

PU Bases used in EMTP-EMTPWorks for the double-phase induction machine model

The base quantities with rms value of a p-pole, double phase induction machine with rated rms voltage V_{rated} , rated value of angular frequency ω_b , and rated volt-ampere S_{rated} , are as follows :

- RMS base voltage $V_b = V_{\text{rated}}$
- Base volt-ampere $S_b = S_{\text{rated}}$
- RMS Base current $I_b = \frac{S_b}{V_b}$
- Base impedance $Z_b = \frac{V_b^2}{S_b} = \frac{V_b}{I_b}$
- Base torque $T_b = \frac{p S_b}{2 \omega_b}$
- RMS Base flux $\Psi_b = \frac{V_b}{\omega_b}$

Current, voltage and flux base quantities are RMS values. As a consequence a $\sqrt{2}$ factor is applied on the instantaneous values of current, voltage and flux if pu is requested in scopes and observes.