

Transformer Winding Resistance Temperature Calculator

Normalize winding-resistance readings taken at different temperatures for a preliminary test-record comparison.

Generated October 10, 2026

<https://www.elecatrix.com/testing-protection-grounding/transformer-winding-resistance-temperature-calculator/>

Inputs

Input	Value	Unit
Winding, phase, or tap label	Phase A / Tap 1	
Measured resistance	0.125	ohm
Measured temperature	25	deg C
Reference temperature	75	deg C
Temperature coefficient	0.393	%/deg C
Entered comparison resistance	0.1496	ohm

Results

Result	Value	Unit
Temperature adjustment	50	deg C
Normalized resistance	0.1496	ohm
Normalized / measured ratio	1.1965	x
Difference vs entered comparison	N/A	ohm

Calculation details

Detail	Value	Unit
Calculation basis	The entered linear temperature coefficient adjusts measured resistance to the entered reference temperature. The coefficient basis stays visible and is not inferred from the transformer model.	
Test boundary	Temperature-normalization estimate only; verify conductor material, transformer class, tap, phase, test current, thermal state, manufacturer procedure, and current standard separately.	

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Formulas

$$\Delta T = T_{\text{reference}} - T_{\text{measured}}$$

$$R_{\text{reference}} = R_{\text{measured}} \times (1 + \alpha \Delta T)$$

$$\text{Resistance ratio} = \frac{R_{\text{reference}}}{R_{\text{measured}}}$$

$$\text{Comparison difference} = R_{\text{reference}} - R_{\text{comparison}}$$

Warnings and limitations

This temperature-normalization estimate does not diagnose transformer health, thermal damage, winding faults, or test acceptance.