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℃~50℃, 32°F~122°F　relative humidity ＜ 80%
6. Storage environment: temperature -10℃~60℃, 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 ℃/°F conversion

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

Ⅲ. Technical Feature

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

Resolution	Range	Accuracy
0.1℃	-150℃~199.9℃	±(0.2%+2℃)
0.1°F	-199.9°F~199.9°F	±(0.3%+3°F)
1℃	-150℃~0℃	±(0.3%+2℃)
	0℃~1000℃	±(0.2%+2℃)
	1000℃~1300℃	±(0.5%+2℃)
1°F	-238°F~-40°F	±(0.5%+3°F)
	-40°F~1832°F	±(0.3%+3°F)
	1832°F~2372°F	±(0.5%+2°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.