

Experiment No.: 01

Name of Experiment: *Verification of Ohm's.*

Objectives:

1. To Verify Ohm's Law.
2. To Plot Current (I) vs Voltage (V) Curve.

Required Equipment:

1. DC Power Supply Loadstar
2. Resistor R
3. DC Voltmeter
4. DC Ammeter
5. Connecting wires

Circuit Diagram:



Fig. 1.1: Circuit for verification of Ohm's Law

Table:

$$R = 50\Omega$$

Voltage (V)	$V_1 = 5\text{ V}$	$V_2 = 10\text{V}$	$V_3 = 15\text{ V}$	$V_4 = 20\text{V}$	$V_5 = 25\text{V}$
Current (I)	0.1 A	0.2 A	0.3 A	0.41 A	0.5 A

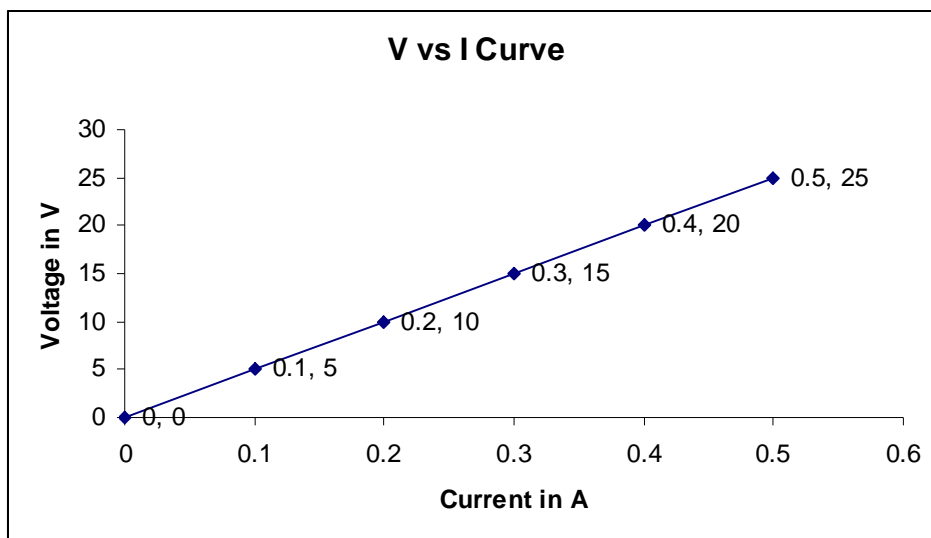


Fig. 1.2: Voltage vs Current Curve

Calculation:

$$\frac{V_1}{I_1} = 50, \frac{V_2}{I_2} = 50, \frac{V_3}{I_3} = 50, \frac{V_4}{I_4} = 48.8, \frac{V_5}{I_5} = 50$$

Report:

Ans. Q2: Since $R = \frac{V_1}{I_1} = \frac{V_2}{I_2} = \frac{V_3}{I_3} = \frac{V_4}{I_4} = \frac{V_5}{I_5}$, it can be summarized that Ohm's Law is verified.

Ans. Q3: The curve is a straight line passing through the origin.

Ans.: Q4: A discrepancy is found in fourth observation. Causes of this discrepancy may be the following:

- a) Wrong reading of Ammeter and Voltmeter.
- b) Sight error in taking reading from analog meter.