

# OPERATION MANUAL

## I. Overview

It is a 3 1/2 digital thermometer which is driven by 3V battery, used for measuring temperature with large range and high accuracy, can use any K-type thermocouple (Ni-Cr - nisiloy) as the temperature sensor.

## II. General feature

1. Display: 3 1/2digit LCD display with max. indication 1999
2. Sampling Rate: about 2.5 times/s
3. Open circuit display of the sensor: Max. display "1"
4. Low battery display: weak battery symbol shows
5. Operating environment: temperature 0°C~50°C, 32°F~122°F relative humidity < 80%
6. Storage environment: temperature -10°C~60°C, 10°F~140°F relative humidity < 80%
7. Battery: AAA alkaline battery or carbon zinc battery
8. Battery life: alkaline battery is about 200h, carbon zinc battery is about 100h
9. Auto power off: about 15 mins
10. Function key: ① Switch key ② HOLD (lock screen) ③ °C/°F conversion

④ 0.1°(select the range) ⑤ 1°(select the range) ⑥ MAX/MIN/AVG (function key )

## III. Technical Feature

1. Accuracy:  $\pm(a\% \times \text{reading} + \text{dgt})$
2. Environment of accurate calibration: 23°C±5°C
3. Measuring range: -150°C~1300°C, -238°F~2372°F
4. Error coefficients affected by temperature: The coefficient will be 0.1×accurate /°C below 18°C or above 28°C

Resolution	Range	Accuracy
0.1°C	-150°C~199.9°C	$\pm(0.2\%+2^\circ\text{C})$
0.1°F	-199.9°F~199.9°F	$\pm(0.3\%+3^\circ\text{F})$
1°C	-150°C~0°C	$\pm(0.3\%+2^\circ\text{C})$
	0°C~1000°C	$\pm(0.2\%+2^\circ\text{C})$
	1000°C~1300°C	$\pm(0.5\%+2^\circ\text{C})$
1°F	-238°F~-40°F	$\pm(0.5\%+3^\circ\text{F})$
	-40°F~1832°F	$\pm(0.3\%+3^\circ\text{F})$
	1832°F~2372°F	$\pm(0.5\%+2^\circ\text{F})$

Note: 1. In order to ensure the measuring accuracy, it's better to measure after turn on and warm up the meter for 3 minutes.

2. The accuracy in the form above excludes the errors of thermocouple, refer to the accuracy of the probe for revising during the measurement.

#### IV. Operation Method

- 1) Press the POWER button to turn on / off after fixing two AAA batteries; Short press the “HOLD” key to enter the data hold function. (0.1° is default when power on)
- 2) °C/°F key is the conversion function between the Centigrade and Fahrenheit
- 3) 0.1°, 1° keys are the measuring range; MAX/MIN/AVG key is the maximum, minimum and average value.
- 4) Insert the thermocouple into the input jack of the meter, and warm up for 3 minutes.
- 5) The thermocouple plug should correspond to the jack “+” and “—” on the meter.
- 6) Over range display: It will display “1” if the tested temperature exceeds the range, now the instrument range should be adjusted.
- 7) The battery symbol will display when the voltage is less than 2.4V, and the battery need to be replaced.

In order to get the highest accuracy, it takes a few minutes to balance temperature between the plug and the jack when the sensor insert into the meter or after replace a new sensor, to ensure the cold junction compensator works well.

Warning: If LCD displays over range may be caused by the reasons below:

- ① The thermocouple is not inserted into the interface.
- ② The thermocouple already inserted into the interface, but it is in a short circuit, open circuit, or bad connection.

#### V. Specification of the K-Type Thermocouple

Model	Range	Applicable Scope	Errors
TP01	-50°C~250°C	Any condition	0°C~250°C ±1.5°C
TP02	-50°C~750°C	Liquid, solid temperature	400°C~750°C ±0.4%
TP03	-50°C~1300°C	Liquid, solid temperature	750°C~1300°C ±0.3%

Note: It is the thermocouple errors in the above form, please revise the result with the accuracy of the meter during the measurement.

**This user’s manual is subject to any change without further notice.**

**The content in this user’s manual is deemed correct; if you find any mistake, omission, etc, please contact the manufacturer.**

**We will not be held liable for any accidents or harms caused due to your wrong operations.**

**The functions set forth in this user’s manual shall not be regarded as reasons for applying this product for special purposes.**