

Motor Service Factor Load Calculator

Compare measured motor current with a service-factor current reference, utilization, margin, and nameplate percentage.

Generated October 10, 2026

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

Inputs

Input	Value	Unit
Nameplate FLA	40	A
Service factor	1.15	x
Measured or running current	42	A

Results

Result	Value	Unit
Service-factor current reference	46	A
Utilization of SF reference	91.3043	%
Service-factor margin	4	A
Measured current vs nameplate	105	%
Service-factor comparison	Within entered service-factor reference	

Calculation details

Detail	Value	Unit
Calculation basis	The service-factor current reference is nameplate FLA multiplied by service factor. Measured current is compared with both FLA and that reference.	
Screening boundary	Motor service-factor load arithmetic only; no thermal, duty-cycle, ambient, enclosure, altitude, overload, code, or manufacturer approval result is made.	

Formulas

service-factor current reference = nameplate FLA x service factor

utilization percent = measured current / service-factor current reference x 100

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$\text{service-factor margin} = \text{service-factor current reference} - \text{measured current}$

$\text{measured-vs-nameplate percent} = \text{measured current} / \text{nameplate FLA} \times 100$

Warnings and limitations

This service-factor load estimate is arithmetic only. Service factor is not operating permission; verify nameplate data, temperature, voltage, duty, enclosure, altitude, overloads, manufacturer instructions, and AHJ context.