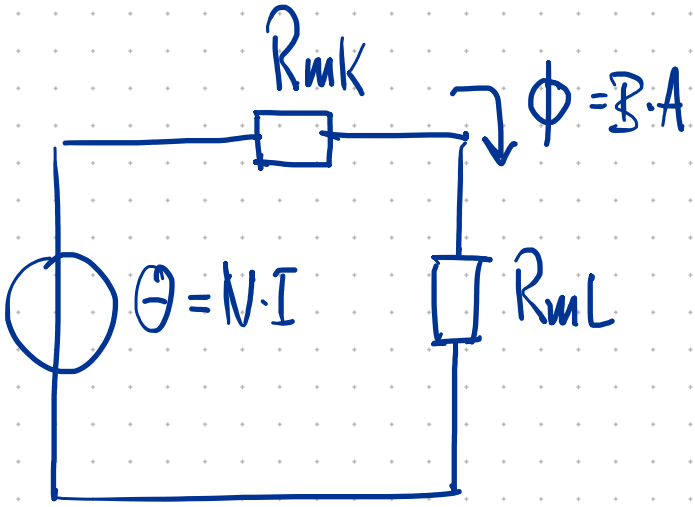
Bsp. 4.6

UNTERPUNKT - C -

Eisenkern:



$$\mu_r = \frac{B}{\mu_0 \cdot H} = \frac{0{,}1 \frac{Vs}{m^2}}{4\pi 10^{-7} \frac{Vs}{Am} \cdot 50 \frac{A}{m}} = 1591{,}5$$

- $\Phi = B \cdot A = 0{,}1 \frac{Vs}{m^2} \cdot 0{,}0004\, m^2 = 40\, \mu Wb$
- $R_{mK} = \frac{0{,}495\, m}{1591{,}5 \cdot 4\pi 10^{-7} \frac{Vs}{Am} \cdot 0{,}0004\, m^2} = 618.769{,}2 \frac{A}{Vs}$
- $R_{mL} = \frac{0{,}005\, m}{4\pi \cdot 10^{-7} \frac{Vs}{Am} \cdot 0{,}0004\, m^2} = 9.947.183{,}9 \frac{A}{Vs}$
- $\Theta = (R_{mK} + R_{mL}) \cdot \Phi \rightsquigarrow N \cdot I = (R_{mK} + R_{mL}) \cdot \Phi$
- $I = (618.769{,}2 + 9.947.183{,}9) \frac{A}{Vs} \cdot \frac{0{,}000004\, Vs}{2500} = 16\, mA$
- $\Lambda_{mK} = \frac{1}{R_{mK}} = 1{,}616 \cdot 10^{-6} \frac{Vs}{A}$ $\quad \Lambda_{mL} = 1{,}005 \cdot 10^{-7} \frac{Vs}{A}$