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› Tilswall Infrared Thermometer User Manual

TILSWALL IR02B

Tilswall Infrared Thermometer User Manual

Model: IR02B

1. INTRODUCTION

Thank you for choosing the Tilswall Infrared Thermometer. This device is a professional non-contact infrared thermometer with a wide measurement range and a convenient contact probe for internal temperature readings. It is designed for various industrial, culinary, and household applications, providing quick and accurate temperature measurements.

Please read this manual thoroughly before operation to ensure safe and proper use of the thermometer.



Figure 1: Tilswall Infrared Thermometer (Model IR02B) with included probe and AAA batteries.

2. SAFETY INFORMATION

WARNING: This device is a Class 2 laser product. Do not stare into the laser beam. Optical power is less than 1mW.

- **NOT FOR HUMAN USE:** This infrared thermometer is designed for measuring the temperature of inanimate objects only. It is not intended for medical use or for measuring body temperature of humans or animals. Readings for biological subjects will not be accurate.
- Do not point the laser directly at eyes or indirectly off reflective surfaces.
- Do not use the thermometer near explosive gas, vapor, or dust.
- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Keep out of reach of children.



Figure 2: Important safety notice: This thermometer is not for human use.

3. PACKAGE CONTENTS

- 1 x Tilswall Infrared Thermometer (Model IR02B)
- 1 x K-Type Thermocouple Probe
- 2 x AAA Batteries
- 1 x User Manual

4. PRODUCT FEATURES

- **High Accuracy:** Measures with an accuracy of up to $\pm 1.5\%$ and a response time within 0.5 seconds.
- **Wide Temperature Range:** Infrared measurement from -58°F to 1472°F (-50°C to 800°C). Probe measurement from -14°F to 932°F (-10°C to 500°C).
- **Adjustable Emissivity:** Emissivity adjustable from 0.1 to 1.0 for improved accuracy on various surfaces. Default is 0.95.
- **Distance to Spot Ratio (D:S):** 12:1 for precise measurement at longer distances.
- **Dual Measurement Modes:** Non-contact infrared and contact probe.
- **LCD Backlight Display:** Color large screen for clear readings, even in dark conditions.
- **Data Hold Function:** Freezes the current reading on the display.
- **High/Low Temperature Alarm:** User-settable alarms for temperature thresholds.
- **Unit Conversion:** Easily switch between Celsius ($^{\circ}\text{C}$) and Fahrenheit ($^{\circ}\text{F}$).
- **Auto-Off Function:** Automatically powers off after 30 seconds of inactivity to save battery life.

High-Sensitive Sensor

laser indication, 0.5 second fast measurement



Figure 3: High-sensitive sensor for fast and accurate measurements.



Figure 4: Understanding the 12:1 Distance to Spot Ratio.



Figure 5: The 30-second auto-off feature conserves battery.

5. SETUP

5.1 Battery Installation

1. Locate the battery compartment on the handle of the thermometer.
2. Open the battery compartment cover.
3. Insert the two AAA batteries, ensuring correct polarity (+/-).
4. Close the battery compartment cover securely.

5.2 Connecting the K-Type Probe

To use the contact probe for internal temperature measurements:

1. Locate the probe input jack on the side of the thermometer.
2. Insert the K-type thermocouple probe's connector firmly into the jack.
3. The thermometer will automatically switch to probe measurement mode when the probe is connected.

Equipped with Temperature Probe

Connect the temperature probe to the thermometer, and make the probe contact the inside of the liquid or the surface of the object to be measured



Infrared temperature

(-58°F - 1472°F)

Probe temperature

(14°F - 932°F)

* When measuring boiling liquid, do not let watervapor touch the temperature sensing area, and keep the measuring angle at about 45°-60°, otherwise it will affect the accuracy of temperature measurement.

Figure 6: Connecting and using the K-Type temperature probe.

6. OPERATING INSTRUCTIONS

6.1 Power On/Off

- To power on, press the measurement trigger. The display will light up.
- The device will automatically power off after 30 seconds of inactivity.

6.2 Non-Contact Infrared Measurement

1. Ensure the K-type probe is disconnected if you wish to use infrared mode.
2. Point the thermometer at the target object.
3. Press and hold the measurement trigger. The laser pointer will activate to indicate the measurement area.
4. The temperature reading will appear on the display. Release the trigger to hold the reading (Data Hold).
5. For best accuracy, position the thermometer approximately 14 inches (36 cm) away from the object.

Non-Contact Infrared Thermometer

Measure surface temperatures ranging from
-58°F to 1472°F (-50°C to 800°C)



-58°F



1472°F

Figure 7: Non-contact infrared measurement in various environments.

6.3 Contact Probe Measurement

1. Connect the K-type probe to the thermometer's input jack.
2. Insert the probe tip into the substance or onto the surface you wish to measure.
3. The display will show the probe temperature reading.
4. When measuring boiling liquids, ensure the probe tip is submerged but avoid direct contact of steam with the thermometer's infrared sensor to maintain accuracy.

6.4 Adjusting Emissivity

Emissivity (ϵ) is a measure of an object's ability to emit infrared energy. Different materials have different emissivity values. Adjusting the emissivity setting improves measurement accuracy for various surfaces.

1. Press and hold the "MODE" button for 2 seconds to enter emissivity adjustment mode.
2. Use the "▲" (Up) and "▼" (Down) buttons to increase or decrease the emissivity value (0.1 to 1.0).
3. Press the "MODE" button again to confirm and exit.



Figure 8: Steps for adjusting emissivity and a reference table for common materials.

6.5 Changing Temperature Units (°C/°F)

Press the "MODE" button briefly to toggle between Celsius (°C) and Fahrenheit (°F).



Figure 9: Switching between Celsius and Fahrenheit.

6.6 High/Low Temperature Alarm

The thermometer can be set to alert you when a measured temperature exceeds or falls below a set threshold. Refer to the full manual for detailed instructions on setting alarm values.

7. MAINTENANCE

- **Cleaning:** Wipe the device with a soft, damp cloth. Do not use abrasive cleaners or immerse the device in water.
- **Storage:** Store the thermometer in a cool, dry place away from direct sunlight and extreme temperatures. Remove batteries if storing for extended periods.
- **Probe Care:** Clean the K-type probe after each use, especially when used with food.

8. TROUBLESHOOTING

- **Inaccurate Readings:** Check emissivity setting for the material being measured. Ensure the target is within the D:S ratio. Clean the infrared lens if dirty.
- **No Display:** Check battery installation and replace batteries if necessary.
- **Laser Not Working:** Ensure the measurement trigger is pressed and batteries are sufficient.

9. SPECIFICATIONS

Feature	Specification
Model Number	IR02B
Infrared Temperature Range	-58°F to 1472°F (-50°C to 800°C)
Probe Temperature Range	-14°F to 932°F (-10°C to 500°C)
Accuracy	±1.5%
Response Time	0.5 seconds
Distance to Spot Ratio (D:S)	12:1
Emissivity	Adjustable 0.1-1.0 (Default 0.95)
Display Type	Digital LCD with Backlight
Power Source	2 x AAA batteries (included)
Auto-Off	30 seconds
Product Dimensions	12 x 0.01 x 0.01 inches
Item Weight	9.17 ounces
Certifications	CE, FCC, FDA

10. WARRANTY AND SUPPORT

Tilswall provides a 28-month after-sales service for this product. For any questions, technical support, or warranty claims, please contact Tilswall customer service through the retailer's platform or the official Tilswall website.

Please retain your purchase receipt as proof of purchase for warranty purposes.

ASK A QUESTION ABOUT THIS MANUAL

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. [Privacy details](#).

Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question