1. Introduction

Formaldehyde (molecular formula: HCHO) is the simplest aldehyde, which is generally combustible, colorless and irritating gas and soluble in water, alcohol and ether. 35%-40% formaldehyde solution is called formalin. As an important organic raw material, formaldehyde is mainly used in plastic industry (such as making of phenol-formaldehyde resin and urea-formaldehyde plastics), synthetic fiber (such as synthesis-nylon-polyvinyl formal), leather industry, medicine and dye, etc. However, its odor is irritating and is very harmful to human body. Harmful formaldehyde is connected with contact time, age as well as, gender and physique of the contact population. A high relative intensity on infants, the elderly and women, as a brand new indoor formaldehyde concentration monitoring instrument, the latest imported electrochemical sensor and high-performance operating amplifying chip are adopted for the formaldehyde tester, which can continuously and directly convert the formaldehyde concentration signal in the air to electrical signal in real time and display and reflect the measuring result in LCD digital after microcomputer data processing. It has broken the bottleneck of the traditional formaldehyde tester that must be operated by the professional and is expensive in detection cost, and it can automatically provide 24-hour continuous real-time monitoring of indoor formaldehyde concentration. The formaldehyde tester can detect indoor formaldehyde gas rapidly, display data, detection time, temperature and humidity data at the detection site. It is featured by simple structure, small volume, ease of carrying and using and visual display. It can easily apply to site quantitative and qualitative detection of formaldehyde in living room, indoor and residential area, public place, living room and factory and workshop. The indoor portable formaldehyde tester is designed and made according to the principles in the national standard GB/T18204.25-2000 Methods for Determination of Formaldehyde in Air of Public Places.

The product possesses the following functions:
1. Charging function
2. Sound-light alarm setting function
3. Low battery indication function
4. LCD backlight display
5. Temperature unit switch
6. Date and time setting
7. Supporting formaldehyde gas leak warning
8. Maximum, minimum, maximum value read data hold
9. Date display format: YMD, MD, MDY, MDY

II. Safety instruction

To know and understand toxic properties of formaldehyde
- Suction volume: 90-120m³/min: bronchitis and serious injury of lung;
- Suction volume: 12-24m³/min: severe burns of mucous of nose and pharynx, larynx and cough;

Please use the original power adapter for charging, and others can not be used instead.

3. Backlight
It is on when the backlight key is pressed after startup, and will be automatically off when backlight key is not pressed in 3 seconds.

4. Temperature unit switch
When temperature unit switch key is long pressed, the temperature unit will be switched between Celsius degree and Fahrenheit degree.

And the default unit after startup is Celsius degree.

5. Time and date setting
Long press clock key to enter clock mode, and hour will flicker, press + or - to increase or decrease the digit, then press clock key, and minute will flicker, In this manner, repeatedly press the clock key to set in the sequence of H-M-M-Y-M-Y-D. When YM-D flickers, press + or - to switch between YM-D and M-Y-D, to select the required date display format of year-month-day or month-day-year. Long press clock key to exit mode after completing setting.

6. Date hold, maximum value and minimum value
The screen will display HOLD marking when the data hold / maximum value / minimum value is pressed, to lock formaldehyde concentration, air temperature and humidity, etc. Press again to unlock.

7. Alarm setting
Long press alarm key to display “ ** ” and switch on the alarm. The formaldehyde safe value stipulated by the state is not over 0.10mg/m³. It will beep and display red light when the displayed formaldehyde concentration exceeds the standard, and the beep and red light will continue to beep and display red light until the formaldehyde alarm is not required, long press again the alarm key to cancel it.

8. Charging
LCD will display “ Charging” when the battery power is low, indicating that the battery power is insufficient, which shall be charged in time. Insert the power adapter in the power charge hole, and connect the power supply for charging. After completion of charging, the adapter light turns from red to green, and the adapter can be unplugged.

9. Operating Instructions
1. Startup and shutdown
Press the power key to start it up and long press the power key to shut it down.

2. Read the formaldehyde concentration
When the screen displays 30s countdown after startup, it can display the formaldehyde concentration as well as temperature and humidity of current environment. Keys other than the back light key are invalid for operation before completion of 30 seconds countdown. The measured formaldehyde concentration will be displayed by four emotions on the LCD display:

   - Level 1: red - normal range
   - Level 2: yellow - attention range
   - Level 3: orange - warning range
   - Level 4: red - immediate evacuation

10. LCD display (as shown in Figure 1)

   Battery capacity symbol
   YMD
   MDY
   MD
   AM PM
   Maximum value
   Minimum value
   Temperature unit

   Air temperature
   Humidity
   Humidity unit

   Battery door

   Data hold / maximum value / minimum value
   Switching
   Clock key
   + / - temperature unit switch

Figure 2

V. Name of each component (as shown in Figure 2)

- Sensor window
- Battery door
- LCD display
- Data hold / maximum value / minimum value
- Switching
- Clock key
- + / - temperature unit switch

VI. Advantages in comparison

Our advantages are obvious, as compared to products of the same type:

- Time
- Precision
- Charging
- Usage Mode

<table>
<thead>
<tr>
<th>Time</th>
<th>Precision</th>
<th>Charging</th>
<th>Usage Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appointed required, and only one time detection; of not reaching the allowable concentration level, indication is to be expressed in the form of an alarm</td>
<td>The equipment provided with the digital display of data will not be on time detection, and the alarm is to be expressed in the form of an alarm</td>
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<tr>
<td>Professional operation required company</td>
<td>The equipment provides with digital display of data will not be on time detection, and the alarm is to be expressed in the form of an alarm</td>
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<tr>
<td>The product automatically sounds alarm in the event of temperature and humidity exceeding the allowable range</td>
<td>The equipment provides with digital display of data will not be on time detection, and the alarm is to be expressed in the form of an alarm</td>
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<tr>
<td>Dynamic detection</td>
<td>One-time measurement, no time delay</td>
<td>One-time measurement, no time delay</td>
<td>One-time measurement, no time delay</td>
</tr>
<tr>
<td>Cost effective</td>
<td>Cost efficient</td>
<td>Cost efficient</td>
<td>Cost efficient</td>
</tr>
<tr>
<td>Thorough and reliable</td>
<td>Thorough and reliable</td>
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VII. Technical parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measuring range</td>
<td>0-100mg/m³</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.01mg/m³</td>
</tr>
<tr>
<td>Measurement accuracy</td>
<td>±2.0%</td>
</tr>
<tr>
<td>Response time</td>
<td>&lt;30s</td>
</tr>
<tr>
<td>Sensor type</td>
<td>Electrochemical sensor</td>
</tr>
<tr>
<td>Working environment</td>
<td>-5°C to 40°C, 10-95%RH</td>
</tr>
<tr>
<td>Storage environment</td>
<td>-10-90°C, 10-95%RH</td>
</tr>
<tr>
<td>Dimension</td>
<td>91x46x57mm</td>
</tr>
<tr>
<td>Weight</td>
<td>152g</td>
</tr>
</tbody>
</table>

Special declaration: Our company reserves the right to modify the product design and the instruction. We will not give further notice for any changes!