MESTEK IR02B

MESTEK IR02B Digital Infrared Thermometer with K-Type Probe User Manual

Model: IR02B

1. Introduction

Thank you for choosing the MESTEK IR02B Digital Infrared Thermometer. This device offers both non-contact infrared temperature measurement and contact measurement via a K-type probe, providing versatility for various applications. It is designed for accurate and rapid temperature readings in industrial, household, and culinary settings. Please read this manual thoroughly before use to ensure safe and proper operation.

Image 1.1: MESTEK IR02B Infrared Thermometer, K-type probe, and AAA batteries.

2. Safety Information

To prevent potential injury or damage to the device, observe the following safety precautions:

- **Do not point the laser directly at eyes or reflective surfaces.** The laser is for targeting purposes only.
- This product is **not suitable for measuring human or animal body temperature**. It is designed for industrial and surface temperature measurements.
- Do not use the device in environments with explosive gas, steam, or dust.
- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Remove batteries if the device will not be used for an extended period.

Image 2.1: Visual warning against using the thermometer on human skin or highly reflective surfaces.

3. Product Overview

3.1 Components

- Infrared Sensor
- Laser Pointer (12-point)
- LCD Display
- Measurement Trigger
- Mode Button
- Up/Down Buttons
- K-Type Probe Input Jack
- Battery Compartment

3.2 LCD Display

The high-definition LCD provides clear readings and indicators:

- Measurement Indication
- High/Low Alarming Indicator
- Data Hold Indicator (H)

- Emissivity Indication (E)
- Temperature Value
- Maximum Value (MAX)
- Low Battery Indication
- Laser Indication
- Celsius/Fahrenheit Unit (°C/°F)

Image 3.1: Detailed view of the IR02B LCD display and control buttons.

4. Setup

4.1 Battery Installation

1. Open the battery compartment cover located at the bottom of the handle.
2. Insert two AAA batteries, ensuring correct polarity (+/-).
3. Close the battery compartment cover securely.

4.2 K-Type Probe Connection (Optional)

If contact temperature measurement is required, insert the K-type probe into the designated jack on the side of the device.

Image 4.1: Package contents, showing the thermometer, K-type probe, batteries, and instruction manual.

5. Operating Instructions

5.1 Basic Infrared Measurement

1. Point the infrared lens towards the target object.
2. Press and hold the measurement trigger. The laser pointers will activate, indicating the measurement area.
3. The temperature reading will appear on the LCD within 0.5 seconds.
4. Release the trigger to hold the reading on the display (Data Hold function). The device will automatically shut off after 20 seconds of inactivity to conserve battery.

Image 5.1: Non-contact infrared measurement in progress, illustrating the 12-point laser targeting.

5.2 K-Type Probe Measurement

1. Ensure the K-type probe is securely connected to the device.
2. Insert the metal tip of the K-type probe into the liquid or soft material whose internal temperature you wish to measure.
3. Press the measurement trigger. The display will show both the infrared surface temperature and the K-type probe's internal temperature.

Image 5.2: Using the K-type probe for internal temperature measurement of a liquid.

5.3 Adjusting Emissivity (E)

Emissivity (E) is the ability of a material to emit thermal energy. Different materials have different emissivities. For accurate readings, adjust the emissivity setting (0.10-1.00) to match the target material. Consult a standard emissivity table for common materials.

1. Press the 'MODE' button until 'E' appears on the display.
2. Use the 'Up' and 'Down' buttons to adjust the emissivity value.
3. Press the 'MODE' button again to confirm and exit.

Image 5.3: Examples of applications requiring emissivity adjustment, such as measuring food, engines, or water.

5.4 High/Low Temperature Alarm

The device can be set to alarm when temperatures exceed or fall below a specified threshold.

1. Press the 'MODE' button repeatedly to cycle through settings until 'HAL' (High Alarm) or 'LAL' (Low Alarm) appears.
2. Use the 'Up' and 'Down' buttons to set the desired alarm temperature.
3. Press the 'MODE' button to confirm. When the measured temperature exceeds the set high alarm or falls below the set low alarm, an audible and visual alert will activate.

Image 5.4: Visual representation of high and low temperature alarm functions.

5.5 Unit Switching (°C/°F)

To switch between Celsius and Fahrenheit, press the dedicated °C/°F button (often integrated with the 'Up' or 'Down' button, or a separate button depending on the model variant).

Image 5.5: Display showing temperature units being switched between Celsius and Fahrenheit.

5.6 Data Hold

After releasing the measurement trigger, the last measured temperature will remain on the display, indicated by an 'H' icon. This allows for easy recording of readings.

6. Maintenance

6.1 Cleaning

- Clean the device casing with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- Carefully clean the infrared lens with a soft, lint-free cloth or cotton swab. Avoid scratching the lens, as this can affect accuracy.
- The K-type probe can be cleaned with soap and water or an appropriate disinfectant, then thoroughly dried.

6.2 Storage

Store the thermometer in a cool, dry place, away from direct sunlight and extreme temperatures. Remove batteries if storing for extended periods.

7. Troubleshooting

Problem	Possible Cause	Solution
No display/Device won't turn on	Low or dead batteries; Incorrect battery polarity	Replace batteries; Check battery orientation
Inaccurate readings	Incorrect emissivity setting; Dirty lens; Distance too far; Reflective surface	Adjust emissivity; Clean lens; Move closer to target; Avoid reflective surfaces
Laser not working	Laser disabled in settings; Malfunction	Check device settings to enable laser; Contact support if issue persists
K-type probe not working	Probe not fully inserted; Damaged probe	Ensure probe is fully inserted; Replace probe if damaged

8. Specifications

- **Infrared Temperature Range:** -50°C to 800°C (-58°F to 1472°F)
- **K-Type Probe Temperature Range:** -10°C to 500°C
- **Infrared Accuracy:** ±2% or ±2°C (for -50°C~0°C: ±3°C; for 0°C~800°C: ±(1.5%+2°C/4°F))
- **K-Type Probe Accuracy:** ±(1.5%+2°C/4°F)
- **Response Time:** <0.5 seconds
- **Distance to Spot Ratio (D:S):** 12:1
- **Emissivity:** Adjustable 0.10-1.00
- **Display:** HD LCD with color display
- **Power Source:** 2 x AAA batteries (included)
- **Automatic Shutdown:** 20 seconds of inactivity
- **Special Features:** 12-point laser, Data HOLD, °C/°F switch, High/Low temperature alarm, Low battery reminder
- **Dimensions:** 12.5 x 19 x 6.1 cm
- **Weight:** 318 grams
- **Compliance:** CE

9. Warranty and Support

MESTEK offers a limited warranty for this product. Please refer to the included warranty card or contact MESTEK customer support for detailed information regarding warranty coverage and service.

For technical assistance, troubleshooting, or any questions regarding your MESTEK IR02B thermometer, please contact the seller or MESTEK customer service directly. Contact information can typically be found on the product packaging or the official MESTEK website.