

Mastech MS6514

Mastech MS6514 Dual Channel Digital Thermometer

Temperature Logger Tester with USB Interface

INTRODUCTION

The Mastech MS6514 is a high-precision, dual-channel digital thermometer designed for accurate temperature measurement and data logging. It supports various thermocouple types (J, K, T, E, R, S, N) and features a USB interface for data transfer to a computer. This manual provides essential information for the safe and effective operation, maintenance, and troubleshooting of your MS6514 thermometer.

SAFETY INFORMATION

Please read and understand all safety instructions before operating the device. Failure to do so may result in injury or damage to the instrument.

- Do not operate the device if it appears damaged or if the insulation is compromised.
- Ensure correct battery polarity when installing.
- Avoid exposing the device to extreme temperatures, humidity, or direct sunlight.
- Do not attempt to repair or modify the device. Refer all servicing to qualified personnel.
- Use only specified thermocouple types and ensure they are properly connected.
- Keep the device clean and dry.

PACKAGE CONTENTS

Verify that all items listed below are present in your package:

- Mastech MS6514 Digital Thermometer (1 unit)
- USB Cable (1 unit)
- CD Software (1 unit)
- Temperature Probe (2 units)
- User Manual (this document)

PRODUCT OVERVIEW



Figure 1: Front view of the MS6514 thermometer, highlighting the LCD display and button layout.



Figure 2: Side and back views illustrating the physical dimensions and battery compartment of the MS6514.



Figure 3: The MS6514 thermometer with its standard accessories, including the USB cable and two temperature probes.

The MS6514 features a clear LCD display, intuitive button controls, and robust construction. Key components include:

- **LCD Display:** Shows temperature readings, units, time, and various indicators.
- **POWER Button:** Turns the device on or off.
- **T1/T2/T1-T2 Button:** Toggles between displaying temperature from probe 1, probe 2, or the difference between T1 and T2.
- **°C/°F/K Button:** Changes the temperature unit between Celsius, Fahrenheit, and Kelvin.
- **MAX/AVG/MIN Button:** Cycles through maximum, average, and minimum recorded temperature values.
- **HOLD/ENTER/SETUP Button:** Holds the current reading, confirms selections in setup mode, or enters setup mode.
- **MEM/READ Button:** Accesses memory functions to store or recall data.
- **Up/Down Arrows:** Navigate menus or adjust settings.
- **USB Port:** For connecting to a computer for data transfer.
- **Thermocouple Inputs (T1, T2):** Jacks for connecting K-type thermocouples.

SETUP

1. Battery Installation

1. Locate the battery compartment on the back of the device.
2. Open the battery cover.
3. Insert a new 9V battery, observing the correct polarity (+/-).
4. Close the battery cover securely.

2. Thermocouple Connection

1. Identify the T1 and T2 input jacks at the top of the thermometer.
2. Connect your desired thermocouple probes into the T1 and/or T2 jacks. Ensure a firm connection.
3. Note: The device supports J, K, T, E, R, S, N type thermocouples. Ensure the correct type is selected in the device settings for accurate readings.

3. Software Installation (for Data Logging)

1. Insert the provided CD Software into your computer's CD/DVD drive.
2. Follow the on-screen instructions to install the necessary drivers and data logging software.
3. Connect the MS6514 to your computer using the supplied USB cable.
4. Launch the installed software to begin data transfer and logging.

OPERATING INSTRUCTIONS

Power On/Off

Press the **POWER** button to turn the thermometer on or off. The device features an automatic shutdown function to conserve battery life; the auto-off time can be configured in the setup menu.

Selecting Temperature Units (°C/°F/K)

Press the **°C/°F/K** button to cycle through Celsius, Fahrenheit, and Kelvin temperature units.

Dual Input Display (T1, T2, T1-T2)

Press the **T1/T2/T1-T2** button to switch the display between:

- **T1**: Temperature reading from the first thermocouple input.
- **T2**: Temperature reading from the second thermocouple input.
- **T1-T2**: The temperature difference between the two inputs.

Maximum, Minimum, and Average Measurement

Press the **MAX/AVG/MIN** button to view the maximum, minimum, or average temperature recorded since the last reset or power-on. Press repeatedly to cycle through these values.

Data Hold

Press the **HOLD** button (short press) to freeze the current temperature reading on the display. Press again to release the hold function.

Data Logging and Memory

The MS6514 can store up to 1000 data points, either automatically or manually.

- **Manual Storage:** While in normal measurement mode, press the **MEM** button (short press) to manually save the current reading.
- **Automatic Storage:** Configure the automatic storage interval in the setup menu. The device will log data at the set interval.
- **Reading Stored Data:** Press and hold the **MEM** button, then use the **Up/Down** arrows to scroll through stored data points.

USB Interface for Data Transfer

Connect the thermometer to your computer using the USB cable. Use the provided software to transfer logged data, view real-time readings, and configure device settings from your computer.

User Auto-Calibration and Thermocouple Deviation Compensation

The device features a user auto-calibration function and thermocouple deviation compensation to ensure accuracy. Refer to the detailed instructions in the software manual or the device's internal setup menu for proper execution of these functions. It is crucial to understand the procedure before attempting self-calibration.

MAINTENANCE

Cleaning

Wipe the device with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure the device is dry before storage or next use.

Battery Replacement

When the low battery indicator appears on the display, replace the 9V battery as described in the "Battery Installation" section. Remove the battery if the device will not be used for an extended period.

Storage

Store the thermometer in a cool, dry place, away from direct sunlight and extreme temperatures. Keep it in its protective case (if provided) to prevent damage.

TROUBLESHOOTING

Problem	Possible Cause	Solution
Device does not power on.	Low or dead battery; incorrect battery installation.	Replace the 9V battery; ensure correct polarity.
Inaccurate temperature readings.	Incorrect thermocouple type selected; damaged thermocouple; need for calibration.	Verify thermocouple type in settings; check thermocouple for damage and replace if necessary; perform user auto-calibration.
Cannot connect to PC via USB.	Driver not installed or corrupted; faulty USB cable/port; software issue.	Reinstall drivers from the provided CD; try a different USB cable or port; ensure software is running correctly.
"OL" or "---" displayed.	Temperature out of range; open thermocouple circuit.	Ensure temperature is within specified range; check thermocouple connection and integrity.

SPECIFICATIONS

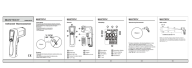
Parameter	Value
Material	ABS housing
Supported Thermocouple Types	J, K, T, E, R, S, N
Temperature Units	°C, °F, K (Kelvin)
Measurement Range (K-type)	-200.0°C to +1372°C / -328.0°F to +2501°F
Measurement Range (J-type)	-210.0°C to +1200°C / -346.0°F to +2192°F
Measurement Range (T-type)	-250.0°C to +400°C / -418.0°F to +752°F
Measurement Range (E-type)	-150.0°C to +1000°C / -238.0°F to +1832°F
Measurement Range (R-type)	0°C to +1767°C / 32°F to +3212°F
Measurement Range (S-type)	0°C to +1767°C / 32°F to +3212°F
Measurement Range (N-type)	-200.0°C to +1300°C / -328.0°F to +2372°F
Display Resolution	0.1°C / °F / K (for values <1000); 1°C / °F / K (for values ≥1000, R/S types)
Accuracy (K, J, T, E)	±(0.2% + 0.5°C)
Accuracy (R, S)	±(0.2% + 1°C)
Accuracy (N)	±(0.2% + 0.5°C)
Temperature Scale	ITS-90
Applicable Standards	NIST-175
Data Storage Capacity	1000 data points (automatic and manual)
Interface	USB
Power Supply	9V battery
Dimensions (L x W x H)	Approx. 188mm x 85mm x 39mm (7.5 x 3.3 x 1.5 inches)
Weight	Approx. 1.12 pounds

WARRANTY AND SUPPORT

Warranty information for the Mastech MS6514 Digital Thermometer is typically provided with your purchase documentation. Please refer to the warranty card or contact your point of purchase for specific details regarding warranty coverage and duration.

For technical support, service, or inquiries not covered in this manual, please contact Mastech customer service or visit the official Mastech website. Contact information can usually be found on the product packaging or the manufacturer's website.

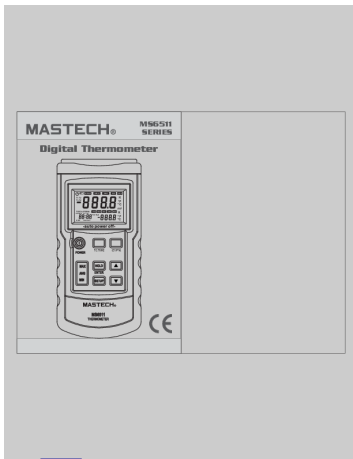
Related Documents - MS6514

	Mastech MS6514 Digital Thermometer Quick Start Guide Quick start guide for the Mastech MS6514 Digital Thermometer, covering setup, operation, and specifications for K, J, T, E, N, R, S type thermocouples.
	MASTECH MY74 Digital Multimeter Quick Start Guide Accurate Measurements Get started quickly with the MASTECH MY74 Digital Multimeter. This guide covers setup, safety, and specifications for accurate voltage, current, resistance, capacitance, frequency, and temperature measurements.
	MASTECH MS6591P Infrared Thermometer User Manual and Specifications Comprehensive guide to the MASTECH MS6591P Infrared Thermometer, covering its features, operation, specifications, and safety guidelines for accurate non-contact temperature measurement.
	Mastech MS6541 Infrared Thermometer Quick Start Guide Quick start guide for the Mastech MS6541 Infrared Thermometer, detailing its specifications, usage, and features.
	MASTECH MS6531B Infrared Thermometer Quick Start Guide Get started quickly with the MASTECH MS6531B Infrared Thermometer. This guide provides essential specifications, usage instructions, and safety information for accurate non-contact temperature measurements.
	MASTECH MS5908A Circuit Analyzer Quick Start Guide and Specifications Quick start guide and technical specifications for the MASTECH MS5908A Circuit Analyzer. Learn about its functions, safety precautions, and measurement ranges for voltage, impedance, RCD, and GFCI testing.

Documents - Mastech – MS6514



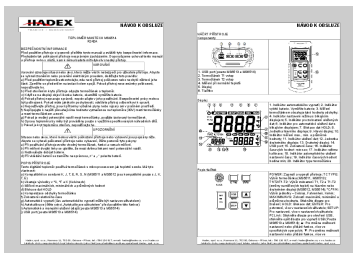
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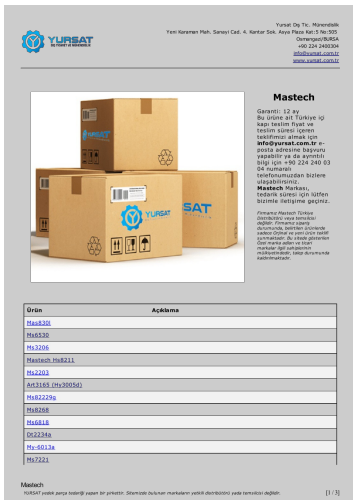


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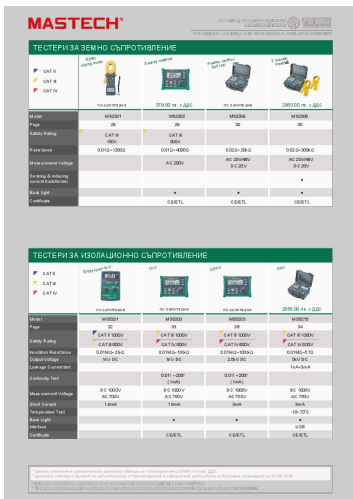
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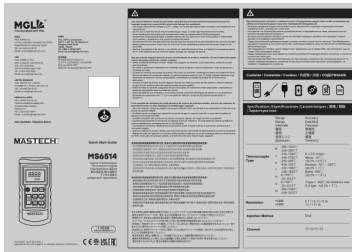


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[Mastech MS6514 Digital Thermometer Quick Start Guide](#)

Quick start guide for the Mastech MS6514 Digital Thermometer, covering setup, operation, and specifications for K, J, T, E, N, R, S type thermocouples.

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