Ohm's Law II

AIM: To find the change in resistance of a given material with length using ohm's Law

APPARATUS: Cells, Ammeter, Voltmeter, Rheostat, Key, Screw Gauge, Graph Paper, Connecting wires etc

THEORY:

The Resistivity of the material of the wire is give by

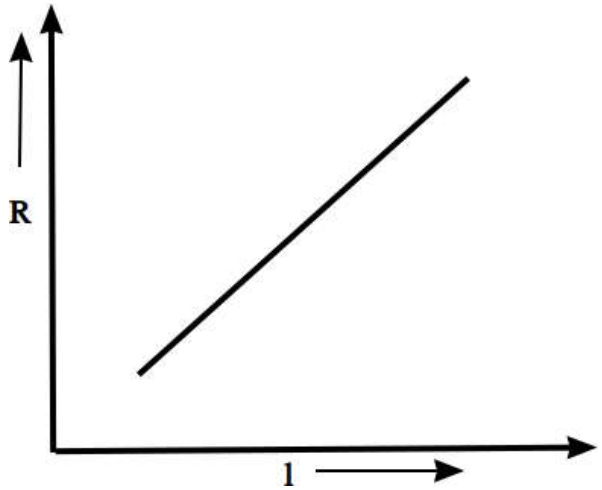
$$\rho = \frac{RA}{l}$$

Where R is the resistance of the conductor having area of cross section A and length l

For any given conductor with uniform cross sectional area

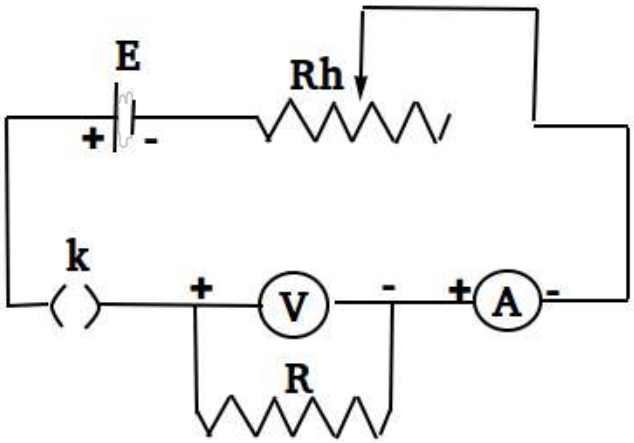
$$R \propto l$$

Resistance – length graph is a straight line



OBSERVATIONS:

1. **To find the resistance of the wire (R)**



Least Count of the ammeter = A

Least Count of the voltmeter = V

Sl No	Length of the wire (L) cm	Ammeter Reading (I) Ampere	Voltmeter Reading (V) Volts	Resistance of the wire (R) ohm
1				
2				
3				
4				
5				
6				

RESULT:

Resistance of the wire is found proportional to the length of the wire