

Measures Insulation Resistances Up To 1 T Ohm

Simpson's Model 505 High Voltage Insulation Tester is capable of measuring insulation resistances from 10 kilohms to 1 teraohm with eight selectable test voltages up to 5000 V. As a safety feature, the insulation tester acts as an AC/DC voltmeter to measure the absence of voltage in networks up to 2000V. For added safety, the cables are permanently attached, preventing possible injury that could occur by the accidental removal of the cables. The Model 505 features automatic discharging capability of capacitive units under test and a lock in test switch, for hands-free operation. An optional guard terminal is available to minimize surface leakage errors. Two LEDs indicate the selected measuring range, and one LED signifies valid measurements and battery charge status. Each tester comes in a padded carrying case with permanently connected cables and test probes, 2 alligator clips and a plug-in battery module with batteries.

- *Eight Test Voltages: 100, 250, 500, 1000, 1500, 2000, 2500, and 5000 VDC*
- *High Sensitivity, Direct Resistance Reading to 1T Ω (1,000,000 M Ω), no Multipliers*
- *Voltage Measurement to 2000 V AC/DC*
- *Battery Powered*
- *Built in Battery Test and Battery Charge Indicator*

Measuring Ranges

INSULATION RESISTANCE

| Nominal/Open-Circuit Voltage | Measuring Range | Nominal Current | Short Circuit Current | Intrinsic Error (1) |
|---|-----------------|--------------------------------------|-----------------------|---------------------|
| 100V 250V 500V 1000V | 100KΩ to 100MΩ | 1 mA | 1.3 mA | ±2.5% |
| 100V/1500V 250V/2000V 500V/2500V 1000V/5000V | 10KΩ to 1 TΩ | 0.7 mA 0.5 mA 0.4 mA 0.1 mA | 1.3 mA | ±5% |

DIRECT AND ALTERNATING VOLTAGE

| Measuring Range | Frequency | Internal Resistance | Maximum Overload | Intrinsic Error (1) |
|-----------------|---------------|---------------------|-------------------------|---------------------|
| 0-2000V AC/DC | 15Hz to 500Hz | 5MΩ | 2200V AC/DC max. 10s | ±5% |

(1) Referring to scale length



Specifications

REFERENCE CONDITIONS

Ambient Temperature: 73°F (23°C) ± 4°F (2°C)

Relative Humidity: 45 to 55%

Measurement Magnitude Frequency: 60Hz
(voltage measurements)

Line Voltage Waveform: Sine, deviation between effective and rectified value ≈ 1%

Battery Voltage: 9V ± 1%

Operating Position: Horizontal

ELECTROMAGNETIC COMPATIBILITY EMC

Interference Emission: EN 50081-1: 1992

Interference Immunity: EN 50082-1: 1992

ELECTRICAL SAFETY

Designed to IEC 1010-1

Protection Class: II

Test Voltage: ≈8.5 Kv

Overvoltage Classification: II

Pollution Degree: 2

Protection: IP 52

AMBIENT CONDITIONS

Operating Temp. Range: 32°F (0°C) to 104°F (40°C)

Storage Temp. Range: -4°F (-20°C) to 140°F (60°C)

(without batteries)

Relative Humidity: max. 75%, condensation must be avoided

Batteries: 6 ea. 1.5V "D" size batteries

Working Range: 6 to 10V

Battery Service Life: 100 hours for no-load and intermittent operation, 7500 measurements for test voltage of 1000V with measure resistance of 1 MΩ, 15,000 measurements for test voltage of 500V with measure resistance of 500KΩ, measurement of 5sec. - pause 25sec.

MECHANICAL DESIGN

Dimensions: W 11.41" (290mm) x D 9.8" (250mm) x H 5.5" (140mm)

Weight: Approx.. 7.5 lbs. (with batteries)

Specifications Subject To Change Without Notice.

Ordering Information

| ACCESSORIES | Catalog No. | ACCESSORIES | Catalog No. | ACCESSORIES | Catalog No. |
|------------------------------------|-------------|---------------------------------|-------------|------------------------------------|-------------|
| 505 High-Voltage Insulation Tester | 12505 | Guard Cable with Alligator Clip | 45065 | Replacement Alligator Clips (pair) | 45066 |