item# 22-080 Wide Range Battery Tester

Maintenance

Your new battery tester is an example of superior design and craftsmanship and should be treated with care. The suggestions below will help you enjoy this product for many years.

Keep dry. If the tester becomes wet, dry quickly. Water contains minerals that can corrode electronic circuits.

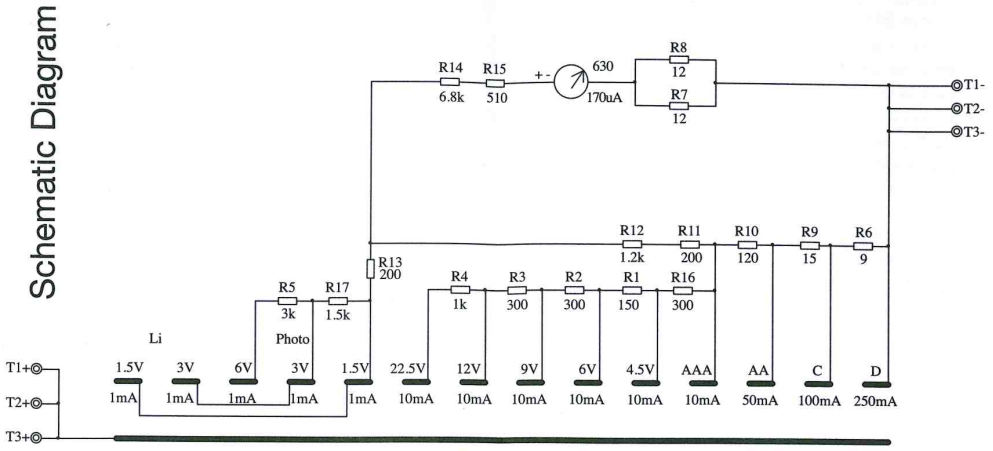
Do not store in hot areas. High temperatures can shorten the life of electronic devices, damage batteries and warp certain plastics.

Do not drop. This can cause permanent damage to circuit boards and the case.

Do not use or store in dusty, dirty areas. Premature wear of moving parts can occur.

Do not use harsh chemicals, cleaning solvents or strong detergents to clean. Simply wipe with a soft cloth, dampened with a mild soap-and-water solution.

Schematic Diagram



Note: All resistance values are indicated in "ohm" (k=10³ohm)

GemOro
SUPERIOR INSTRUMENTS

EconoTester WB+

OWNER'S MANUAL

please read before using this equipment

Your new EconoTester WB+ battery tester is a sensitive, accurate tester for checking batteries under designed load conditions. You can test standard carbon zinc, alkaline, mercury, silver oxide, lithium, zinc air and nickel-cadmium batteries.

Operation

1. Set the recessed index mark of the range switch adjacent to the marked voltage and type.
   For example, to check a 1.5V C-type battery, position the switch to 1.5V AA • C. To check a 9V rectangular battery, position the switch to 9V. If you want to check a mercury, zinc-air, silver oxide or alkaline button cell, position the switch to BUTTON CELL 1.4-1.55V. If the button cell is a lithium coin type, position the switch to LITHIUM 3V.
   To test a 1.25V nickel-cadmium battery, use the 1.5V AA • C position and read the lower nickel-cadmium scale.
   CAUTION: If you position the switch improperly, you may not obtain an accurate battery check. In addition, you might damage the tester.
2. Touch the red probe tip to the positive ⊕ battery terminal and the black probe tip to the negative ⊖ battery terminal.
   CAUTION: Always identify battery polarity correctly before testing.
   Use the following handling methods for most batteries:
   • Position the negative side of the battery against the negative ⊖ post and touch the red probe tip to the positive ⊕ terminal of the battery.
   • To check a 9V rectangular battery, position the battery terminals so that they make contact with the 9V positive ⊕ and negative ⊖ posts on the battery tester.
   • To check a button type battery, insert the battery into the recess at the right side of the tester with the negative ⊖ terminal of the battery up. Then, press the gray switch down.
   CAUTION: To avoid damage to the battery under test:
   • Do not push the gray switch down when using the probe tips for testing a button type battery.
   • Do not allow the red probe tip to contact the black probe or negative post when you use the 9V rectangular or button-type battery terminals.
3. Read the scale to determine the battery condition.
   • Use the upper REGULAR scale for measuring regular carbon-zinc and alkaline batteries. Use the center BUTTON CELL • LITHIUM scale for measuring mercury, zinc-air, silver oxide, alkaline and lithium button or coin cell batteries. Use the lower NICKEL CADMIUM scale for measuring rechargeable nickel cadmium batteries.
   If the reading is in the red REPLACE or RECHARGE zone, replace or if rechargeable, recharge the battery. If the reading is in the green GOOD zone battery current is available at the time the battery was tested. If the reading is on the oblique lines in the REGULAR scale, this indicates that the battery strength is marginal. The battery needs to be replaced.
   Note: Your tester is designed to check almost all electronic and flashlight batteries. It is not designed to test 6 and 12 volt lantern, motorcycle, or marine batteries.
4. If the needle fails to align with the black dot in the upper left hand corner, you can adjust the zero position of the needle. Insert a flat screwdriver in the zero-adjustment screw. Rotate the screw so that the needle aligns with the black dot at the extreme left end of the top scale.

Note: This is a simple and economical device designed to to help the user to determine if any voltage is available at the time of the test. Using this device or even a more complicated analytical tool, it is not possible to tell how much capacity remains available without performing a complete discharge test, since voltage is relatively flat and stable throughout battery life especially for Silver Oxide and Lithium batteries.

Specifications

Range	Load Current Drain	Minimum Voltage For Good Zone
BUTTON CELL 1.4-1.55V	1mA	1.125±0.09V
LITHIUM 3V	1mA	2.25±0.18V
AAA, N 1.5V	10mA	1.125±0.09V
AA, C 1.5V	50mA	1.125±0.09V
D 1.5V	250mA	1.125±0.09V
PHOTO 1.5V	1mA	1.125±0.09V
PHOTO 3V	1mA	2.25±0.18V
PHOTO 6V	1mA	4.50±0.36V
4.5V	10mA	3.375±0.27V
6V	10mA	4.50±0.36V
9V	10mA	6.75±0.54V
12V	10mA	9.00±0.72V
22.5V	10mA	16.875±1.35V