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› Metravi MT-14 Digital Infrared Pyrometer User Manual

METRAVI MT-14

Metravi MT-14 Digital Infrared Pyrometer User Manual

Model: MT-14

1. INTRODUCTION

The Metravi MT-14 is a versatile digital pyrometer designed for both non-contact infrared and contact (K-type thermocouple) temperature measurements. It offers a wide temperature range, high accuracy, and advanced features suitable for industrial applications. This manual provides essential information for safe and effective operation of your device.



MT-14

Non-contact Infrared cum Contact (with K-type Thermocouple) Thermometer



Figure 1.1: The Metravi MT-14 Digital Infrared Pyrometer, showcasing its non-contact infrared sensor and the included K-type thermocouple for contact measurements.

2. SAFETY INFORMATION

Please read all safety warnings and operating instructions before using this instrument to prevent injury or damage.

- Do not point the laser directly at eyes or indirectly off reflective surfaces.
- Do not use the device near explosive gas, vapor, or dust.
- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Use only specified batteries. Ensure correct polarity during installation.
- Do not attempt to repair or modify the instrument. Refer servicing to qualified personnel.
- When using the battery eliminator, ensure the internal battery is removed to prevent damage.

IMPORTANT!!



The Metravi MT-14 Infrared Thermometer
DOES NOT come with rechargeable battery.

The Power Supply is by either installing a 9V Alkaline Battery OR removing the battery and using Mains by connecting the instrument to the Battery Eliminator (supplied alongwith)

DO NOT USE BOTH THE BATTERY AND THE ELIMINATOR TOGETHER!

Usage of both together will damage the internal components beyond repair.

Figure 2.1: Important safety notice regarding power supply. Do not use both the battery and the battery eliminator simultaneously, as this can cause internal damage.

3. PACKAGE CONTENTS

Verify that all items are present and undamaged upon opening the package:

- Metravi MT-14 Digital Infrared Pyrometer
- K-type Thermocouple Sensor
- Battery Eliminator (for mains operation)
- Tripod Stand
- User Manual (this document)
- Carrying Case



Figure 3.1: The Metravi MT-14 pyrometer and its accessories neatly organized within the protective carrying case.

4. PRODUCT FEATURES

- **Dual Measurement Modes:** Non-contact infrared and contact K-type thermocouple.
- **Wide Temperature Range:** IR: -50°C to 1300°C (-58°F to 2372°F); K-type: -50°C to 1370°C (-58°F to 2498°F).
- **High Distance-to-Spot Ratio (D:S):** 30:1 for accurate measurements from a distance.
- **Adjustable Emissivity:** Digitally adjustable from 0.10 to 1.00.
- **Built-in Laser Pointer:** For precise targeting in non-contact mode.
- **Data Functions:** Max/Min/Dif/Avg recording, Data Hold, 20-reading offline data storage.
- **Alarm Function:** High/Low alarm setting.
- **Trigger Lock:** For continuous measurement.
- **Selectable Units:** °C / °F.
- **Power Options:** Battery operated (9V) or mains operated via battery eliminator.

- **Automatic Power Off:** Conserves battery life.
- **Low Battery Indication:** Alerts user when battery is low.
- **Analogue Output:** 1mV / °F for control action and data recording.

5. SETUP

5.1 Battery Installation

1. Locate the battery compartment at the base of the handle.
2. Open the battery compartment cover.
3. Insert a 9V alkaline battery, ensuring correct polarity.
4. Close the battery compartment cover securely.



Figure 5.1: View of the battery compartment and switches for mode settings (e.g., °C/°F, Lock, Set Alarm) located within the handle of the Metravi MT-14.

5.2 K-type Thermocouple Connection

To use the contact measurement function, insert the K-type thermocouple probe into the designated input jack located at the bottom of the device.

5.3 Tripod Stand Installation

The MT-14 can be mounted on the included tripod stand for stable, continuous measurements. Screw the tripod into the threaded hole at the bottom of the pyrometer's handle.



Figure 5.2: The Metravi MT-14 pyrometer shown with the tripod stand attached and the battery eliminator for mains power supply.

6. OPERATING INSTRUCTIONS

6.1 Power On/Off

Press the trigger to power on the device. The device will automatically power off after a period of inactivity to conserve battery.

6.2 Non-Contact (Infrared) Measurement

- 1. Point the infrared sensor towards the target object.
- 2. Press and hold the trigger. The laser pointer will activate to assist with aiming.
- 3. The temperature reading will be displayed on the LCD.
- 4. Release the trigger to hold the reading.

6.3 Contact (K-type Thermocouple) Measurement

- 1. Ensure the K-type thermocouple is securely connected.
- 2. Select the K-type measurement mode (refer to device specific button/switch, typically near battery compartment).
- 3. Place the tip of the thermocouple in contact with the object to be measured.
- 4. The temperature reading will be displayed on the LCD.

6.4 Emissivity Adjustment

Emissivity is crucial for accurate infrared measurements. The MT-14 allows digital adjustment from 0.10 to 1.00. Consult an emissivity table for common materials or adjust based on known reference temperatures.

6.5 Data Functions (MAX/MIN/DIF/AVG)

Use the mode buttons (refer to device interface) to cycle through Max, Min, Difference, and Average temperature readings recorded during a measurement session. The device can store up to 20 readings offline.

6.6 High/Low Alarm Setting

Set desired high and low temperature thresholds. The device will alert you if the measured temperature falls outside these limits.

6.7 Trigger Lock

Activate the trigger lock feature for continuous temperature monitoring without needing to hold the trigger down.

7. MAINTENANCE

7.1 Cleaning

Wipe the device with a soft, damp cloth. Do not use abrasive cleaners or immerse the device in water. Keep the infrared lens clean and free of dust or debris for accurate readings.

7.2 Storage

When not in use for extended periods, remove the battery to prevent leakage. Store the device in its carrying case in a cool, dry place, away from direct sunlight and extreme temperatures.

8. TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on	Low or dead battery; Incorrect battery installation	Replace battery; Check battery polarity
Inaccurate IR readings	Incorrect emissivity setting; Dirty IR lens; Distance too far	Adjust emissivity; Clean lens; Move closer to target (within D:S ratio)

Problem	Possible Cause	Solution
K-type reading unstable/incorrect	Loose thermocouple connection; Damaged thermocouple	Ensure secure connection; Replace thermocouple if damaged
Laser not working	Laser function disabled; Malfunction	Check settings; Contact support if persistent

9. SPECIFICATIONS

Parameter	Specification
IR Measurement Range	-50°C to 1300°C (-58°F to 2372°F)
K-type Measurement Range	-50°C to 1370°C (-58°F to 2498°F)
IR Resolution	0.1°C / °F
K-type Resolution	0.1°C / °F
IR Accuracy	±1.5% or ±1.5°C (whichever is greater)
K-type Accuracy	±1.5%
Distance to Spot Ratio (D:S)	30:1
Emissivity	Digitally Adjustable 0.10 to 1.00
Response Time	Less than 500ms
Spectral Response	8-14µm
Power Supply	9V Battery or Battery Eliminator
Data Storage	20 Readings (Offline)
Dimensions	Refer to product dimensions
Weight	200 Grams
Safety Compliance	CE

10. WARRANTY AND SUPPORT

The Metravi MT-14 comes with a **1-year warranty** against manufacturing defects. For any usage issues, product concerns, replacements, or warranty claims, please contact Metravi Instruments directly.

- **Email:** online_sales@metravi.com
- **SMS / WhatsApp:** 9073384641

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Setting Trends. Showing the Way.

CONTACT US
We will help you!

with

- Usage Issues
- Product Issues
- Replacements
- Warranty

1 YEAR WARRANTY

All Metravi Instruments carry 1 year Warranty against manufacturing defects

Read Operating Manual for instructions carefully. Check for Usage Video on YouTube or our website.

Email online_sales@metravi.com
SMS / WhatsApp 9073384641

(Faint background image of a handheld electronic device)

Figure 10.1: Metravi's warranty statement and contact details for customer support.

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