

Motor Wye-Delta Current Calculator

Compare across-the-line and ideal wye-start current, reduction, and kVA from entered three-phase values.

Generated October 10, 2026

<https://www.elecatrrix.com/motors-starters/motor-wye-delta-current-calculator/>

Inputs

Input	Value	Unit
Delta current reference	60	A
Across-line start multiplier	6	x
Line voltage	480	V

Results

Result	Value	Unit
Across-line start current	360	A
Ideal wye-start current	120	A
Equivalent wye-start multiplier	2	x
Current reduction	66.6667	%
Running apparent power	49.8831	kVA
Wye-start apparent power	99.7661	kVA

Calculation details

Detail	Value	Unit
Calculation basis	Across-line start current is the entered current reference multiplied by the starting multiplier. Ideal wye-start current is one-third of that value.	
Screening boundary	Motor wye-delta current arithmetic only; no torque, transition, timer, contactor, load acceleration, listing, protection, code, or approval result is made.	

Formulas

across-line start current = delta current reference x across-line start multiplier

ideal wye-start current = across-line start current / 3

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$$\text{equivalent wye-start multiplier} = \text{ideal wye-start current} / \text{delta current reference}$$

$$\text{current reduction percent} = (1 - \text{ideal wye-start current} / \text{across-line start current}) \times 100$$

$$\text{three-phase kVA} = \sqrt{3} \times \text{line voltage} \times \text{current} / 1000$$

Warnings and limitations

This ideal wye-delta estimate is arithmetic only. It does not verify torque, transition timing, contactors, load acceleration, listing, utility requirements, protection, or code compliance.