Tekpower MS8268

Tekpower Mastech MS8268 Digital Multimeter User Manual

Model: MS8268

Introduction

This manual provides detailed instructions for the safe and effective operation of your Tekpower Mastech MS8268 Digital Multimeter. The MS8268 is an auto/manual ranging digital multimeter designed for various electrical measurements. It features a backlit LCD screen and includes sound and light warnings for incorrect test lead connections, enhancing user safety and convenience.

Figure 1: Tekpower Mastech MS8268 Digital Multimeter. This image displays the front view of the multimeter, highlighting its display, function buttons, rotary dial, and input jacks.

Key Features:

- Measures AC/DC Voltage up to 1000V and AC/DC Current up to 10A.
- Measures Resistance up to 40MΩ, Capacitance up to 200μF, and Frequency up to 200KHz.
- Includes Diode Check, Continuity Test, and hFE (transistor) measurement.
- Non-Contact Voltage (NCV) detection for enhanced safety.
- Automatic and manual ranging capabilities with relative measurement (excluding frequency).
- LED and sound warnings for incorrect test lead jack usage relative to the function switch setting.
- Blue LED backlit LCD display for clear readings in various lighting conditions.
- Automatic power-off function (can be disabled) to conserve battery life.
- All ranges are fused (resettable) for circuit protection.

Safety Information

To ensure safe operation and avoid damage to the meter, please read and follow all safety instructions carefully. This device complies with IEC 1010-1 (61010-1@iec:2001), CAT II 1000V, and CAT III 600V safety standards.

General Safety Precautions:

- Always ensure the multimeter is set to the correct function and range before making any measurements.
- Never apply voltage or current that exceeds the maximum specified limits for the selected range.
- Exercise extreme caution when working with live circuits. High voltages can be dangerous.
- Do not use the meter if it appears damaged or if the test leads are compromised.
- Verify the meter's operation on a known voltage or current source before using it for critical measurements.
- Always connect the common (COM) test lead first and disconnect it last when measuring live circuits.
- Keep fingers behind the finger guards on the test probes during measurements.
- Replace batteries as soon as the low battery indicator appears to ensure accurate readings.
- Do not operate the meter in explosive gas, vapor, or dust environments.
- **Proposition 65 Warning:** This product may contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Wash hands after handling.

Product Overview

Familiarize yourself with the components of your MS8268 Digital Multimeter before operation.

Figure 2: Labeled diagram of the MS8268 Multimeter. This diagram points out key features including the NCV sensing area, LCD region, function selection buttons, range selection, data hold, backlight, transistor input, rotary switch, and input jacks.

1. **NCV Sensing Area:** Used for non-contact voltage detection.
2. **LCD Region:** Digital display for measurement readings and unit symbols.
3. **SEL Measure Function Selection:** Button to select sub-functions within a rotary switch position (e.g., AC/DC, Diode/Continuity).
4. **RANGE Manual Range Selection Button:** Toggles between auto-ranging and manual ranging.
5. **HOLD Data Control:** Freezes the current display reading. Press again to release.
6. **B/L Backlight Function:** Activates the LCD backlight. Press again to turn off.
7. **Transistor Input:** Socket for hFE (transistor gain) measurements.
8. **Gear Swift (Rotary Switch):** Selects the primary measurement function (e.g., Voltage, Current, Resistance, NCV,

OFF).

9. **COM Jack:** Common (negative) input terminal for all measurements.
10. **VΩHzC Jack:** Positive input terminal for Voltage, Resistance, Frequency, Capacitance, Diode, and Continuity measurements.
11. **mA Jack:** Positive input terminal for current measurements up to 600mA.
12. **A Jack:** Positive input terminal for current measurements up to 10A.

Figure 3: Detailed view of the multimeter's operational areas. This image provides a closer look at the LCD, function buttons, rotary dial, and the clearly labeled input jacks with their respective current limits and safety ratings.

Setup

Battery Installation:

The MS8268 Multimeter requires three (3) AAA batteries for operation. Batteries are not included with the device.

1. Ensure the multimeter is turned OFF.
2. Locate the battery compartment on the back of the meter.
3. Unscrew the two Philips head screws securing the battery cover.
4. Remove the battery cover.
5. Insert three AAA batteries, observing the correct polarity (+/-) as indicated inside the compartment.
6. Replace the battery cover and secure it with the screws.

Figure 4: Back view of the multimeter, showing the integrated kickstand and the location of the battery compartment cover.

Test Lead Connection:

Always connect test leads to the appropriate jacks for the selected measurement function. The meter features an LED/sound warning system to alert you if leads are connected incorrectly.

- Connect the black test lead to the **COM** (common) jack for all measurements.
- For Voltage, Resistance, Frequency, Capacitance, Diode, and Continuity measurements, connect the red test lead to the **VΩHzC** jack.
- For current measurements up to 600mA, connect the red test lead to the **mA** jack.
- For current measurements up to 10A, connect the red test lead to the **A** jack.

Figure 5: The MS8268 Multimeter shown with its included red and black test leads, ready for connection to the input jacks.

Operating Instructions

This section details how to perform various measurements using your MS8268 Multimeter.

1. Measuring DC/AC Voltage (V):

1. Turn the rotary switch to the "V" position (DC Voltage) or "mV" position (millivolts).
2. For AC Voltage, press the **SEL** button to toggle between DC and AC modes if necessary. The display will show "AC" or "DC".
3. Connect the black test lead to the **COM** jack and the red test lead to the **VΩHzC** jack.
4. Connect the test probes in parallel to the circuit or component you wish to measure.

5. Read the voltage value on the LCD.

2. Measuring DC/AC Current (A, mA, µA):

1. Turn the rotary switch to the "A", "mA", or "µA" position depending on the expected current range.
2. For AC Current, press the **SEL** button to toggle between DC and AC modes if necessary.
3. Connect the black test lead to the **COM** jack.
4. Connect the red test lead to the **mA** jack for currents up to 600mA, or to the **A** jack for currents up to 10A.
5. **Caution:** Always connect the meter in series with the circuit. Never connect it in parallel to a voltage source when measuring current, as this can blow the fuse or damage the meter.
6. Read the current value on the LCD.

3. Measuring Resistance (Ω):

1. Turn the rotary switch to the "Ω" position.
2. Connect the black test lead to the **COM** jack and the red test lead to the **VΩHzC** jack.
3. Ensure the circuit or component is de-energized before measuring resistance.
4. Connect the test probes across the component.
5. Read the resistance value on the LCD.

4. Measuring Capacitance (F):

1. Turn the rotary switch to the "F" position.
2. Connect the black test lead to the **COM** jack and the red test lead to the **VΩHzC** jack.
3. Ensure the capacitor is fully discharged before measurement to prevent damage to the meter.
4. Connect the test probes across the capacitor.
5. Read the capacitance value on the LCD.

5. Measuring Frequency (Hz):

1. Turn the rotary switch to the "Hz" position.
2. Connect the black test lead to the **COM** jack and the red test lead to the **VΩHzC** jack.
3. Connect the test probes to the signal source.
4. Read the frequency value on the LCD.

6. Diode Test and Continuity Check:

1. Turn the rotary switch to the "Diode/Continuity" position (often shared with resistance).
2. Press the **SEL** button to toggle between Diode Test and Continuity Check modes.
3. Connect the black test lead to the **COM** jack and the red test lead to the **VΩHzC** jack.
4. **For Diode Test:** Connect the red probe to the anode and the black probe to the cathode of the diode. A forward voltage drop will be displayed. Reverse the probes; the display should show "OL" (Open Loop) for a good diode.
5. **For Continuity Check:** Connect the probes across the circuit or component. If continuity exists (resistance below approximately 50Ω), the meter will emit an audible beep.

7. hFE (Transistor Gain) Measurement:

1. Turn the rotary switch to the "hFE" position.
2. Identify if the transistor is NPN or PNP.
3. Insert the transistor leads (Emitter, Base, Collector) into the corresponding holes in the "Transistor Input" socket (7 on Figure 2).

4. Read the hFE value on the LCD.

8. Non-Contact Voltage (NCV) Detection:

1. Turn the rotary switch to the "NCV" position.
2. Move the top part of the meter (NCV Sensing Area, 1 on Figure 2) close to the conductor or circuit you want to test for AC voltage.
3. The meter will emit an audible beep and/or display an indication when AC voltage is detected without direct contact.

9. Auto/Manual Ranging:

The meter defaults to auto-ranging. To switch to manual ranging, press the **RANGE** button (4 on Figure 2). Each subsequent press will cycle through available manual ranges. To return to auto-ranging, press and hold the **RANGE** button or turn the rotary switch to a different function and then back.

10. Data Hold:

Press the **HOLD** button (5 on Figure 2) to freeze the current reading on the display. Press it again to release the hold function and resume live readings.

11. Backlight:

Press the **B/L** button (6 on Figure 2) to activate the blue LED backlight for the LCD. Press it again to turn off the backlight. The backlight may automatically turn off after a short period to conserve battery life.

Maintenance

Fuse Replacement:

The MS8268 Multimeter is protected by resettable fuses. If the meter fails to measure current, the fuse may need replacement. Always use fuses of the specified type and rating.

- **FUSED MAX 10A:** For the 10A current range.
- **FUSED MAX 600mA:** For the mA and µA current ranges.

To replace a fuse:

1. Ensure the meter is turned OFF and all test leads are disconnected.
2. Unscrew the battery cover and remove the batteries.
3. Carefully open the meter casing (refer to the internal diagram if available, or consult a qualified technician).
4. Locate the blown fuse and replace it with a fuse of the identical type and rating.
5. Reassemble the meter, ensuring all screws are tightened.

Cleaning:

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

Storage:

When the meter is not in use for an extended period, remove the batteries to prevent leakage. Store the meter in a cool, dry place, away from direct sunlight and extreme temperatures.

Troubleshooting

- **Meter does not power on:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **Inaccurate or "0000" readings:**
  - Ensure test leads are fully seated in the correct input jacks. The meter's warning system should alert you if they are not.
  - Verify the rotary switch is set to the appropriate function and range.
  - For resistance measurements, ensure the circuit is de-energized.
  - If the meter displays "0000" or inconsistent readings, try turning the meter OFF and then ON again to reset it.
  - Check for blown fuses if measuring current.
- **No backlight:** Press the B/L button. If it still doesn't light, check battery level.
- **Auto power-off too soon:** The auto power-off feature can be disabled (refer to advanced settings in a full manual if available, or typically by holding a specific button during power-on). The meter will beep before shutting off.

Specifications

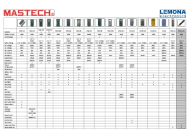
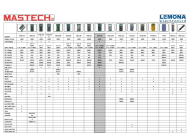
Parameter	Value
Brand	Tekpower
Model Number	MS8268
Measurement Type	Digital Multimeter
Power Source	Battery Powered (3 AAA batteries required)
AC/DC Voltage	Up to 1000V
AC/DC Current	Up to 10A
Resistance	Up to 40MΩ
Capacitance	Up to 200µF
Frequency	Up to 200KHz
Diode Check	Yes
Continuity Test	Yes (with audible beep)
hFE Test	Yes
Non-Contact Voltage (NCV)	Yes
Display	LCD with Blue LED Backlight
Auto Power Off	Yes (can be disabled)
Safety Rating	IEC 1010-1 (61010-1@iec:2001), CAT II 1000V, CAT III 600V
Item Dimensions (L x W x H)	7.68 x 1.73 x 3.62 inches
Item Weight	0.4 Kilograms (14.1 ounces)

Warranty and Support

The Tekpower Mastech MS8268 Digital Multimeter comes with a**1-year warranty** from the date of purchase, covering defects in materials and workmanship.
For technical support, warranty claims, or service inquiries, please contact the manufacturer or your point of purchase. Please have your model number (MS8268) and purchase date available when contacting support.

- **Brand:** Tekpower
- **Manufacturer:** RSR Electronics Inc

Related Documents - MS8268

	MASTECH MS8268 Digital Multimeter Quick Start Guide A concise quick start guide for the MASTECH MS8268 Digital Multimeter, providing essential safety information, detailed specifications, and step-by-step usage instructions for common measurements.
	MASTECH Catalogue 2025: Digital Multimeters, Clamp Meters & Testing Instruments 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.
	MASTECH Multimeter Comparison - Model Specifications and Features Comprehensive comparison of MASTECH digital multimeter models, detailing specifications such as display counts, safety ratings, voltage/current ranges, resistance, capacitance, frequency, and special features like autoranging, data hold, and NCV. Includes models MS8236 through MS8211D.
	Mastech Digital Multimeter Comparison Chart - Specifications and Models Comprehensive comparison of Mastech digital multimeter models including MS8236, MS8229, MS8250 A/B, MS8240B, MS8264, MS8269, MS8265, MS8268, MS8230B, MS8221C, MS6231, MAS830B, MAS830L, M320, MS8211, and MS8211D. Features, safety ratings, and technical specifications.
	Mastech Catalogue 2024: Digital Multimeters, Clamp Meters & Electrical Testers Explore the Mastech Catalogue 2024, featuring a wide range of high-quality digital multimeters, clamp meters, and electrical testing instruments for industrial, professional, and DIY applications. Find detailed specifications and selection charts.

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