

POWER EQUATIONS

Instantaneous power	$p = v \cdot i$
Average (real) power	$P = \frac{V_m I_m}{2} \cdot \cos(\theta_v - \theta_i)$
Reactive power	$Q = \frac{V_m I_m}{2} \cdot \sin(\theta_v - \theta_i)$
Complex power	$S = P + jQ$
Power factor	$\text{pf} = \cos(\theta_v - \theta_i)$
Reactive factor	$\text{rf} = \sin(\theta_v - \theta_i)$

V_m and I_m represent peak amplitudes of the voltage and current, respectively.