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Mastech MS8233A

Mastech MS8233A Digital Multimeter

INSTRUCTION MANUAL

Model: MS8233A

1. Introduction

The Mastech MS8233A is a compact, battery-powered digital multimeter designed for measuring AC/DC voltage, DC current, resistance, diode, continuity, and temperature. It features a 2000-count display, data hold function, and a low battery indicator, making it suitable for various electrical testing applications.

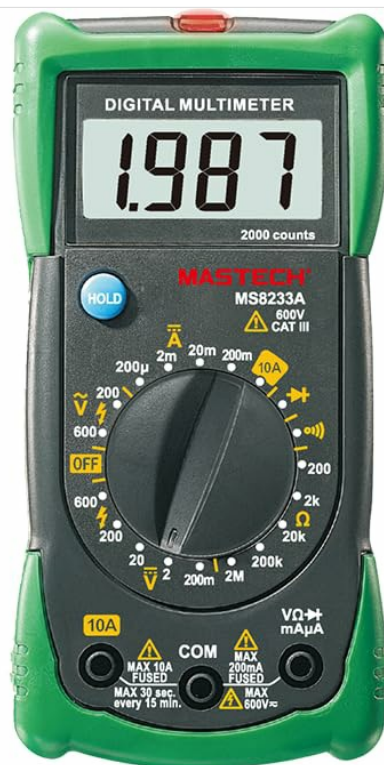


Figure 1: Front view of the Mastech MS8233A Digital Multimeter, showing the display, rotary switch, and input jacks.

2. Safety Information

To ensure safe operation and service of the meter, follow these instructions:

- Always ensure the meter is in good working condition before use.
- Do not apply voltage or current that exceeds the maximum specified limits for the meter.
- Use caution when working with voltages above 60V DC or 30V AC RMS, as these pose a shock hazard.
- Always disconnect the test leads from the circuit before changing functions.
- Replace the battery immediately when the low battery indicator appears to ensure accurate readings.
- Do not operate the meter if the case is open or if it appears damaged.
- Adhere to local and national safety codes.

3. Product Features

- Display: 2000 counts
- Diode Open Voltage: 3.0V
- Continuity Buzzer: Sounds at less than 60Ω
- Data Hold function
- Low Battery Display indicator
- Measures AC/DC voltage, DC current, resistance, diode check, continuity test, and temperature.

4. Package Contents

Verify that all items are present in the package:

- Mastech MS8233A Digital Multimeter
- Test Leads
- 1x 9V 6F22 Battery (pre-installed or included separately)
- Calibration Certificate
- Quick Start Guide



DIGITAL MULTIMETER MS8233A

SKU NO.: MS8233ACBGLO
UPC CODE: 810053673140
EAN CODE: 8435394778877

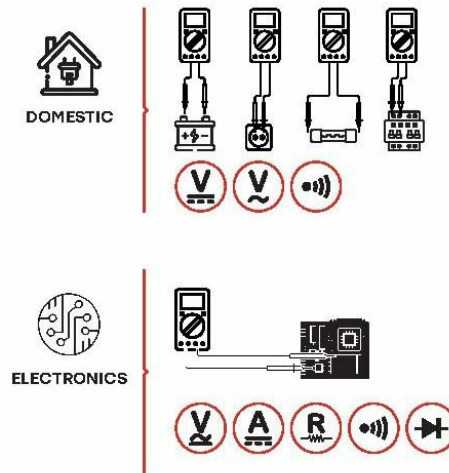
FEATURE

- Diode Open Voltage 3.0V.
- Continuity Buzzer <60Ω.
- Data Hold.
- Low Battery Display.

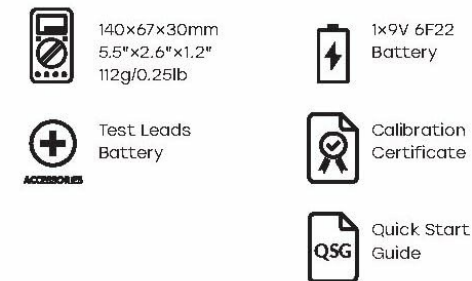
SPECIFICATIONS

AC Voltage 600V	DC Voltage 600V	DC Current 10A
Resistance 2MΩ	Continuity <60Ω	Display Counts 2000

MAIN APPLICATIONS



CONTENTS



PACKAGING INFORMATION



Figure 2: Illustration of package contents and main applications for the MS8233A multimeter.

5. Setup

5.1 Battery Installation

The MS8233A requires one 9V 6F22 battery. If the battery is not pre-installed or needs replacement:

1. Ensure the multimeter is turned OFF and disconnect all test leads.
2. Locate the battery compartment cover on the back of the unit.
3. Unscrew the retaining screw(s) and carefully remove the cover.
4. Connect the 9V battery to the battery clip, observing correct polarity.
5. Place the battery into the compartment and replace the cover, securing it with the screw(s).

5.2 Connecting Test Leads

Insert the test leads into the appropriate input jacks:

- Insert the black test lead into the “COM” (common) jack.
- For most measurements (voltage, resistance, diode, continuity, temperature), insert the red test lead into the “VΩmA” jack.
- For DC current measurements up to 10A, insert the red test lead into the “10A” jack.

6. Operating Instructions

To operate the multimeter, turn the rotary switch to the desired function. The display will show the measurement value.

6.1 DC Voltage Measurement (V–)

1. Set the rotary switch to the desired DC Voltage range (e.g., 200mV, 2V, 20V, 200V, 600V).
2. Connect the red test lead to the positive (+) side of the circuit and the black test lead to the negative (-) side.
3. Read the voltage value on the display.

6.2 AC Voltage Measurement (V~)

1. Set the rotary switch to the desired AC Voltage range (e.g., 200V, 600V).
2. Connect the test leads across the AC voltage source.
3. Read the voltage value on the display.

6.3 DC Current Measurement (A–)

1. Set the rotary switch to the desired DC Current range (e.g., 200μA, 2mA, 20mA, 200mA, 10A).
2. **Important:** For 10A measurements, move the red test lead to the “10A” jack. For other current ranges, use the “VΩmA” jack.
3. Open the circuit where current is to be measured and connect the meter in series.
4. Read the current value on the display.

6.4 Resistance Measurement (Ω)

1. Set the rotary switch to the desired Resistance range (e.g., 200Ω, 2kΩ, 20kΩ, 200kΩ, 2MΩ).
2. Ensure the circuit or component is de-energized before measuring resistance.
3. Connect the test leads across the component to be measured.
4. Read the resistance value on the display.

6.5 Diode Test (→|–)

1. Set the rotary switch to the Diode Test function.
2. Connect the red test lead to the anode and the black test lead to the cathode of the diode.
3. The display will show the forward voltage drop. Reverse the leads to check for open circuit (OL) indication.

6.6 Continuity Test (🔊)

1. Set the rotary switch to the Continuity Test function.

2. Connect the test leads across the circuit or component.
3. If the resistance is below approximately 60Ω, the buzzer will sound, indicating continuity.

6.7 Temperature Measurement (°C/°F)

The MS8233A can measure temperature using a K-type thermocouple (not always included, check package contents).

1. Set the rotary switch to the Temperature function.
2. Connect the K-type thermocouple to the input jacks, observing polarity.
3. Place the thermocouple probe at the point where temperature is to be measured.
4. Read the temperature value on the display.

6.8 Data Hold Function

Press the "HOLD" button to freeze the current reading on the display. Press it again to release the hold function and resume live readings.

7. Maintenance

7.1 Battery Replacement

When the low battery indicator appears on the display, replace the 9V battery as described in Section 5.1.

7.2 Cleaning

Wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents. Ensure the meter is completely dry before use.

7.3 Fuse Replacement

The current input jacks are typically protected by fuses. If the meter fails to measure current, the fuse may need replacement. Refer to the specific fuse ratings printed on the meter or in the detailed specifications. Fuse replacement should only be performed by qualified personnel.

8. Troubleshooting

If the multimeter does not function correctly, consider the following:

- **No display or faint display:** Check battery charge and ensure it is correctly installed. Replace if necessary.
- **Incorrect readings:** Verify the correct function and range are selected. Ensure test leads are properly connected and making good contact. Check battery level.
- **Cannot measure current:** Check the fuse for the current input. Ensure the red test lead is in the correct current jack (e.g., 10A).
- **"OL" (Overload) displayed:** The measured value exceeds the selected range. Switch to a higher range or verify the circuit is not open.

If problems persist, contact customer support.

9. Specifications

9.1 General Specifications

- Power Source: 2 LR44 batteries required (included) -*Note: Product description states 1x 9V 6F22*

battery. Please verify with actual product.

- Product Dimensions: 16 x 9 x 5 cm
- Item Weight: 0.5 Kilograms
- Manufacturer: MASTECH/MGL
- Safety Rating: CAT III 600V
- Certifications: CE, RoHS
- Upper Temperature Rating: 50 Degrees Celsius

9.2 Electrical Specifications

Specifications	Range	Resolution	Accuracy
DC Voltage	200mV/2V/20V/200V 600V	0.1mV/1mV/10mV/100mV 1V	$\pm(0.5\%+3)$ $\pm(0.5\%+3)$
AC Voltage	200V 600V	100mV 1V	$\pm(1.2\%+10)$ $\pm(1.2\%+10)$
DC Current	200μA/2mA/20mA/200mA 10A	0.1μA/1μA/10μA/0.1mA 0.01A	$\pm(1.0\%+3)$ $\pm(3.0\%+5)$
Resistance	200Ω/2kΩ/20kΩ/200kΩ 2MΩ	0.1Ω/1Ω/10Ω/100Ω 1kΩ	$\pm(0.8\%+4)$ $\pm(0.8\%+4)$

MS8233A Features

- Display 2000 counts
- Diode Open Voltage 3.0V
- Continuity Buzzer <60Ω
- Data Hold
- Low Battery Display
- Power Supply : 1x9V 6F22 Battery
- Product Size : 140mmx67mmx30mm/5.5"x2.6"x1.2"
- Product Weight : 112g/0.25lb
- Certificate : CE / ETL / RoHS
- Safety Rating : CATIII 600V

Specifications	Range	Resolution	Accuracy
DC Voltage	200mV/2V/20V/	0.1mV/1mV/10m	
	200V	V/0.1V	±(0.5%+3)
	600V	1V	±(0.5%+3)
AC Voltage	200V	100mV	±(1.2%+10)
	600V	1V	±(1.2%+10)
DC Current	200μA/2mA/20m	0.1μA/1μA/10μA	
	A/200mA	/0.1mA	±(1.0%+3)
	10A	0.01A	±(3.0%+5)
Resistance	200Ω/2kΩ/20kΩ/	0.1Ω/1Ω/10Ω/0.	
	200kΩ	1kΩ	±(0.8%+4)
	2MΩ	1kΩ	±(0.8%+4)

Figure 3: Detailed electrical specifications for the Mastech MS8233A.

9.3 Related Models Comparison




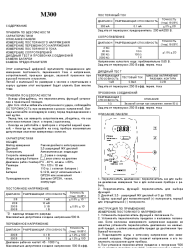


DIGITAL MULTIMETERS MANUAL RANGING

								
CAT II CAT III CAT IV	MAS838	MS8233A	MS8233B	MS8233C	MS8238	MS8261	MS8264	MS8269
Model	MAS838	MS8233A	MS8233B	MS8233C	MS8238	MS8261	MS8264	MS8269
Page	38	39	40	41	42	43	44	445
Safety Rating	CAT II 600V	CAT III 600V	CAT III 600V	CAT III 600V	CAT III 600V	CAT II 1000V CAT III 600V	CAT II 1000V CAT III 600V	CAT II 1000V CAT III 600V
Display Counts	2000	2000	2000	2000	2000	2000	2000	2000
Auto Ranging								
Auto Power Off						•	•	•
True RMS								
DC Voltage	600V	600V	600V	600V	600V	1000V	1000V	1000V
AC Voltage	600V	600V	600V	600V	600V	750V	750V	750V
DC Current	10A	10A	10A	10A	10A	10A	10A	10A
AC Current						10A	10A	10A
Resistance	2MΩ	2MΩ	2MΩ	2MΩ	2MΩ	200MΩ	200MΩ	20MΩ
Capacitance						20μF	20μF	20μF
Frequency							20kHz	
Duty Cycle								
Type K Temperature	-20~1000°C			-20~1000°C -4~1832°F		-20~1000°C		
Battery Test					•			
Diode	•	•	•	•	•	•	•	•
Continuity	•	•	•	•	•	•	•	•
Display Backlight			•	•		•	•	
Work Light								
Data Hold	•	•	•	•		•	•	•
NCV			•	•				
Inductance								20H
hFE Transistor						•	•	•
Dual Display								
MAX								
MAX/MIN								
MAX/MIN/AVG								
Relative Measurement								
Peak Measurement								
DWELL Test								
TACH Test								

Figure 4: Comparison table of various Mastech manual ranging digital multimeters, including the MS8233A.

10. Warranty and Support

Mastech products are designed for reliability and performance. For warranty information or technical support, please refer to the warranty card included with your product or contact Mastech customer service through their official website. Keep your purchase receipt as proof of purchase for warranty claims.

	<p>Mastech MS8233A Digital Multimeter Quick Start Guide</p> <p>A quick start guide for the Mastech MS8233A Digital Multimeter, providing essential safety information and specifications for various measurements including voltage, current, and resistance.</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 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 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 MY-68 Digital Multimeter User Manual</p> <p>Comprehensive user manual for the MASTECH MY-68 digital multimeter, covering specifications, safety instructions, operation, and maintenance.</p>
	<p>MASTECH MS8211D Pen-type Digital Multimeter Quick Start Guide</p> <p>A quick start guide for the MASTECH MS8211D pen-type digital multimeter, providing essential safety information, technical specifications, and basic operational instructions for voltage, current, resistance, and logic testing.</p>