

KIRCHHOFF

1. Kirchhoff's Laws

The first law, known as Kirchhoff's Current Law (KCL), states that the sum of currents entering a node is equal to the sum of currents leaving the node. This is based on the principle of conservation of charge. The second law, known as Kirchhoff's Voltage Law (KVL), states that the sum of voltages around a closed loop is equal to zero. This is based on the principle of conservation of energy.

2. Application of Kirchhoff's Laws

These laws are used to analyze electrical circuits and determine the current and voltage in various components. They are particularly useful in analyzing complex circuits with multiple loops and nodes.

3. Example Circuit Analysis



4. Summary

- 1. Kirchhoff's Current Law (KCL) states that the sum of currents entering a node is equal to the sum of currents leaving the node.
- 2. Kirchhoff's Voltage Law (KVL) states that the sum of voltages around a closed loop is equal to zero.
- 3. These laws are used to analyze electrical circuits and determine the current and voltage in various components.
- 4. The diagram illustrates the application of these laws to a specific circuit, showing the KVL equation and the KCL equation.