Electronics and Electrical Communication Engineering Department

Electronic measurements	Year:2nd

Sheet (**4**)

Transducer

1. A resistance potentiometer has a sensitivity of 10 v/mm. Find the output voltage for a displacement of 2mm.

2. An LVDT has a secondary voltage of 5 V and arange of ± 25mm .Find

a) the output voltage when the core is -18.75mm away from the center.

b) the output voltage change when the core is moving from ± 18.75mm to -10mm.

3.The output of an LVDT is connected to a 5 volt voltmeter through an amplifier whose amplification factor is 250. An output of 2mv appears across the terminals of LVDT when the core move through a distance of 0.5mm. Calculate the sensitivity of the LVDT and that of the whole setup. The milli voltmeter scale has 100 divisions. The scale can be read to 1/5 of a division. Calculate the resolution of the instrument in mm.

4.A hall effect transducer is used for measurement of a magnetic field of 1.5wb/m^2 with a copper transducer for which the hall effect coefficient is -52*10^{-12}v.m/A.wb.m^{-2}. The thickness of the element is2mm and the current passing is 5A. Find the voltage generated.

a)-0.195 μV
b)0.195μV
c)-390 μV
d)-390*10^{-19}V

Best Wishes

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