**ECE 281**

**Electrical Circuits and Instrumentation + Laboratory**

**Fall 2016/2017**

**LAB # 5-Supplement**

3**1.10.2016**

**Objective:**

1. **Learn the use of a rheostat**

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# 1. Learn the use of a rheostat (15 Points)

**Rheostat:** Any device that regulates (controls) current flow is called as a rheostat. A potentiometer can be used as a rheostat if it is connected properly in a circuit.

**Procedure:**

1. Adjust potentiometer to middle when you measure resistance between 1-3
2. Construct the circuit shown in Figure 1 (In this circuit, we take $R_1$= 1kΩ and $V_S$= 10Volt DC. We also use a potentiometer whose nominal value is 10 kΩ). Connect only one of the constant terminal (terminal 1) and the variable terminal (terminal 3) of the potentiometer to the circuit while leaving the other constant terminal (terminal 2) open (don't connect this terminal to anywhere).

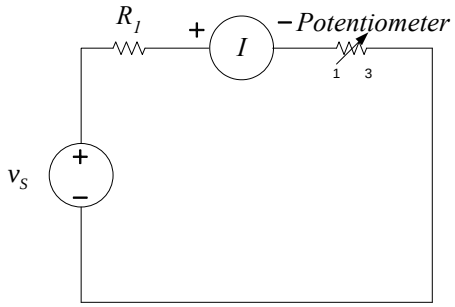


**Figure 1:** Circuit diagram for current measurement over rheostat

3. Measure current, according to your reading over the Ampermeter.
4. Measure current two more times clockwise and counter-clockwise

| Turning direction | Clockwise | Counter-clockwise | Mid-point |
|---|---|---|---|
| Current value (I) | | | |

**Table 1:** Current measurements

**Questions:**

- How does the current varies when the shaft is moved clockwise?
- How does the current varies when the shaft is moved counter-clockwise?
- What is the use of rheostat?