

ELECTRICAL

Watts(W)=Power, A=Amperes, V=Volts, R=Resistance (Ohms), PF=Power Factor, Eff=efficiency, HP=Horsepower, BHP=Brake Horsepower, r=running, np=Nameplate, SF=Service Factor

Watts Law: $W = V \times A$

$$V = \frac{W}{A}$$

$$A = \frac{W}{V}$$

Ohms Law: $V = A \times R$

$$R = \frac{V}{A}$$

$$A = \frac{V}{R}$$

Single Phase:

$$P = V \times A \times PF$$

$$BHP = \frac{V \times A \times Eff \times PF}{746}$$

3 Phase:

$$P = V \times A \times PF \times 1.73$$

$$BHP = \frac{V \times A \times Eff \times PF \times 1.73}{746}$$

$$\text{Actual Full Load Amps (AFLA)} = \frac{\text{F. L. Amps}_{NP} \times V_{NP}}{\text{Actual Voltage}}$$

$$BHP = HP \times \frac{(\text{Motor Operating Amps}) - (\text{No Load Amps} \times 0.5)}{(\text{Actual Full Load Amps}) - (\text{No Load Amps} \times 0.5)}$$