

Electricity Basics

Electrical power is the most common energy source in North America.

Key terms:

Arcing: sudden flash of electricity between two points of contact

Voltage: force that causes electricity to flow (measured in volts)

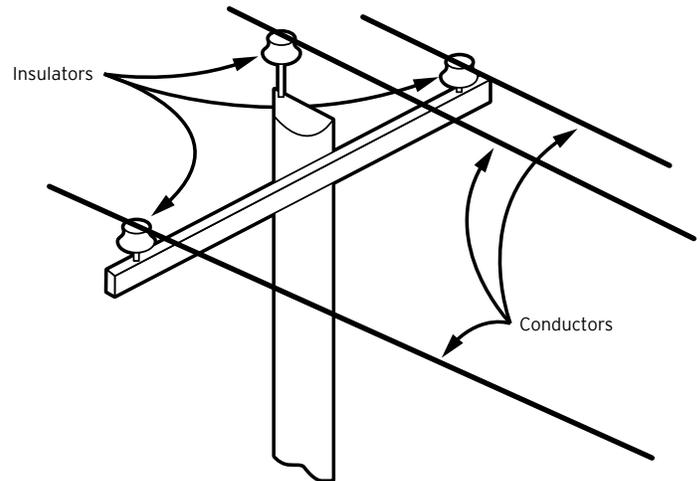
Current: flow from negative to positive on the surface of a conductor (measured in amps)

Resistance: determines how much current will flow through a conductor (measured in ohms)

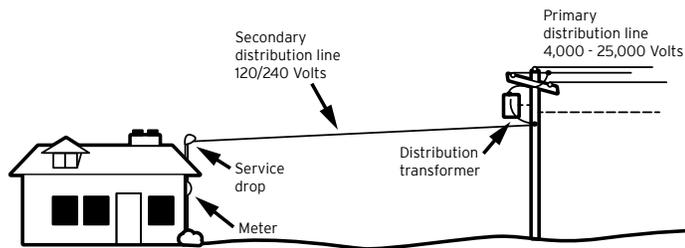
Grounding: connection of electrical equipment and wiring to the earth by a conductor

Conductors: provide low resistance, so electric current is able to flow freely – e.g. the human body, most metals, wires, wet wood and rope

Insulators: non-conductors, provide high resistance so electric current is not able to flow freely – e.g. porcelain, glass, fiberglass, some rubber materials, plastic



Distribution system

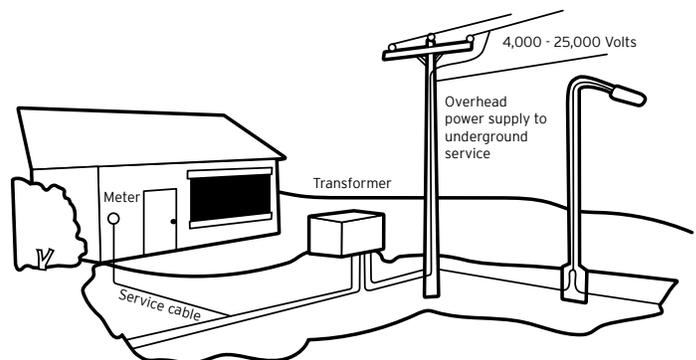


Overhead: most services in towns and cities are on wooden poles

- primary voltage = 4,000 to 25,000 volts
- power line attached to insulators to prevent the flow of electricity to the ground
- one to three distribution transformers are used to reduce voltage
- secondary lines = three wires below the primary line connected to the transformer
- customer service drop comes off the secondary lines

Underground: low and medium voltage lines are buried underground

- transformers are mounted on ground-level pads or located in underground vaults
- common to newer, densely-populated residential developments



Electricity and the human body

Electricity will travel through a person to reach the ground as easily as it goes through a power line. The amount of electrical current a person can withstand depends on:

- **time:** the length of time a person is exposed
- **current strength:** the higher the current strength, the less exposure time a person can survive
- **energy path:** a path through the heart or brain is more life threatening

Electrical emergency? Call us at 1-886-436-7847

Call FortisBC to disconnect power before approaching an emergency scene with downed power lines or other potential electrical hazards.

FortisBC owns and operates four regulated hydroelectric generating plants and approximately 7,200 kilometres of transmission and distribution power lines. Learn more at fortisbc.ca.