SZBJ® BM801A INSTRUCTION MANUAL

1. Introduction

The digital clamp meter is completely portable, 3 1/2 digits LCD display instrument for measuring AC current, DC and AC voltage, resistance, diode and for testing audible continuity. It is kind of ideal facility for measurement and monitor in electrician materials, electrical equipments and household electric appliances etc.

2. Safety Information

This clamp meter has been designed according to IEC61010-1

Please read this manual carefully before using the meter.

2.1 Explanation of Symbols

⚠ Warning! Important safety information is found in the manual.

⚠ risk of high voltage and electric shock!

Double insulated.

2.2 Never exceed the protection limit values indicated in the specifications for each range of measurement.

2.3 Check the rotary switch and make sure it is at the correct position before measuring.

2.4 Before rotating the range selector to change functions, disconnect test leads from the circuit under test.

2.5 Never perform resistance measurements and continuity test on live circuits.

2.6 Exercise extreme caution when measuring live system with voltage above 60V dc or 30V ac rms.

2.7 Keep fingers behind the barriers while measuring current.

2.8 Never touch exposed wiring, connections or live circuit when attempting to take measurements.

2.9 Change the battery when the "⊟" symbol appears to avoid incorrect data.

3.Specification

3.1 General Specification:

3.1.1 Digital display: 3 1/2 digits LCD display with maximum reading 1999.

3.1.2 Jaw opening capability: 52mm.

3.1.3 Data hold function: When the HOLD button is pushed, the display will keep the last reading and "DH" symbol will appear on the LCD until pushing it again.

3.1.4 Polarity: "-" displayed for negative polarity.

3.1.5 Over-range indication: "1" figure only on the display.

3.1.5 Low battery indication: When the battery is under the proper operation range, "⊟" will appear on the display.

3.1.6 Auto power off: If there is not any operation with the keys or dials within about15 minutes, the meter will power itself off to save battery consumption. Dial the rotary switch to turn on the meter again.

3.1.7 Operating temperature and humidity: 0°C~40°C，⩽70%RH.

3.1.8 Storage temperature and humidity: -20°C~60°C，⩽80%RH.

3.1.9 Power supply: 9V battery, NEDA 1604, 6F22 or equivalent.

3.1.10 Dimension: 248（L）×88（W）×45（H）mm.

3.1.11 Weight: about 360g (include battery).

3.1.12 Accessory: Test leads, Instruction Manual.

3.2 Electrical Specification:

The accuracy specification is defined as ±…%reading ±…count.

At 23±5°C，⩽70%RH.

Funcuion	Range	Resolution	Accuracy
ACA	2A	0.001A	±2%±10
	20A	0.01A	
	200A	0.1A	
	1000A	1A	
ACV	700V	1V	±1.2%±5
DCV	1000V	1V	±0.8%±2
Ω	2kΩ	1Ω	±1.0%±2
⊳|	Forward current: 1mA. Reversed voltage: 2.8V.		
)))	Buzzer sounds at less than50Ω. Open circuit voltage: 2.8V, Test current: 1mA.		

Voltage input impeadance：10MΩ

ACA/ACV frequence range: 50~60Hz

Ω/))) ⊳| Overload protection: effective value 250V

4. Operating Instruction

4.1 Front Panel Description

(1) Transformer jaws: Pick up the AC current flowing through the conductor.

(2) Trigger: Press the lever to open the transformer. When the lever is released, the jaws will close again.

(3) Rotary switch: This switch is used to selected functions and desired ranges as well as to turn on/off the meter.

(4) Data-hold button: The user may hold the present reading and keep it on the display by pressing the "Hold" button. When the data is no longer needed, one may release the data-hold operation by press the "Hold" button again.

(5) LCD display

(6) "V/Ω" jack: This is positive input terminal for volt and ohms.

(7) "COM" jack: This is negative (ground) input terminal for all measurement modes except current.

(8) Barrier

4.2 AC Voltage Measurement

⚠ **WARNING!** Maximum Input Voltage is 700V AC/DC. Do not attempt to take any voltage measurement that may exceed to avoid electrical shock hazard or damage to this meter.

(1) Set the rotary switch at AC700V position. Connect the red test lead to "V/Ω" jack and the black test to the "COM" jack.

(2) Connect test leads across the source or loading being measured and read voltage value on the LCD display.

4.3 DC Voltage Measurement

⚠ **WARNING!** Maximum Input Voltage is 1000V AC/DC. Do not attempt to take any voltage measurement that may exceed to avoid electrical shock hazard or damage to this meter.

(1) Set the rotary switch at DC1000V position. Connect the red test lead to "V/Ω" jack and the black test to the "COM" jack.
(2) Connect test leads across the source or loading being measured and read voltage value on the LCD display.

4.4 AC Current Measurement

⚠ **WARNING!** The input current should not exceed indicated values, it is to avoid electrical shock hazard or damage to this meter.

(1) Set the rotary switch at AC1000A position.
(2) Press the trigger to open transformer jaw and clamp one conductor only, making sure that the jaw is firmly closed around the conductor. Read current value on LCD display.
(3) If current under test is smaller, the lower range has to be selected.

Note: a) Disconnect the test lead with the meter for safety before this measurement.
b) If two or more conductors are clamped, the meter will stop operating.
c) The accurate reading will be obtained by the conductor across center of the transformer jaws.

4.5 Resistance Measurement

⚠ **WARNING!** When checking in-circuit resistance, be sure the circuit under test has all power removed and all capacitors have been discharged fully.

(1) Set the rotary switch at 2kΩ position.
(2) Connect the red test lead to "V/Ω" jack and the black test to the "COM" jack.
(3) Connect test leads across the resistor to be measured and read LCD display.
(4) When at open circuit or over-range condition, "1" will be displayed.

4.6 Diode Measurement

(1) Set the rotary switch at position. When the input is not connected, i.e. at open circuit, the figure "1" will be displayed.
(2) Connect the red test lead to "V/Ω" jack and the black test to the "COM" jack.(The polarity of red lead is positive "+")
(3) If diode test mode is selected, connect the red and black leads to the anode and cathode of the diode, the forward voltage drop of this diode will be displayed in mV.
(4) The figure "1" will be displayed when the diode is reversed under test.

4.7 Continuity Test

(1) Set the rotary switch at position. When the input is not connected, i.e. at open circuit, the figure "1" will be displayed.
(2) Connect the red test lead to "V/Ω" jack and the black test to the "COM" jack.
(3) Connect tip of the test leads to the points where the conduction needed. If the resistance is under 50Ω, the buzzer will sound continuously.

Note: The circuit to be tested must in power off status during the continuity check, because any load signals may sound the buzzer and mislead the result.

5. Maintenance

⚠ **WARNING!** To avoid electrical shock hazard, before open the case or the battery cover, be sure that test leads have been disconnected from measurement circuits. Close case and tighten screws completely before using the meter.

5.1 If the sign "" appears on the LCD display, it indicates that battery should be replaced. Remove the battery cover of case, replace the exhausted battery with a new one.
5.2 Do not expose the instrument to direct sunlight, extreme temperature or moisture.
5.3 Keep the meter cleaning. Do not use abrasives or solvents on the meter, wipe periodically the case with a dry cloth and detergent.