

## GuliTech MS8301A

# GuliTech MS8301A Digital Multimeter Instruction Manual

Model: MS8301A

## 1. INTRODUCTION

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This manual provides essential information for the safe and effective operation of your GuliTech MS8301A Digital Multimeter. The MS8301A is a compact, handheld device designed for measuring AC/DC voltage, DC current, resistance, continuity, diode, and performing battery tests. Please read this manual thoroughly before use and retain it for future reference.

## MS8301A Features

- Display 2000 Counts
- Data hold
- Battery Tester 1.5V/9V
- Power Supply : 2x1.5V AAA
- Product Size : 150mmx74mmx48mm / 5.9"x2.9"x1.7"
- Product Weight : 220g / 0.48lb

Specifications	Range	Resolution
DC Voltage	200mV/2V/20V/200V/600V	100 $\mu$ V/1mV/10mV/100mV/1V
AC Voltage	200V/600V	100mV/1V
DC Current	2mA/20mA/200mA/10A	1 $\mu$ A/10 $\mu$ A/100 $\mu$ A/10mA
Resistance	200 $\Omega$ /2k $\Omega$ /20k $\Omega$ /200k $\Omega$ /2M $\Omega$	0.1 $\Omega$ /1 $\Omega$ /10 $\Omega$ /100 $\Omega$ /1k $\Omega$

Figure 1: GuliTech MS8301A Digital Multimeter

## 2. SAFETY INFORMATION

**WARNING: To avoid electric shock or personal injury, read and understand all safety information before using this multimeter.**

- Always ensure the multimeter is in the correct function and range for the measurement.
- Do not use the multimeter if it appears damaged or if the test leads are damaged.
- Do not apply more than the rated voltage, as marked on the multimeter, between the terminals or between any terminal and earth ground. The MS8301A is rated for CAT III 600V.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC. These voltages pose a shock hazard.
- Keep your fingers behind the finger guards on the test probes during measurements.
- Replace the battery immediately when the low battery indicator appears to ensure accurate readings.
- Do not operate the multimeter in explosive gas, vapor, or dust environments.

## 3. PRODUCT FEATURES

The GuliTech MS8301A Digital Multimeter offers the following key features:

- **Display:** 2000 Counts for precise readings.
- **Data Hold:** Freezes the displayed reading for convenient recording.

- **Battery Test:** Dedicated function for 1.5V and 9V batteries.
- **Compact Design:** Product dimensions of approximately 16 x 9 x 5 cm (6.3 x 3.5 x 2 inches) and a weight of 500g (1.1 lbs).
- **Safety Rating:** CAT III 600V.



Figure 2: MS8301A Features Overview

## 4. PACKAGE CONTENTS

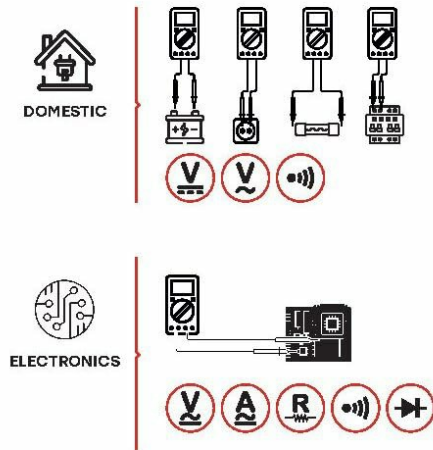
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Verify that all items are present in your package:

- GuliTech MS8301A Digital Multimeter
- Test Leads (Red and Black)
- 2 x LR44 Batteries (pre-installed or included separately)
- Calibration Certificate (if included)
- Quick Start Guide (if included)



### MAIN APPLICATIONS



## DIGITAL MULTIMETER MS8301A

SKU NO.: MS8301ACBGLO  
UPC CODE: 810053675540  
EAN CODE: 8435394784298

### FEATURE

- Display 2000 Counts.
- Data hold.
- Battery Tester 1.5V/9V.

### SPECIFICATIONS

AC Voltage <b>600V</b>	DC Voltage <b>600V</b>	DC Current <b>10A</b>
Resistance <b>2MΩ</b>	Continuity test <b>&lt;30Ω</b>	Display Counts <b>2000</b>

### CONTENTS



### PACKAGING INFORMATION



Figure 3: Package Contents

## 5. SETUP

### 5.1 Battery Installation

The MS8301A requires two LR44 batteries. These are typically included. If not pre-installed or if replacement is needed:

1. Ensure the multimeter is turned OFF and disconnect all test leads.
2. Locate the battery compartment cover on the back of the multimeter.
3. Use a screwdriver to remove the screw(s) securing the cover.
4. Carefully remove the old batteries (if any) and insert the new LR44 batteries, observing the correct polarity (+ and -).
5. Replace the battery compartment cover and secure it with the screw(s).

## 5.2 Connecting Test Leads

To prepare for measurements:

1. Insert the black test lead into the "COM" (Common) jack.
2. For most voltage, resistance, and continuity measurements, insert the red test lead into the "V $\Omega$ mA" jack.
3. For current measurements (up to 10A), insert the red test lead into the "10A" jack.

## 6. OPERATING INSTRUCTIONS

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The MS8301A uses a rotary switch to select functions. Turn the switch to the desired measurement type.

### 6.1 Measuring DC Voltage (V $-$ )

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

### 6.2 Measuring AC Voltage (V $\sim$ )

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 Measuring DC Current (A $-$ )

**CAUTION: Never connect the multimeter in parallel with a voltage source when measuring current. This can blow the fuse or damage the meter.**

1. Turn off power to the circuit.
2. Break the circuit at the point where you want to measure current.
3. Set the rotary switch to the appropriate DC Current range (e.g., 2mA, 20mA, 200mA, 10A). For currents up to 200mA, use the "V $\Omega$ mA" jack. For currents up to 10A, use the "10A" jack.
4. Connect the multimeter in series with the circuit, ensuring the current flows through the meter.
5. Restore power to the circuit and read the current value.

### 6.4 Measuring Resistance ( $\Omega$ )

**CAUTION: Ensure the circuit is completely de-energized before measuring resistance. Disconnect power and discharge all capacitors.**

1. Set the rotary switch to the desired Resistance range (e.g., 200 $\Omega$ , 2k $\Omega$ , 20k $\Omega$ , 200k $\Omega$ , 2M $\Omega$ ).
2. Connect the test leads across the component or circuit segment to be measured.
3. Read the resistance value on the display.

### 6.5 Continuity Test

1. Set the rotary switch to the continuity ( $\bullet$ )) position.
2. Connect the test leads across the circuit or component.

3. If the resistance is below approximately  $30\Omega$ , the buzzer will sound, indicating continuity. The display will show the resistance value.

## 6.6 Diode Test

1. Set the rotary switch to the diode ( $\rightarrow|$ ) position.
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; the display should show "OL" (Open Loop) for a good diode.

## 6.7 Battery Test (1.5V/9V)

1. Set the rotary switch to the "1.5V/9V" battery test position.
2. Connect the red test lead to the positive terminal of the battery and the black test lead to the negative terminal.
3. Read the battery voltage 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 and resume live readings.

# 7. MAINTENANCE

## 7.1 Cleaning

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

## 7.2 Battery Replacement

Refer to Section 5.1 for battery replacement instructions. Replace batteries when the low battery indicator appears on the display to maintain measurement accuracy.

## 7.3 Storage

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

# 8. TROUBLESHOOTING

Problem	Possible Cause	Solution
No display or dim display	Dead or low batteries	Replace batteries (refer to Section 5.1)
Incorrect readings	Incorrect function/range selected; Poor test lead connection; Low battery	Verify function/range; Check test lead connections; Replace batteries
"OL" (Overload) displayed	Measurement exceeds selected range; Open circuit (for continuity/resistance)	Select a higher range; Check circuit for breaks

Problem	Possible Cause	Solution
No continuity beep	Circuit resistance too high; Open circuit	Check circuit for breaks; Ensure resistance is below $\sim 30\Omega$

## 9. SPECIFICATIONS

Measurement	Range	Resolution	Accuracy
DC Voltage	200mV / 2V / 20V / 200V / 600V	100 $\mu$ V / 1mV / 10mV / 100mV / 1V	$\pm(0.5\% + 3$ digits)
AC Voltage	200V / 600V	100mV / 1V	$\pm(1.0\% + 5$ digits)
DC Current	2mA / 20mA / 200mA / 10A	1 $\mu$ A / 10 $\mu$ A / 100 $\mu$ A / 10mA	$\pm(1.0\% + 3$ digits)
Resistance	200 $\Omega$ / 2k $\Omega$ / 20k $\Omega$ / 200k $\Omega$ / 2M $\Omega$	0.1 $\Omega$ / 1 $\Omega$ / 10 $\Omega$ / 100 $\Omega$ / 1k $\Omega$	$\pm(0.8\% + 3$ digits)
Continuity	< 30 $\Omega$ (approx.)	Buzzer sounds	N/A
Diode Test	Forward voltage drop	1mV	N/A
Battery Test	1.5V / 9V	1mV / 10mV	$\pm(1.0\% + 5$ digits)

### General Specifications:

- **Display:** 2000 Counts
- **Safety Rating:** CAT III 600V
- **Power Supply:** 2 x LR44 batteries
- **Dimensions (L x W x H):** 16 x 9 x 5 cm (6.3 x 3.5 x 2 inches)
- **Weight:** 500 g (1.1 lbs)
- **Operating Temperature:** 0°C to 40°C (32°F to 104°F)
- **Storage Temperature:** -10°C to 50°C (14°F to 122°F)
- **Certifications:** CE, RoHS

DIGITAL MULTIMETERS  
MANUAL RANGING


								
CAT II CAT III CAT IV								
Model	MS8301A	MS8301B	MS8321A	MS8321D	MS8360C	MS8360E	MY60	MY61
Page	46	47	48	49	50	51	52	53
Safety Rating	CAT III 600V	CAT III 600V	CAT III 600V	CAT II 1000V CAT III 600V	CAT III 600V	CAT III 600V	CAT II 1000V CAT III 600V	CAT II 1000V CAT III 600V
Display Counts	2000	4000	2000	2000	2000	2000	2000	2000
Auto Ranging	•	•						
Auto Power Off	•	•	•	•	•	•	•	•
True RMS								
DC Voltage	600V	600V	600V	1000V	600V	600V	1000V	1000V
AC Voltage	600V	600V	600V	750V	600V	600V	700V	700V
DC Current		10A	10A	20A	10A	10A	10A	10A
AC Current	10A	10A	10A	20A	10A	10A	10A	10A
Resistance	2MΩ	40MΩ	20MΩ	20MΩ	200MΩ	200MΩ	200MΩ	200MΩ
Capacitance		100μF			200μF	200μF		100μF
Frequency		10kHz			20kHz			
Duty Cycle								
Type K Temperature		-4~1832°F			-20~1000°C -4~1832°F			
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: Manual Ranging Specifications (MS8301A column)

## 10. WARRANTY AND SUPPORT

GuliTech products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the contact details provided with your purchase or visit the official GuliTech website. Keep your purchase receipt as proof of purchase for warranty claims.