

Gardner Bender GDT-3190

Gardner Bender GDT-3190 Digital Multimeter User Manual

Model: GDT-3190 | Brand: Gardner Bender

1. INTRODUCTION

The Gardner Bender GDT-3190 Digital Multimeter is a versatile and essential tool designed for testing various electrical parameters in household appliances and electrical systems. This manual provides detailed instructions for the safe and effective use of your multimeter, covering setup, operation, maintenance, and troubleshooting.

2. SAFETY INFORMATION

Always prioritize safety when working with electrical devices. This multimeter is rated CAT III 600V and conforms to UL 61010-1 standards, certified to CAN/CSA C22.2. Adhere to the following safety guidelines:

- Ensure the multimeter is set to the correct function and range before making any measurements.
- Do not attempt to measure voltages or currents exceeding the specified maximum ratings.
- Always disconnect power to the circuit before connecting or disconnecting test leads, especially when measuring resistance or continuity.
- Inspect test leads for damage before each use. Replace damaged leads immediately.
- Wear appropriate personal protective equipment (PPE), such as safety glasses and insulated gloves, when working with electricity.
- Do not use the multimeter in wet conditions or if the device itself is wet.
- Keep fingers behind the finger guards on the test probes during measurements.

3. PRODUCT OVERVIEW

The Gardner Bender GDT-3190 Digital Multimeter features a robust design with a clear digital display and intuitive controls. Key components include:

- **3.5-inch Digital Display:** Provides clear, easy-to-read measurements.
- **14-Position Manual Ranging Rotary Dial:** Selects the desired measurement function and range.
- **Test Lead Input Jacks:** Securely connect the included positive (red) and negative (black) test leads.

- **Durable Rubber Boot:** Offers drop resistance (up to 6 ft.) and a comfortable, steadfast grip.
- **Wrap-around Lead Holders:** Convenient storage for test leads.



Figure 3.1: The Gardner Bender GDT-3190 Digital Multimeter with its red and black test leads.



Figure 3.2: Testing a switch for continuity or resistance using the multimeter's probes.



Figure 3.3: Measuring voltage within a circuit breaker panel using the multimeter.

Turn the rotary dial from the 'OFF' position to any desired measurement function to power on the device. The multimeter features an auto-off function to conserve battery life after a period of inactivity.

5.2 Measuring AC Voltage (ACV)

To measure AC voltage (e.g., household outlets, AC circuits):

1. Set the rotary dial to the desired ACV range (e.g., 500V).
2. Carefully touch the red and black test probes to the two points in the circuit where you want to measure AC voltage.
3. Read the voltage value on the digital display.

5.3 Measuring DC Voltage (DCV)

To measure DC voltage (e.g., batteries, DC power supplies):

1. Set the rotary dial to the desired DCV range (e.g., 600V).
2. Touch the red test probe to the positive (+) point and the black test probe to the negative (-) point in the circuit.
3. Read the voltage value on the digital display. A negative sign indicates reversed polarity.

5.4 Measuring Resistance (Ω)

To measure resistance (e.g., components, wires):

1. Ensure the circuit is completely de-energized before measuring resistance.
2. Set the rotary dial to the desired Ohm (Ω) range (e.g., 2M Ω).
3. Touch the test probes across the component or wire you wish to measure.
4. Read the resistance value on the digital display. An 'OL' (Overload) reading indicates the resistance is higher than the selected range; select a higher range.

5.5 Battery Testing

The multimeter can test 1.5V and 9V batteries:

1. Set the rotary dial to the '1.5V' or '9V' battery test function.
2. Connect the red probe to the positive terminal of the battery and the black probe to the negative terminal.
3. Read the battery voltage on the digital display. A low reading indicates a weak or dead battery.

6. MAINTENANCE

6.1 Cleaning

To maintain the accuracy and longevity of your multimeter:

- Wipe the unit with a dry, soft cloth. Do not use abrasive cleaners or solvents.
- Keep the test leads clean and free of debris.

6.2 Battery Replacement

When the low battery indicator appears on the display, replace the 9V battery as described in Section 4.1.

6.3 Storage

Store the multimeter in a cool, dry place away from direct sunlight and extreme temperatures. Utilize the wrap-around lead holders for neat storage of the test leads.

7. TROUBLESHOOTING

If you encounter issues with your GDT-3190 Digital Multimeter, refer to the following common problems and solutions:

Problem	Possible Cause	Solution
No display or dim display	Dead or weak battery; incorrect battery installation.	Replace the 9V battery; ensure correct polarity.
'OL' (Overload) reading	Measurement exceeds selected range; open circuit (for resistance/continuity).	Select a higher range; check for breaks in the circuit or component.
Inaccurate readings	Incorrect function/range selected; poor contact with probes; damaged leads.	Verify function/range; ensure firm contact; inspect and replace damaged leads.
Multimeter turns off unexpectedly	Auto-off function activated; low battery.	This is normal behavior for auto-off; replace battery if low battery indicator is on.

8. SPECIFICATIONS

Below are the technical specifications for the Gardner Bender GDT-3190 Digital Multimeter:

Brand: Gardner Bender

Model Number: GDT-3190

Style: Manual 4 Function / 14 Range

Color: Red With Black Rubber Boot

Power Source: Battery Powered (Requires 9V battery, not included)

Measurement Type: Multimeter

AC Voltage: Up to 500V

DC Voltage: Up to 600V

Resistance: Up to 2 meg Ohms

Battery Testing: 1.5V and 9V

Item Weight: 9.6 ounces

Product Dimensions (L x W x H): 1.75 x 7 x 11.5 inches

Material: Plastic

Measurement Accuracy: $\pm 2\%$

Safety Rating: CAT III 600V, UL 61010-1, CAN/CSA C22.2

Country of Origin: China

UPC: 032076068370, 100058666460

9. WARRANTY AND SUPPORT

9.1 Warranty Information

The Gardner Bender GDT-3190 Digital Multimeter comes with a **1-Year Limited Warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use. Please retain your proof of purchase for warranty claims.

9.2 Customer Support

For technical assistance, troubleshooting beyond this manual, or warranty inquiries, please contact Gardner Bender customer support. Visit the official Gardner Bender website for contact information and additional resources.

You can find more information and support at the [Gardner Bender Store on Amazon](#).

