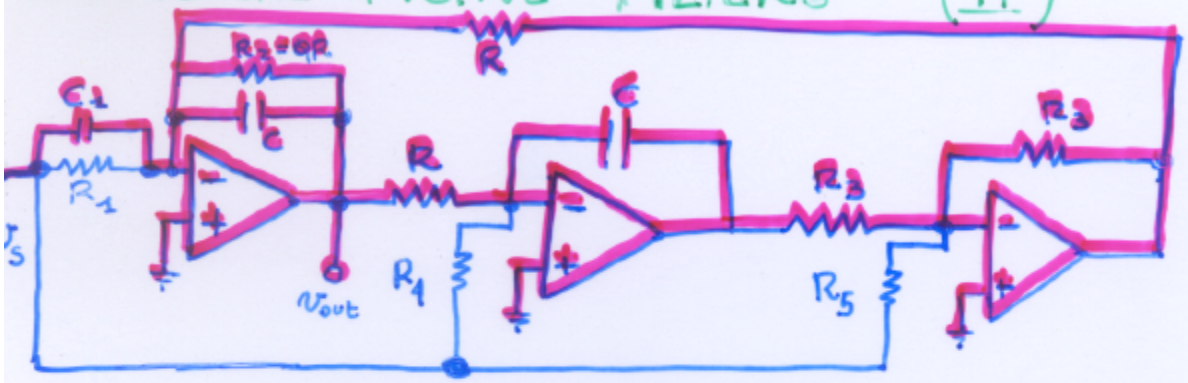
UNIVERSAL ACTIVE FILTERS (II)



$$\frac{V_{out}}{V_s}(s) = \frac{s^2\left(\frac{C_1}{C}\right) + \frac{s}{C}\left(\frac{1}{R_1} - \frac{R_3}{RR_5}\right) + \frac{1}{RR_4C^2}}{s^2 + s\left(\frac{R}{R_2}\right)\frac{1}{RC} + \frac{1}{R^2C^2}}$$

⬇

passa-basso : $C_1 = 0$; $R_1 = \infty$; DC gain $= \frac{R}{R_4}$; $R_5 = \infty$

passa-banda : - positivo : $C_1 = 0$; $R_1 = \infty$; $R_4 = \infty$; $R_5 = \frac{Q R_3}{\text{center freq. gain}}$

- negativo : $C_1 = 0$; $R_1 = \frac{QR}{\text{center freq. gain}}$; $R_4 = \infty$; $R_5 = \infty$

passa-alto : $C_1 = C * (\text{high freq. gain})$; $R_1 = \infty$; $R_4 = \infty$; $R_5 = \infty$

notch : $C_1 = C * (\text{high freq. gain})$; $R_1 = \infty$; $R_2 = R\left(\frac{\omega_0}{\omega_N}\right)^2 / (\text{high freq. gain})$

$R_5 = \infty$

passa-tutto : $C_1 = C * \text{guadagno}$; $R_1 = \infty$; $R_4 = \frac{R}{\text{guadagno}}$; $R_5 = \frac{Q R_3}{\text{guadagno}}$