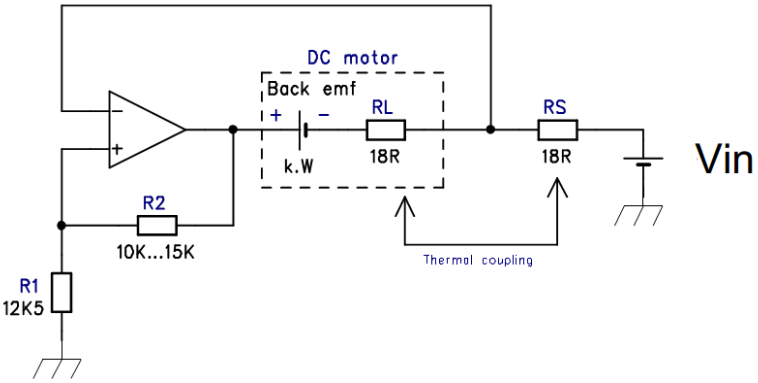
$$\alpha = \frac{R_S}{R_L} \qquad \beta = \frac{R_1}{R_2}$$

$$V_+ = Vs \cdot \frac{R1}{R1 + R2} = Vs \cdot \frac{\beta}{1 + \beta}$$

$$V_- = \frac{V_{IN} \cdot R_L + (Vs - k\omega) \cdot R_S}{R_S + R_L}$$

$$V_- = \frac{V_{IN} + (Vs - k\omega) \cdot \alpha}{\alpha + 1} \cdot \alpha$$



$$V_+ = V_- \rightarrow Vs \cdot \frac{\beta}{1 + \beta} \cdot \frac{\alpha + 1}{\alpha} - V_{IN} = \alpha(Vs - k\omega)$$

$$\alpha\, k\, \omega = Vs \frac{\alpha - \beta}{\alpha(\beta + 1)} + V_{IN}$$

$$If\ \alpha = \beta \rightarrow \omega = \frac{V_{IN}}{\alpha k}$$

$$\frac{R_S}{R_L} = \frac{R_1}{R_2}$$

R_S is made with copper and thermally linked with the motor in order to have the ratio $\frac{R_S}{R_L}$ constant with temperature.