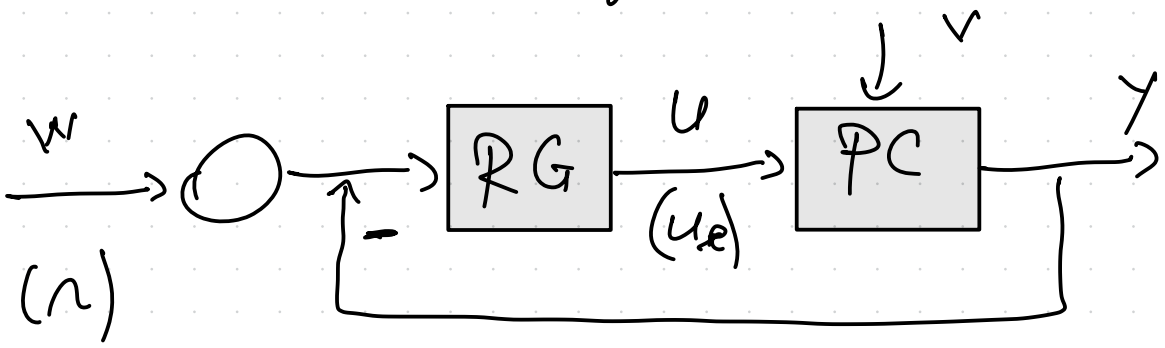
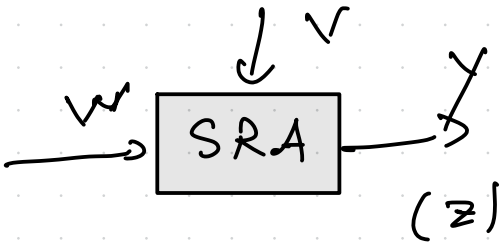
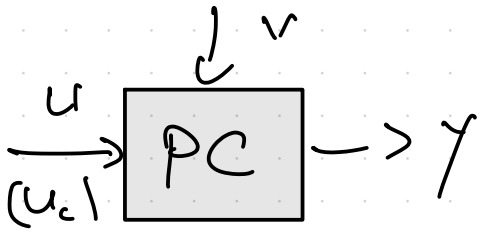
SRA — System Reglare Automat





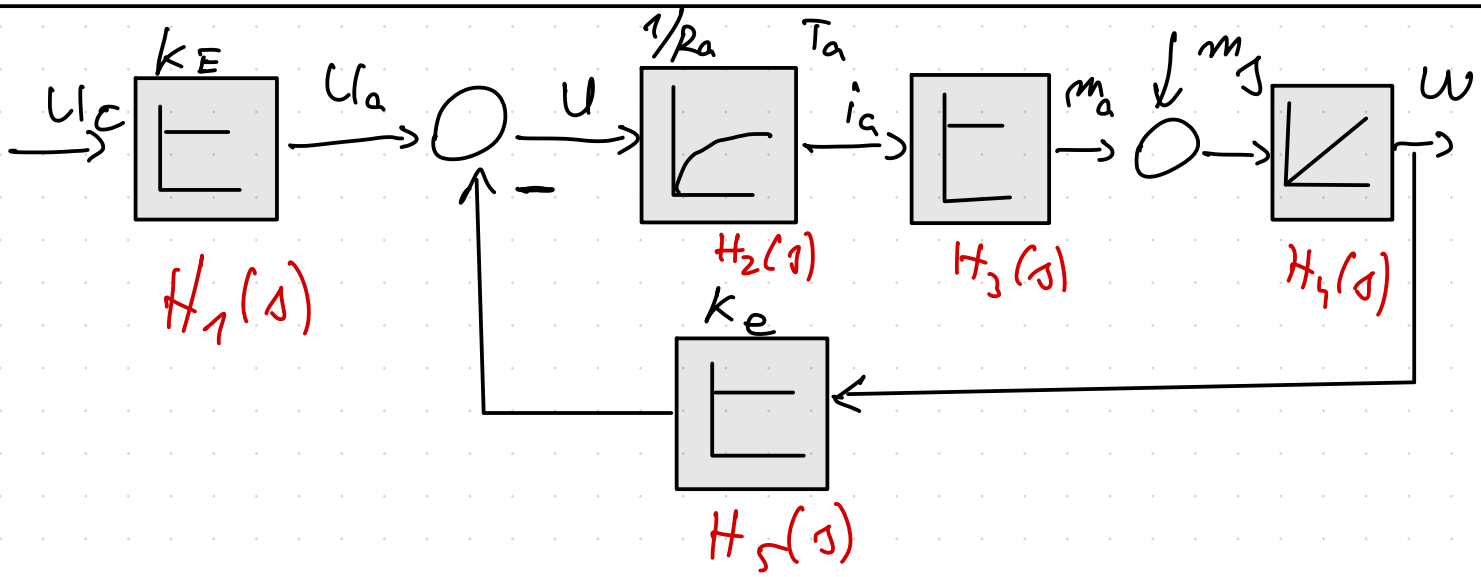
$$H_{yw}(s) = \left.\frac{y(s)}{w(s)}\right|_{v=0}$$

$$H_{yv}(s) = \left.\frac{y(s)}{v(s)}\right|_{w=0}$$



$$H_{yu}(s) = \left.\frac{y(s)}{u(s)}\right|_{v=0}$$

$$H_{yv}(s) = \left.\frac{y(s)}{v(s)}\right|_{u=0}$$



$$H_1(s) = k_E \quad (ET - P)$$

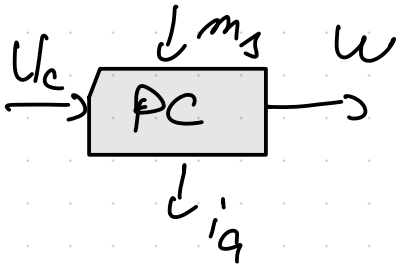
$$H_2(s) = 1/R_a \cdot \frac{1}{1+sT_a} \quad (ET - PT_1)$$

$$H_3(s) = k_m \quad (ET - P)$$

$$H_4(s) = \frac{1}{Js} \quad (ET - I)$$

$$H_5(s) = k_e \quad (ET - P)$$

$$H_{\omega, u_c}(s) = \left. \frac{\omega(s)}{u_c(s)} \right|_{m_s = 0}$$

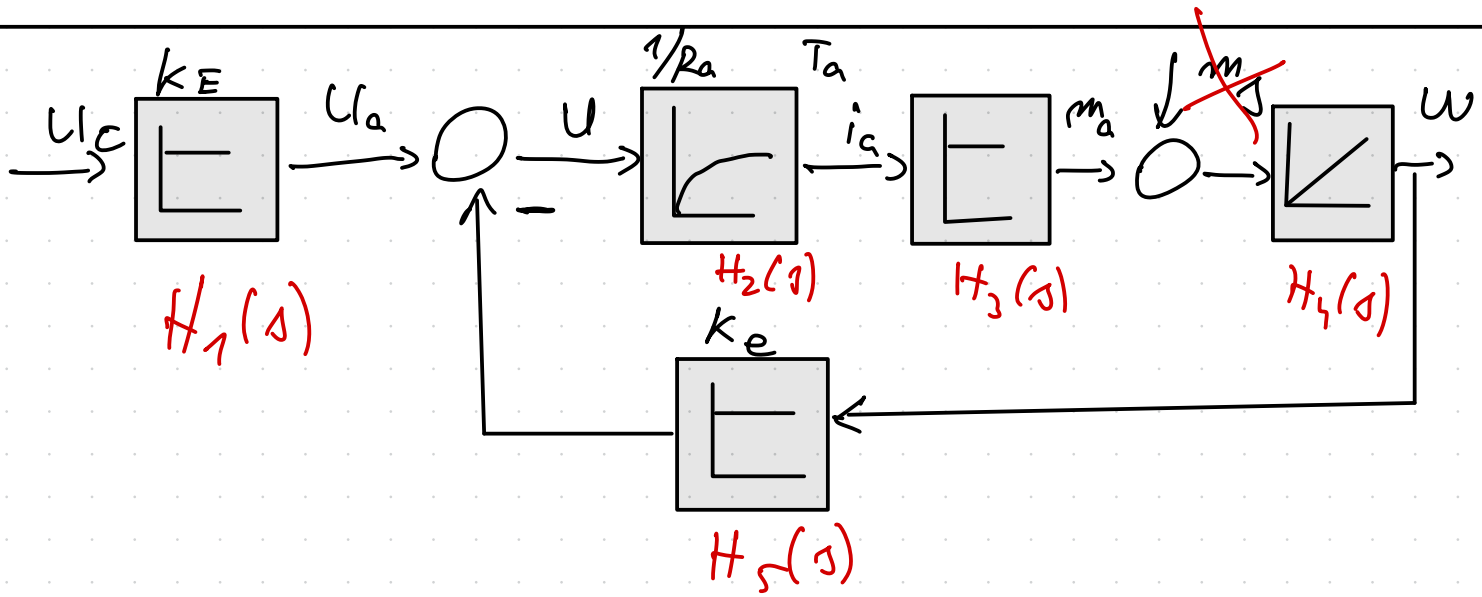


$$H_{\omega, m_s}(s) = \left. \frac{\omega(s)}{m_s(s)} \right|_{u_c = 0}$$

$$H_{i_a, u_c}(s) = \left. \frac{i_a(s)}{u_c(s)} \right|_{m_s = 0}$$

$$H_{i_a, m_s}(s) = \left. \frac{i_a(s)}{m_s(s)} \right|_{u_c = 0}$$

$$H_{\omega, u_c}(s) =$$



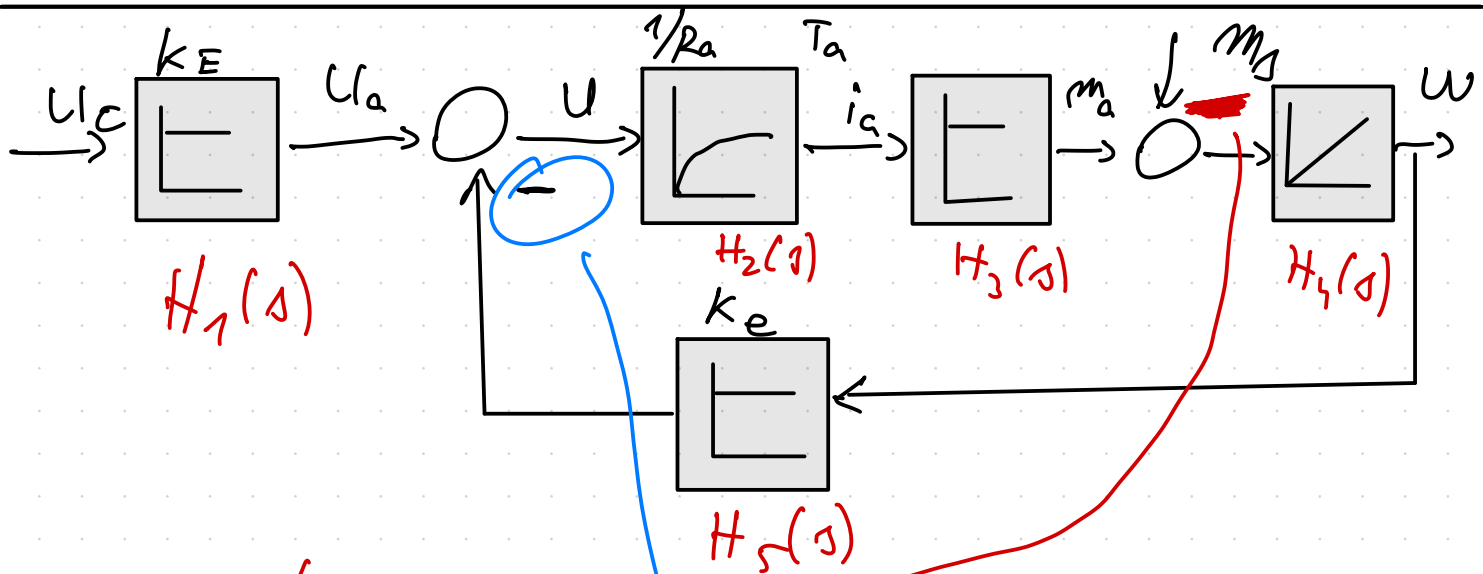
$$U \rightarrow H_1(s) \rightsquigarrow \underbrace{H_{e_1}(s)}_{\text{Reactie}} = H_{\omega u_c}(s)$$

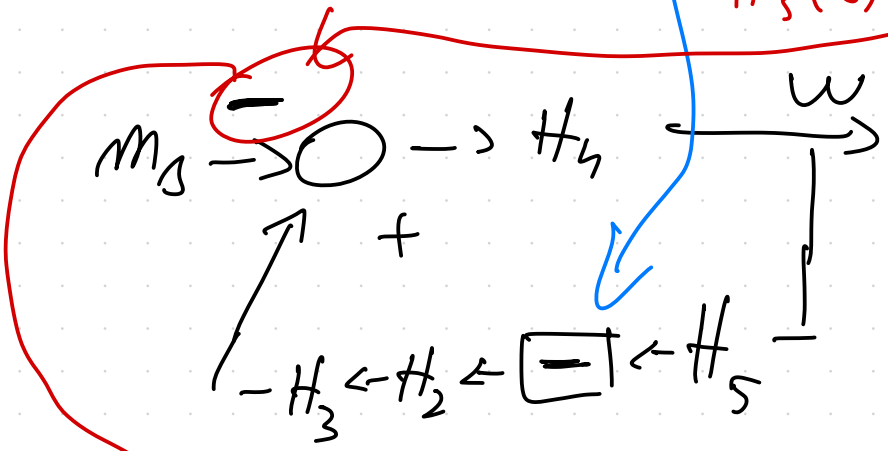
$$H_{e_1}(s) = \frac{H_2(s)\,H_3(s)\,H_4(s)}{1 + H_2(s)\,H_3(s)\,H_4(s)\,H_5(s)}$$

$$H_{\omega, u_c}(s) = k_E \cdot \frac{\frac{1/R_a}{1+sT_a} \cdot k_m \cdot \frac{1}{Js}}{1 + \frac{k_m \cdot k_e / R_a}{Js(1+sT_a)}} =$$

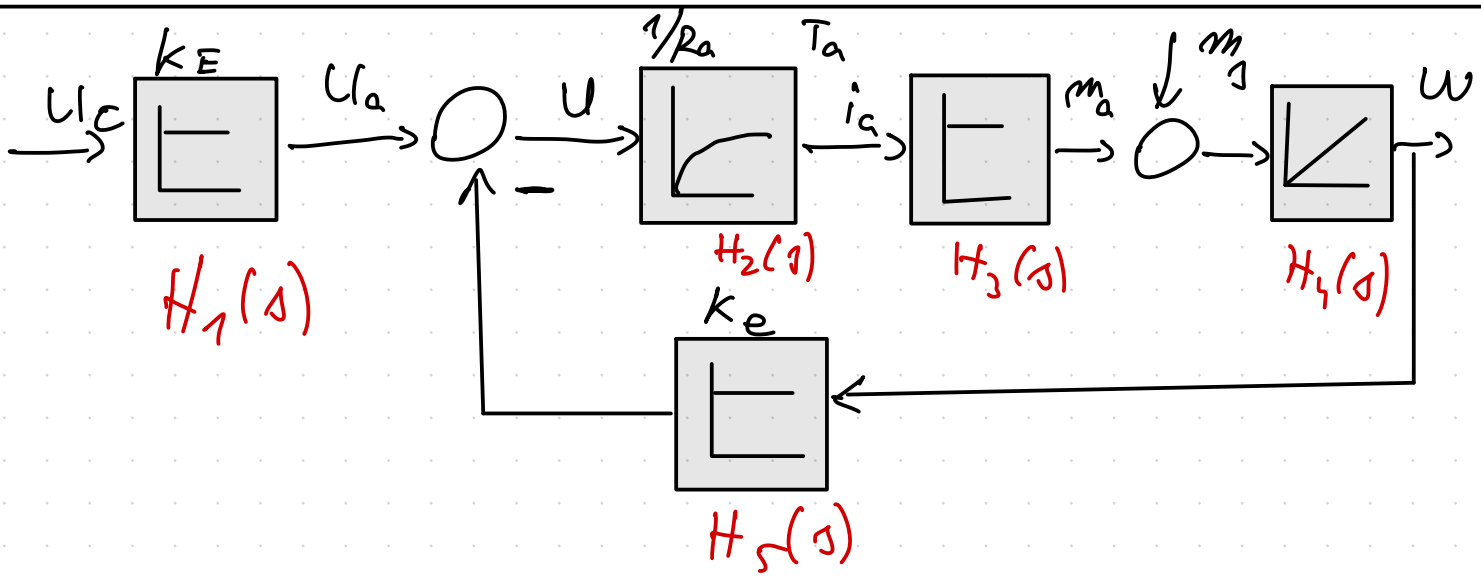
$$k_E \cdot \frac{\frac{k_m/R_a}{Js(1+sT_a)}}{\frac{Js(1+sT_a) + k_m k_e/R_a}{Js(1+sT_a)}} = \frac{k_E \; k_m/R_a}{T_m \frac{k_m k_e}{R_a} s (1+sT_a) + \frac{k_m k_e}{R_a}}$$

$$= \frac{k_E (k_m / R_a)}{\frac{k_m}{R_a} k_e \quad s T_m (1 + s T_a) + 1} = \frac{k_E / k_e}{s^2 T_a T_m + s T_m + 1}$$

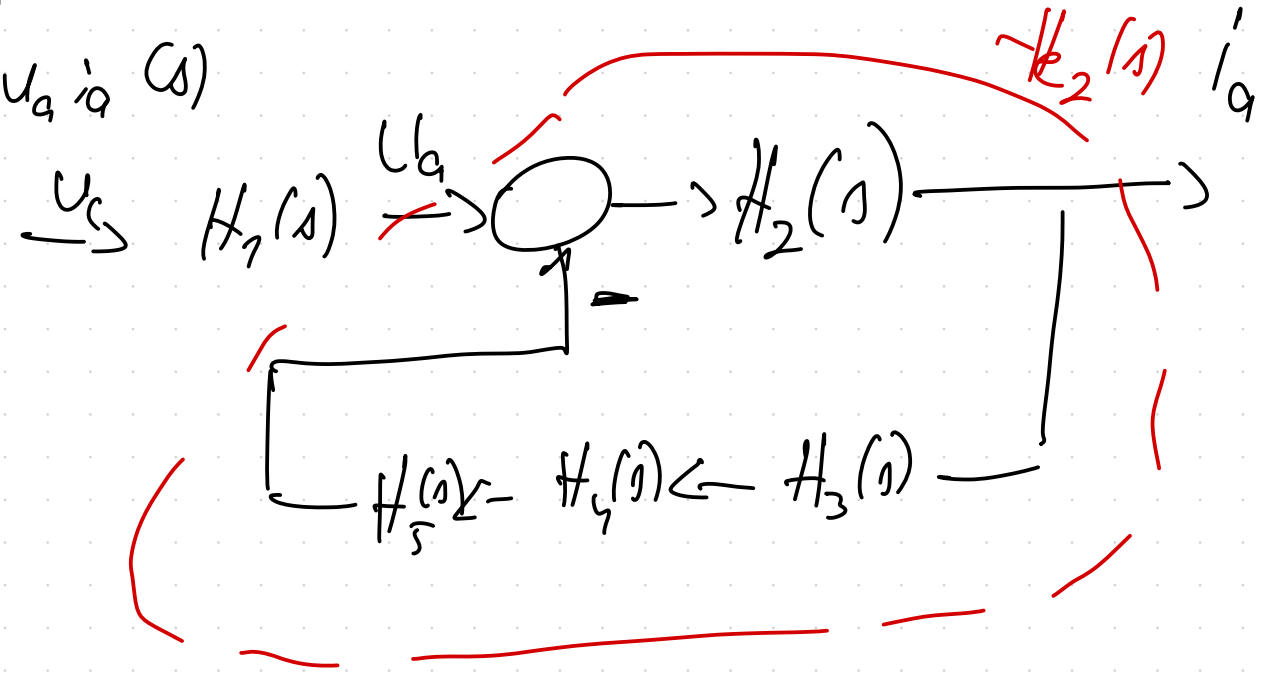




$$H_{\omega m_s}(s) = - \frac{H_4(s)}{1 - H_4(s)\left[-H_5(s)\, H_2(s)\, H_3(s)\right]}$$

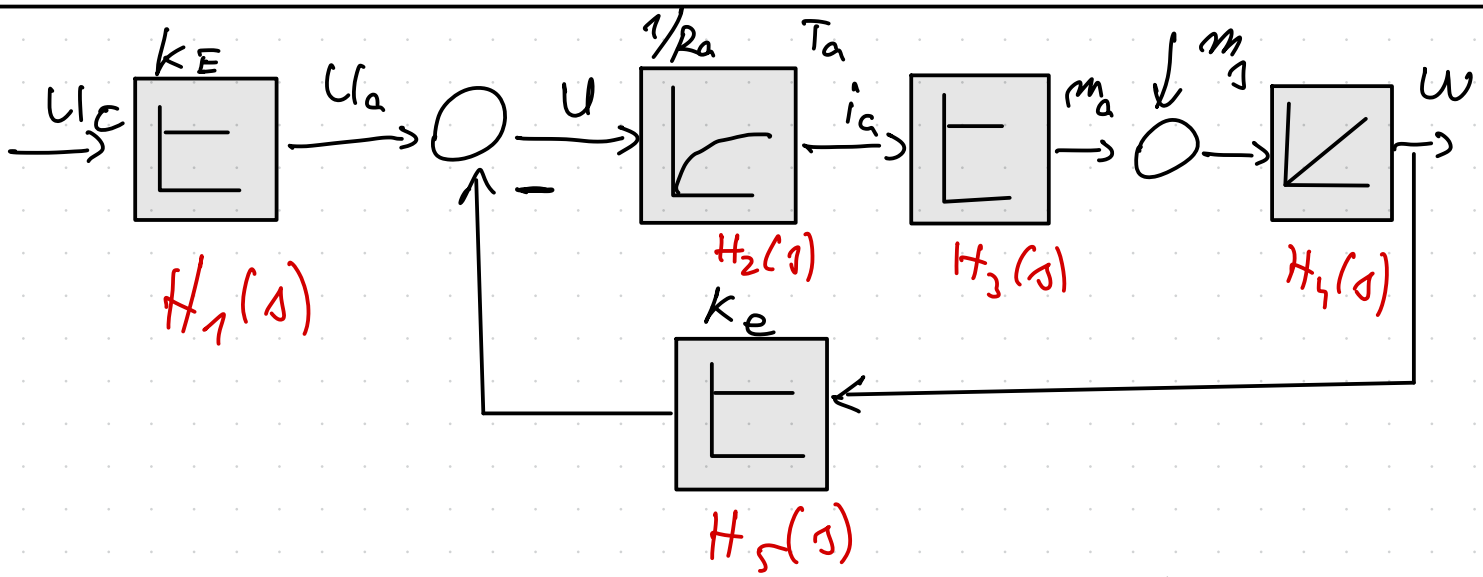


$H_{u_a i_a}(s)$

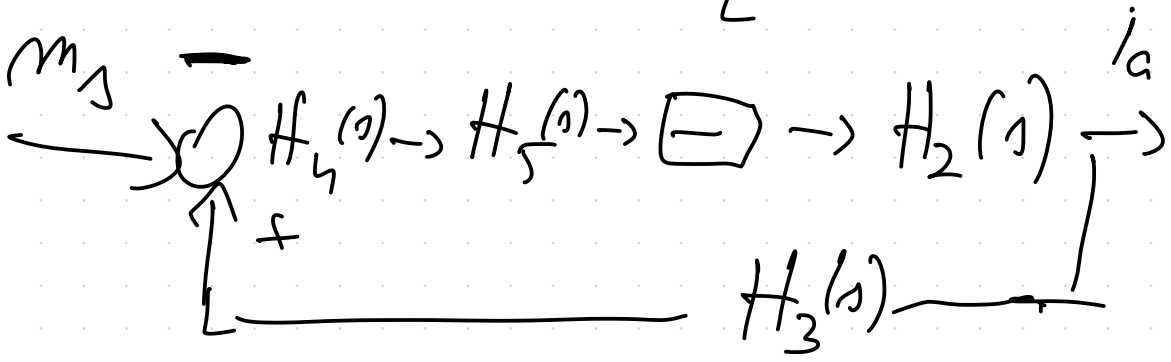


$$H_{i_a u_c}(s) = H_1(s) \cdot H_{e_2}(s) = \frac{H_2(s)}{1 + H_2(s)\left[H_3(s) H_4(s) H_5(s)\right]}$$

$$= H_1(s) \cdot$$



$$H_{i_a m_s}(s) = -\frac{H_1(s) H_5(s) (-) H_2(s)}{1 - \left[- H_2(s) H_4(s) H_5(s) \right] H_3(s)}$$



Syst. încălzire pardoseală → 4 fct. transf.

$H_{\theta_p u_c}$

$H_{\theta_p \theta_e}$

$H_{\theta_c u_c}$

$H_{\theta_c \theta_e}$

+ Prima schemă poză cv. yot 4 fct transf