

VFD Sizing Calculator

Compares required VFD output current with an entered drive rating using motor FLA, application multiplier, derating factor, and system voltage.

Generated October 10, 2026

<https://www.elecatrix.com/motors-starters/vfd-sizing-calculator/>

Inputs

Input	Value	Unit
Motor FLA	42	A
Application multiplier	110	%
Derating factor	90	%
Entered VFD output rating	60	A
System voltage	480	V
Phase	Balanced three-phase	

Results

Result	Value	Unit
Basis current	46.2	A
Required VFD current	51.3333	A
Entered VFD margin	8.6667	A
Motor load	34.9181	kVA

Status

Status	Value	Unit
Rating comparison	Within entered drive rating	

Calculation details

Detail	Value	Unit
Calculation basis	Basis current applies the entered application multiplier to motor FLA, then divides by the entered derating factor for an entered VFD rating comparison.	

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Selection boundary

VFD sizing estimate only; no catalog selection, enclosure, overload, bypass, harmonics, SCCR, grounding, listing, or code-compliance result is made.

Formulas

$$I_{basis} = I_{FLA} \times (M/100)$$

$$I_{required} = \frac{I_{basis} \times D}{100}$$

$$I_{margin} = I_{VFD} - I_{required}$$

$$S_{motor} = \frac{I_{FLA} \times V \times k_{\phi}}{1000}, \text{ kVA}$$

Warnings and limitations

This VFD sizing estimate uses entered comparison values. It does not select a VFD catalog item, enclosure, overload, bypass, harmonics filter, SCCR, or code compliance.