

Ohm's law

Purpose:

To verify ohm's law (the relation between I and V)

Theory:

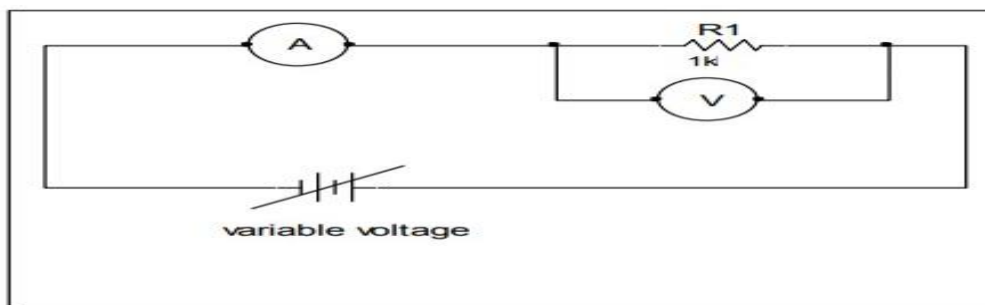
Ohm's law :the ratio of the potential (between the points in a conductor to a current at a given temp. Known as Resistance "R".

Apparatuses used :

Power supply, Ammeter , constant resistance "R" voltmeter.

Procedure:

- Connect the power supply "E" , the ammeter A the rheostat and the constant resistance "R" in series . then connect the voltmeter "V" in parallel with (R) as shown in fig :



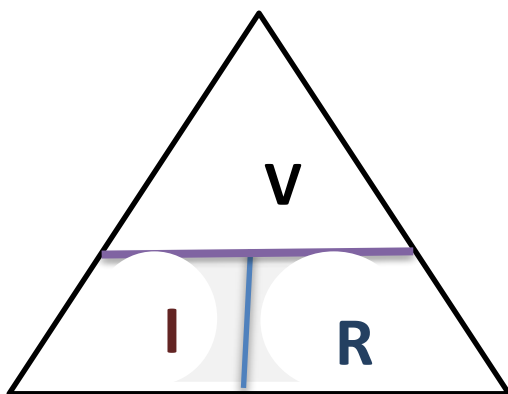
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- Adjust the rheostat so that the ammeter and voltmeter are registers a convenient reading on the scale.
- Record both the reading of I of the ammeter and voltmeter (V)
- Tabulate the results.

V (volt)	I (amp)	R(Ω)

$R(\Omega) = \text{Slope}$



$$R = \frac{V}{I}$$

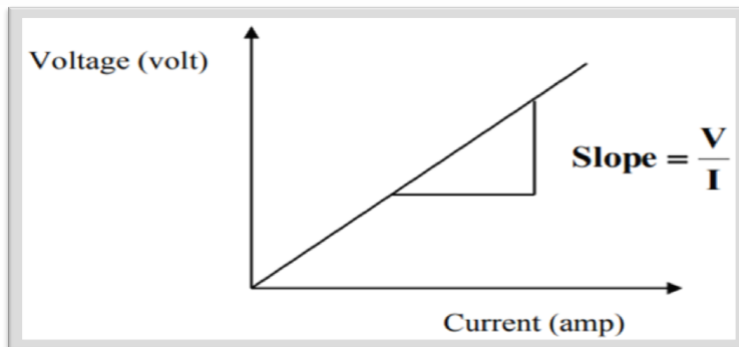
$$V = R \cdot I$$

$$I = \frac{V}{R}$$

Ohm's law units are: (Ω)

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Discussion:

- Draw the relationship between V & I from table.
- Is it necessary that the relationship between V & I start with the original point (0, 0) and why?
- What does the slopes represent in V & I relationship? □ Why should the graphic be a straight line?

Q- choose the correct answer

1- What is the mathematical formula for Ohm's law?

- A. $R = V/C$
- B. $R = V/ I$
- C. $R = I/ V$
- D. $R = V/SLOPE$

2- What is the purpose of Ohm's law?

- A. To verify ohm's law (the relation between I and V)
- B. To verify ohm's law (the relation between R and V)
- C. To verify ohm's law (the relation between R and V)
- D. To verify ohm's law (the relation between R and T)

3- The slope in Ohm's law is:

- A. V/ R
- B. R/ V
- C. V/ I
- D. I/ V

4- the ratio of the potential (between the points in a conductor to a current at a given temp. Known as Resistance "R").

- a. Ohm's law :
- b. power law
- c. power momentum law
- d. D- charge law

5- Ohm's law units are:

- A. Ω
- B. V
- C. Ampere
- D. Watt

current	التيار			المنافشة	Discussion
voltage	فولطية			ارسم	draw
Resistance	المقاومة			وضح	Explain
Ω	اوم			الجهد	potential