

Conductor Resistance Calculator

Calculate DC conductor resistance and conductance from resistivity, length, and cross-sectional area at an entered reference condition.

Generated October 10, 2026

<https://www.elecatrrix.com/wire-raceway-ampacity/conductor-resistance-calculator/>

Inputs

Input	Value	Unit
Resistivity	0.0175	ohm-mm2/m
Conductor length	100	m
Cross-sectional area	10	mm2

Results

Result	Value	Unit
Resistance	0.175	ohm
Conductance	5.7143	S
Resistivity used	0.0175	ohm-mm2/m
Length used	100	m
Area used	10	mm2

Calculation details

Detail	Value	Unit
Calculation basis	Resistance equals resistivity multiplied by length and divided by cross-sectional area.	
Selection boundary	DC physical estimate only; temperature, frequency, stranding, insulation, product construction, terminal effects, ampacity, and manufacturer data require separate review.	

Formulas

$$R = \rho(L/A)$$

$$G = (1/R) \text{ when } R > 0$$

Warnings and limitations

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This is a DC geometry estimate. Temperature, AC frequency, stranding, cable construction, contact resistance, ampacity, and product-specific data require separate review.