

Motor Load Percentage Calculator

Review motor loading from measured input power or a documented electrical-power estimate. The calculation does not infer load from current alone.

Generated October 10, 2026

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

Inputs		
Input	Value	Unit
Measured input power	10	kW
Efficiency assumption	90	%
Rated output power	8	kW
Operating hours per day	4	h/day
Measurement note	Record voltage, current, power factor, and instrument context separately.	

Results		
Result	Value	Unit
Estimated output power	9	kW
Estimated motor load	112.5	%
Estimated loss	1	kW
Daily input energy	40	kWh/day
Calculation details		

Detail	Value	Unit
Calculation basis	Estimated mechanical output is measured input power multiplied by the entered efficiency. Load percentage compares that output with entered rated output.	
Motor boundary	Measured-power load review only; current alone is not used as a universal load proxy, and no motor, VFD, protection, or efficiency acceptance decision is made.	

Formulas		
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$$P_{\text{out}} = P_{\text{in}} \times \eta$$

$$\text{Load\%} = \frac{P_{\text{out}}}{P_{\text{rated}}} \times 100$$

$$P_{\text{loss}} = P_{\text{in}} - P_{\text{out}}$$

$$E_{\text{daily}} = P_{\text{in}} \times t_{\text{daily}}$$

Warnings and limitations

This is an input-power load estimate. It does not diagnose a motor, select a replacement, infer load from current alone, verify efficiency certification, or prove code compliance.