

5. ASZINKRON GÉPEK

5.1. Háromfázisú aszinkron motorok

$$M_i = \frac{P_{li}}{\omega_0} = \frac{4574,6}{314,15} = 14,56 \text{ N}\cdot\text{m}$$

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$$c) R_n = R_1 + \frac{R_2'}{s_n} = 1,5 + \frac{1,8}{0,06} = 31,5 \Omega$$

$$I_n = \frac{U_{ln}}{\sqrt{R_n^2 + X_s^2}} = \frac{220}{\sqrt{31,5^2 + 6,8^2}} = 6,82 \text{ A}$$

$$I_n = 6,82 \text{ A}$$

$$P_{ln} = 3 \cdot I_n^2 \cdot \frac{R_2'}{s_n} = 3 \cdot 6,82^2 \cdot \frac{1,8}{0,06} = 4186,1 \text{ W}$$

$$M_n = \frac{P_{ln}}{\omega_0} = \frac{4186}{314,15} = 13,32 \text{ N}\cdot\text{m}$$

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$$d) R_f' = a^2 \cdot R_f = 3^2 \cdot 2 = 18 \Omega$$

$$\frac{R_2 + R_f}{s} = \frac{R_2}{s_n} \rightarrow s = s_n \cdot \left(1 + \frac{R_f}{R_2}\right) = 6 \cdot \left(1 + \frac{2}{0,2}\right) = 66 \%$$

$$n^* = n_0 \cdot (1 - s) = 50 \cdot (1 - 0,66) = 17 \text{ 1/s} = 1020 \text{ 1/min}$$

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$$\omega = 106,814 \text{ 1/s}$$

5.1.27. feladat

$$a) n_0 = \frac{60 \cdot f}{p} = \frac{60 \cdot 50}{2} = 1500 \text{ 1/min} = 25 \text{ 1/s}$$

$$n_0 = 25 \text{ 1/s}$$

$$\omega_0 = 2 \cdot \pi \cdot n_0 = 2 \cdot \pi \cdot 25 = 157,079 \text{ 1/s}$$

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$$n = n_0 \cdot (1 - s) = 25 \cdot (1 - 0,04) = 24 \text{ 1/s} = 1440 \text{ 1/min}$$

$$n = 1440 \text{ 1/min}$$

$$\omega = 2 \cdot \pi \cdot n = 2 \cdot \pi \cdot 24 = 150,79 \text{ 1/s}$$

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$$b) I_i = \frac{U_{ln}}{Z_c} = \frac{220}{6} = 36,66 \text{ A}$$

$$I_i = 36,66 \text{ A}$$

$$c) P_{li} = 3 \cdot I_i'^2 \cdot R_2' = 3 \cdot 36,66^2 \cdot 1,05 = 4235 \text{ W}$$

$$P_{li} = 4235 \text{ W}$$

$$R = Z_c \cdot \cos \varphi_c = 6 \cdot 0,35 = 2,1 \Omega$$

$$R_l = R_2' = \frac{R}{2} = \frac{2,1}{2} = 1,05 \Omega$$