

# 323511 Earth Tester

**Test Equipment  
Depot**  
1-800-517-8431

99 Washington Street  
Melrose, MA 02176  
Fax 781-665-0780  
TestEquipmentDepot.com

## Single Dial Measurement Without Range Change



The Model 323511 Earth Tester is a convenient test set to facilitate very easy, accurate measurements of earth resistance. Without a hand-driven generator, this instrument consists of a battery-operated silicon-transistorized DC-AC inverter, an AC potentiometer measuring dial and a galvanometer. Just push the pushbutton switch and move the dial so that the galvanometer shows balanced

condition. Then, the resistance is directly read on the dial scale. A wide range of earth resistance of 0 to 1,000  $\Omega$  can be measured by a single measuring dial without range changeover. Furthermore, earth voltage can also be measured on the galvanometer scale by positioning the selector switch.

### FEATURES

- **3 terminal measurement of earth resistance**  
Two earth electrodes are used in addition to the system earth under test. Test electrode resistance is not critical, up to 10 k $\Omega$  is tolerable.
- **Accurate, wide-range logarithmic scale**  
YOKOGAWA's technology has produced a potentiometer with accurate, wide-range logarithmic scale to eliminate the necessity for range changeover. Accuracy is better than 5% from 2 to 1,000  $\Omega$ , and maximum resolution is 0.1  $\Omega$ .
- **AC potentiometer bridge, synchronous detector**  
The bridge uses a transistorized 500 Hz inverter and synchronous detector, so is not affected by DC or 50/60 Hz earth voltages of normally operating equipment. (An AC voltmeter mode is provided to check earth voltage).
- **Portable yet rugged and shockproof**  
Bridge balance is indicated by a rugged yet sensitive taut-band suspension galvanometer. The case is of impact-resistant ABS resin.

## SPECIFICATIONS

**Model:** 323511

**Measuring Range:**

**Earth Resistance:** 0 to 10 to 100 to 1,000  $\Omega$  (Min. Scale Div. 0, 1  $\Omega$ )

**Earth Voltage:** 0 to 30 V

**Scale:**

**Earth Resistance:** 3-digit logarithmic continuous scale on measuring dial

**Earth Voltage:** Uniform scale on galvanometer

**Accuracy:**

**Earth Resistance:**  $\pm 5\%$  of 2  $\Omega$  ( $\pm 0,1 \Omega$  or min. one div.) in the range of 0 to 2  $\Omega$

$\pm 2,5\%$  of 20  $\Omega$  ( $\pm 0,5 \Omega$  or min. one div.) in the range of 2 to 20  $\Omega$

$\pm 2,5\%$  of 200  $\Omega$  ( $\pm 5 \Omega$  or min. one div.) in the range of 20 to 200  $\Omega$

$\pm 5\%$  of 1,000  $\Omega$  ( $\pm 50 \Omega$  or min. one div.) in the range of 200 to 1,000  $\Omega$

**Earth Voltage:**  $\pm 5\%$  of full scale value

**Measuring Frequency:** 500 Hz

**Ambient Temperature Influence:** Variation in indication is within the corresponding one scale division for temperature change by  $20 \pm 20^\circ\text{C}$ .

**Battery Voltage Influence:** The accuracy is maintained within the specified limit even if the voltage decreases down to approx. 4 V under operating condition.

**Earth Voltage Influence:** Variation in indication is within the corresponding one scale division for the earth voltages of up to 10 V at commercial frequency.

**Power Source:** Four 1.5 V batteries (JIS SUM-1, ANSI D, Mono 1.5 V or equivalent).

**Insulation Resistance:** More than 20 M $\Omega$  at 500 V DC between terminals and case

**Dimensions:** Approx. 122 x 190 x 124 mm (4-7/8 x 7-1/2 x 4-7/8") not including accessories.

**Weight:** Approx. 1.5 kg (3.3 lbs) for Instrument only, Approx. 3,5 kg (7.7 lbs) including all accessories.

**Accessories supplied at no extra cost:**

Measurement leads, . . . . . 3 pcs. (green 5 m or 5.5 yd for earth plate, yellow 10 m or 11 yd for potential, and red 20 m or 22 yd for current)

earth spikes . . . . . 2 pcs. (one each for potential and current)

carrying case, . . . . . 1 pc. (shoulder bag type)

accessory storage bag . . . . . 1 pc. (cloth-made knapsack)

## OPTIONAL ACCESSORY

### B9646CG Auxiliary earthing net

(2 pcs/unit, order qty 1 unit)

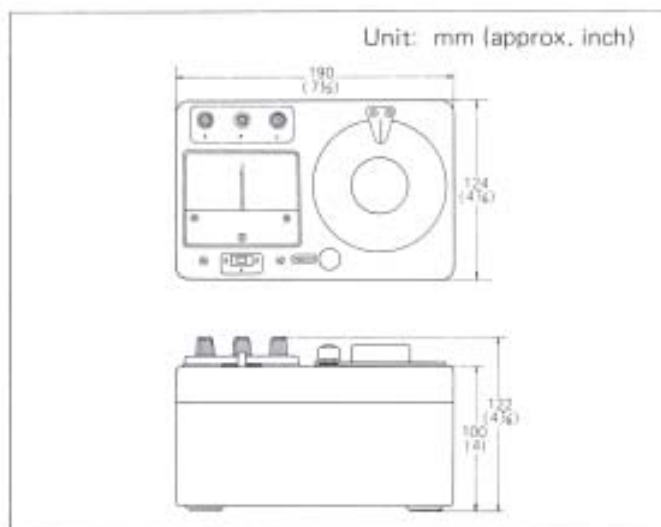
The auxiliary earthing nets are used to improve the earthing conditions of the earth spikes. For example, on soft ground such as sand, or hard places such as concrete, etc. where the earth spikes cannot be driven.

However, please note that the earth resistance cannot be measured if the water does not permeate into the place such as a newly paved road, a heavy thick intermediate on the earth, etc.



**B9646CG**  
300 x 300 mm  
(11-7/8 x 11-7/8")

## DIMENSIONS



**YOKOGAWA**   
Yokogawa M&C Corporation

World Wide Web site at  
<http://www.yokogawa.com/MCC>

### NOTICE

- Before using the product, read the instruction manual carefully to ensure proper and safe operation.

YOKOGAWA M&C CORPORATION  
International Sales Dept.

2-9-32 Nakacho, Musashino-shi, Tokyo, 180-8750 Japan  
Phone: +81-422-52-5716 Facsimile: +81-422-55-8954

Represented by:

YOKOGAWA CORPORATION OF AMERICA (U.S.A.)  
YOKOGAWA EUROPE B. V. (THE NETHERLANDS)  
YOKOGAWA ENGINEERING ASIA PTE. LTD. (SINGAPORE)  
YOKOGAWA AMERICA DO SUL LTDA (BRAZIL)  
YOKOGAWA MEASURING INSTRUMENTS KOREA CORPORATION (KOREA)  
YOKOGAWA AUSTRALIA PTY. LTD. (AUSTRALIA)  
YOKOGAWA BLUE STAR LTD. (INDIA)  
YOKOGAWA MIDDLE EAST E.C. (BAHRAIN)  
LTD. YOKOGAWA ELECTRIC (RUSSIAN FEDERATION)

Phone: +1-770-253-7000  
Phone: +31-334-64-1611  
Phone: +65-6241-9933  
Phone: +55-11-5681-2400  
Phone: +82-2-551-0660  
Phone: +61-2-9805-0699  
Phone: +91-80-227-1513  
Phone: +973-358100  
Phone: +7-095-737-7868

Facsimile: +1-770-251-2888  
Facsimile: +31-334-64-1610  
Facsimile: +65-6241-2606  
Facsimile: +55-11-5881-0744/03  
Facsimile: +82-2-551-0665  
Facsimile: +61-2-9888-1844  
Facsimile: +91-80-227-4270  
Facsimile: +973-336100  
Facsimile: +7-095-737-7869

MCK-ES10