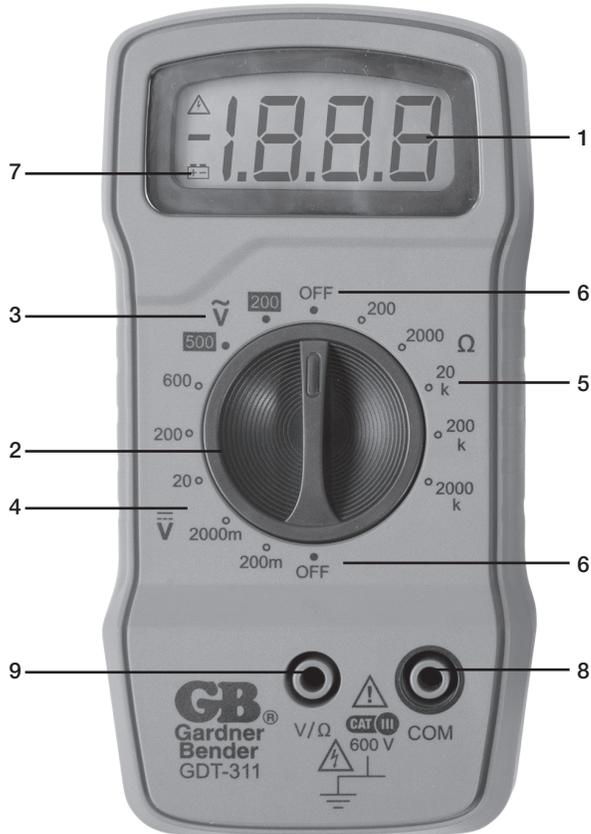


Read this owners manual thoroughly before use and save.

GDT-311: Page 1 of 3

1.0 METER FUNCTIONS



1.1 FUNCTIONS (Figure 1)

1. 2000 count digital display
2. 14 position
3. AC Volts
4. DC Volts
5. Resistance
6. Off Dial Selection
7. Low Battery Indicator
8. Common Input Jack
9. Positive Input Jack

1.1 METER FUNCTIONS

Meter Type:	Manual
Functions:	3
Ranges:	12
Display Count:	2000
Input Impedance:	10 Meg Ohm
AC Volt Ranges:	200 / 500 (2.5% + 5 dgts)
DC Volt Ranges:	200m / 2000m / 20 / 200 / 600 ±(1.2% + 2 dgts)
Resistance Ranges:	200 / 2000 / 20k / 200k / 2000k ±(1.5% + 2 dgts)
Operating Environment	
Indoor Use	
Operating Temperature:	0°C – 40°C
Storage Temperature:	-10°C – 50°C
Relative Humidity:	0% – 75%RH (0°C – 31°C) 0% – 50%RH (31°C – 40°C)
Altitude:	Up to 2000m
Ingress protection degree:	IP40
Pollution degree:	2
Battery Type:	9 Volt
Battery Life:	100 hours with carbon-zinc cells, 200 hours with alkaline cells under normal conditions.
Overrange Indication:	The three least significant digits are blank and the number "1" is displayed at the left when the range capacity is exceeded by the input.
Polarity Indication:	Negative displayed, positive implied
Size (LxWxH):	5.51" x 2.83" x 1.26"
Weight:	Approximately 110g (without batteries)
Test lead type:	ETL, cETL, CE, CAT III 600V 1A <input type="checkbox"/>
Agency Approvals:	ETL, CE, CAT III 600V
Note:	Accuracy is given for one year at 23°C ± 3°C rH<70%

CONTENTS

1. Meter Functions
2. Read First
 - 2.1 For Your Safety
3. Operating Suggestions
 - 3.1 AC Volts
 - 3.2 DC Volts
 - 3.3 Resistance
4. Battery Replacement

2.0 READ FIRST: IMPORTANT SAFETY INFORMATION



Read this operators manual thoroughly before using this multimeter. This manual is intended to provide basic information regarding this meter and to describe common test procedures which can be made with this unit. Many types of appliance, machinery, and other electrical circuit measurements are not addressed in this manual and should be handled by experienced service technicians.

The marking “” on the equipment represents **Caution, risk of electric shock.**

The marking “” on the equipment represents **Caution, risk of danger.**

The marking “” on the equipment represents **Functional earth terminal.**

The marking “” on the equipment represents **Equipment protected by DOUBLE INSULATION or REINFORCED INSULATION.**

Use extreme caution when using this multimeter. Improper use of this meter can result in severe damage to property, severe personal injury or death. Follow all instructions and suggestions in this operators manual as well as observing normal electrical safety precautions. Do not use this meter if you are unfamiliar with electrical circuits and proper test procedures.

2.1 SAFETY WARNINGS

- This instruction manual contains warnings and safety rules which must be observed by the user to ensure safe operation of the instrument and retain it in safe condition.
- Read through and understand the instructions contained in this manual before using the instrument.
- Keep the manual at hand to enable quick reference whenever necessary.
- The instrument is to be used only in its intended applications.
- Understand and follow all the safety instructions contained in the manual.
- It is essential that all safety instructions are adhered to.
- Failure to follow the safety instructions may cause injury, instrument damage

The symbol  indicated on the instrument means that the user must refer to the related parts in the manual for safe operation of the instrument. It is essential to read the instructions wherever the symbol appears in the manual.

-  **DANGER** is reserved for conditions and actions that are likely to cause serious or fatal injury.
-  **WARNING** is reserved for conditions and actions that can cause serious or fatal injury.
-  **CAUTION** is reserved for conditions and actions that can cause injury or instrument damage.

DANGER

- Never make measurement on a circuit in which voltage over 1000V exists.
- Do not exceed the CAT rating of the measuring device
- Do not attempt to make measurement in the presence of flammable gases.
The use of the instrument may cause sparking, which can lead to an explosion.
- Never use the instrument if its surface or your hand is wet.
- Do not exceed the maximum allowable input of any measuring range.
- Never open the battery cover during a measurement.
- The instrument is to be used only in its intended applications or conditions.
Use in other than as intended may cause instrument damage or serious personal injury.

WARNING

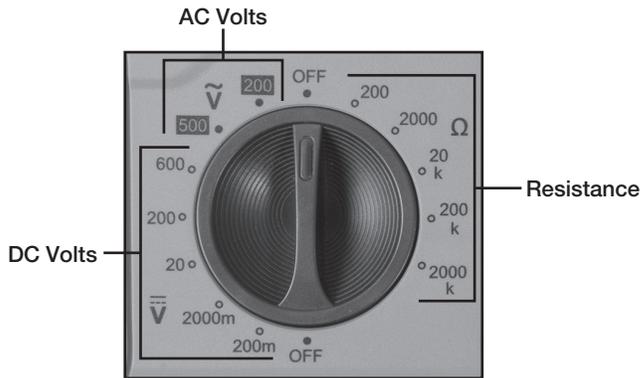
- Never attempt to make any measurement if any abnormal conditions are noted, such as broken case, cracked test leads and exposed metal part.
- Do not turn the function selector switch with plugged in test leads connected to the circuit under test.
- Do not install substitute parts or make any modification to the instrument.
Return the instrument to your distributor for repair or recalibration.
- Do not try to replace the batteries if the surface of the instrument is wet.
- Always switch off the instrument before opening the battery compartment cover for battery replacement.

CAUTION

- Set the Function Switch to an appropriate position before starting measurement.
- Firmly insert the test leads.
- Disconnect the test leads from the instrument for current measurement.
- Do not expose the instrument to the direct sun, high temperature and humidity or dewfall.
- Be sure to power off the instrument after use.
When the instrument will not be in use for a long period, place it in storage after removing the batteries.
- Use only a soft cloth dampened with water or neutral detergent for cleaning the meter.
Do not use abrasives, solvents or harsh chemicals. Allow to dry thoroughly before use.

3.0 OPERATING INSTRUCTIONS

DIAL SETTINGS



3.1 AC VOLTS

There are two ranges for measuring AC voltage: 200 V and 500 V. For more accurate measurements under 200 volts, use the 200 Volt setting.

1. Connect the black test lead to the “COM” terminal and the red test lead to the “V/Ω” input terminal.
2. Set the function/range switch to the appropriate AC V range. With AC Voltage, the polarity of the test leads is not a factor.

NOTE: It is best to touch one of the test leads to ground or Neutral first and then touch the 2nd test lead to the hot wire.

3. Touch the test leads to the circuit under test.
4. Read the value of the measurement displayed.
5. Typical AC Voltage measurements include wall outlets, appliance outlets, motors, light fixtures and switches.

3.2 DC VOLTS

There are five ranges for measuring DC voltage: 200m V, 2000m V, 20 V, 200 V, and 600 V. For more accurate measurements, use the lowest range possible without exceeding the value.

1. Connect the black test lead to the “COM” terminal and red the test lead to the “V/Ω” input terminal.
2. Set the function/range switch to the appropriate DC V range.
3. Touch the test leads to the circuit under test. Touch the black (common) test lead to the negative DC source first and red (positive) test lead to the “live” source second.
4. Read the value of the measurement displayed. If the leads are reversed a “-” indicator will appear on the display.
5. Typical DC Voltage measurements include car batteries, automotive switches and household batteries.

3.3 RESISTANCE

There are five ranges for measuring resistance 200, 2000, 20K, 200K and 2000K Ohms. For more accurate measurements use the lowest range possible without exceeding the value.

⚠ WARNING When measuring resistance always make sure the power is off.

1. Connect the black test lead to the “COM” terminal and red the test lead to the “V/Ω” input terminal.
2. Set the function/range switch to the appropriate resistance (ohms) range.
3. Touch the test leads to the resistor or non-energized component to be measured. Use the 2000K range when testing for resistance values in electronic components such as resistors and potentiometer. If the value of the component falls within the range of another setting, reset the function/range switch to that setting for a more accurate reading.
4. Read the value of the measurement displayed. With resistance measurements, the polarity of the test leads is not a factor.
5. Typical resistance/continuity measurements include resistors, potentiometer, switches, extension cords and fuses.

4. BATTERY REPLACEMENT

Note: When the battery’s voltage drops below the operating voltage, the mark “” will appear on the LCD to indicate the the batteries must be replaced.

Caution: When changing the battery, disconnect the test leads from the circuit completely. Turn the meter off before removing the batteries.

1. Remove the screws in the back cover of the tester and carefully separate the back cover from the front.
2. Remove the battery from the contacts, noting the polarity of the battery terminals and contacts.
3. Replace with one fresh 9 volt battery.

Note: Do not use rechargeable or lithium batteries in this unit.

4. Carefully replace the back cover and tighten the screws. Do not overtighten the screws as this may strip the threads in the tester housing.

1 Year Warranty limited solely to repair or replacement; no warranty of merchantability or fitness for a particular purpose. Product is warrantied to be free of defects in materials and workmanship for the normal life of the product. In no event shall Sperry Instruments be liable for incidental or consequential damage.

1. BEFORE USE

READ ALL OPERATING INSTRUCTIONS BEFORE USE. Use extreme caution when checking electrical circuits to avoid injury due to electrical shock. Sperry Instruments assumes basic knowledge of electricity on the part of the user and is not responsible for any injury or damages due to improper use of this tester.

OBSERVE and follow all standard industry safety rules and local electrical codes. When necessary call a qualified electrician to troubleshoot and repair the defective electrical circuit.

2. SPECIFICATIONS

Operating Range: 120 VAC, 60 Hz

Indicators: Visual Only

Operating Environment: 32° - 104° F (0 - 32° C)

80% RH max., 50% RH above 30° C

Altitude up to 2000 meters. Indoor use.

Pollution degree 2. Accordance with IED-664.

Cleaning: Remove grease and grime with clean, dry cloth.

3. OPERATION:

1. Plug the tester into any 120 Volt standard or GFCI outlet.
2. View the indicators on the tester and match with the chart on the tester.
3. If the tester indicates a wiring problem then turn off all power to the outlet and repair wiring.
4. Restore power to the outlet and repeat steps 1-3.



4. TO TEST GFCI PROTECTED OUTLETS:

1. To test GFCI (Ground Fault Circuit Interrupter) protected circuits plug tester into GFCI protected outlet. Verify the power is on and that the outlet is wired properly.
2. Press the GFCI test button.
3. If circuit is wired properly the main GFCI outlet should trip and power to the circuit should be off (this is indicated by the neon lamps on the tester turning off).
4. When checking circuits with a GFCI outlet on them, the tester may indicate hot/ground reversed when the actual wiring condition is open neutral.

5. NOTICE:

1. All appliances or equipment on the circuit being tested should be unplugged to help avoid erroneous readings.
2. Not a comprehensive diagnostic instrument but a simple instrument to detect nearly all probable common improper wiring conditions.
3. Refer all indicated problems to a qualified electrician.
4. Will not indicate quality of ground.
5. Will not detect two hot wires in a circuit.
6. Will not detect a combination of defects.
7. Will not indicate a reversal of grounded and grounding conductors.

6. NOTICE:

1. Consult the GFCI manufacturer's installation instructions to determine that the GFCI is installed in accordance with the manufacturer's specifications.
2. Check for correct wiring of receptacle and all remotely connected receptacles on the branch circuit.
3. Operate the test button on the GFCI installed in the circuit. The GFCI must trip. If it does not — do not use the circuit — consult an electrician. If the GFCI does trip, reset the GFCI. Then, insert the GFCI tester into the receptacle to be tested.
4. Activate the test button on the GFCI tester for a minimum of 6 seconds when testing the GFCI condition. Visible indication on the GFCI tester must cease when tripped.
5. If the tester fails to trip the GFCI, it suggests: a.) a wiring problem with a totally operable GFCI, or b.) proper wiring with a

Caution: When testing GFCIs installed in 2- wire systems (no ground wire available), the tester may give a false indication that the GFCI is not functioning properly. If this occurs, recheck the operation of the GFCI using the test and reset buttons. The GFCI button test function will demonstrate proper operation.



CAUTION – REFER TO THIS MANUAL BEFORE USING THIS TESTER.



Double Insulation: The tester is protected throughout by double insulation or reinforced insulation.

1 Year Warranty limited solely to repair or replacement; no warranty of merchantability or fitness for a particular purpose. Product is warranted to be free of defects in materials and workmanship for the normal life of the product. In no event shall Sperry Instruments be liable for incidental or consequential damage.

READ ALL OPERATING INSTRUCTIONS BEFORE USE.

Use extreme caution when checking electrical circuits to avoid injury due to electrical shock. Gardner Bender assumes basic knowledge of electricity on the part of the user and is not responsible for any injury or damages due to improper use of this tester.

OBSERVE and follow all standard industry safety rules and local electrical codes. When necessary call a qualified electrician to troubleshoot and repair the defective electrical circuit.

SPECIFICATIONS:

Operating Range: 50-600 VAC, 50-60 Hz; CAT III 600V

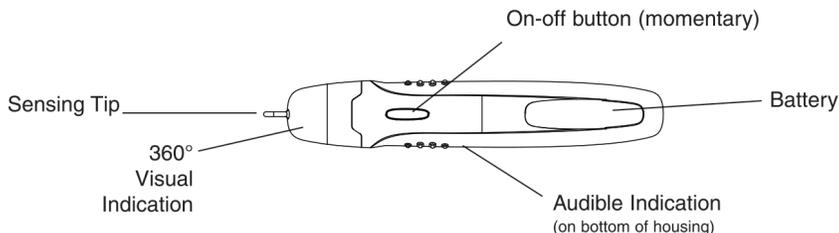
Indicators: Visual and Audible

Operating Environment: 32° - 104° F (0 - 32° C) 80% RH max., 50% RH above 30° C

Altitude up to 2000 meters. Indoor use.

Pollution degree 2. Accordance with IED-664.

Cleaning: Remove grease and grime with clean, dry cloth.



OPERATION:

Before use test the battery by pressing the black button on the top side of the tester. If the battery is good then the light will flash and speaker will chirp momentarily. If indicators do not function then replace the battery. This unit operates from a single AAA battery.

To test for voltage press and hold the black button on the top of the unit. Place sensor on or near the wire, device or circuit to be tested. If AC Voltage greater than 50 VAC is present the light will flash and the speaker will beep continuously. See Fig. 1

Static Electricity - The tester is subject to electrical static interference. If the LED or tone activates a single time, it is detecting the static electricity in the air. When detecting voltage, the LED and tone will activate repeatedly.



Battery Replacement:

- 1) Slide open the battery cover on the back of the tester.
- 2) Remove the old battery from its housing and replace with a new battery (size AAA / R03 / UM4 / 1.5V)
- 3) Replace the battery cover.



Measurement category III is for measurements performed in the building installation



CAUTION - REFER TO THIS MANUAL BEFORE USING THIS TESTER.

WARNING- If the equipment is used in a manner not specified by manufacturer, the protection provided by the equipment may be impaired.

WARNING- This product does not sense potentially hazardous voltages below 50 volts. Do not use outside of the marked/rated ranges indicated.

WARNING- To assure the unit is operating properly, always test on a known live circuit before use.

WARNING- This tester will not detect voltage in wires that are electrically shielded by metal conduit or grounded electrical enclosures.

1 Year Warranty limited solely to repair or replacement; no warranty of merchantability or fitness for a particular purpose. Product is warranted to be free of defects in materials and workmanship for the normal life of the product. In no event shall Sperry Instruments be liable for incidental or consequential damage.

This unit is protected by the following US Patents: US Pat# 5,877,618

READ ALL OPERATING INSTRUCTIONS BEFORE USE.

Use extreme caution when checking electrical circuits to avoid injury due to electrical shock. Gardner Bender assumes basic knowledge of electricity on the part of the user and is not responsible for any injury or damages due to improper use of this tester.

OBSERVE and follow all standard industry safety rules and local electrical codes. When necessary call a qualified electrician to troubleshoot and repair the defective electrical circuit.



SPECIFICATIONS:

Operating Range: Use only to test phone or data lines.

Indicators: Visual Only

Operating Environment: 32° - 104° F (0 - 32° C)

80% RH max., 50% RH above 30° C

Altitude up to 2000 meters. Indoor use.

Pollution degree 2. Accordance with IED-664.

Cleaning: Remove grease and grime with clean, dry cloth.

OPERATION:

This tester is a simple indicating device and is used to test both single and dual telephone lines. If the phone jack is only wired for a single line then only the first LED at the top of the tester will glow. If the jack is wired for two lines then both LEDs will glow.

To operate just plug the tester into the phone jack and view the LEDs to find out the status of the circuit. The tri-color LEDs show if the jack is wired properly, reverse wired, has a high voltage on the line or is dead. See chart below.

LED	STATUS
Green	Line is good
Red	Line is reverse wired
Yellow	AC voltage is present on the line
no indication	Line is dead

⚠ CAUTION - REFER TO THIS MANUAL BEFORE USING THIS TESTER.

1 Year Warranty limited solely to repair or replacement; no warranty of merchantability or fitness for a particular purpose. Product is warranted to be free of defects in materials and workmanship for the normal life of the product. In no event shall Sperry Instruments be liable for incidental or consequential damage.