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Transformerless UPS Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented, By Component Type (Rectifier & Inverter, Battery, PCB, Electromechanical, and Others), By Power (10-100 KVA, 101-250 KVA, More than 250 KVA), By End-User Industry (BFSI, Telecommunication, Government, Manufacturing, Transportation, Healthcare, and Others), By Region, By Competition, 2020-2030F

https://marketpublishers.com/r/T15CDD71A624EN.html
Date: July 2025
Pages: 180
Price: US$ 4,500.00 (Single User License)
ID: T15CDD71A624EN

Abstracts

Market Overview

Global Transformerless UPS Market was valued at USD 2.04 Billion in 2024 and is expected to reach USD 4.03 Billion by 2030 with a CAGR of 11.87%. The Transformerless UPS (Uninterruptible Power Supply) Market refers to the segment of the power protection industry that focuses on the development, production, and deployment of UPS systems that operate without traditional bulky transformers. These systems use advanced power electronics to deliver reliable, efficient backup power solutions while significantly reducing size, weight, and energy losses.

Transformerless UPS solutions are designed to offer a compact, lightweight, and energy-efficient alternative to traditional transformer-based systems, making them highly suitable for a wide range of applications, including data centers, IT infrastructure, telecommunications, healthcare, industrial automation, and commercial buildings. Unlike conventional systems, transformerless UPS units offer higher efficiency—often above 95%—even at partial loads, which translates to lower operating costs, reduced

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heat generation, and improved overall system performance. Their modular design allows for scalability and flexibility, which is particularly valuable in dynamic environments that require adaptable power solutions.

Key Market Drivers

Growing Demand for Energy-Efficient Power Solutions

The global push toward energy efficiency and carbon reduction is a key driver for the transformerless UPS market, as industries, commercial facilities, and data centers are under increasing pressure to reduce energy consumption and environmental impact. Transformerless UPS systems are specifically designed to deliver high energy efficiency, often exceeding 96%, significantly outperforming traditional transformer-based UPS systems. These systems operate with reduced heat generation, lower power losses, and minimal footprint, which translates to lower operating costs and reduced cooling requirements.

As energy costs continue to rise and sustainability becomes a top strategic objective across sectors, businesses are looking to invest in technologies that can deliver operational savings while contributing to their environmental, social, and governance (ESG) goals. Transformerless UPS systems not only offer superior efficiency but also support features such as scalability, modularity, and intelligent monitoring, which align with the evolving needs of modern, energy-conscious facilities. Government regulations and green building codes are also pushing for more efficient power infrastructure, making transformerless UPS solutions more attractive in both new construction and retrofitting projects.

Additionally, the adoption of renewable energy sources, which often come with fluctuating power quality, has increased the demand for stable, efficient power backup systems. Transformerless UPS units offer rapid response and advanced voltage regulation capabilities that help maintain power continuity and quality in such environments. As a result, companies in critical sectors such as healthcare, telecommunications, finance, and manufacturing are increasingly integrating transformerless UPS systems into their energy management strategies. This growing preference for sustainable and high-efficiency backup power solutions is expected to drive long-term demand in the global transformerless UPS market. Over 65% of new industrial and commercial energy systems prioritize energy-efficient technologies. The global market for energy-efficient power solutions is expected to grow at a CAGR of 15–18% over the next five years. Energy-efficient upgrades can reduce power

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consumption by 20–40% in most industrial applications. More than 75 countries offer incentives or mandates for adopting energy-efficient power infrastructure. Nearly 50% of global electricity demand is projected to be met through energy-optimized systems by 2030. Adoption of energy-efficient solutions could reduce global carbon emissions by over 1 billion tons annually by 2030.

Key Market Challenges

Limited Load Compatibility and Performance Constraints in Certain Applications

One of the major challenges facing the transformerless UPS market is its limited compatibility with specific load types and performance constraints in demanding industrial environments. Transformerless UPS systems are primarily designed for modern, sensitive electronic equipment, such as those found in IT and data center infrastructures. However, in scenarios where nonlinear, inductive, or high-inrush current loads are involved—such as in manufacturing, heavy industry, or older infrastructure—the performance of transformerless UPS systems can be suboptimal.

These systems lack the galvanic isolation that transformer-based units provide, which can lead to issues with load fluctuations, electromagnetic interference, and harmonic distortion. Additionally, transformerless designs typically struggle to handle severe voltage sags or spikes without affecting connected equipment, especially in facilities where electrical disturbances are frequent or grid conditions are unstable. The absence of a built-in transformer also limits protection against common mode noise and high-voltage transients, making it harder for these systems to meet the reliability standards required in mission-critical or rugged industrial applications.

Furthermore, certain specialized equipment, such as motor-driven devices or legacy systems, often requires the voltage buffering and isolation that transformer-based systems inherently offer, which transformerless designs cannot adequately replicate. These performance gaps not only restrict the market's potential in industrial sectors but also raise concerns for users who prioritize load flexibility, robust protection, and high tolerance for voltage fluctuations. While the transformerless UPS systems are more compact, energy-efficient, and cost-effective in the long term, their inability to universally support a broad spectrum of loads reduces their adoption rate across diverse industry verticals.

Users in sectors such as oil and gas, transportation, power utilities, and chemical processing may continue to prefer traditional transformer-based UPS solutions due to

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their proven resilience, despite the trade-off in size, cost, and efficiency. To expand market penetration, manufacturers of transformerless UPS systems must invest in R&D to improve inverter control technologies, enhance power conditioning capabilities, and develop hybrid solutions that bridge the gap between high-performance protection and the compact benefits of transformerless designs. Until such technological advancements become widespread, the challenge of limited load compatibility will continue to hinder broader adoption in high-demand environments.

Key Market Trends

Rising Adoption in Edge Computing & Data Centers

The demand for transformerless UPS is surging significantly as edge computing and modern data centers expand globally. These systems require high-efficiency, compact, and low-weight backup power solutions to support localized IT infrastructure, telecommunications equipment, and IoT gateways. Transformerless UPS designs, characterized by their smaller form factors and reduced electromagnetic interference, are ideally suited for high-density, space-constrained environments, making them a preferred option for edge computing nodes and satellite data closets.

Furthermore, with the rising integration of artificial intelligence, machine learning, and real-time analytics at the network edge, the need for redundant and resilient power backup grows, reinforcing transformerless UPS's position due to its rapid response time, lower energy losses, and ability to maintain clean power quality. Additionally, operators are increasingly focused on minimizing operational expenditure (OPEX) and carbon footprints, making transformerless designs—with their improved energy efficiency, simplified thermal management, and elimination of massive magnetic cores—a more sustainable and cost-effective solution.

With the global trend toward decentralization, on-premises processing, and hybrid infrastructure models, transformerless UPS is solidifying its role as a foundational component that enables 24/7 uptime, minimized risk, and enhanced energy performance in edge-first and highly distributed computing landscapes.

Key Market Players

Schneider Electric SE

Eaton Corporation plc

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Vertiv Holdings Co.

ABB Ltd.

Huawei Technologies Co., Ltd.

Delta Electronics, Inc.

Socomec Group S.A.

Riello Elettronica S.p.A.

CyberPower Systems, Inc.

Emerson Electric Co.

Report Scope:

In this report, the Global Transformerless UPS Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Transformerless UPS Market, By Component Type:

Rectifier & Inverter

Battery

PCB

Electromechanical

Others

Transformerless UPS Market, By Power:

10-100 KVA

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101-250 KVA

More than 250 KVA

Transformerless UPS Market, By End-User Industry:

BFSI

Telecommunication

Government

Manufacturing

Transportation

Healthcare

Others

Transformerless UPS Market, By Region:

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

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- Germany
- Spain

Asia-Pacific

- China
- India
- Japan
- Australia
- South Korea

South America

- Brazil
- Argentina
- Colombia

Middle East & Africa

- South Africa
- Saudi Arabia
- UAE
- Kuwait
- Turkey

Competitive Landscape

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Company Profiles: Detailed analysis of the major companies presents in the Global Transformerless UPS Market.

Available Customizations:

Global Transformerless UPS Market report with the given Market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional Market players (up to five).

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