

## Mastech MS8236

# MASTECH MS8236 Digital Multimeter and Network Cable Tester User Manual

## 1. INTRODUCTION

The MASTECH MS8236 is a versatile 2-in-1 digital multimeter and network cable track tester designed for electrical and network diagnostics. This device combines the functions of a digital multimeter for measuring electrical parameters with a network cable tester for verifying cable integrity and a tone generator for tracing wires. It is suitable for professional and DIY use in various applications.

## 2. SAFETY INFORMATION

Always adhere to basic safety precautions when using this device to prevent personal injury or damage to the meter or equipment under test. Read all instructions carefully before use.

- Do not exceed the maximum input values specified for each function.
- Exercise extreme caution when working with live circuits.
- Ensure the function switch is in the correct position before making measurements.
- Do not use the meter if it appears damaged or if the test leads are damaged.
- Replace batteries immediately when the low battery indicator appears to ensure accurate readings.
- Avoid using the device in environments with high humidity, extreme temperatures, or explosive gases.
- Always disconnect power to the circuit before testing continuity or resistance.

## 3. PRODUCT OVERVIEW

The MASTECH MS8236 integrates a digital multimeter with a detachable cable tracker/tone generator. The main unit features a clear digital display, function selector dial, and input jacks. The cable tracker assists in identifying and tracing network and telephone lines.



Figure 3.1: MASTECH MS8236 Digital Multimeter and Cable Tracker. The image shows the main multimeter unit on the left and the separate cable tracker unit on the right. Both are green and black.

MS8236

**Measuring Current:**  
 $\pm(1.2\%rdg+5dgt)$

**Measuring Resistance:**  
 $\pm(1.0\%rdg+3dgt)$

**Measuring Voltage Range:**  
 $\pm(0.7\%rdg+3dgt)$

**Measuring Inductance:**  
 200/2K/20K/200K/2M

Figure 3.2: Close-up of the MASTECH MS8236 Multimeter Display and Controls. The display shows '1.987 V' and the function dial indicates various measurement modes including V, A, Ohm, Diode, Continuity, Phone, Net Cable, and NCV.

## Key Features:

- Display: 2000 counts
- Ranging: Auto & Manual
- Non-Contact Voltage (NCV) Detector
- Diode Open Voltage: 1.7V
- Continuity Buzzer: Activates below 70Ω
- Data Hold function
- Low Battery Display
- Display Backlight
- Auto Power Off
- Network Cable Check: Tests for open circuits, shorts, miss-wires, reversals, split pairs, and shield detection. Supports T568A, T568B, 10Base-T.
- Telephone Line Check: Identifies line states (Busy, Ringing, Clear) and continuity.
- Tone Function: For tracking cables and diagnosing break points.

## 4. SETUP

### 4.1. Unpacking and Inspection

Carefully unpack the MS8236 and all accessories. Inspect the device for any signs of damage. If any damage is found, contact your supplier immediately.

# MS8236



Figure 4.1: MASTECH MS8236 Kit Contents. The image displays the multimeter, cable tracker, red and black test leads, a network cable adapter, and a small instruction manual.

## 4.2. Battery Installation

The MS8236 requires 2 LR44 batteries, which are included. To install or replace batteries:

1. Locate the battery compartment cover on the back of the multimeter unit.
2. Use a screwdriver to open the battery compartment.
3. Insert the 2 LR44 batteries, observing the correct polarity (+/-).
4. Securely close the battery compartment cover.

## 5. OPERATING INSTRUCTIONS

### 5.1. Basic Multimeter Functions

Connect the test leads to the appropriate input jacks (COM for black lead, V $\Omega$ mA for red lead for most measurements, or 20A for high current). Select the desired function using the rotary switch.

- **Voltage Measurement (DCV/ACV):** Turn the rotary switch to the 'V' position. Select DC or AC voltage if applicable. Connect test leads in parallel to the circuit.

- **Current Measurement (DCA/ACA):** Turn the rotary switch to the 'A' position. Select DC or AC current. Connect test leads in series with the circuit. Ensure the correct input jack (mA or 20A) is used.
- **Resistance Measurement ( $\Omega$ ):** Turn the rotary switch to the ' $\Omega$ ' position. Ensure the circuit is de-energized. Connect test leads across the component.
- **Diode Test ( $\rightarrow|$ ):** Turn the rotary switch to the diode symbol. Connect the red lead to the anode and the black lead to the cathode of the diode.
- **Continuity Test ()))**: Turn the rotary switch to the continuity symbol. The buzzer will sound if the resistance is below approximately  $70\Omega$ .

## 5.2. Network Cable Check

This function tests the integrity of network cables (RJ45). It can detect open circuits, shorts, miss-wires, reversals, split pairs, and shield detection for T568A, T568B, and 10Base-T standards.

1. Turn the rotary switch to the 'Net Cable' position.
2. Connect one end of the network cable to the RJ45 port on the main multimeter unit.
3. Connect the other end of the network cable to the RJ45 port on the remote cable tracker unit.
4. Observe the display for test results, which will indicate the cable status. The device also features a debug mode for detailed fault identification.

## 5.3. Telephone Line Check

This function allows for checking the state of a working telephone line and its continuity.

1. Turn the rotary switch to the 'Phone' position.
2. Connect the telephone line to the appropriate port on the main unit.
3. The device will identify the state of the line as Busy, Ringing, or Clear. It can also judge the continuity of the telephone cables or wires.

## 5.4. Tone Function

The tone function is used with the cable tracker to trace cables and wires and diagnose break points.

1. Turn the rotary switch to the 'Tone' position.
2. Connect the test leads or RJ11/RJ45 plug to the cable you wish to trace.
3. Use the remote cable tracker unit to follow the cable. The tracker will emit an audible tone when it detects the signal from the main unit, helping to locate the cable and identify breaks.

## 5.5. Non-Contact Voltage (NCV) Detection

The NCV function allows for detecting AC voltage without direct contact with the conductor.

1. Turn the rotary switch to the 'NCV' position.
2. Move the top part of the multimeter near a live AC voltage source.
3. The device will indicate the presence of AC voltage through an audible alarm and/or visual indicator.

## 5.6. Additional Functions

- **Data Hold:** Press the 'HOLD' button to freeze the current reading on the display. Press again to release.
- **Backlight:** Press the backlight button (often labeled with a light bulb symbol) to illuminate the display for better visibility in low-light conditions.
- **Auto Power Off:** The device will automatically power off after a period of inactivity to conserve battery.

life.

## 6. MAINTENANCE

### 6.1. Cleaning

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

### 6.2. Battery Replacement

When the low battery indicator appears on the display, replace the batteries as described in Section 4.2. Remove batteries if the device will not be used for an extended period.

## 7. TROUBLESHOOTING

- **No display or faint display:** Check battery installation and charge level. Replace batteries if necessary.
- **Incorrect readings:** Ensure test leads are properly connected and the correct function is selected. Verify the circuit is de-energized for resistance/continuity tests.
- **Network cable test failure:** Ensure both ends of the cable are securely connected to the main unit and remote. Check for physical damage to the cable or connectors.
- **No tone from cable tracker:** Verify the main unit is in 'Tone' mode and properly connected to the cable. Check the cable tracker's battery.

## 8. SPECIFICATIONS

The following table outlines the general and electrical specifications for the MASTECH MS8236.

### MS8236 Features

- Display 2000 counts
- Auto & Manual Ranging
- Auto Power Off
- Non-Contact Voltage Detector
- Diode Open Voltage 1.7V
- Continuity Buzzer <70Ω
- Maximum Measurement
- Data Hold
- Low Battery Display
- Display Backlight
- Network Cable Check
- Test for open circuits, shorts, miss-wires, reversals, split pairs, shield detection
- Main unit and one remote allow one person testing of T568A, T568B, 10Base-T.
- Debug mode for detailed fault identification result
- Phone Check
- Identify the state in the working telephone line: Busy, Ringing or Clear"
- Tone
- Judge the continuity of cables or wires.
- Track the cables or wires and diagnose the break point

Specifications	Range	Resolution	Accuracy
DC Voltage	200mV/2V/20V/200V/ 600V	0.1mV/1mV/10mV/10 0mV/1V	±(0.5%+5)
AC Voltage	200mV/2V/20V/200V/ 600V	0.1mV/1mV/10mV/10 0mV/1V	±(0.8%+5)
DC Current	200μA/2000μA/20mA/ 200mA 2A/10A	0.1μA/1μA/10μA/0.1m A 1mA/10mA	±(1.2%+5) ±(2.0%+10)
AC Current	200μA/2000μA/20mA/ 200mA 2A/10A	0.1μA/1μA/10μA/0.1m A 1mA/10mA	±(1.5%+5) ±(3.0%+10)
Resistance	200Ω/2kΩ/20kΩ/200k Ω 2MΩ/20MΩ	0.1Ω/1Ω/10Ω/100Ω 1kΩ/10kΩ	±(1.0%+5) ±(1.5%+5)

Figure 8.1: MASTECH MS8236 Features and Specifications Table. This image provides detailed electrical specifications for DC Voltage, AC Voltage, DC Current, AC Current, and Resistance, including ranges, resolutions, and accuracies.

Parameter	Range	Resolution	Accuracy
DC Voltage	200mV/2V/20V/200V/600V	0.1mV/1mV/10mV/100mV/1V	±(0.5%+5)
AC Voltage	200mV/2V/20V/200V/600V	0.1mV/1mV/10mV/100mV/1V	±(0.8%+5)
DC Current	200μA/2000μA/20mA/200mA/2A/10A	0.1μA/1μA/10μA/0.1mA/1mA/10mA	±(1.2%+5) ±(2.0%+10) for 10A
AC Current	200μA/2000μA/20mA/200mA/2A/10A	0.1μA/1μA/10μA/0.1mA/1mA/10mA	±(1.5%+5) ±(3.0%+10) for 10A
Resistance	200Ω/2kΩ/20kΩ/200kΩ/2MΩ/20MΩ	0.1Ω/1Ω/10Ω/100Ω/1kΩ/10kΩ	±(1.0%+5) ±(1.5%+5) for 20MΩ
Diode Open Voltage	1.7V		
Continuity Buzzer	<70Ω		

Parameter	Range	Resolution	Accuracy
Display	2000 counts		
Ranging	Auto & Manual		
Non-Contact Voltage Detector	Yes		
Auto Power Off	Yes		
Data Hold	Yes		
Low Battery Display	Yes		
Display Backlight	Yes		
Power Source	2 LR44 batteries (included)		
Product Dimensions	16 x 9 x 5 cm		
Item Weight	500 g		
Material	Acrylonitrile Butadiene Styrene (ABS)		
Certifications	CE, RoHS		

## 9. WARRANTY AND SUPPORT

For warranty information and technical support, please refer to the documentation provided with your purchase or contact the seller or manufacturer directly. Specific warranty terms may vary by region and retailer.