

Thevenin Equivalent Calculator

Enter the Thevenin voltage, Thevenin resistance, and load resistance to evaluate source loading, terminal voltage, and resistive power.

Generated October 10, 2026

<https://www.elecatrrix.com/circuits-components/thevenin-equivalent-calculator/>

Inputs

Input	Value	Unit
Thevenin voltage	12	V
Thevenin resistance	4	ohm
Load resistance	8	ohm

Results

Result	Value	Unit
Load current	1	A
Load voltage	8	V
Load power	8	W
Source resistance loss	4	W
Total series resistance	12	ohm

Calculation details

Detail	Value	Unit
Calculation basis	Thevenin load current is Vth divided by Rth plus RL. Load voltage and power use the resulting load current.	
Boundary	Linear DC equivalent-source estimate only; the page does not solve arbitrary schematics, dependent sources, AC complex impedance, fault duty, protection, or equipment approval.	

Formulas

$$I_L = \frac{V_{th}}{R_{th} + R_L}$$

$$V_L = I_L \times R_L$$

$$P_L = I_L^2 \times R_L$$

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$$P_{R_{th}} = I_L^2 \times R_{th}$$

Warnings and limitations

This is a linear DC equivalent-source estimate. It does not extract values from schematics, solve nonlinear or dependent-source networks, model AC complex impedance, or approve a protection or equipment decision.