

## EXPERIMENT No.8

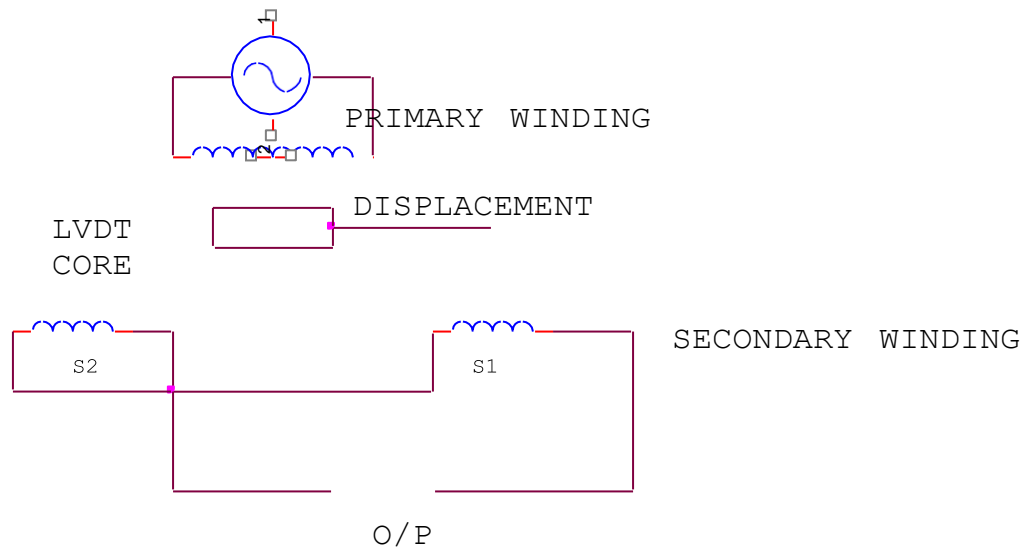
**OBJECTIVE:-** Measurement of displacement using LVDT.

**APPARATUS REQUIRED:-** LVDT kit, multimeter, connecting wires.

### **THEORY: -**

The differential transformer is a passive inductive transformer also known as Linear Variable Differential Transformer (LVDT). LVDT has a soft iron core which slides within the hollow transformer & therefore affects magnetic coupling between the primary and two secondaries. The displacement to be measured is applied at its arm attached to soft iron core. When core is in normal position (null), equal voltages are induced in the two secondaries. The frequency of ac applied to the primary winding ranges from 50Hz to 20KHz.

### **CIRCUIT DIAGRAM**



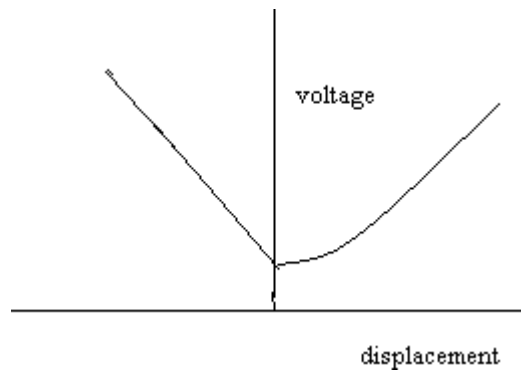
### **PROCEDURE: -**

1. Connect the circuit according to circuit diagram.
2. Switch on the power supply.
3. The core is initially brought to null position.
4. First turn the nut in clockwise direction to move core inwards i.e. left of null position & take respective voltage readings on the voltmeter.
5. Now turn nut in anticlockwise direction to move the core towards right of null point & again take respective voltage reading from voltmeter.
6. Plot the graph from the observations taken.

**OBSERVATIONS TABLE**

S.No.	Displacement Micrometer (mm)	Displacement Reading (mm)	Analog o/p

## GRAPH



**RESULT: -** Graph between voltage and displacement is plotted.

### **PRECAUTIONS: -**

1. Handle all equipments with care.
2. Make connections according to the circuit diagram.
3. Take the readings carefully.
4. The connections should be tight.