

e) Az indítási áram és nyomaték:

$$I_{iy} = \frac{I_{zn}}{3} = \frac{5 \cdot 48,7}{3} = 81,1 \text{ A}$$

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$$M_{iy} = \frac{M_i}{3} = \frac{1,1 \cdot 135,4}{3} = 49,6 \text{ N}\cdot\text{m}$$

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5.1.37. feladat

$$\text{a) } P_{t0} = 1,5 \cdot I_0^2 \cdot R_{k1} = 1,5 \cdot 5^2 \cdot 0,96 = 36 \text{ W}$$

$$P_v = P_0 - (P_s + P_{t0}) = 600 - (250 + 36) = 314 \text{ W}$$

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$$\text{b) } \cos \varphi_0 = \frac{P_0}{\sqrt{3} \cdot U_n \cdot I_0} = \frac{600}{\sqrt{3} \cdot 380 \cdot 5} = 0,182$$

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$$\text{c) } P_{t1} = 1,5 \cdot I_n^2 \cdot R_{k1} = 1,5 \cdot 22^2 \cdot 0,96 = 697 \text{ W}$$

$$P_{t1} = 697 \text{ W}$$

$$P_1 = \frac{P_s}{\eta} = \frac{10000}{0,85} = 11764 \text{ W}$$

$$P_s = P_1 - (P_v + P_{t1}) = 11764 - (314 + 697) = 10753 \text{ W}$$

$$P_s = 10,753 \text{ kW}$$

$$\text{d) } n_0 = \frac{60 \cdot f}{p} = \frac{60 \cdot 50}{3} = 1000 \text{ 1/min} = 16,66 \text{ 1/s}$$

$$M = \frac{P_s}{2 \cdot \pi \cdot n_0} = \frac{10753}{2 \cdot \pi \cdot 16,66} = 102,6 \text{ N}\cdot\text{m}$$

$$M = 102,6 \text{ N}\cdot\text{m}$$

$$\text{e) } P_{t2} = P_s - (P_v + P_{t1}) = 10753 - (10000 + 250) = 503 \text{ W}$$

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$$s = \frac{P_{t2}}{P_s} = \frac{503}{10753} = 4,67 \%$$

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$$\text{f) } n = (1 - s) \cdot n_0 = (1 - 0,0467) \cdot 1000 = 953 \text{ 1/min}$$

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$$\cos \varphi_n = \frac{P_1}{\sqrt{3} \cdot U_n \cdot I_n} = \frac{11764}{\sqrt{3} \cdot 380 \cdot 22} = 0,812$$

$$\cos \varphi_n = 0,812$$

$$\text{g) } Q = \sqrt{3} \cdot U_n \cdot I_n \cdot \sin \varphi_n = \sqrt{3} \cdot 380 \cdot 22 \cdot 0,583 = 8411 \text{ var}$$

$$Q = 8,411 \text{ kvar}$$