

## I. Introduction:

This instrument is a digital thermometer for use with any K-type thermocouple as temperature sensor. Temperature indication follows National Bureau of Standards and IEC584 temperature/voltage table for K-type thermocouples.

## II. Specifications:

**Numerical Display:**

4 digital liquid crystal display

**Measurement Range:**

-200 °C ~ 1370 °C    -328 °F ~ 2498 °F

**Resolution:**

-200 °C ~ 200 °C    0.1 °C ; 200 °C ~ 1370 °C    1 °C

-200 °F ~ 200 °F    0.1 °F ; 200 °F ~ 2498 °F    1 °F

**Maximum Voltage at Thermocouple Input:**

60V DC, or 24Vrms AC

**Environmental:**

- Operating Temperature and Humidity:  
0 °C ~ 50 °C (32 °F ~ 122 °F) ; 0 ~ 80% RH
- Storage Temperature and Humidity:  
-10 °C to 60 °C (14 °F ~ 140 °F); 0 ~ 80% RH
- Altitude up to 2000 meters.

**Sample Rate:** 0.6 times per second

**Dimension:** 164x54x34mm

**Weight:** Approx.180g

**Accessory:**

K Type Bead Probe, Battery, Instruction Menu

**Power requirement:**

9 Volt Battery, NEDA 1604 or JIS 006P or IEC6F22

**Battery Life:**

Approx. 150hrs with alkaline battery

**Accuracy: at ( 23 ± 5°C )**

Range	Accuracy
-200°C ~ 200°C	±(0.3% reading + 1 °C)
200°C ~ 400°C	±(0.5% reading + 1 °C)
400°C~1370°C	±(0.3% reading + 1 °C)
-328°F ~ -200°F	±(0.5% reading + 2°F)
-200°F ~ 200°F	±(0.3% reading + 2°F)
200°F ~ 400°F	±(0.5% reading + 2°F)
400°F ~ 2498°F	±(0.3% reading + 2°F)

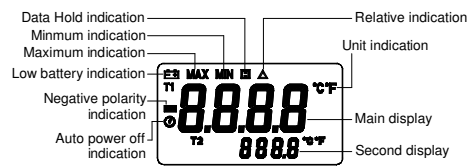
**Temperature Coefficient:**

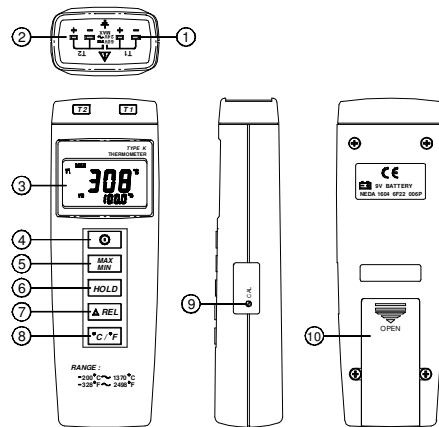
For ambient temperatures from 0°C ~ 18°C and 28°C ~ 50°C, for each °C ambient below 18°C or above 28°C add the following tolerance into the accuracy spec.

0.01% of reading + 0.03°C  
( 0.01% of reading + 0.06°F )

**⚠ Note:**

The basic accuracy Specification does not include the error of the probe please refer to the probe accuracy specification for additional details.

**III. Symbol Definition and Button Location:**



- ① T1 K type temperature sensor connector
- ② T2 K type temperature sensor connector
- ③ LCD display
- ④ ON/OFF button
- ⑤ MAX MIN Average control button
- ⑥ HOLD button
- ⑦ Relative readout button
- ⑧ °C, °F control button
- ⑨ Offset calibration screw
- ⑩ Battery cabinet cover

## IV. Operation Instructions:

### 4.1 Power-Up

Press the **ⓘ** key to turn the thermometer On or OFF.

### 4.2 Connection the Thermocouples

For measurement, plug the thermocouple into the input connectors.

### 4.3 Selecting the Temperature Unit

When the meter was power on, the default unit is Celsius (°C) scale. The user may change it to Fahrenheit (°F) by pressing "°C/°F" button and vice versa to Celsius.

### 4.4 Data-Hold Operation

The user may hold the present reading and keep it on the display by pressing the "HOLD" button. When the hold data is no longer needed, one may release the data-hold operation by pressing "HOLD" button again. When the meter is under Data Hold operation, the "ΔREL", MAX/MIN and "°C/°F" button are disabled.

### 4.5 Relative Operation:

When one press the "ΔREL" button, the meter will memorize the present reading and the difference between the new reading and the memorized data will be shown on the display. Press the "ΔREL" button again to exit the Relative operation.

### 4.6 MAX/MIN Operation:

When one press the MAX/MIN button the meter will enter the MAX/MIN mode. Under this mode the maximum value and minimum value is kept in the memory simultaneously and updated with every new data.

When the MAX symbol is display, the Maximum is shown on the display.

Press MAX/MIN again, then the MIN symbol is on the display and also the minimum reading.

Press MAX/MIN again, MAX, MIN will blink together. This means that all these data is updated in the

memory and the reading is the present temperature.  
One may press **MAX/MIN** to circulate the display mode among these options.


When the meter is under **MAX/MIN** operation, “**Δ REL**” and “**°C/°F**” are disabled.

To exit the **MAX/MIN** mode, one may press and hold **MAX/MIN** for two seconds.

#### 4.7 Auto Power Off:

By default, when the meter is powered on, it is under auto power off mode. The meter will power itself off after 30 minutes if no key operation is performed. Key combination at power on can disable auto power off. One may press and hold “**HOLD**” button and then power on the meter and auto power off symbol will disappear to indicate that auto power off is disabled.

#### 4.8 Low Battery Condition

When the battery voltage is under proper operation requirement, the  symbol will show on the LCD and the battery need to be replaced with new one.

#### 4.9 Calibration Point:

Room Temperature  $23 \pm 3^{\circ}\text{C}$

input	Adjust VR	tolerance
0 °C	VR3	$\pm 0.1^{\circ}\text{C}$
190 °C	VR2	$\pm 0.1^{\circ}\text{C}$
1000 °C	VR1	$\pm 1^{\circ}\text{C}$
190 °F	VR4	$\pm 0.1^{\circ}\text{F}$

Normally, performing offset Calibration with thermal stabled ice water through VR3 will give a very good calibration result.