

BK PRECISION®



INSTRUCTION MANUAL

FOR

BATTERY CAPACITY

ANALYZER

Model 601

Warranty

BK warrants that all products manufactured by *BK* conform to published *BK* specifications and are free from defects in materials and workmanship for a period of one year from the date of despatch when used under normal operating conditions and within the service conditions for which they were furnished.

The obligation of *BK* arising from a Warranty claim shall be limited to repairing, or at its option, replacing without charge, any product which in *BK*'s sole opinion proves to be defective within the scope of the Warranty.

BK must be notified in writing of the defect or nonconformity within the Warranty period and the affected product returned to *BK*'s factory or to an authorized service center within (30) days after discovery of such defect or nonconformity.

For products warranties requiring return to *BK*, products must be returned to a service facility designated by *BK*.

BK shall have no responsibility hereunder for any defect or damage caused by improper storage, improper installation, unauthorized modification, neglect, inadequate maintenance, accident or for any product which has been repaired or altered by anyone other than *BK* or its authorized representative and not in accordance with instructions furnished by *BK*.

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Section 1

General Description

1.1 INTRODUCTION

BK's Battery Capacity Analyser Model 601 measures the terminal voltage, internal resistance & % capacity left in a battery. By just selecting proper AH range & pressing TEST switch, user can get the terminal voltage, % Balance capacity & internal resistance as per the selections.

Model 601 supports 6V & 12V storage type lead acid batteries with wide range of AH capacity. No external power (Mains or DC) is required. The unit works on BUT (Battery Under Test).

1.2 APPLICATIONS

As the information age develops, it is likely that the demand for UPS units will increase for use in hospitals, offices, labs etc. It is expected that the importance of battery maintenance will increase alongwith increasing demand for UPS.

Looking forward to the future developments the Battery Capacity Analyser can fulfill many applications.

The instrument can be applicable for Automobile Service Stations, UPS Manufacturing, Maintenance and Field Servicing, QC Department, Battery Systems in Railways, Tele-communications, Ships / Submarine etc.

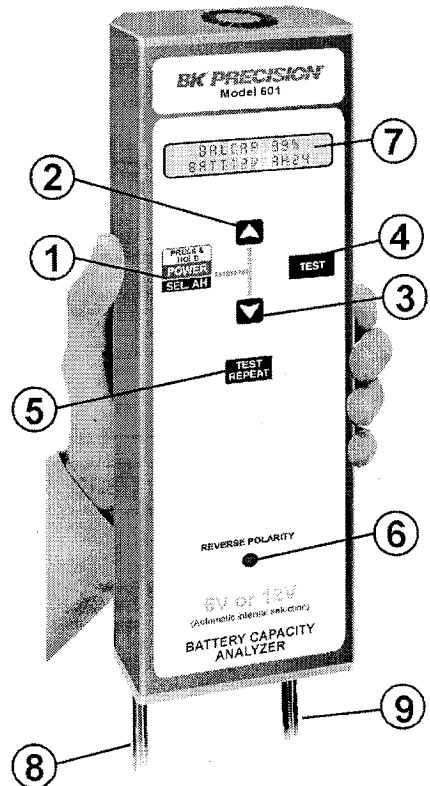
1.3 SPECIFICATIONS

Voltage Ranges	: 6V, 12V automatically selected.
Display	: i) Capacity 0% to 100%. ii) No load Voltage & loaded Voltage. iii) Internal Resistance.
Min. Input Voltage	: 4.8V.
Max. Input Voltage	: 20V.
AH Selection	: Programmable 2-100AH in steps of 1AH.
No Load Voltage Accuracy	: $\pm 0.2\%$ ± 1 counts.
Voltage Resolution	: 10mV.
Dimensions (WxHxD)	: 3.5 x 11 x 2.12 inches

Operation

2.1 FRONT PANEL CONTROLS

1. **PRESS & HOLD POWER / SEL. AH KEY**
After you connect the BUT to the battery analyzer, you need to press & hold this key to activate the battery analyzer.
After activation user can select the AH values as per BUT rating using this key.
2. **UP KEY**
This key is used to increase the AH values.
3. **DOWN KEY**
With this key, the user can decrease the AH values.
4. **TEST KEY**
On pressing this key the measurement will begin.
5. **TEST REPEAT KEY**
This key is used to repeat previously performed test.
6. **REVERSE POLARITY**
This LED glows when the battery is reverse connected.
7. **LCD**
This is 16x2 line alphanumeric display. It displays various messages & results of tests as per AH value selected.



8/9. TEST LEADS

These are used to connect the BUT to the Battery Analyzer. The Red test lead is to be connected to the +ve terminal of BUT & black is used to connect to the -ve terminal of BUT.

2.2 OPERATING PROCEDURE

Follow the steps as outlined below :

2.2.1 Connection Procedure

Connect Battery Capacity Analyser (601) to Battery Under Test (BUT). Connect the +ve terminal of 601 to +ve terminal of Battery. Connect -ve terminal of 601 to -ve terminal of Battery. The 601 is powered by BUT. To power on the unit, press & hold the POWER key. On Power up, 601 performs a memory test & displays open circuit voltage on LCD.

CAUTION : Do not connect the +ve terminal of 601 to -ve terminal of BUT and -ve terminal of 601 to +ve terminal of BUT. On doing so, the 'Reverse Polarity' LED glows.

2.2.2 Operation Procedure

On Power up, following screens will appear.

**BK-PRECISION
BK-601**

Next the unit under goes the memory test. Following message will be displayed.

MEMORY TEST

If memory test is OK.

**FOUND PREVIOUS
SETTINGS**

If the memory test fails:

**NO SETTINGS FOUND
LOADING DEFAULTS**

If the flash memory is corrupted, following message is displayed.

**INT MEMORY ERROR
LOADING DEFAULTS**

Next screen directs the user to the menu to select the sub-menu. The battery is auto-sensed & the defaults are loading accordingly.

After memory test, the open circuit voltage is displayed on the first line of LCD, the required AH value can be selected using up & down keys.

**OPEN CKT: 12.53V
SELECT AH: 028**

On selecting the required AH value, press SELECT AH & then press the TEST key, the measurements will begin & following message is displayed. Backlight will switch off during the test.

**TEST IN PROGRESS
12.53V 028AH**

The results will be displayed as follows.

**12.37V 61.87% CAP
IR: 39.2 mOhm**

The first field indicates the battery terminal voltage when battery was loaded during the test, the second field shows the balance capacity in percentage. IR indicates the internal resistance in milli ohms.

After the test, follows a cooling period of approximately 15 seconds. If user tries to perform a test during this period, the following message is displayed.

**TO BEGIN NEXT
SESSION, WAIT...**

In case the open circuit voltage of BUT exceeds 14.8V, the following screen will be continuously flashed & you will not be able to enter the test mode.

**X HIGH VOLTAGE X
REMOVE BATTERY**

Once the test period elapses the following screen will be displayed.

**OPEN CKT: 12.53V
SELECT AH: 028**

To start a new test, press SELECT AH key & in order to repeat the same test, press TEST REPEAT key.

To prevent unnecessary discharge of BUT, BATTERY ANALYSER will switch off automatically after 5 minutes of non-operational period.

CAUTION

- 1) Do not connect Model 601 to a voltage source more than 20V.
- 2) Do not connect the unit to a battery connected in circuit.