1.0 METER FUNCTIONS

1.1 FUNCTIONS (Figure 1)
1. 2000 count digital display
2. 15 Position Function/Range Dial
3. AC Volts
4. DC Volts
5. Resistance
6. Battery Test
7. Off Dial Selection
8. Low Battery Indicator
9. Common Input Jack
10. Positive Input Jack
11. Protective Rubber Boot and Tilt-Out Stand

1.1 METER FUNCTIONS
Meter type: Manual
Functions: 4
Ranges: 15
Display Count: 2000
Input impedance: 10 Meg Ohm
AC Volt ranges: 200 / 500 (2.5% + 5 digits)
DC Volt Ranges: 200m / 2000m / 20 / 200 / 600 ±(1.2% + 2 digits)
Resistance Ranges: 200 / 2000 / 20k / 200k / 2000k ±(1.5% + 2 digits)
Battery Test Ranges: 1.5V / 9V / 12V
Auto Off: Approx. 40 minutes
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.
Over Range 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"
Agency Approvals: ETL, CE, CAT III 600V
Note: Accuracy is given for one year at 23°C ± 3°C rH<70%

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.
2.1 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 shown above.
3. Touch the test leads to the circuit under test. With AC voltage, the polarity of the test leads is not a factor.
4. Read the value of the measurement displayed.
5. Typical AC Voltage measurements include wall outlets, appliance outlets, motors, light fixtures and switches. When measuring outlets the specially spaced lead holders allow for single one hand testing.
3.2 DC VOLTS
There are five ranges for measuring DC voltage, 200mV, 2000mV, 20V, 200V, and 600V. For more accurate measurements use the lowest range possible without exceeding the value.

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 DC V range shown above.
3. Touch the test leads to the circuit under test. With DC voltage, the polarity of the test leads is a factor. 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 2 Meg 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 the red test lead to the “V/Ω” input terminal.
2. Set the function/range switch to the appropriate resistance (ohms) range shown above.
3. Touch the test leads to the resistor or non-energized component to be measured. Use the 200K 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.

3.4 HOUSEHOLD BATTERY TESTING
There are three ranges for measuring common household batteries, 1.5V, 9V, and 12V.

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 battery position.
3. Touch the test leads to the positive and negative terminals on the battery. With DC voltage, the polarity of the test leads is a factor. Touch the black (common) test lead to the negative (-) terminal and the red test lead to the positive (+) terminal.
4. Read the value of the measurement displayed. If the leads are reversed a “-” indicator will appear on the display.

4. BATTERY REPLACEMENT

**Note:** When the battery’s voltage drops below the operating voltage, the mark “▌” will appear on the LCD to indicate the battery must be replaced. **Caution:** When changing the battery, disconnect the test leads from the circuit completely.

1. Turn the meter off before removing the batteries.
2. Remove protective boot from test unit.
3. Remove the screws in the back cover of the tester and carefully separate the back cover from the front.
4. Remove the battery from the contacts, noting the polarity of the battery terminals and contacts.
5. Replace with one fresh 9 volt battery.

**Note:** Do not use rechargeable batteries in this unit.

1. Carefully replace the back cover and tighten the screws.
2. Do not overtighten the screws as this may strip the threads in the tester housing.
3. Replace protective boot.

5. AUTO OFF
1. To turn the meter back on if it turns off because of the auto off function, first turn the dial to the off position. Then turn the dial from the off position to any function to turn the meter back on.

**One 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 Gardner Bender be liable for incidental or consequential damage.