

Mastech MS8250A

Mastech MS8250A Digital Multimeter User Manual

Model: MS8250A

1. INTRODUCTION

This user manual provides detailed instructions for the safe and effective operation of the Mastech MS8250A Digital Multimeter. The MS8250A is a portable, battery-powered instrument designed for measuring AC/DC voltage, AC/DC current, resistance, capacitance, frequency, duty cycle, diode, and continuity. It also features non-contact voltage detection, data hold, and a display backlight.

Please read this manual thoroughly before using the device to ensure proper operation and to prevent potential hazards.

2. SAFETY INFORMATION

Always adhere to the following safety precautions to avoid personal injury or damage to the multimeter or the equipment under test.

- Read and understand all instructions in this manual before use.
- Do not exceed the maximum input values specified for each function.
- Never use the multimeter if its casing is damaged or if the test leads are frayed or broken.
- Ensure the function switch is in the correct position for the desired measurement before connecting the test leads.
- Use extreme caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- The Mastech MS8250A is rated for CAT IV 600V. This rating indicates its suitability for measurements at the source of the low-voltage installation, such as electricity meters and primary overcurrent protection devices.
- Always disconnect the test leads from the circuit before changing the function switch position.
- Replace batteries immediately when the low battery indicator appears to ensure accurate readings.

3. PRODUCT OVERVIEW

3.1 Key Features

- Display: 4000 counts
- Auto Ranging and Manual Ranging capabilities
- Auto Power Off function to conserve battery life

4. SETUP

4.1 Battery Installation

The Mastech MS8250A requires two LR44 batteries for operation. These are typically included with the device.

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment cover on the back of the multimeter.
3. Use a screwdriver to loosen the screw(s) securing the battery cover.
4. Carefully remove the battery cover.
5. Insert two new LR44 batteries, observing the correct polarity (+ and -) as indicated inside the compartment.
6. Replace the battery cover and tighten the screw(s) securely.

Note: Always dispose of used batteries responsibly according to local regulations.

5. OPERATING INSTRUCTIONS

5.1 General Operation

- **Power On/Off:** Rotate the function switch from the 'OFF' position to any desired measurement function to turn the multimeter ON. Rotate it back to 'OFF' to power OFF.
- **Auto Power Off:** The multimeter will automatically power off after approximately 15 minutes of inactivity to save battery. Press any button or rotate the function switch to resume operation.
- **Auto Ranging:** By default, the multimeter operates in auto-ranging mode, automatically selecting the appropriate measurement range.
- **Manual Ranging:** Press the 'RANGE' button to switch to manual ranging. Each press will cycle through available ranges. Press and hold 'RANGE' to return to auto-ranging.
- **Data Hold:** Press the 'HOLD' button to freeze the current reading on the display. Press it again to release.
- **Backlight:** Press the backlight button (often indicated by a light bulb icon) to turn the display backlight ON or OFF.

5.2 Measurement Functions

Before any measurement, ensure the test leads are correctly inserted into the appropriate input jacks.

5.2.1 DC Voltage Measurement (V \rightarrow)

1. Insert the red test lead into the 'V Ω Hz% \rightarrow \leftarrow CAP' jack and the black test lead into the 'COM' jack.
2. Rotate the function switch to the 'V \rightarrow ' position.
3. Connect the test leads in parallel to the DC voltage source or component to be measured.
4. Read the voltage value on the display. Observe polarity.

5.2.2 AC Voltage Measurement (V \sim)

1. Insert the red test lead into the 'V Ω Hz% \rightarrow \leftarrow CAP' jack and the black test lead into the 'COM' jack.
2. Rotate the function switch to the 'V \sim ' position.
3. Connect the test leads in parallel to the AC voltage source or component to be measured.
4. Read the voltage value on the display.

5.2.3 DC Current Measurement (A \rightarrow , mA \rightarrow , μ A \rightarrow)

1. **For μ A/mA:** Insert the red test lead into the 'mA μ A' jack and the black test lead into the 'COM' jack.

2. **For A:** Insert the red test lead into the 'A' jack and the black test lead into the 'COM' jack.
3. Rotate the function switch to the appropriate 'A-', 'mA-', or 'μA-' position.
4. Connect the test leads in series with the circuit to be measured.
5. Read the current value on the display.

Caution: Never connect the multimeter in parallel when measuring current, as this can blow the fuse or damage the meter.

5.2.4 AC Current Measurement (A~, mA~, μA~)

1. Follow the same lead connection steps as for DC Current Measurement.
2. Rotate the function switch to the appropriate 'A~', 'mA~', or 'μA~' position.
3. Connect the test leads in series with the circuit to be measured.
4. Read the current value on the display.

5.2.5 Resistance Measurement (Ω)

1. Insert the red test lead into the 'VΩHz%→←CAP' jack and the black test lead into the 'COM' jack.
2. Rotate the function switch to the 'Ω' position.
3. Ensure the circuit or component is de-energized before measuring resistance.
4. Connect the test leads across the component to be measured.
5. Read the resistance value on the display.

5.2.6 Diode Test (→←)

1. Insert the red test lead into the 'VΩHz%→←CAP' jack and the black test lead into the 'COM' jack.
2. Rotate the function switch to the '→←' position.
3. Connect the red test lead to the anode and the black test lead to the cathode of the diode.
4. The display will show the forward voltage drop. Reverse the leads; the display should show 'OL' (Open Loop) for a good diode.

5.2.7 Continuity Test (→←)

1. Insert the red test lead into the 'VΩHz%→←CAP' jack and the black test lead into the 'COM' jack.
2. Rotate the function switch to the '→←' position and press the 'FUNC' button to select continuity mode (indicated by a buzzer icon).
3. Connect the test leads across the circuit or component.
4. If the resistance is below approximately 50Ω, the buzzer will sound, indicating continuity.

5.2.8 Non-Contact Voltage (NCV) Detection

1. Rotate the function switch to the 'NCV' position.
2. Move the top part of the multimeter (where the NCV sensor is located) close to the conductor being tested.
3. If AC voltage is detected, the multimeter will emit an audible beep and/or flash an indicator light. The intensity of the indication may vary with voltage strength.

5.2.9 Relative Measurement (REL)

1. Select the desired measurement function (e.g., voltage, resistance).
2. Take a reference measurement.
3. Press the 'REL' button. The display will show '0' and subsequent measurements will be displayed as a difference from the stored reference value.

4. Press 'REL' again to exit relative mode.

6. SPECIFICATIONS

The following table details the technical specifications for the Mastech MS8250A Digital Multimeter.

MS8250A Features

- Display 4000 counts
- Auto Ranging
- Manual Ranging
- Auto Power Off
- Relative Measurement
- Non-Contact Voltage Detector
- Diode Open voltage 1.5V
- Continuity Buzzer <50±20Ω
- Data Hold
- Low Battery Display
- Display Backlight

Specifications	Range	Resolution	Accuracy
DC Voltage	400mV	0.1mV	±(0.8%+3)
	4V/40V/400V/600V	1mV/10mV/0.1V/1V	±(0.5%+5)
AC Voltage	400mV	0.1mV	±(1.0%+5)
	4V/40V/400V	1mV/10mV/0.1V	±(0.8%+5)
	600V	1V	±(1.2%+3)
DC Current	400μA/4000μA/40mA/400mA	0.1μA/1μA/0.01mA/0.1mA	±(0.8%+2)
	10A	10mA	±(2.0%+5)
	400μA/4000μA/40mA/400mA	0.1μA/1μA/0.01mA/0.1mA	±(1.5%+2)
AC Current	10A	10mA	±(3.0%+5)
	400Ω /4kΩ /40kΩ /400kΩ /4MΩ /40MΩ	0.1Ω /1Ω /10Ω /0.1kΩ /4kΩ /10kΩ	±(1.0%+5)
Resistance			±(1.2%+15)
Capacitance	40nF/400nF/4μF/40μF/100μF	10pF/0.1nF/1nF/10nF/0.1μF	±(3.0%+5)
Frequency	5Hz/50Hz/500Hz/5kHz	0.001Hz/0.01Hz/0.1Hz/1Hz	±(0.5%+2)
	50kHz/500kHz/5MHz	10Hz/0.1kHz/1kHz	±(0.5%+2)
Duty Cycle	0.1%~99.9%	0.1%	±(2.0%+5)

Figure 2: Detailed specifications for the Mastech MS8250A.

Measurement	Range	Resolution	Accuracy
DC Voltage	400mV/4V/40V/400V/600V	0.1mV/1mV/10mV/0.1V/1V	±(0.8%+3) / ±(0.5%+5)
AC Voltage	400mV/4V/40V/400V/600V	0.1mV/1mV/10mV/0.1V/1V	±(1.0%+5) / ±(0.8%+5) / ±(1.2%+3)

Measurement	Range	Resolution	Accuracy
DC Current	400μA/4000μA/40mA/400mA/10A	0.1μA/1μA/0.01mA/0.1mA/10mA	±(0.8%+2) / ±(2.0%+5)
AC Current	400μA/4000μA/40mA/400mA/10A	0.1μA/1μA/0.01mA/0.1mA/10mA	±(1.5%+2) / ±(3.0%+5)
Resistance	400Ω/4kΩ/40kΩ/400kΩ/4MΩ/40MΩ	0.1Ω/1Ω/10Ω/100Ω/1kΩ/10kΩ	±(1.0%+5) / ±(1.2%+15)
Capacitance	40nF/400nF/4μF/40μF/100μF	10pF/0.1nF/1nF/10nF/0.1μF	±(3.0%+5)
Frequency	5Hz/50Hz/500Hz/5kHz/50kHz/500kHz/5MHz	0.001Hz/0.01Hz/0.1Hz/1Hz/10Hz/0.1kHz/1kHz	±(0.5%+2)
Duty Cycle	0.1%~99.9%	0.1%	±(2.0%+5)

6.1 General Specifications

- **Display:** 4000 counts
- **Power Source:** 2 x LR44 batteries (included)
- **Dimensions (L x W x H):** 6.3 x 3.54 x 1.97 inches (160 x 90 x 50 mm)
- **Weight:** 1.1 Pounds (0.5 Kilograms)
- **Safety Rating:** CAT IV 600V

7. MAINTENANCE

7.1 Cleaning

To clean the multimeter, wipe the case with a damp cloth and a mild detergent. Do not use abrasives or solvents. Ensure the device is completely dry before use.

7.2 Battery Replacement

When the low battery indicator appears on the display, replace the batteries as described in Section 4.1. Using the multimeter with low batteries may result in inaccurate readings.

7.3 Storage

If the multimeter is not to be used for an extended period, remove the batteries to prevent leakage and potential damage to the device. Store the multimeter in a cool, dry place, away from direct sunlight and extreme temperatures.

8. TROUBLESHOOTING

- **No Display or Faint Display:** Check battery installation and charge. Replace batteries if necessary.
- **Incorrect Readings:** Ensure the function switch is set to the correct measurement type and range. Verify test lead connections. Check battery level.
- **'OL' (Overload) Display:** The measured value exceeds the selected range. Switch to a higher range or ensure the input is within the meter's maximum capabilities.
- **No Continuity Beep:** Ensure the function switch is in the continuity position and the 'FUNC' button has been pressed to select continuity mode. Check test leads for damage.







If problems persist, contact Mastech customer support or your local distributor for assistance.

9. WARRANTY AND SUPPORT

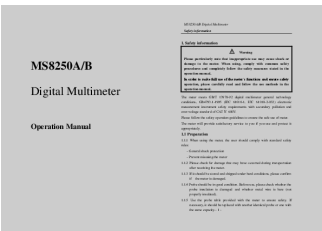
For warranty information and technical support, please refer to the documentation provided with your purchase or visit the official Mastech website. You may also contact the seller directly for assistance.

For more information about Mastech products, visit the [Mastech Store](#).

Related Documents - MS8250A

	<p>MASTECH MS2016A Leakage Clamp Meter Operation Manual</p> <p>Comprehensive operation manual for the MASTECH MS2016A AC Leakage Clamp Meter, covering safety information, specifications, operating guidance, maintenance, and accessories. Features include AC/DC voltage, resistance, capacitance, continuity, diode, and temperature measurements.</p>
	<p>MASTECH Catalogue 2025: Digital Multimeters, Clamp Meters & Testing Instruments</p> <p>Explore the MASTECH Catalogue 2025, featuring a comprehensive range of digital multimeters, clamp meters, and electrical testing instruments. Discover detailed product specifications and selection guides for professionals and DIYers.</p>
	<p>MASTECH M300 Digital Multimeter User Manual</p> <p>User manual for the MASTECH M300 digital multimeter, detailing its features, specifications, safety precautions, and operating instructions for measuring DC/AC voltage, DC current, resistance, continuity, and diode testing.</p>
	<p>MASTECH MS8223A Pen-Type Digital Multimeter Quick Start Guide</p> <p>Quick start guide for the MASTECH MS8223A pen-type digital multimeter, covering safety precautions, specifications, and basic operation for voltage, current, resistance, continuity, logic test, and NCV detection.</p>
	<p>MASTECH MY74 Digital Multimeter Quick Start Guide Accurate Measurements</p> <p>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.</p>
	<p>MASTECH MS8250D Digital Multimeter Quick Start Guide</p> <p>A concise and SEO-optimized guide for the MASTECH MS8250D Digital Multimeter, providing essential information on safety, specifications, and basic operation.</p>

Documents - Mastech – MS8250A



[\[pdf\]](#) User Manual Datasheet

Download MS8250A Datasheet Mastech datasheets down M S 8 |||

MS8250A/B Digital Multimeter Operation Manual **MS8250A/B** Digital Multimeter Safety information 1. Safety information Warning Please particularly note that inappropriate use may cause shock or damage to the meter. When using, comply with common safety procedures and completely follow the safety measu...

lang:en score:38 filesize: 1.72 M page_count: 11 document date: 2020-01-06

CATALOGUE 2023 mastech group 4 fast selection charts digital multimeters manual ranging cat ii iii iv model
ms8233a ms8233b ms8233c ms8360e my70 my74 20231213105827706 resource |||

CATALOGUE 2023 MEASURING INSTRUMENTS CATALOGUE CONTENT INDEX
CONTENT INDEX 2 3 4 22 50 66 69 76 ... Wireless MS8239C 33 CAT III 600V 4000 600V
600V 10A 10A 40M 100F 10kHz -20-1000C -4-1832F **MS8250A** 34 CAT IV 600V 4000 600V
600V 10A 10A 40M 100F 5MHz MS8250D 35 CAT III 1000V CAT IV 600V...

lang:en score:25 filesize: 8.01 M page_count: 136 document date: 2023-12-13



[\[pdf\]](#) User Manual Quick Start Guide

MS8250A B cdr Administrator GLO MS8250B mastech group resources QSG GLO |||

CAT I V CAT IV: MEASUREMENT CATEGORY IV is applicable to test and measuring circuits connected at ... ocket 7 Non-contact voltage induction area 7 1 2 AUTO REL PCLINK DC AC kHz 3 nmFAV **MS8250A** DIGITAL MULTIMETER Auto Power Off Hz RANGE REL HOLD 4 FUNC Hz NCV A V mA 5 A A ...

lang:en score:24 filesize: 4.79 M page_count: 12 document date: 2017-05-15



[\[pdf\]](#) User Manual Catalog

OEM catalogue MGL Mastech LR 2021 02 18 — under our own brands KPS Power Probe and APPA to the complete packaging manuals customization Battery User s Manual mgl euman Euman |||

GENERAL INDEX 04 08 32 37 W ho is MGL P RODUCT OVERVIEW TABLES 44 87 112 116 121 126 1 ... For Clamp Interface 47 MS8361D CE/ETL CAT III 600V 4000 600V 600V 10A 10A 40M 100mF 10MHz 70 **MS8250A** CE/ETL CAT IV 600V 4000 600V 600V 10A 10A 40M 100 F 5MHz 70 MS8250B CE/ETL CAT IV 600V 4...

lang:en score:23 filesize: 33.32 M page_count: 166 document date: 2021-03-09



[\[pdf\]](#) Catalog

cover 2 mastech catalogue technica m ru upload support ext Каталог продукции Mastech Токовые клещи M9912 AC DC Техника М Современное измерительное оборудование |||

MGL International Limited APAC - Taiwan Flat 4-1, 4/F, No. 35, Section 3 Minquan East Road, Taipei, ... 0MHz -20-1000 -4-1832 CE/ETL MS8301D 52 CAT III 600V 6000 600V 600V 10M 3kHz CE/ETL **MS8250A** 53 CAT III 600V 4000 600V 600V 10A 10A 40M 100F 5MHz MS8251A 54 CAT III 1000V CAT IV ...

lang:en score:17 filesize: 37.35 M page_count: 78 document date: 2019-11-11



[\[pdf\]](#) Catalog

cover 2 CATALOGUE 2019 catalog mastech bg media |||

MGL International Limited APAC - Taiwan Flat 4-1, 4/F, No. 35, Section 3 Minquan East Road, Taipei, ... 0MHz -20-1000 -4-1832 CE/ETL MS8301D 52 CAT III 600V 6000 600V 600V 10M 3kHz CE/ETL **MS8250A** 53 CAT III 600V 4000 600V 600V 10A 10A 40M 100F 5MHz MS8251A 54 CAT III 1000V CAT IV ...

lang:en score:17 filesize: 12.97 M page_count: 78 document date: 2019-05-20



[MASTECH Measuring Instruments Catalogue 2021](#)

Explore the comprehensive MASTECH 2021 catalogue featuring a wide range of high-quality electrical test and measurement instruments, including digital multimeters, clamp meters, testers, and environmental meters for industrial, professional, and DIY applications.

lang:en score:16 filesize: 37.73 M page_count: 228 document date: 2023-10-26



[Mastech Catalogue 2024: Comprehensive Guide to Electrical Test and Measurement Instruments](#)

Explore the Mastech Catalogue 2024, featuring a wide range of high-quality electrical test and measurement instruments, including digital multimeters, clamp meters, and environmental testers. Discover Mastech's innovative solutions for industrial, automotive, and domestic applications.

lang:en score:16 filesize: 12.42 M page_count: 223 document date: 2024-01-30



[MASTECH 2021 Catalogue: Electrical Test & Measurement Instruments](#)

Explore the MASTECH 2021 Catalogue, featuring a wide range of high-quality electrical test and measurement instruments, including digital multimeters, clamp meters, and environmental testers for industrial, construction, and DIY applications.

lang:en score:15 filesize: 38.32 M page_count: 228 document date: 2021-08-01

[illegible][Mastech Digital Multimeters and Clamp Meters Fast Selection Charts](#)

Comprehensive selection guide for Mastech digital multimeters and clamp meters, detailing specifications, features, and safety ratings for various models.

lang:tl score:13 filesize: 961.08 K page_count: 17 document date: 2022-11-17

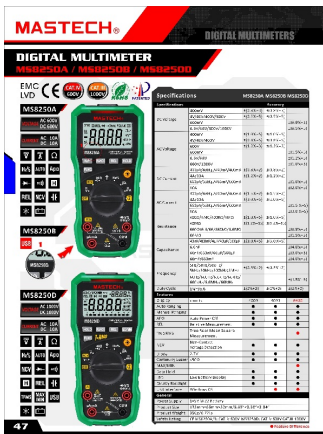


[pdf] Catalog

PRODUCTS CATALOG 52c482531c137f4d5fc9ba18918c1982 solislux eu site files |||

BUILD TO PRECISION PRODUCTS CATALOG BUILD TO PRECISION Director s Message
Mr Kai-Yin Ip, founder ... Clamp Interface NEW 43 MS8361D CE/ETL CAT III 600V 4000 600V
600V 10A 10A 40M 100mF 10MHz 66 **MS8250A** CE/ETL CAT IV 600V 4000 600V 600V 10A
10A 40M 100F 5MHz 66 MS8250B CE/ETL CAT IV 600V 40...

lang:en score:13 filesize: 9.33 M page_count: 86 document date: 2018-10-08



[pdf]

Untitled mastech® digital multimeter ManoManoMASTECH® DIGITAL MULTIMETER MS8250A MS8250B

MS8250D EMC CE LVD VOLTAGE AC 600V DC 10A CURRENT VÅ TΩ CAT IV III9733250cdn manomano files
9733250 |||

...

lang:en score:12 filesize: 2.89 M page_count: 1 document date: 2022-10-08



[pdf]

Sheldone Technical Documents 1MS8250D Digital USB Multimeterms8250dtoolworld in storage media product

technical documents ms8250d 1UntitledMS8250D Multimetertoolworld ms8250dtoolworld srsItid

AfmBOorMD4FROBfc3pSldtvumPDqPYKKH 5cpuDKLtn5 olxKn 7uBM1 1Technical MultimeterMS8250D mastech®

digital multimeter Tool WorldTechnical 1UntitledMASTECH® DIGITAL MULTIMETER MS8250A MS8250B

MS8250D EMC CE LVD MASTECH® AUTO REL hFE PCLINKE 8 KΩHz numFAV DIGITAL MS8250D

AfmBOornUOMRtI2aI5RzNK2vUqkXUSGSVwFSYSsz2GJ91CDTwwkoow7oNtoolworld |||

...

lang:en score:11 filesize: 519.18 K page_count: 1 document date: 2017-09-04