ENEE2360 Project

sem2 2024-2025

A sensor outputs a range of 0.2V to 2.5V as a variable varies over its range.

a) **Complete the design of the circuit shown in Fig.(1) so that the output voltage varies from 0V to 5V as the output of the sensor varies from 0.2V to 2.5V**

b) **Using hand calculation, determine all nodal voltage for Vi = 0.1V,0.2V,0.5V,1V,1.5V,2V,2.5V, and 3V**

c) **Using Pspice, simulate your designed circuit for Vi = 0.1V,0.2V,0.5V,1V,1.5V,2V,2.5V, and 3V**

d) **Using LM324 IC shown in Fig.(2), Construct your designed circuit, measure and record all the nodal voltages if Vi = 0.1V,0.2V,0.5V,1V,1.5V,2V,2.5V, and 3V**

e) **Write a simple report that includes:**

1 – Explanation of the function of the circuit of Fig.(1)

2 – Indication of all your steps to determine the values of Rx and Ry

2 - Simulation circuits and results

3 - Comparison of simulation results to hand calculation and practical implementation

4 – Conclusion

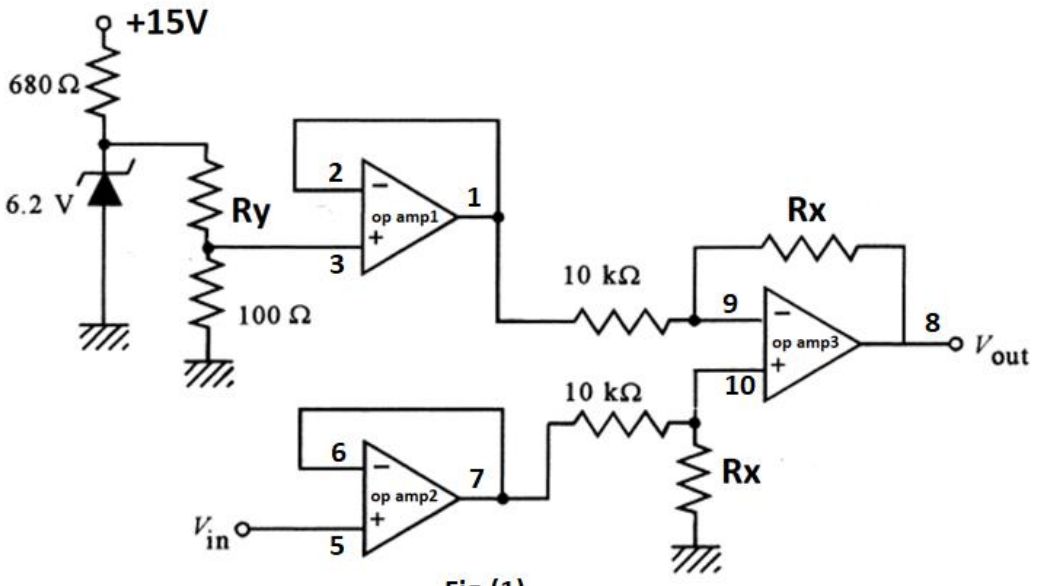

Fig.(1)

LM324 Pinout

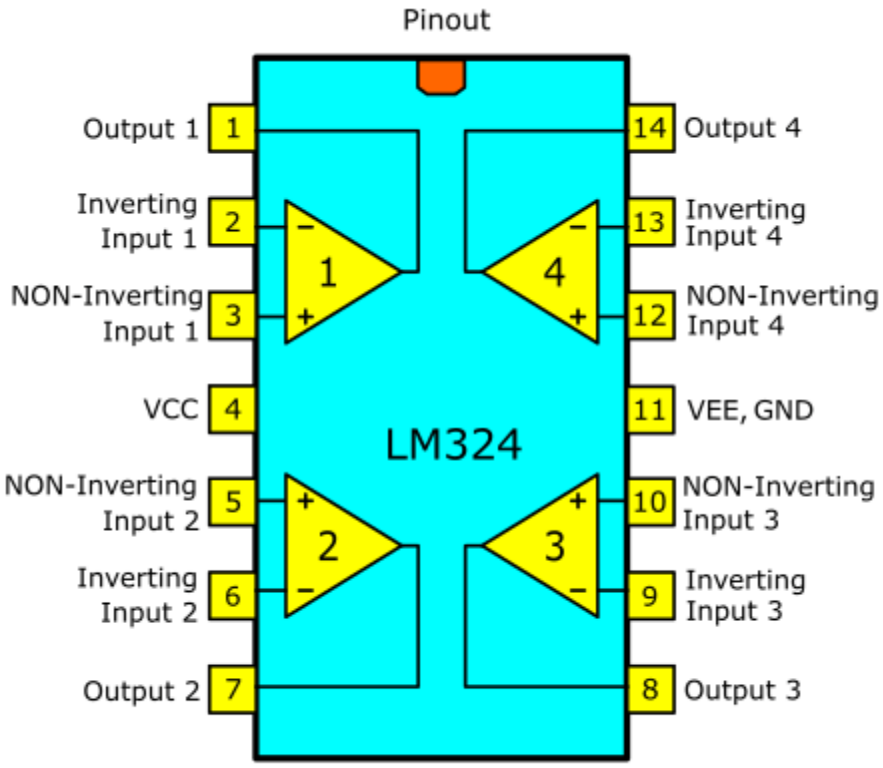

Fig.(2)

Note : VCC =+15V and VEE = - 15V