

Current Divider Calculator

Estimate ideal current division in a fixed-resistance parallel circuit from total current and up to three branch resistance values.

Generated October 10, 2026

<https://www.elecatrrix.com/circuits-components/current-divider-calculator/>

Inputs		
Input	Value	Unit
Total current	10	A
Resistance 1	10	ohm
Resistance 2	20	ohm
Resistance 3	N/A	ohm
Results		
Result	Value	Unit
Total conductance	0.15	S
Equivalent resistance	6.6667	ohm
Estimated parallel voltage	66.6667	V
Branch current 1	6.6667	A
Branch current 2	3.3333	A
Branch current 3	N/A	A
Branch current total	10	A
Calculation details		
Detail	Value	Unit
Calculation basis	Ideal current-divider arithmetic using active branch conductance values.	
Component boundary	No resistor wattage, tolerance, temperature, nonlinear, AC impedance, conductor, protection, fault, manufacturer, or code-compliance result is made.	

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Formulas

$G_n = (1/R_n)$ for each active branch

$G_{total} = \sum G_n$

$I_n = I_{total} \times \frac{G_n}{G_{total}}$

$R_{eq} = \frac{1}{G_{total}}$

Warnings and limitations

This current-divider estimate uses ideal fixed-resistance branches. It does not model tolerance, temperature, nonlinear loads, AC impedance, component ratings, fault current, conductor sizing, or code compliance.