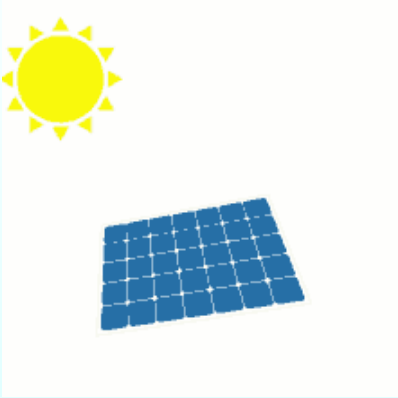
BALANCED THREE PHASE DELTA CONNECTED LOAD



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Delta Connection :

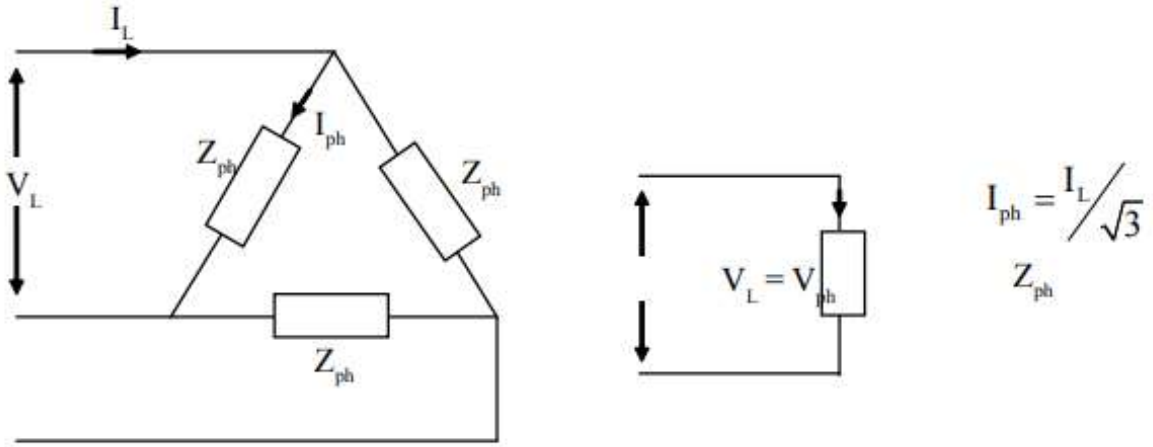

Fig. 4.30 Balanced Delta Load

A balanced 3 phase load when connected in delta across a 3 phase balanced supply, the total power in three phase delta connected load is equal to the three times of power in star connected load.

Phase voltage, $V_{ph} = V_L$

Phase impedance, $Z_{ph} = R + jX = \sqrt{R^2 + X^2}$

Phase current, $I_{ph} = \frac{V_{ph}}{Z_{ph}}$

Line current, $I_L = \sqrt{3}\, I_{ph}$

Power factor, $\cos\phi = \frac{R}{Z}$

per phase power $= V_{ph}\ I_{ph}\ \cos\phi$

Total power, $P = \sqrt{3}\, V_L I_L \cos\phi$

Reactive power per phase $= V_{ph}\ I_{ph}\ \sin\phi$

Total reactive power, $Q = \sqrt{3}\ V_L I_L \sin\phi$

Apparent power per phase $= V_{ph}\ I_{ph}$

Total apparent power, $S = \sqrt{3}\ V_L I_L$


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Thank You


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