

Motor Overload Calculator

Compares a motor overload setting from nameplate FLA and an entered percentage with a recorded device setting, with motor load shown in kVA.

Generated October 10, 2026

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

Inputs

Input	Value	Unit
Motor nameplate FLA	32	A
Overload setting factor	115	%
Entered overload setting	36	A
System voltage	480	V
Phase	Balanced three-phase	

Results

Result	Value	Unit
Calculated overload setting	36.8	A
Entered setting margin	-0.8	A
Motor load	26.6043	kVA

Status

Status	Value	Unit
Setting comparison	Review overload setting	

Calculation details

Detail	Value	Unit
Calculation basis	Calculated overload setting equals entered motor nameplate FLA multiplied by the entered setting percent, then compares that value with an entered overload setting.	
Selection boundary	Motor overload estimate only; no NEC table, overload device selection, service-factor interpretation, manufacturer setting, or code-compliance result is made.	

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Formulas

$$I_{OL} = I_{FLA} \times \frac{p_{set}}{100}$$

$$M_{set} = I_{entered} - I_{OL}$$

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

Warnings and limitations

This motor overload estimate uses user-entered setting assumptions. It does not apply NEC motor rules, service-factor rules, manufacturer instructions, device settings, or code compliance.