

505 High Voltage Insulation Tester

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 cable is available to minimize surface leakage errors. Two LEDs indicate the selected measuring range, and one LED signifies valid measurements.

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**

Ordering Information	
Accessories	Catalog Number
505 High-Voltage Insulation Tester	12505
Guard Cable with Alligator Clip	45065
Replacement Alligator Clips (pair)	45066

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Measuring Ranges				
Insulation Resistance				
Nominal/Open-Circuit Voltage	Measuring Range	Nominal Current	Short Circuit Current	Intrinsic Error (1)
100V	100K Ω to 100M Ω	1 mA	1.3 mA	$\pm 2.5\%$
250V				
500V				
1000V				
100V / 1500V	10K Ω to 1 T Ω	0.7 mA	1.3 mA	$\pm 5\%$
250V / 2000V		0.5 mA		
500V / 2500V		0.4 mA		
1000V / 5000V		0.1 mA		
(1) Referring to scale length				

Direct and Alternating Voltage				
Measuring Range	Frequency	Internal Resistance	Maximum Overload	Intrinsic Error (1)
0 to 2000V AC/DC	15Hz to 500Hz	5M Ω	2200V AC/DC max. 10s	$\pm 5\%$
(1) Referring to scale length				

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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	≈ 8.5Kv
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 1MΩ, 15,000 measurements for test voltage of 500V with measure resistance of 500KΩ, measurement of 5 sec. - pause 25 sec.
MECHANICAL DESIGN	
Dimensions	W 11.41" (290mm) x D 9.8" (250mm) x H 5.5" (140mm)
Weight	7.5 lbs. (1.6kg) (with batteries)
Specifications subject to change without notice	