

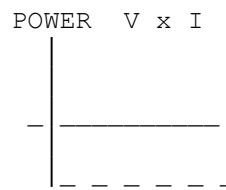
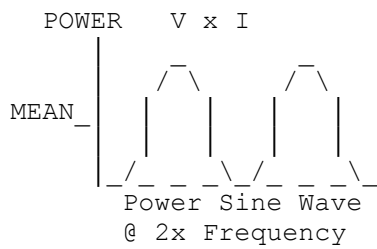
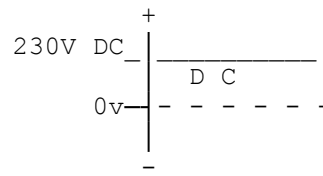
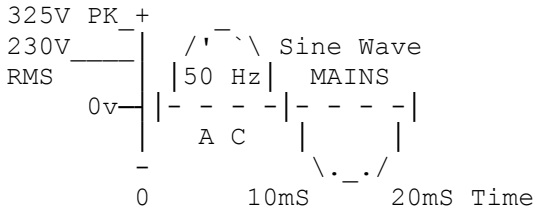
AC Theory

By G8MNY

(Updated Mar 08)

(8 Bit ASCII Graphics use code page 437 or 850)

RMS is the DC equivalent power of AC, & for a sine wave is 70.7% of the peak value. e.g. the peak value is  $\sqrt{2}$  (1.414) time bigger than the RMS meter reading!

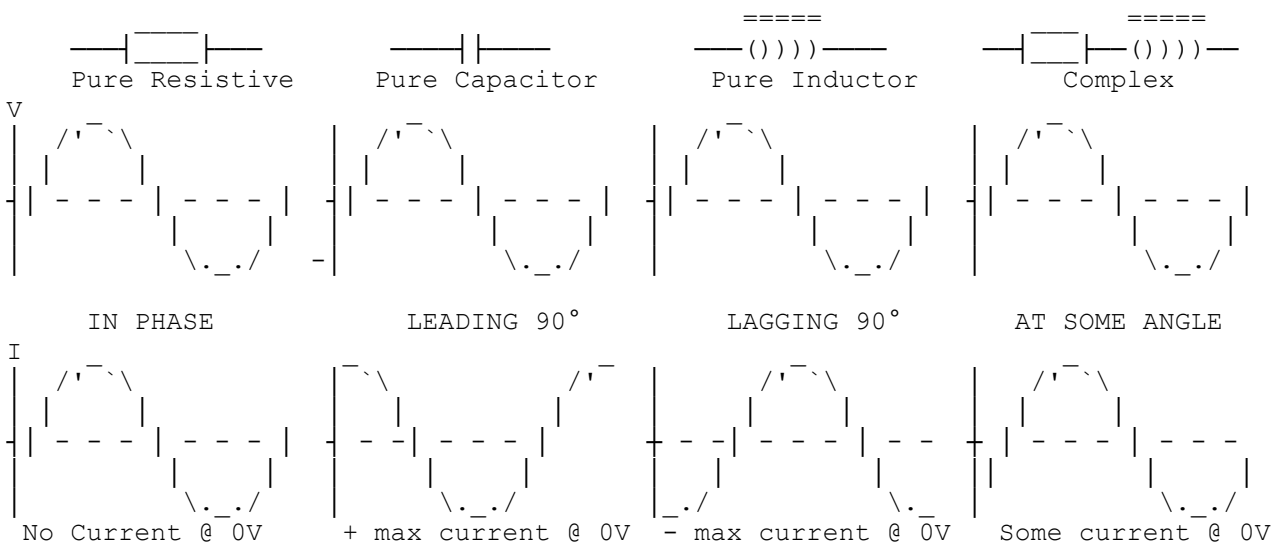


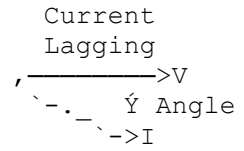
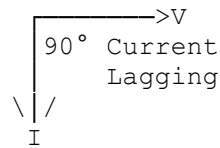
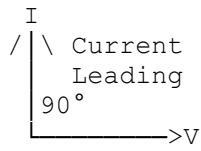
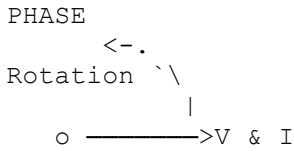
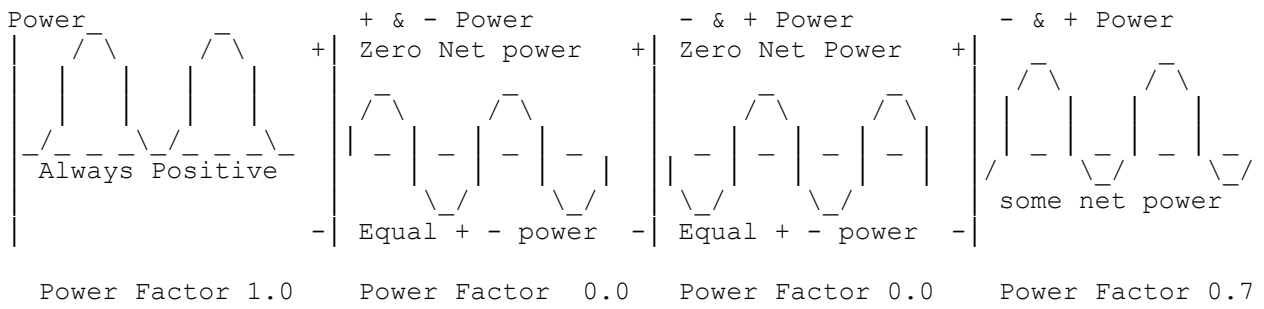
Unlike DC circuits in AC circuits the power is the mean of the Instantaneous Power which is made from the instantaneous Voltage X instantaneous Current.

For complex non resistive power loads it is usual to use a term Power Factor to describe the rating factor to be applied to the RMS Volts X RMS Amps to get the true power rating. Some items are rated in Watts & some in VA depending on which is the safer limit for that item.

e.g. a kettle is rated in watts & a transformer is rated in VA.

At power stations the amount of Volt Amp Reactive (VARs) is monitored as an indication of how much wasted energy flows to & from the customers, just heating up the transmission system. As the transmission lines are capacitive some inductive power factor is a good idea as it tunes out this capacitance.





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73 De John, G8MNY @ GB7CIP