

# Electric current is defined as

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(1775-1836),,, 1820~1827, "" ? ?

Let us now define electric current and also know about conductors and insulators.

Electric Current is the rate of flow of electrons in a conductor. The SI Unit of electric current is the Ampere.

**Conductors:** these materials allow the free flow of electrons from one particle to another. Conductors allow for charge transfer through the free movement of electrons. The flow of electrons inside the conducting material or conductor generates an electric current. The force that is required to drive the current flow through the conductor is known as voltage.

Examples of conductors: Human body, aqueous solutions of salts and metals like iron, silver and gold.

Silver is the best conductor of electricity.

**Insulators:** Insulators are materials that restrict the free flow of electrons from one particle to another. The particles of the insulator do not allow the free flow of electrons; subsequently, the charge is seldom distributed evenly across the surface of an insulator.

Examples of Insulators: Plastic, Wood and Glass

Some of the prerequisites for the electric current to flow in a conductor are discussed here. The circuit includes an energy source (a battery, for instance) that produces voltage. Without voltage, electrons move randomly and are undirected; hence current cannot flow. Voltage creates pressure on the electrons, which channelises them to flow in a single direction.

The motion of free electrons is normally haphazard. If a force acts on electrons to make them move in a particular direction, then up to some extent random motion of the electrons will be eliminated. An overall movement in one direction is achieved. The force that acts on the electrons to make them move in a certain direction is known as electromotive force, and its quantity is known as voltage and is measured in volts.

Read More: [Electromotive Force](#)

The magnitude of electric current is measured in coulombs per second. The SI unit of electric current is Ampere and is denoted by the letter A. Ampere is defined as one coulomb of charge moving past a point in one second. If there are  $6.241 \times 10^{18}$  electrons flowing through our frame in one second, then the electrical current flowing through it is "One Ampere."



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Web: <https://www.kary.com.pl/contact-us/>

Email: [energystorage2000@gmail.com](mailto:energystorage2000@gmail.com)

WhatsApp: 8613816583346

