

U.8.5 Resistance

A. Basic idea

measures the opposition of a material to the flow of electric current.

unit → ohm (Ω) 欧姆

B. How does resistance affect current?

When resistance increases, the electric current in a circuit decreases.

C. Factors affecting resistance

Material of the wire

- Different material have different resistance
- An insulator has higher resistance than a conductor.

Thickness of the wire

Thinner wire → higher resistance

Length of the wire

Longer wire → higher resistance

D. Resistor

| a circuit component with a **fixed** value of resistance.

E. Rheostat

| a circuit component whose resistance can be **adjusted** 調整.

- sliding rheostat 滑动型变阻器
- rotary-type rheostat 旋转式变阻器

Applications

- dimmer switch
- hi-fi volume control