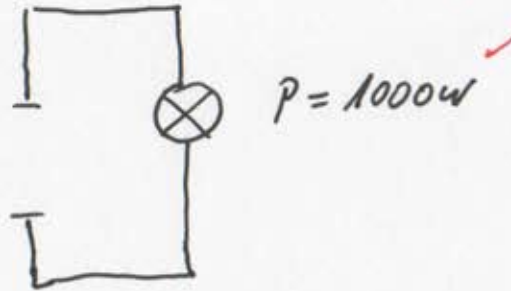


14-09-16
2016-1 NTC

Aufgabe 2

$u = 230V$ ✓



9)

Widerstand bleibt const.!

$P = U \cdot I$; $P = I^2 \cdot R$;
 $P = \frac{U^2}{R}$

$R_L = \frac{U^2}{P} = \frac{230^2 V^2}{1000 W} \Omega$

$R_L = 52,9 \Omega$ ✓

b) $P_L = U_L \cdot I_L$

$U_k = R_k \cdot I_k$

$U_k = 1,2 \Omega \cdot 4,16 A$

$U_k \approx 5V$

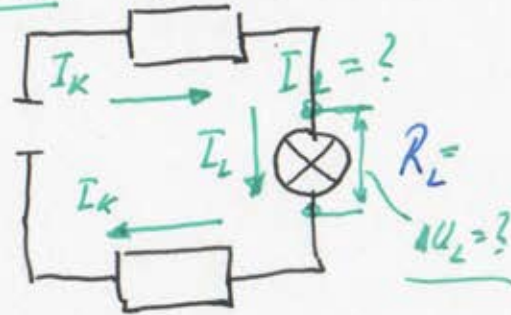
$U_L = U_{gs} - 2 \cdot U_k$

$= 230V - 10V = 220V$

$P_L = 220V \cdot 4,16 A = 915W$;

Kabelstrom: $R_k = 1,2 \Omega$

$U_{gs} = 230V$



$R_2 = 1,2 \Omega$

$U_{gs} = R_{gs} \cdot I_{gs}$

$R_{gs} = 2 \cdot R_k + R_L = 2 \cdot 1,2 \Omega + 52,9 \Omega$

$R_{gs} = 55,3 \Omega$ ✓

$I_{gs} = \frac{U_{gs}}{R_{gs}} = \frac{230V}{55,3 \Omega} = 4,16 A$

$U_{gs} = U_k + U_L + U_k$

$I = const = I_k = I_L$



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