

Electronic Instrumentation

Problem sheet: Hysteresis

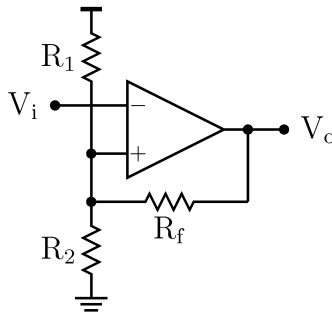
2011/2012 module 2

P. Stallinga



MIEET 3º ano

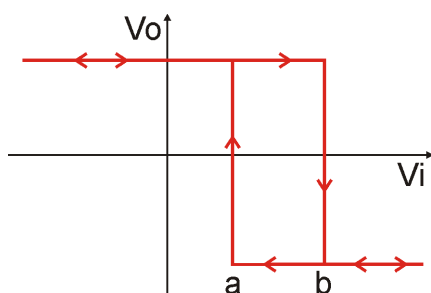
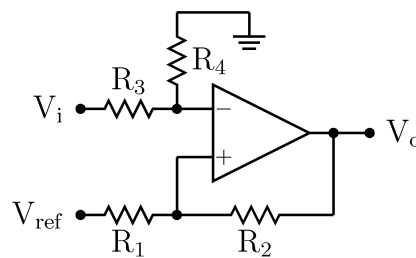
1)



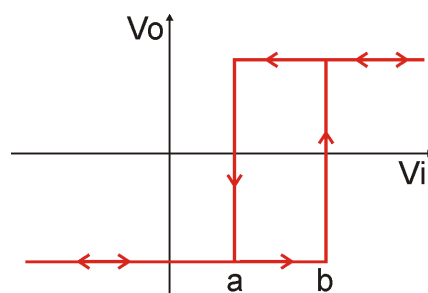
For the above circuit $R_1 = R_2 = 10 \text{ k}\Omega$, $R_f = 100 \text{ k}\Omega$, power supply of the circuit including op-amp: +10 V and ground (0 V).

Draw the output voltage V_o as a function of input voltage V_i .

2)



Type I



Type II

- a) The circuit shown above implements hysteresis of type I (left) or type II (right)? Explain why.
- b) Give values for the components and voltages to get hysteresis with $a = 1 \text{ V}$ and $b = 2 \text{ V}$.
- c) What is the application of this circuit?