

Earth Electrode Test Calculator

Summarize earth-electrode test readings, resistance spread, calculated resistance, and comparison margin for qualified field review.

Generated October 10, 2026

<https://www.elecatrix.com/testing-protection-grounding/earth-electrode-test-calculator/>

Inputs		
Input	Value	Unit
Test method	Fall of potential / 3-point	
Test-point readings	Rows: 3	
Row 1 - Measured resistance	8.2	ohm
Row 1 - Probe distance	100	ft
Row 2 - Measured resistance	8.6	ohm
Row 2 - Probe distance	150	ft
Row 3 - Measured resistance	8.4	ohm
Row 3 - Probe distance	200	ft
Test current	0.5	A
Measured test voltage	4.2	V
Entered reference resistance	10	ohm
Results		
Result	Value	Unit
Test-point count	3	points
Average resistance	8.4	ohm
Minimum resistance	8.2	ohm
Maximum resistance	8.6	ohm
Reading spread	0.4	ohm
Spread vs average	4.7619	%
Voltage/current resistance	8.4	ohm

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Margin vs entered reference	1.6	ohm
Calculation details		
Detail	Value	Unit
Calculation basis	The page reports the average and spread of entered test-point readings. When both test voltage and test current are entered, resistance is also calculated as voltage divided by current.	
Test boundary	Field-test data reduction only; verify electrode geometry, probe placement, instrument procedure, edition, project criterion, qualified-person controls, and AHJ requirements separately.	

Formulas

$R_{avg} = (\sum R_i/n)$
$\Delta R = R_{max} - R_{min}$
$\Delta R_{\%} = \frac{\Delta R}{R_{avg}} \times 100\%$
$R_{V/I} = \frac{V_{test}}{I_{test}}$ quadwhen both are entered
$M_{reference} = R_{reference} - R_{avg}$ quadwhen a reference is entered

Warnings and limitations

This field-test data reduction does not determine grounding acceptance, electrode design, GEC size, step voltage, touch voltage, utility approval, or readiness to energize.
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