

Transformer Impedance Calculator

Converts transformer percent impedance to per-unit and ohmic values, then estimates transformer-limited current on the selected voltage and phase base.

Generated October 10, 2026

<https://www.elecatrix.com/power-quality-transformers/transformer-impedance-calculator/>

Inputs

Input	Value	Unit
Transformer size	75	kVA
Secondary voltage	480	V
Phase	Balanced three-phase	
Transformer impedance	5.75	%Z

Results

Result	Value	Unit
Base current	90.211	A
Base impedance	3.072	ohm
Transformer impedance	0.1766	ohm
Per-unit impedance	0.0575	pu
Transformer-limited current	1568.8866	A
Phase multiplier	1.7321	x

Calculation details

Detail	Value	Unit
Calculation basis	Transformer impedance is converted from percent impedance to per-unit impedance on the entered kVA, voltage, and phase base.	
Selection boundary	Transformer impedance estimate only; no utility source impedance, conductor impedance, motor contribution, equipment SCCR, protection setting, arc flash, or code-compliance result is made.	

Formulas

Transformer Impedance Calculator

Converts transformer percent impedance to per-unit and ohmic values, then estimates transformer-limited current on the selected voltage and phase base.

Generated October 10, 2026

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

Base current = $\frac{\text{frackVA} \times 1,000}{\text{Phase multiplier} \times \text{Voltage}}$

Base impedance = $(\text{Voltage} / (\text{Phase multiplier} \times \text{Base current}))$

Per-unit impedance = $(\text{Impedance percent} / 100)$

Impedance (ohm) = Base impedance x Per-unit impedance

Transformer-limited current = $(\text{Base current} / \text{Per-unit impedance})$

Warnings and limitations

This transformer impedance estimate is per-unit arithmetic only. It does not include utility source impedance, conductor impedance, motor contribution, equipment rating, protection coordination, arc flash, or code compliance.