produce the original valid warranty card
- Damage caused by product installation not meeting product requirements, standards and relevant specifications
- Damage caused by related accessories in the product installation environment not meeting product requirements, standards and relevant specifications;
- Damage caused by improper use of the product, improper storage, or unauthorized disassembly and private repair by the user
- Expiration of the warranty period.