

Model Matematika Elektrik (Hk. Ohm)

Mekanik (Hk. Newton)

$$e_a(t) - e_b(t) = R_a i_a(t) + L_a \frac{di_a(t)}{dt}$$
$$\frac{di_a(t)}{dt} = -\frac{R_a}{L_a} i_a(t) + \frac{1}{L_a} e_a(t) - \frac{1}{L_a} e_b(t)$$

$$T(t) = J \frac{d\omega(t)}{dt} + B \omega(t)$$

$$\frac{d\theta(t)}{dt} = \omega(t)$$

$$\frac{d\omega(t)}{dt} = -\frac{B}{J} \omega(t) + \frac{1}{J} T(t)$$

$\omega(t)$ = Kecepatan sudut
[rad/sec]

$\theta(t)$ = posisi sudut [rad]

Sifat Motor liner:
Sifat Generator

$$T(t) = K_m i_a(t)$$
$$e_b(t) = K_b \omega(t)$$