



INFRARED TEMPERATURE
THERMOCOUPLE METER
VA8090



Users Manual



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1. Introduction

Thank you for purchasing the infrared temperature thermocouple meter from us. Please take a few minutes to browse through this user manual before you begin to operate the meter to ensure that you are fully familiarized with how best to operate the meter as accurately and safely as possible.

This meter combines two precision thermometers in one unit: a noncontact infrared thermometer and a thermocouple thermometer.

This meter can match standard type K sensor.



WARNING!

Do not point laser directly at eye or reflective surfaces.


1.1 Precautions safety measures

To get the best service from this meter, please read this user's manual carefully and observe the detailed safety precautions strictly.

1.1.1 During use

1. After abrupt ambient temperature changes, allow

instrument temperature to stabilize for 30 minutes before using for measurement.

2. Do not expose thermometer to excessive ambient temperatures.
3. Keep the thermometer clean.
4. the center spacing of the standard small thermocouple jacks is 7.9mm(between the two prongs).
5. 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.
6. Do not use solvents to clean the meter.

1.1.2 Maintaining the product

- Do not measure at a high temperature, high humidity places.
- When not using the instrument for a long time, please remove the battery and avoid storing in high temperature and high humidity.

2 Features

1. Display: 4 digits LCD Display
2. Resolution: 0.1 °C /0.1 °F
1°C /1°F(thermocouple above 1000 °C)
3. Range:
infrared: -50~300°C (-58 °F ~572 °F)
thermocouple: -200~1300 °C (-328 °F ~2372 °F)
4. Accuracy:
infrared: -50~-20 °C / ± 5 °C /9 °F
-20~300 °C / ± (1.5% reading +2 °C /4 °F)
thermocouple:-200~-100°C/±(0.2%reading+1°C/2 °F)
-100~1300 °C / ±(0.1% reading +0.7 °C /1.4 °F)
5. Emissivity: 0.95
6. Field of view: 2:1
7. Laser power: Less than 1 mw
8. Response time: 0.5 second
9. Auto power off: 25 seconds (infrared) or 20 minutes
(thermocouple)
10. Low battery indicator
11. Operating environment:
0 ~ 50 °C (32~122 °F), 0 ~ 90%RH
12. Storage environment:

-10 ~ 60 °C (14~140 °F), 0 ~ 80%RH

13. Dimension and Weight:

121(L)x60(W)x30(H)mm, about 180g

14. Accessories: DC1.5V (AAA) x 3pcs

K-type thermocouple wire

String x 1pcs

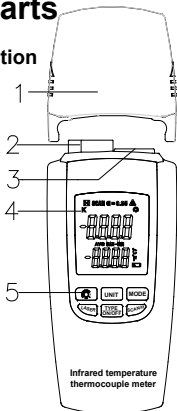
Plastic box x 1pcs

Users manual x 1pcs

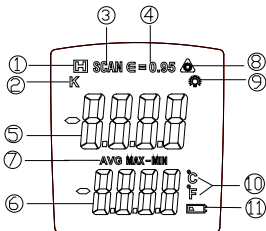
3 Names Of Parts

● Instrument Familiarization

1. sensor cover
2. infrared sensor
3. thermocouple jack
4. LCD display
5. function key



● LCD Display



The meaning of the symbols represented by following:

1. Indicating it is now in the data-holding state
2. Type of thermocouple
3. Indication to measurement
4. Emissivity
5. Display zone
6. Display zone
7. Average/ Maximum / minimize
8. Indication to laser firing
9. Indication to back light
10. Temperature units
11. Indication to low voltage of the batteries

4 . Operation instruction

1. Press the **TYPE**
ON/OFF key to turn the power on and press the key again to shift the measurement mode between infrared or thermocouple.

2. Press the **LASER** key under the infrared state. The meter will enter the measurement state and launch a beam of red laser. Point the laser to the measured object and press the **SCAN/H** key to achieve the continuous temperature measurement.

3. Press the **SCAN/H** key under the thermocouple state and the data will be held. Press the **SCAN/H** key again to return the measurement state.

* If you still need more operations, please see the description of keys instruction.

5 Keys instruction

1. TYPE/ON/OFF key

ON/OFF: Press the key to turn the power ON and press the key once more >2sec. to turn the power OFF.

TYPE: Press the key to select the mode of infrared or thermocouple.

2. key

Control the back light on or off.

3.UNIT key

Press the key to select alternate the two temperature units of °C and °F.

4.MODE key


Press the key to select the mode of AVG, MAX or MIN.

5.LASER key

Control the laser on or off in the infrared state.

6.SCAN/H key

In the infrared state, press the key to measure the temperature.

In the thermocouple state, Press the key, a  icon will display on the LCD and the readout held in. Press the key once more to cancel the hold function.

7. Auto power off setting

When the meter is powered on, it is under auto power off mode. The meter will power itself off after 25 seconds

(infrared) or 20 minutes (thermocouple) if no key operation.

Cancelled auto power off function: press the LASER key when power on until the LCD display all icons and the back light is on.

6 Emissivity and Field of View

Emissivity: Emissivity is a term used to describe the energy emitting characteristics of a material. The higher the emissivity value a material has, the more infrared energy it will emit at a particular temperature. Most organic materials range in emissivity between 0.85 and 0.98. This thermometer has a fixed (non-adjustable) emissivity of 0.95. Measuring objects with an emissivity of less than 0.95 will result in a lower than actual temperature reading on the display. Be aware of this characteristic when measuring low emissivity objects (e.g. shiny, reflective metal objects).

An effective solution is that using the black adhesive

tape to cover the object surface, starting the measurement until the adhesive tape's temperature is same as the object.

Field of View: The distance to spot ratio for this thermometer is 2:1.

The ideal working range of the noncontact thermometer is between 25mm and 250mm(1 and 10 inches). The field of view is a circular measurement area approximately equal to the distance from the target to the unit, divided by 2. To ensure accurate measurements, the measurement target must fill or exceed the field of view.

7 Maintenance


7.1 CLEANING INSTRUCTIONS

The meter may be wiped down with a wet sponge or cloth using a mild water based detergent or anti-bacterial soap and rinsed under a gentle stream of cold water.

NOTE: This unit is not designed for complete submersion or washing in water.

7.2 BATTERY REPLACEMENT

Use the following procedure:

When the battery voltage drop below proper operation range the  symbol will appear on the LCD display and the battery need to be replaced.

- Press the battery cover and towards arrowhead direction to open the battery cover.
- Replace the battery with three new 1.5V batteries (AAA).
- Replace the battery cover.

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