

## USEFUL FORMULAS

TO FIND	SINGLE PHASE	THREE PHASE	DIRECT CURRENT
AMPERES when kVA is known	$\frac{kVA \times 1000}{E}$	$\frac{kVA \times 1000}{E \times 1.73}$	Not Applicable
AMPERES when horsepower is known	$\frac{hp \times 746}{E \times \% \text{ eff.} \times pf}$	$\frac{hp \times 746}{E \times 1.73 \times \% \text{ eff.} \times pf}$	$\frac{hp \times 746}{E \times \% \text{ eff.}}$
AMPERES when kilowatts are known	$\frac{kW \times 1000}{E \times pf}$	$\frac{kW \times 1000}{E \times 1.73 \times pf}$	$\frac{kW \times 1000}{E}$
KILOWATTS	$\frac{I \times E \times pf}{1000}$	$\frac{I \times E \times 1.73 \times pf}{1000}$	$\frac{I \times E}{1000}$
KILOVOLT-AMPERES	$\frac{I \times E}{1000}$	$\frac{I \times E \times 1.73}{1000}$	Not Applicable
HORSEPOWER	$\frac{I \times E \times \% \text{ eff.} \times pf}{746}$	$\frac{I \times E \times 1.73 \times \% \text{ eff.} \times pf}{746}$	$\frac{I \times E \times \% \text{ eff.}}{746}$
WATTS	$E \times I \times pf$	$E \times I \times 1.73 \times pf$	$E \times I$
<div style="display: flex; justify-content: space-between;"> <span>I = Amperes hp = Horsepower</span> <span>E = Volts % eff. = percent efficiency</span> <span>kW = Kilowatts</span> <span>kVA = Kilovolt-Amperes pf = power factor</span> </div>			

## EQUATIONS BASED ON OHM'S LAW

**P = POWER IN WATTS**

**I = CURRENT AMPERES**

**R = RESISTANCE IN OHMS**

**E = ELECTROMOTIVE FORCE IN VOLTS**

