

three phase wiring diagrams

definitions

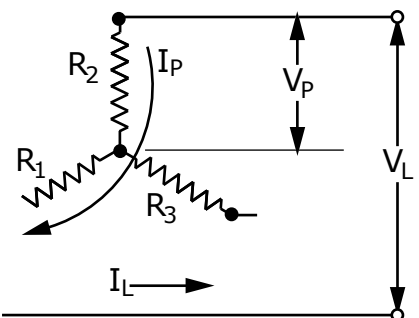
for both wye and delta (balanced loads)

- V_P = Phase Voltage
- V_L = Line Voltage
- I_P = Phase Current
- I_L = Line Current
- R = $R_1 = R_2 = R_3 =$ Resistance of each branch
- W = Wattage

wye and delta equivalents

- $W_{DELTA} = 3 W_{WYE}$
- $W_{ODELTA} = \frac{2}{3} W_{DELTA}$
- $W_{OWYE} = \frac{1}{2} W_{WYE}$

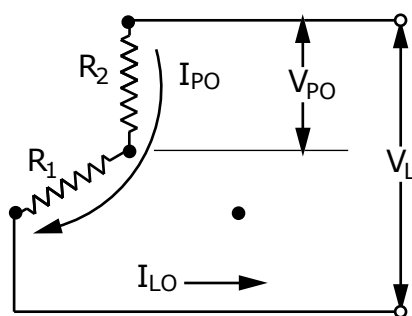
Three phase wye (balanced load)



equations for wye only

- $I_P = I_L$
- $V_P = V_L / 1.73$
- $W_{WYE} = W_L^2 / R = 3(V_P^2) / R$

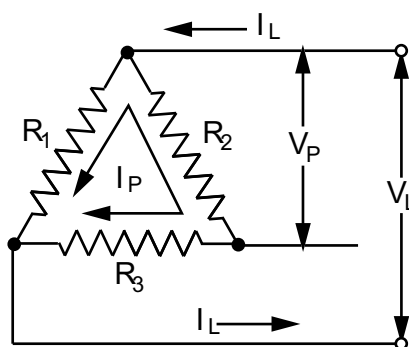
Three phase open wye (no neutral)



equations for open wye only

- $I_{PO} = I_{LO}$
- $V_{PO} = V_L / 2$
- $W_{OWYE} = \frac{1}{2} (W_L^2 / R)$
- $W_{OWYE} = 2(V_{PO}^2) / R$

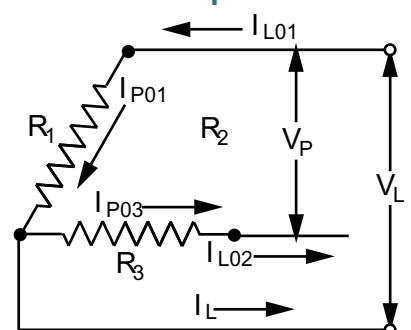
three phase delta (balanced load)



equations for delta only

- $I_P = I_L / 1.73$
- $V_P = V_L$
- $W_{DELTA} = 3(V_L^2) / R$
- $W_{DELTA} = 1.73 V_L I_L$

three phase open delta



equations for open delta only

- $V_P = V_L$
- $I_{PO1} = I_{PO3} = I_{LO2}$
- $I_{LO3} = 1.73 I_{PO1}$
- $W_{ODELTA} = 2(V_L^2) / R$