

Transformer Voltage Ratio Calculator

Compares primary and secondary voltage values into ideal transformer voltage ratio and inverse voltage relationship.

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<https://www.elecatrrix.com/power-quality-transformers/transformer-voltage-ratio-calculator/>

Inputs

Input	Value	Unit
Primary voltage	480	V
Secondary voltage	120	V

Results

Result	Value	Unit
Primary-to-secondary ratio	4	x
Secondary per primary volt	0.25	x
Primary voltage used	480	V
Secondary voltage used	120	V

Calculation details

Detail	Value	Unit
Calculation basis	Ideal transformer voltage ratio uses primary voltage divided by secondary voltage.	
Selection boundary	Estimate only; no taps, regulation, impedance, winding connection, loading, insulation, listing, or manufacturer approval is determined.	

Formulas

$$a = (V_P/V_S)$$

$$b = (V_S/V_P)$$

$$(V_P/V_S) = (N_P/N_S)$$

Warnings and limitations

This transformer ratio estimate uses ideal voltage ratio only. It does not evaluate taps, regulation, impedance, connection type, or equipment approval.