



**OutBack**  
Power Systems

Ohm's Law 101



# Ohm's Law History

- The law was named after the physicist [Georg Ohm](#), who, in a treatise published in [1827](#), described measurements of applied voltage and current passing through simple electrical circuits containing various lengths of wire. He presented a slightly more complex equation than the one above to explain his experimental results.
- Well before Georg Ohm's work, [Henry Cavendish](#) found experimentally (January 1781) that current varies in direct proportion to applied voltage, but he did not communicate his results to other scientists at the time.[\[2\]](#)

# So What is Ohm's Law?

- Ohm's Law defines the relationships between (P) power, (E) voltage, (I) current, and (R) resistance. One ohm is the resistance value through which one volt will maintain a current of one ampere.

( I ) Current is what flows on a wire or conductor like water flowing down a river. Current flows from negative to positive on the surface of a conductor. Current is measured in (A) amperes or amps.

( E ) Voltage is the difference in electrical potential between two points in a circuit. It's the push or pressure behind current flow through a circuit, and is measured in (V) volts.

( R ) Resistance determines how much current will flow through a component. Resistors are used to control voltage and current levels. A very high resistance allows a small amount of current to flow. A very low resistance allows a large amount of current to flow. Resistance is measured in ohms.

( P ) Power is the amount of current times the voltage level at a given point measured in wattage or watts.

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