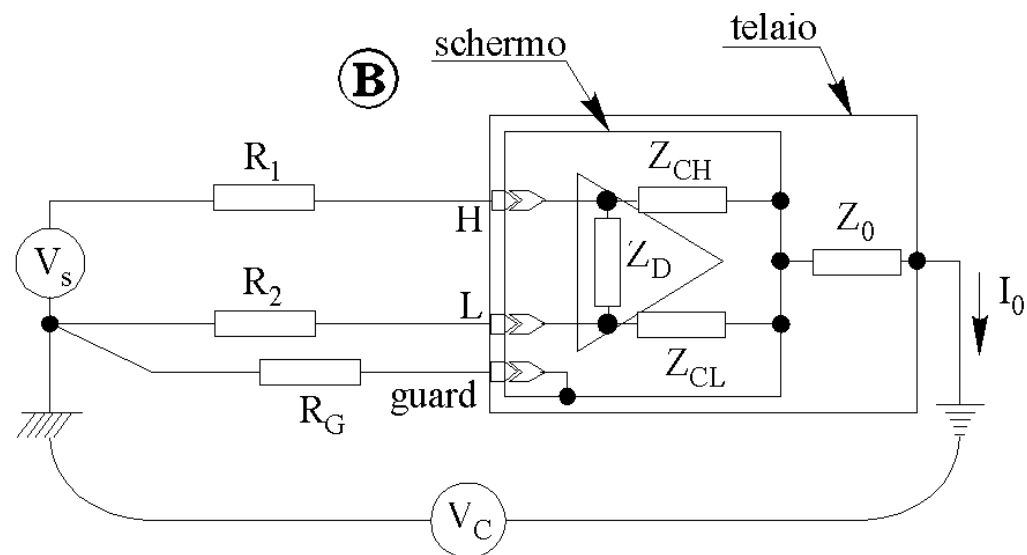
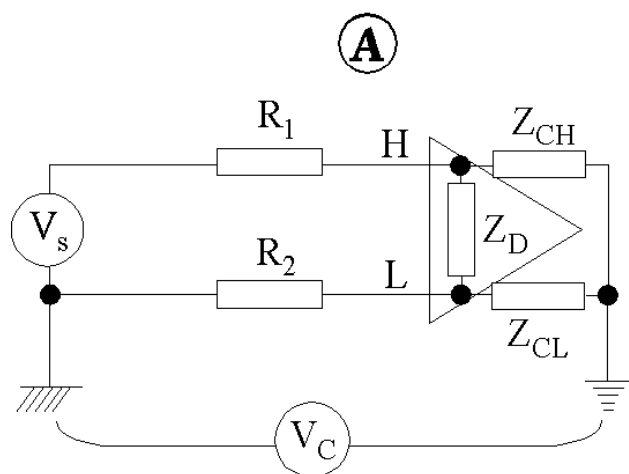


Configurazione differenziale e tecnica di *guarding*



$$Z_{CH} = Z_{CL} = Z_C$$

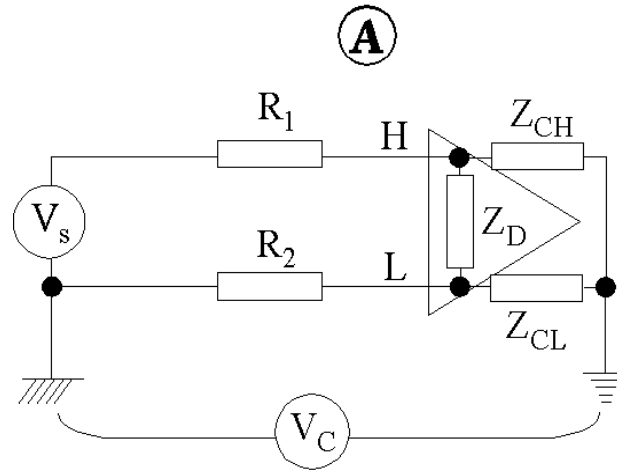
$$Z_C = Z_D = Z_0 = 100 \text{ M}\Omega$$

$$R_1 = 1000 \text{ }\Omega$$

$$R_2 = 10 \text{ }\Omega$$

$$R_G = 10 \text{ }\Omega$$

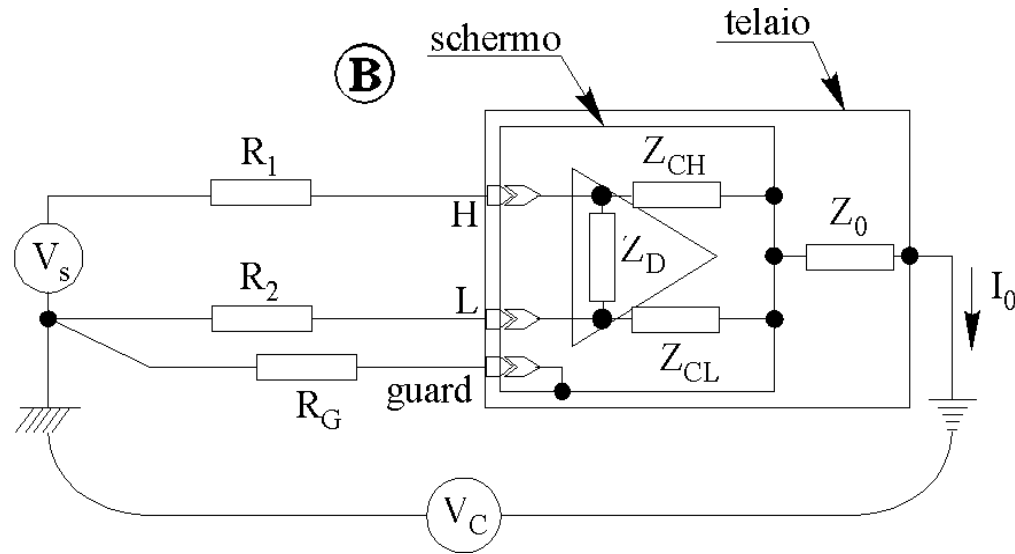
Caso A



$$V_{H,L} = V_C \left[\frac{Z_{CH}}{R_1 + Z_{CH}} - \frac{Z_{CL}}{R_2 + Z_{CL}} \right]$$

$$V_{H,L} = V_C Z_C \frac{R_2 - R_1}{(Z_C + R_1)(Z_C + R_2)} \cong V_C \frac{\Delta R}{Z_C} \cong V_C \frac{1000}{100 \cdot 10^6} = V_C \cdot 10^{-5}$$

Caso B



$$V_{RG} = V_C \frac{R_G}{R_G + Z_0} \cong V_C \cdot 10^{-7}$$

$$V_{H,L} = V_{RG} \left[\frac{Z_{CH}}{R_1 + Z_{CH}} - \frac{Z_{CL}}{R_2 + Z_{CL}} \right] \cong V_C \frac{R_G}{R_G + Z_0} \cdot \frac{\Delta R}{Z_C} \cong V_C \cdot 10^{-5} \cdot 10^{-7} = V_C \cdot 10^{-12}$$