



## **What is a Transformer?**

A transformer is an electrical device that is used to transfer electrical energy from one circuit to another through electromagnetic induction. It consists of a primary winding, a secondary winding, and an iron core.

The primary winding is connected to an AC power source, and the secondary winding is connected to a load, such as an electrical appliance. When an AC voltage is applied to the primary winding, it creates an alternating magnetic field in the core. This alternating magnetic field, in turn, induces an alternating voltage in the secondary winding.

The magnitude of the induced voltage in the secondary winding depends on the number of turns in the primary and secondary windings, as well as the strength of the magnetic field. If the number of turns in the secondary winding is greater than the number of turns in the primary winding, the transformer is said to be a "step-up" transformer, and it will increase the voltage of the AC power. If the number of turns in the secondary winding is less than the number of turns in the primary winding, the transformer is said to be a "step-down" transformer, and it will decrease the voltage of the AC power.

Transformers are widely used in electrical power systems to transmit and distribute electricity over long distances, as well as to match the voltage of the power source to the voltage required by the load. They are also used in a variety of other applications, such as electrical motors, power supplies, and audio equipment.

We have done multiple smart grid projects that take advantage of the latest on this topic. And we continue to work on and advance multiple aspects of these solutions today and look forward to sharing more soon.

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Written by

Andres Carvallo  
CEO & Founder  
CMG Consulting LLC  
Author of "The Advanced Smart Grid"  
Series Editor, Power Engineering at ArtechHouse  
Chairman, SAE Austin  
ASME, IEEE, SAE, SIM member

Co-Director, CIEDAR Consortium  
Fellow, Materials Applications Research Center  
Professor of Innovation, College of Science & Engineering  
Texas State University