

3. EGYENÁRAMÚ GÉPEK

3.1. Egyenáramú motorok

Ötödik fokozat

$$R_b + R_{i5} = \frac{1}{Q} \cdot (R_b + R_{i4}) = \frac{1,32}{1,5} = 0,88 \, \Omega$$

$$R_{i5} = 0,88 - 0,74 = 0,14 \, \Omega$$

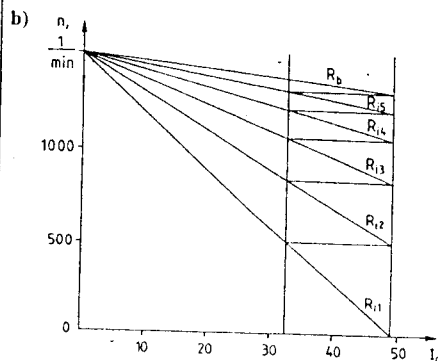
Hatodik fokozat

$$R_b + R_{i6} = \frac{1}{Q} \cdot (R_b + R_{i5}) = \frac{0,88}{1,5} = 0,59 \, \Omega$$

$$R_{i6} = 0$$

$$R_{i5} = 0,14 \, \Omega$$

6 fokozat



a) $P_b = \frac{P}{\eta_{vt}} = \frac{20000}{0,87} = 22988,5 \, \text{W}$

b) $I_{an} = \frac{P_b}{U_{kn}} = \frac{22988,5}{400} = 57,47 \, \text{A}$

c) $c_u \cdot \phi = \frac{U_{kn} - I_{an} \cdot R_b}{n_n} \cdot 60 = \frac{400 - 57,47 \cdot 0,452}{1500} \cdot 60 = 14,96 \, \text{V} \cdot \text{s}$

d) $n_0 = \frac{U_k}{c_u \cdot \phi} \cdot 60 = \frac{400}{14,96} \cdot 60 = 1604,3 \, \text{1/min}$

e) $M_n = \frac{P}{\omega} = \frac{P}{2 \cdot \pi \cdot n_n} = \frac{20000 \cdot 60}{2 \cdot \pi \cdot 1500} = 127,4 \, \text{N} \cdot \text{m}$

f) $U_{kl} = c_u \cdot \phi \cdot \frac{n_1}{60} + I_{an} \cdot R_b = 14,96 \cdot \frac{1300}{60} + 57,47 \cdot 0,452 = 350,1 \, \text{V}$

3.1.7. feladat

$$P_b \approx 22988,5 \, \text{W}$$

$$I_{an} = 57,47 \, \text{A}$$

$$c_u \cdot \phi = 14,96 \, \text{V} \cdot \text{s}$$

$$n_0 = 1604,3 \, \text{1/min}$$

$$M_n = 127,4 \, \text{N} \cdot \text{m}$$

$$U_{kl} = 350,1 \, \text{V}$$