

# BST-ET101

## EARTH RESISTANCE TESTER



## 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, EN61010-1, EN61326-1, EN61557-1, EN61557-5 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 environmental conditions:
  - (1) Indoor and outdoor use.
  - (2) Installation Category IV 400V
  - (3) Pollution Degree 2.
  - (4) Altitude up to 2000 meters.
  - (5) Relative humidity 80% max.
  - (6) Ambient temperature 0~40°C.

Observe the International Electrical Symbols listed below:

 Meter is protected throughout by double insulation or reinforced insulation.

 Warning! Risk of electric shock.

 Cautions! Refer to this manual before using the meter.


### **3. Application**

- (1) Measure earth resistance of a single rod or small ground grids.
- (2) Check compliances with Electrical Code specifications.
- (3) Check lightning protection, remote tower, and electrode equipment.

## 4. Features

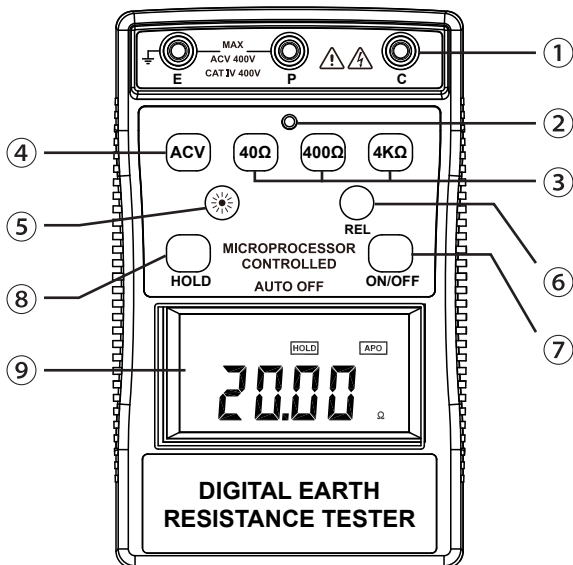
- Microprocessor-controlled.
- Measure earth resistance in three ranges.  
(40Ω/400Ω/4kΩ)
- Capable of measuring earth voltage.
- 3¾digit (4000counts).
- LCD backlight display.
- 2mA measuring current permits the testing of earth resistance without tripping earth leakage current circuit breakers in the circuit.
- Data Hold function.
- Relative function.
- Auto power-off function.
- Battery-operated.
- Low battery indication.
- Small, lightweight, and easy-to-use.
- To disable the auto-off function (APO), press the "HOLD" key and turn on the multimeter at the same time.
- Meets EN61010-1 CAT IV 400V  
EN61326-1  
EN61557-1  
EN61557-5

## 5. Specifications

Measuring Ranges	Earth Resistance 0~40Ω/0~400Ω/0~4kΩ Earth Voltage 0~400V (40~500Hz)
Accuracy	Earth Resistance ±(2%rdg+3dgt) Earth Voltage ±(2%rdg+3dgt)
Earth Resistance Resolution	0~40Ω:0.01Ω 0~400Ω:0.1Ω 0~4kΩ:1Ω
Measurement System	Earth resistance by constant current inverter 820 Hz approx. 2mA
Low Battery Indication	"  " symbol appears on the display
Data Hold Indication	"HOLD" symbol appears on the display
Over Range Indication	"OL"
Open Circuit Indication	LED will be flash, LCD shows "- - - -"
Display LCD	3¾digit (4000 counts)
Power Source	1.5V (AA) x 6

Dimensions	163(L)x102(W)x50(D)mm
Weight	440g approx. (batteries included)
Accessories	Test leads Auxiliary earth spikes Heavy-duty case Instruction manual Batteries



## 6. Instrument Layout

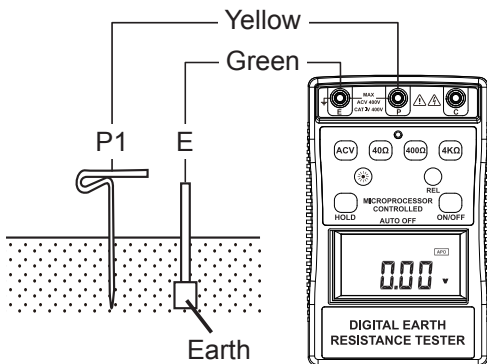


- |                                     |                       |
|-------------------------------------|-----------------------|
| ① Terminal                          | ⑥ REL button          |
| ② LED indicator                     | ⑦ Power ON/OFF button |
| ③ Earth resistance selection button | ⑧ Data Hold button    |
| ④ ACV test button                   | ⑨ LCD                 |
| ⑤ Backlight button                  |                       |



## 7. Measurement

- (1) Battery voltage check
  - a. Before testing, press the "ON/OFF" button. When the " " appears on the display, replace with new batteries.
  - b. Prior to measuring, if " " appears on the display, replace with new batteries.
- (2) Earth voltage check
  - a. Test leads connection.



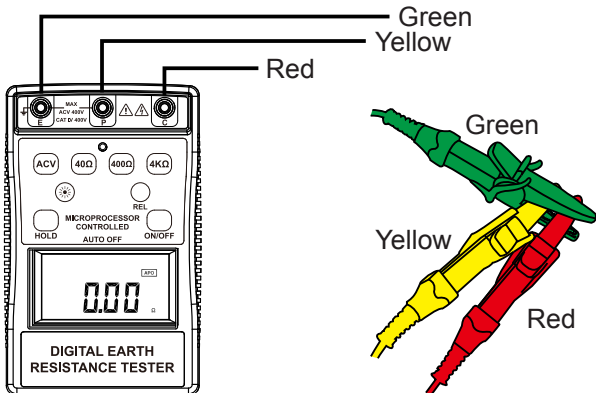
- b. Press the "ON/OFF" button, then the "ACV" button. The earth voltage will be displayed on the LCD. When the earth voltage is more than 10V. It may result in errors in earth resistance measurement. Make sure that the indicated value is less than 10V.

### (3) Earth resistance measurement



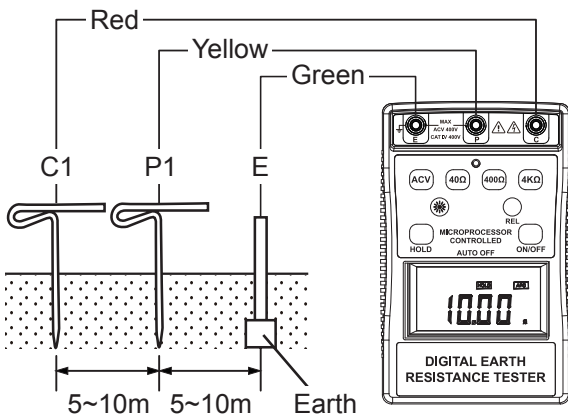
The measured results may be influenced by induction if measurements are made with the Test Leads twisted or connected to each other. When connecting the probes, they should be separated.

- Connect green, yellow and red test leads to instrument terminals E.P.C.
- Short-circuit the alligators of the test leads. Press the "ON/OFF" button, then the "40 $\Omega$ " button and the "REL" button.
- The LCD displays "0.00 $\Omega$ "



d. Test leads connection:

Connect E (green), P (yellow), C (red) test leads with auxiliary earth spikes P1, C1, staked into the earth "IN A STRAIGHT LINE".




e. Press the "ON/OFF" button to turn on the tester than press the appropriate button to select the resistance level range.(40Ω, 400Ω or 4KΩ)

**!** The LED will glow if the connection is proper, if not, the LED will flash.

f. Take the reading on the LCD.

## 8. Maintenance

- Battery replacement:

When the symbol "  " appears on the display, replace with new batteries as follows:

- (1) Disconnect the test leads from the instrument and turn off the power.
- (2) Use a screwdriver to unscrew the screw on back cover then slide the cover, take out the batteries and replace with new batteries type (AA).
- (3) Place back cover and secure by a screw.

- Cleaning and storage:



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

Periodically wipe the case with a damp cloth and detergent. Do not use abrasives or solvents.

If the meter will not used for periods of longer than 60 days, remove the batteries and store them separately.