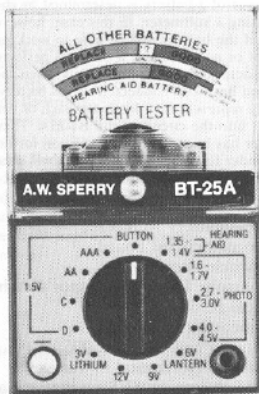


OPERATING INSTRUCTIONS

MODEL BT-25A BATTERY TESTER



A.W. SPERRY INSTRUMENTS INC.

245 MARCUS BLVD., HAUPPAUGE, N.Y. 11788

A.W. SPERRY BATTERY TESTER BT-25A

Description

The **A.W. SPERRY** Battery Tester **BT-25A** is a rugged, compact, reliable, easy-to-operate instrument. It is used to determine the condition of all popular types of batteries. Usually the remaining power of a battery is determined by checking the battery voltage using a voltmeter. In this case, however, it is difficult to judge if the battery will be able to work properly on certain equipment or not. Because a battery's performance capability can be determined accurately only when the representative load has been connected across battery terminals. These particularly representative loads for each of various types of batteries are built into the circuit of the **BT-25A**. Therefore, when your battery tester has been set to test position for the specific type of battery under test, the **BT-25A** meter will precisely indicate the exact condition of the battery.

General Features

Self powered, no battery to replace.

Gold plated printed circuit board.

Silver plated switch assembly.

Front panel controls: Function selector switch and
Mechanical zero adjust.

Functions: 13 measuring positions

Movement: Moving coil - 90 Arc, 235 μ A F.S.

Operating Position: Horizontal or Vertical

Construction: High impact ABS plastic case and
Phenolic PC board.

Size: 3.5"L X 2.4"W X 1.3"D, fits in your pocket.

Weight: 3.2 oz.

Specification:

Battery	Total Load Ohm	Working Fine Current (mA)	Maximum replace Volts	Maximum Good Volts
1.5V Button	750	2.2	1.05	1.65
1.5V "AAA" all chemistries*	75	22	1.05	1.65
1.5V "AA" all chemistries*	36	46	1.05	1.65
1.5V "C" all chemistries*	9.9	167	1.05	1.65
1.5V "D" all chemistries*	4.9	333	1.05	1.65
3V Lithium	2.870	1.15	2.1	3.3
12V	60	220	8.4	13.2
9V	495	20	6.3	9.9
6V Lantern	14.2	460	4.2	6.6
4.0-4.5V	900	5	2.86	4.5
2.7-3.0V	600	5	1.91	3.0
1.6-1.7V	1,417	1.2	1.08	1.7
1.35-1.4V	280	5	1.05	1.4

Where,

1. Working fine Currents(mA) are based on nominal battery voltage.
2. Max. replace Volts are 70% of nominal battery voltage.
3. Max. good Volts are 110% of nominal battery voltage.

*NOTICE

1.5V AAA, AA all chemistries: General purpose (carbon zinc)

1.5V C, all chemistries: Heavy duty (zinc chloride)

1.5V D, all chemistries: Alkaline (alkaline manganese)

Description of Batteries to be tested

Switch Position	Shape	Chemical System	Main Application
1.5V Button	Round Button	Silver-Oxide Alkaline Zinc-air etc.	Watches, Wireless Microphone Elec. Toys, Calculators, Camera Hearing Aids
1.5V "AA" "AAA"	Cylindrical		Desk Clock, Flash Lights, Radios
1.5V "C"	Cylindrical	Carbon-Zinc, Zinc-Chloride Alkaline	Radios, Cassette Tape Recorder Multimeters
1.5V "D"	Cylindrical		Toy Cars, Large Portable Radios Tape Recorders.
3V Lithium	Flat Disk	Lithium	Cameras, Exposure Meters, Pocket Calculators.
12V	Rectangular	Carbon-Zinc, Zinc- Chloride Alkaline	Pocket Receiver, Mike, Portable Radio Telephones, Photo
9V	Rectangular	Alkaline, Carbon Zinc Zinc-Chloride	Radios, Toys, Multimeters, Trans Receivers, Fire & Smoke Alarms, Garage Door Openers Lanterns
6V	Rectangular	Carbon-Zinc, Zinc- Chloride, Alkaline Sealed Lead Acid	
4.0-4.5V	Cylindrical	Alkaline, Zinc-Chloride Carbon-Zinc.	Photo Instruments, Lanterns
2.7-3.0V	Cylindrical	Mercury, Silver-Oxide	Photo Instruments
1.35-1.4V Hearing Aid	Round Button	Mercury	Hearing Aids, Photo Instruments
1.6-1.7V Hearing Aid	Round Button	Silver-Oxide	Watches Calculators

Meter Scale

There are two scales on the meter. The upper scale is divided into three regions: red(REPLACE), yellow(?) and green(GOOD) areas which are used to test all batteries except hearing aid batteries. On this scale you can also read the percentage of battery voltage under test, from 60% up to 110% of the nominal voltage. When the hearing aid batteries are tested, use the scale with only two red(REPLACE) and green(GOOD) regions. Here, the green(GOOD) region extends the full length of the scale when silver(silver-oxide) batteries are tested(nominal voltage 1.35V). It is marked SILVER and MERCURY accordingly. The mercury scale is shorter because a voltage of these, even when it is new, is essentially lower than those of equivalent silver batteries.

Operating Procedure

NOTE

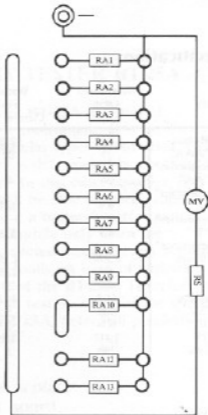
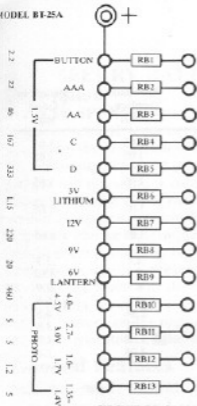
Prior to operating the tester, adjust mechanical adjuster on meter movement to line up the extreme left end of scale if necessary.

CAUTION

To avoid damaging the battery or BT-25A, first set the selector switch to the proper position for checking the battery under test. Do not keep the leads connected to the battery for a longer time than is necessary to determine its condition.

Test Procedure

1. Set the selector switch to the position for testing the battery in question.
2. Remove the battery from the equipment in which it is used.
3. Contact the negative terminal of the battery to (-) contact (A metal screw head located in lower left corner of the front panel) and red test lead to the positive (+) terminal of the battery. If the pointer is deflected to the left, the polarity of the connection or the battery is reversed.
4. Note the reading on the meter scale, the pointer should indicate in the green area (or above) if the battery is in good condition. If the pointer indicates in the red area the battery must be replaced.
5. When the pointer indicates in yellow area, marked (?), between red and green area on the upper scale, the battery's condition is marginal. It is likely that the battery will not perform properly, and probably should be replaced soon.



CIRCUIT DIAGRAM

RESISTOR, METAL FILM, 1%[±]

RA1	1/4W	500 OHM	RB1	1/4W	295 OHM
RA2	1/2W	46 OHM	RB2	1/2W	29 OHM
RA3	1/2W	22 OHM	RB3	1/2W	14 OHM
RA4	1/2W	6 OHM	RB4	1/2W	3.9 OHM
RA5	1/2W	3 OHM	RB5	1/2W	1.9 OHM
RA6	1/2W	1.1K OHM	RB6	1/2W	2K OHM
RA7	1/2W	4.5 OHM	RB7	3W	55 OHM
RA8	1/2W	51 OHM	RB8	1/2W	450 OHM
RA9	1/2W	2.2 OHM	RB9	3W	12 OHM
RA10	1/2W	200 OHM	RB10	1/2W	700 OHM
RA12	1/2W	1K OHM	RB11	1/2W	400 OHM
RA13	1/2W	188 OHM	RB12	1/2W	620 OHM
RS	10W	4.7K OHM	RB13	1/2W	110 OHM

HEARING AID