

# FORMULAS FOR DESIGN

The basics of electricity consist of: Voltage, Power resistance and Current. Any one of these can be found if any two are known. A watt is a measure of electric power and thus is the output of heat in a resistance heater. Voltage and Current produce a watt.

KW = Kilowatt = 1000 watts (1 kw = 3,413 BTUH)

CFM = Cubic Feet per Minute (a measure of the quantity of air)

FPM = Feet per Minute (a measure of the speed of air)

$\Delta T$  = Delta Temperature (difference between entering & leaving air)

A = Area (length x width in square inches; to convert to square feet, divide square inches by 144)

$$\frac{\text{Volts} \times \text{Volts}}{\text{Watts}} \div 1.1 = \text{ohms}$$

$$\text{FPM} = \frac{\text{CFM}}{\text{Area (Sq. Ft.)}}$$

$$\text{Watts} = \text{Volts} \times \text{Amps} \quad W = V \times I$$

$$\text{CFM} = \text{Area (Sq. Ft.)} \times \text{FPM}$$

$$\text{Amps (1 phase)} = \frac{\text{Watts}}{\text{Volts}}$$

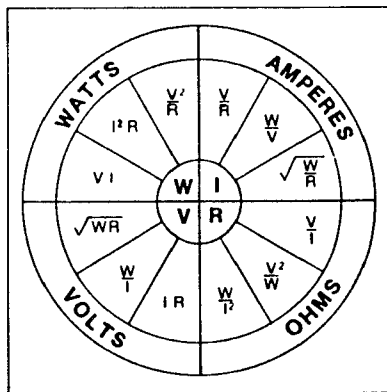
$$\text{Amps (3 phase)} = \frac{\text{Watts}}{\text{Volts}} \div 1.732$$

$$\text{Volts} = \frac{\text{Watts}}{\text{Amps}}$$

$$\text{CFM} = \frac{\text{KW} \times 3413}{\Delta T (1.08)}$$

$$\Delta T = \frac{\text{KW} \times 3413}{\text{CFM} (1.08)}$$

$$\text{KW} = \frac{\text{CFM} \times \Delta T \times 1.08}{3413}$$



For further information please contact:

