

FOR YOUR REFERENCE

USEFUL ELECTRICAL FORMULAS

To check ampacity of cable types, see local regulations for proper cable sizing, which differ by region.

TO OBTAIN	SINGLE PHASE*	THREE PHASE*
Kilowatts	$\frac{V \times I \times pf}{1000}$	$\frac{1.732 \times V \times I \times pf}{1000}$
kVA	$\frac{V \times I}{1000}$	$\frac{1.732 \times V \times I}{1000}$
Horsepower required when generator kW unknown (if generator efficiency is known, use 0.93)	$\frac{kW}{0.746 \times \text{Efficiency (Generator)}}$	$\frac{kW}{0.746 \times \text{Efficiency (Generator)}}$
kW input when motor hp known (if motor efficiency unknown, use 0.85 x hp)	$\frac{hp \times 0.746}{\text{Efficiency (Motor)}}$	$\frac{hp \times 0.746}{\text{Efficiency (Motor)}}$
Amperes when motor hp known	$\frac{hp \times 0.746}{V \times pf \times \text{Efficiency}}$	$\frac{hp \times 0.746}{1.732 \times V \times pf \times \text{Efficiency}}$
Amperes when kW known	$\frac{kW \times 1000}{V \times pf}$	$\frac{kW \times 1000}{1.732 \times V \times pf}$
Amperes when kVA known	$\frac{kVA \times 1000}{V}$	$\frac{kVA \times 1000}{1.732 \times V}$

*Alternating Current