BESANTEK

BST-IT111
DIGITAL INSULATION MULTI-METER
INSTRUCTION MANUAL

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1. Introduction

This meter has been designed and tested in accordance with the CE safety requirements for electronic measuring apparatus, EN 61010-1, IEC 61557-1, IEC 61557-2 and other safety standards. Follow all warnings to ensure safe operation.

2. Safety Notes

- Read the following safety information carefully before attempting to operate or service the meter.

- Use the meter only as specified in this manual; otherwise the protection provided by the meter may be impaired.

- Rated enviromental conditions:
  (1) Indoor use.
  (2) Installation Category III.
  (3) Pollution Degree 2.
  (4) Altitude up to 2000 Meter.
  (5) Rela ive Humidity 80% Max.
  (6) Ambient Temperature 0~40℃.

- Observe the International Electrical Symbols listed below.


Meter is protected throughout by double insulation or reinforced insulation.


Warning! Risk of electric shock.


Caution! Refer to this manual before using the meter.


Alternating current.

3. Feature

- Microprocessor controlled.
- Four insulation test voltages (DC) :
  125V, 250V, 500V, 1000V
- The maximum insulation measurement range is 200G ohm @1000V.
- 1mA test current on insulation test at nominal voltage.
- Large LCD (78 × 67mm).
- Auto-ranging.
- Bar-graph indication.
- Backlight func ion.
- REL(Auto-null) function.
- Auto AC/DC voltmeter.
- Capacitor test.
- Auto-test stop & smart hold.
- Supplied with high quality test leads.
- Safety standard :
  EN 61010-1 CAT III 600V
  IEC 61557-1 IEC 61557-2
  EN 61326-1

4. Specifications

Insulation Resistance(GΩ)

Test voltage (DC V)	125V / 250V / 500V / 1000V
Output voltage on open circuit	Rated test voltage + 10%
Measuring ranges	0-25GΩ/0-50GΩ/0-100GΩ/ 0-200GΩ
Accuracy	±(3%rdg+5dgt)
Output short-circuit current	≥1.0mA

AC/DC Voltage

Measuring ranges	200.0mV / 2000mV / 200.0V / 600V
Accuracy	±(3%rdg+5dgt)

Resistance

Measuring ranges	20.00kΩ / 200.0kΩ / 2000kΩ / 20.00MΩ
Accuracy	±(3%rdg+3dgt)

Capacitor

Measuring ranges	200.0nF / 2000nF / 20.00uF
Accuracy	±(3%rdg+5dgt)

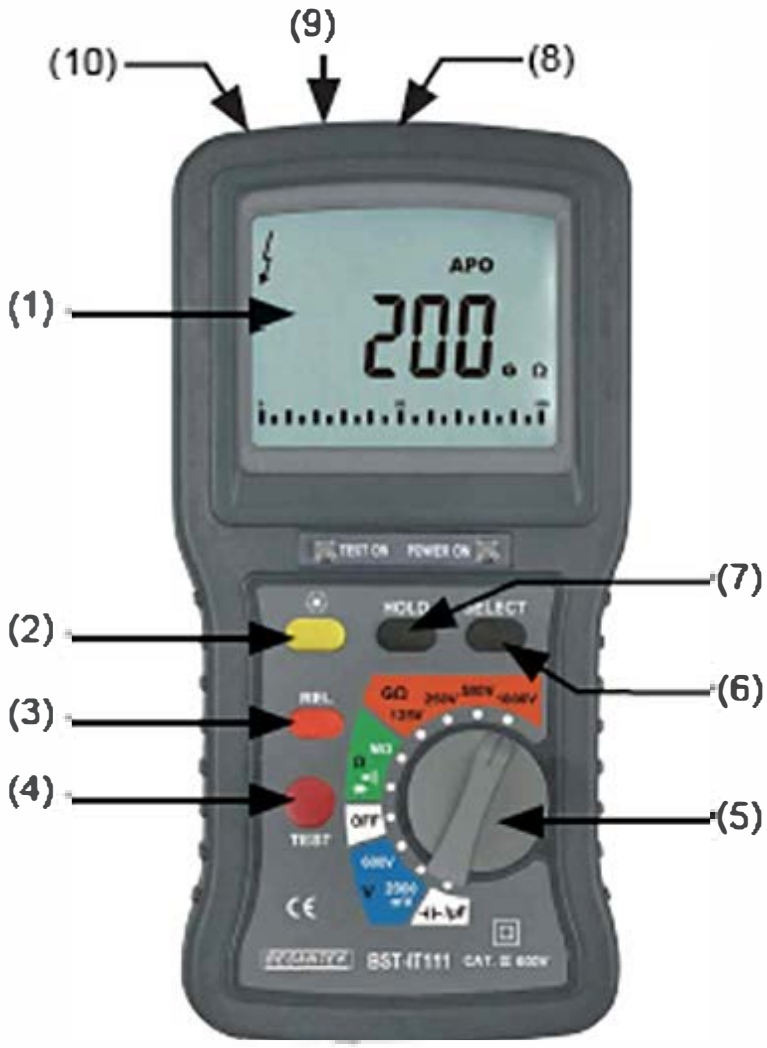
Continuity

Measuring ranges	20.00Ω / 200.0Ω / 2000Ω
Buzzer	under 10Ω
Open circuit voltage	5V±1V
Short circuit current	>210mA
Accuracy	±(3%rdg+5dgt)

General

Dimension	221(L) × 110(W) × 57(D)mm
Weight	676g (batteries included)
Power source	1.5V (AA) × 6 Alkaline batteries
Accesories	Instruction manual Test leads Batteries Carry case Hand strap

5. Instrument Layout



(1) LCD
(2) ☼ Backlight button
(3) REL button
(4) TEST button
(5) Function rotary switch
(6) SELECT button
(7) HOLD button
(8) " – " terminal
(9) Fuse
(10) " + " terminal

6. Measuring Methods

⚠ OPERATION CAUTION

Observe all safety precautions when you select 125V, 250V, 500V or 1000V position. Connect the meter test leads to the circuit under test before operating the "TEST" button. Do not touch the clip ends of the test leads when the "TEST" button is pressed.

Some electrical equipment, especially cables, may retain an electrical charge when disconnected from the line. It is good practice to discharge such equipment with grounding straps, or other suitable devices, before touching or making connections. The meter automatically discharge he test circuits when the stop testing.

⚠ IMPORTANT

Remove all power to the circuit under test when making resistance measurements.

- Always check the following before testing :
  The " 🔋 " indicator is not showing.
  There is no visual damage to the instrument or test leads.
- Test lead continuity : select the "Ω" range by rotating the function switch and press "TEST" button, short the test leads together.
  An over-range "O.L" indication mean the leads are faulty or instrument fuse is blown.

(1) Insulation Resistance Test :

⚠ **Warning**

Insulation tests should be conducted on circuits that are de-energised. Ensure circuits are not live before commencing testing.

a. Select the required test voltage (125V, 250V, 500V, 1000V) by rotating the function switch.

b. Connect the test leads to the instrument and to the circuit to be tested.

c. Press the "TEST" button, the " ⚡ " indicator was shown on the LCD. The value of insulation resistance in megohms will be displayed.

Be sure turn off power before the test leads are disconnected. This is because the system may be charged up and it must be allowed to discharge through the tester's internal discharge resistor.

(2) Continuity test :

⚠ **Warning**

Ensure circuit is not live before commencing testing.

a. Select the "Ω" range by rotating the function switch. Short the tips of the test leads. Press the "REL" button. The display will show "zero".

b. Connect the test leads to the circuit under test. Read the value of resistance from the LCD.

(3) Voltage test :

a. Select the "600V" or "2000mV" range by rotating the function switch.

b. Connect test leads to circuit being measured.

c. Read the value of voltage from the LCD.

※ 600V : AC/DC automatically detection.
2000mV : AC/DC "Select" cutover.

(4) Capactance test :

a. Select the " ⊣⊢ " range by rotating the function switch.

b. Connect test leads to circuit being measured.

c. Read the value of voltage from the LCD.

※ IEC 61557-2 Operating Error

Measurement	Uncertainty	Operating instrumental uncertainty
Insulation Resistance	±(3%rdg+5dgt)	< 30%

This specification describes maximum values accepted by the standard.

7. Maintenance

⚠ Caution

Always disconnect the test leads from instrument before batteries or fuse replacement.

- **Batteries Replacement:**
  Please replace batteries when the " 🔋 " indicator was shown on the LCD.
  Disconnect the test leads from the instrument, remove the battery compartment lid and the batteries.
  Replace with six 1.5V AA Alkaline batteries, taking care to observe correct polarity.
  Replace the battery compartment lid.

- **Fuse replacement**
  Open the fuse compartment lid. Remove the bad fuse, and replace with the new one.
  Replace the fuse cover the fuse compartment lid before using the meter.
  ※ Fuse (0.5A/690V) 6 × 32mm

- **Cleaning and Storage**
  Periodically wipe the case with a damp cloth and detergent; do not use abrasives or solvents.
  If the meter is not to be used for periods of longer than 60 days, remove he batteries and store them separately.

⚠ WARNING

To avoid electrical shock or damage to the meter, do not get water inside the case.