

Reference Data

Air Heater Power Requirement

$$kW = SCFM \times (\text{Exit Temp} - \text{Inlet Temp}) / 2500$$

or

$$kW = SCFM \times (\text{Exit Temp} - \text{Inlet Temp}) / 3000 \times 1.2$$

Air Flow Conversions

$$SCFM = SCFH / 60 = SLPM / 28.3$$

$$SLPM = SCFH / 2.12$$

$$SCMH = SCFH / 35.3$$

$$SCFM = (\text{pounds of air per minute}) / (0.076 \text{ lbs} / \text{ft}^3)$$

$$SCFM = \text{grams} / \text{sec} \times 1.74$$

$$SCFM = \text{kg} / \text{min} \times 28.9$$

Single Phase Wiring

$$V = I \times R \text{ (Volts = Amps} \times \text{Ohms)}$$

$$I = W / V \text{ (Amps = Watts / Volts)}$$

$$W = V^2 / R \text{ (Watts = (Volts} \times \text{Volts) / Ohms)}$$

Three Phase Delta Wiring

$$R = R_1 = R_2 = R_3$$

$$W_{\text{delta}} = 3 (V_L^2) / R$$

$$W_{\text{delta}} = 1.73 \times V_L \times I_L$$

$$IP = I_L / 1.73$$

$$VP = V_L$$

Three Phase Wye Wiring

$$R = R_1 = R_2 = R_3$$

$$W_{\text{wye}} = (V_L^2) / R = 3 (V_P^2) / R$$

$$W_{\text{wye}} = 1.73 \times V_L \times I_P$$

$$IP = I_L$$

$$VP = V_L / 1.73$$

Temperature Conversions

$$^{\circ}\text{F} = 9/5 (^{\circ}\text{C} + 32) \text{ or } ^{\circ}\text{F} = ^{\circ}\text{C} \times 1.8 + 32$$

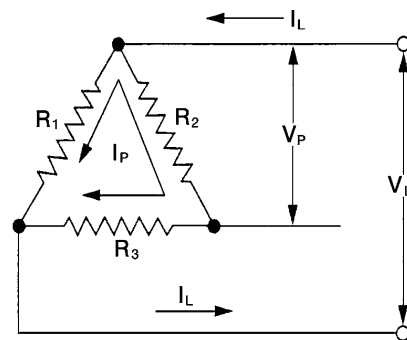
$$^{\circ}\text{C} = 5/9 (^{\circ}\text{F} - 32) \text{ or } ^{\circ}\text{C} = ^{\circ}\text{F} - 32 / 1.8$$

Air Flow Abbreviations

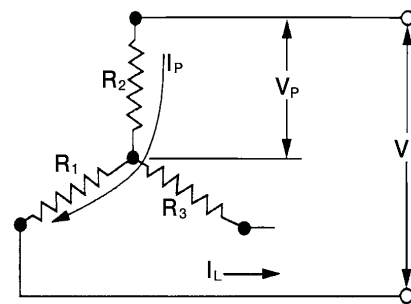
SCFM = standard cubic feet per minute
 SCFH = standard cubic feet per hour
 SLPM = standard liters per minute
 SCMH = standard cubic meters per hour

Thermocouple Wiring / Configuration Type K

(+) = Yellow = Alumel (non-magnetic)
 (-) = Red = Chromel (magnetic)



Delta Wiring Configuration



Wye Wiring Configuration