

Motor Disconnect Size Calculator

Compares a motor disconnect current basis with an entered disconnect rating using motor FLA, multiplier, voltage, and phase.

Generated October 10, 2026

<https://www.elecatrix.com/motors-starters/motor-disconnect-size-calculator/>

Inputs

Input	Value	Unit
Motor FLA	34	A
Disconnect multiplier	115	%
Entered disconnect rating	60	A
System voltage	480	V
Phase	Balanced three-phase	

Results

Result	Value	Unit
Required disconnect current	39.1	A
Entered disconnect margin	20.9	A
Motor load	28.2671	kVA

Status

Status	Value	Unit
Rating comparison	Within entered disconnect rating	

Calculation details

Detail	Value	Unit
Calculation basis	Required disconnect current equals entered motor FLA multiplied by the entered disconnect multiplier, then compares against an entered disconnect rating.	
Selection boundary	Motor disconnect estimate only; no horsepower rating table, enclosure, switch type, short-circuit rating, manufacturer listing, or code-compliance result is made.	

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Formulas

$$I_{\text{required}} = I_{\text{FLA}} \times \frac{\text{fracp_disconnect}}{100}$$

$$M_{\text{disconnect}} = I_{\text{entered}} - I_{\text{required}}$$

$$S_{\text{motor}} = \frac{V \cdot I_{\text{FLA}} \cdot k_{\phi}}{1000}, \text{quad } k_{\phi}=1 \text{ for single-phase and } \sqrt{3} \text{ for balanced three-phase}$$

Warnings and limitations

This motor disconnect estimate uses user-entered comparison values. It does not apply horsepower tables, select disconnects, verify enclosure or SCCR, or prove code compliance.