



# AMPERAGE CHART

## USEFUL FORMULAS

### POWER

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 is known (if generator efficiency is unknown, use 0.93)	$\frac{kW}{0.746 \times \text{Efficiency (Generator)}}$	$\frac{kW}{0.746 \times \text{Efficiency (Generator)}}$
kW input when motor hp is known (if motor efficiency is 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	$\frac{hp \times 746}{v \times PF \times \text{Efficiency}}$	$\frac{hp \times 746}{1.732 \times v \times PF \times \text{Efficiency}}$
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

### TEMPERATURE CONTROL

Tons (Fluid)	=	$\frac{GPM \times 500 \text{ sp.heat} \times \text{sp.gravity} \times DT}{12,000}$
Tons (Air)	=	$\frac{cfm \times 4.45 \times Dh \text{ (enthalpy)}}{12,000}$
kW Heat (Structure)	=	$\frac{\text{Surface area} \times u \text{ factor} \times D T}{3413}$
cfm	=	$\frac{\text{Volume} \times \# \text{ of required air changes}}{60}$
kW Heat	=	$\frac{cfm \times 1.08 \times D T}{3413}$
kW (Temperature)	=	$\frac{Btu / hr}{3413}$
Tons (Refrigeration)	=	$\frac{Btu / hr}{12,000}$
Tons (Nominal)*	=	$\frac{\text{Tons (effective) or Btu /hr of work}}{\text{deration factor}}$

\*= Below 45° Low Temperature Applications

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