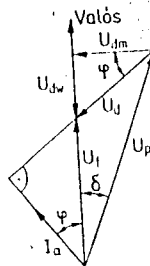


4. SZINKRON GÉPEK

c)



$$U_f = \frac{U_p}{\sqrt{3}} = \frac{380}{\sqrt{3}} = 220 \text{ V}$$

$$S_v = \frac{P}{\cos \varphi_v} = \frac{50}{0,7} = 71,43 \text{ kV} \cdot \text{A}$$

$$I_a = \frac{S_v}{3 \cdot U_f} = \frac{71,43 \cdot 10^3}{3 \cdot 220} = 108,23 \text{ A}$$

$$U_d = I_a \cdot X_d = 108,23 \cdot 3,45 = 373,4 \text{ V}$$

$$U_{du} = U_d \cdot \cos \varphi = 373,4 \cdot 0,7 = 261,4 \text{ V}$$

$$U_{dw} = U_d \cdot \sin \varphi = 373,4 \cdot 0,714 = 266,6 \text{ V}$$

$$U_p = \sqrt{(U_f + U_{dw})^2 + U_{du}^2} = \sqrt{(220 + 266)^2 + 261^2} = 410 \text{ V}$$

$$\text{d) } \sin \delta = \frac{-U_{du}}{U_p} = \frac{-261,4}{410} = -0,63658 \rightarrow \delta = -43,93^\circ$$

$$U_p = 410 \text{ V}$$

$$\delta = -43,93^\circ$$

4.3. feladat

$$\text{a) } n_0 = \frac{60 \cdot f_1}{p} = \frac{60 \cdot 50}{2} = 1500 \text{ 1/min}$$

$$I = \frac{P}{\sqrt{3} \cdot U_i} = \frac{100000}{1,73 \cdot 380} = 151 \text{ A}$$

$$\omega_0 = \frac{2 \cdot \pi \cdot n_0}{60} = \frac{2 \cdot \pi \cdot 1500}{60} = 157 \text{ 1/s}$$

$$M = \frac{P}{\omega_0} = \frac{100000}{157} = 636 \text{ N} \cdot \text{m}$$

$$n_0 = 1500 \text{ 1/min}$$

$$I = 151 \text{ A}$$

$$M = 636 \text{ N} \cdot \text{m}$$