

Electrical Conversion Formulas

TO FIND	DIRECT CURRENT	ALTERNATING CURRENT	
		Single Phase	Three Phase
Amperes When Horsepower (Input) is Known	$\frac{HP \times 746}{Volts \times Efficiency}$	$\frac{HP \times 746}{Volts \times Efficiency \times PF}$	$\frac{HP \times 746}{Volts \times 1.73 \times Efficiency \times PF}$
Amperes When Kilowatts is	$\frac{KW \times 1000}{Volts}$	$\frac{KW \times 1000}{Volts \times PF}$	$\frac{KW \times 1000}{Volts \times 1.73 \times PF}$
Amperes When kva is Known		$\frac{kva \times 1000}{Volts}$	$\frac{kva \times 1000}{Volts \times 1.73}$
Kilowatts	$\frac{Amperes \times Volts}{1000}$	$\frac{Amps. \times Volts \times PF}{1000}$	$\frac{Amps. \times Volts \times 1.73 \times PF}{1000}$
kva		$\frac{Amps. \times Volts}{1000}$	$\frac{Amps \times Volts \times 1.73}{1000}$
Power Factor		$\frac{Kilowatts \times 1000}{Amps. \times Volts}$ or $\frac{KW}{kva}$	$\frac{KW \times 1000}{Amps. \times Volts \times 1.73}$ or $\frac{KW}{kva}$
Horsepower (Output)	$\frac{Amps \times Volts \times Efficiency}{746}$	$\frac{Amps. \times Volts \times Efficiency \times PF}{746}$	$\frac{Amps. \times Volts \times 1.73 \times Efficiency \times PF}{746}$

Power Factor and Efficiency when used in above formulas should be expressed as decimals.

For 2-phase, 3-wire substitute 1.41 instead of 1.73.

For 2-phase, 4-wire substitute 2 instead of 1.73.