

Transformer Inrush Current Calculator

Estimates transformer rated current and planning inrush current from kVA, voltage, phase, and a documented inrush multiplier.

Generated October 10, 2026

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

Inputs

Input	Value	Unit
Transformer size	75	kVA
System voltage	480	V
Phase	Balanced three-phase	
Inrush multiplier	10	x

Results

Result	Value	Unit
Rated current	90.211	A
Estimated inrush current	902.1098	A
Apparent power	75000	VA
Phase multiplier	1.7321	x

Calculation details

Detail	Value	Unit
Calculation basis	Rated current uses transformer apparent power, voltage, and the selected phase multiplier. Inrush is the rated current times the entered multiplier.	
Equipment boundary	Planning estimate only; no residual flux, switching angle, source impedance, voltage sag, protection, utility, manufacturer, or code-compliance result is made.	

Formulas

Transformer apparent power (VA) = Transformer size (kVA) x 1,000

Single-phase rated current = (VA/Voltage)

Three-phase rated current = (VA/sqrt(3) x Line voltage)

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Estimated inrush current = Rated current x Inrush multiplier

Warnings and limitations

This transformer inrush estimate uses a user-entered multiplier. It does not model residual flux, switching angle, transformer design, source impedance, protective-device behavior, voltage sag, utility limits, or equipment selection.