

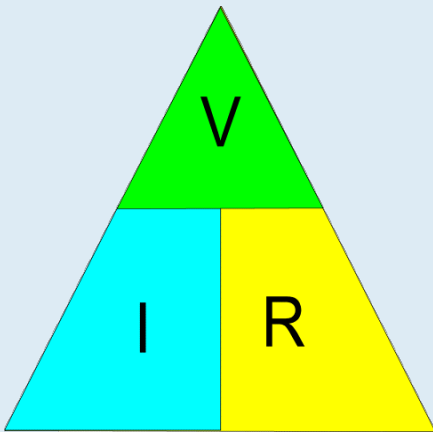
Current

Current is the amount of net charge passing through a surface per a second.

$$I = q/t$$

I = Current (Amperes)
q = Charge (Coulombs)
t = Time (seconds)

Ohm's Law



Resistivity

Resistivity is a material property that quantifies how much the material restricts the flow of current.

Ohm- meter

$$R = \rho (l/a)$$

R = resistivity
 ρ = conductivity (ohms/m)
l = length
a = area of crosssection (m²)

Replay

$$R = \rho (l/a)$$

What happens if the area is larger?
| the smaller the resistance

What happens if you increase the length?
| the larger the resistance

Power

Work per unit time.

$$P = IV = I^2R = (v)^2/R$$

Original formula is $P = IV$. With this formula, apply Ohm's law and the rest will follow.

$$\text{Power} = \text{energy} * \text{time}$$

Power (Watts)
Energy (kWhr,
Time (seconds)

$$\text{energy} = (\text{power}) (\text{time})$$

Energy (kWhr, Joules)
Power (Watts)
Time (seconds)

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