Unit UT-306C

Unit UT-306C Infrared Thermometer User Manual

Model: UT-306C | Brand: Unit

1. Introduction

The Unit UT-306C Infrared Thermometer is a robust and easy-to-use device designed for non-contact surface temperature measurement. This series is suitable for various applications, including the food industry, machine maintenance, metal processing, cold storage, and other industrial fields.
It features a wide temperature range, selectable Celsius/Fahrenheit units, an EBTN display, auto power-off, and low battery indication.

2. Safety Information

Please read all safety warnings and instructions carefully before using this product. Failure to follow these instructions may result in electric shock, fire, or serious injury.

2.1 General Safety Precautions

- Do not point the laser directly at eyes or reflective surfaces.
- Do not use the device in environments with explosive gas, vapor, or dust.
- Keep the device away from strong electromagnetic fields.
- Do not attempt to disassemble or modify the device. Refer all servicing to qualified personnel.
- Ensure the battery compartment is securely closed before use.

2.2 Laser Safety

This device uses a Class 2 laser. Avoid direct eye exposure to the laser beam. The laser power is less than 1mW and the wavelength is 630nm-670nm.

3. Product Components and Display

Familiarize yourself with the main parts of your UT-306C Infrared Thermometer.

Figure 3.1: Front view of the Unit UT-306C Infrared Thermometer, showing the display, trigger, and function buttons.

Figure 3.2: Side view of the Unit UT-306C, highlighting the ergonomic grip and laser aperture.

Figure 3.3: Close-up of the EBTN-LCD display on the UT-306C, showing temperature readings and mode indicators.

3.1 Display Indicators

The EBTN-LCD display provides clear readings and indicators:

- **HI/LO Alarm:** Indicates if the measured temperature is above or below set limits.
- **HOLD:** Shows that the current reading is held on the display.
- **°C/°F:** Temperature unit indicator.
- **MAX/MIN/AVG/DIF:** Indicates the current measurement mode (Maximum, Minimum, Average, or Difference).
- **Low Battery:** Icon appears when battery power is low.

4. Setup

4.1 Battery Installation

1. Locate the battery compartment on the handle of the thermometer.
2. Open the battery cover.
3. Insert two 1.5V AAA batteries, ensuring correct polarity (+/-).

4. Close the battery cover securely.

4.2 Power On/Off

To power on the device, press the trigger. The device will automatically power off after a period of inactivity to conserve battery life.

5. Operating Instructions

5.1 Basic Measurement

1. Point the thermometer at the target surface.
2. Press and hold the trigger. The laser pointer will activate (if enabled) to indicate the measurement area.
3. The temperature reading will appear on the display.
4. Release the trigger to hold the reading on the display (Data Hold function).

5.2 Unit Selection (°C/°F)

With the device powered on, press the 'SET' button to cycle through settings. Use the up/down arrows to change the temperature unit between Celsius (°C) and Fahrenheit (°F).

5.3 Emissivity Adjustment

Emissivity (ε) is crucial for accurate temperature measurement. The UT-306C allows adjustment from 0.10 to 1.00.

1. Press the 'MODE' button to enter emissivity adjustment mode.
2. Use the up/down arrows to increase or decrease the emissivity value.
3. Press 'MODE' again to confirm and exit.

Refer to a standard emissivity table for common materials to ensure accuracy.

5.4 Measurement Modes (MAX/MIN/AVG/DIF)

Press the 'MODE' button repeatedly to cycle through different measurement modes:

- **MAX:** Displays the maximum temperature measured during a scan.
- **MIN:** Displays the minimum temperature measured during a scan.
- **AVG:** Displays the average temperature measured during a scan.
- **DIF:** Displays the difference between the maximum and minimum temperatures measured during a scan.

5.5 High/Low Temperature Alarm

The device can be set to alarm when temperatures exceed or fall below predefined limits.

1. Press 'SET' to enter alarm setting mode.
2. Use the up/down arrows to adjust the high or low alarm threshold.
3. Press 'SET' again to switch between high and low alarm settings.
4. Press 'MODE' to exit alarm setting mode.

6. Maintenance

6.1 Cleaning the Device

To ensure accurate readings and prolong the life of your thermometer:

- Clean the lens with a soft, clean cloth or cotton swab moistened with water or medical alcohol.
- Clean the device casing with a damp cloth and mild soap. Do not use abrasive cleaners or solvents.
- Ensure the device is completely dry before storage or next use.

6.2 Battery Replacement

When the low battery indicator appears on the display, replace the batteries as described in the "Battery Installation" section (4.1). Always use two new 1.5V AAA batteries.

6.3 Storage

Store the thermometer in a cool, dry place, away from direct sunlight and extreme temperatures. If storing for extended periods, remove the batteries to prevent leakage.

7. Troubleshooting

Problem	Possible Cause	Solution
Device does not power on.	Dead or incorrectly installed batteries.	Replace batteries, ensuring correct polarity.
Inaccurate readings.	Incorrect emissivity setting; lens is dirty; distance to spot ratio exceeded.	Adjust emissivity; clean the lens; ensure measurement is within 12:1 distance spot ratio.
"HI" or "LO" displayed.	Temperature is outside the measurement range (-50°C to 500°C).	Ensure the target temperature is within the device's specified range.
Laser not visible.	Laser function is disabled.	Check settings to ensure laser is enabled.

8. Specifications

Parameter	Value
Model	UT306C
Certifications	CE, UKCA
Temperature Range	-50°C 500°C (-58°F 932°F)
Laser Type	Circle
Accuracy	±2°C or ±2% (whichever is greater)
Resolution	0.1°C
Distance Spot Ratio (D:S)	12:1
Response Time	≤250ms
Emissivity	0.10 1.00 (adjustable)

Parameter	Value
Laser Class	Class 2
Laser Power	1mW
Laser Wavelength	630nm 670nm
Spectral Response	8μm 14μm
Display Type	EBTN-LCD
Unit Selection	°C/°F
Data Hold	Yes
Auto Power Off	Yes
Low Battery Indication	Yes
MAX/MIN/AVG/DIF Mode	Yes
High / Low Temperature Alarm	Yes (Audible)
Drop Test	1m
Power	2 x 1.5V AAA batteries
Product Color	Red and grey
Product Weight	161.5g
Product Size	146×78×45mm

9. Warranty and Support

For warranty information and technical support, please refer to the official Unit website or contact your local distributor. Keep your purchase receipt as proof of purchase.