

Synchrophasors Market by Component (Hardware, Software), Application (Fault Analysis, State Estimation, Stability Monitoring, Power System Control, Operational Monitoring, Improve Grid Visualization, and Others), and Region 2023-2028

<https://marketpublishers.com/r/S14CB38F8C7FEN.html>

Date: January 2023

Pages: 142

Price: US\$ 2,499.00 (Single User License)

ID: S14CB38F8C7FEN

Abstracts

The global synchrophasors market size reached US\$ 271.0 Million in 2022. Looking forward, IMARC Group expects the market to reach US\$ 824.3 Million by 2028, exhibiting a growth rate (CAGR) of 19.8% during 2023-2028. The rising product utilization in power grids, increasing incidences of power outages, and adoption of smart grid technology represent some of the key factors driving the market.

Synchrophasors are monitoring devices that take high-speed measurements of voltage, current, and frequency. They consist of various components, such as a filter, converter, oscillator, global positioning system (GPS) clock, and communication interface. The measurements taken by synchrophasors are time-stamped with signals from GPS satellites, enabling data from various utilities and locations to be time-synchronized to create a detailed and comprehensive view of the entire system. They are widely used for fault analysis, state estimation, stability monitoring, power system control, and operational monitoring. As compared to supervisory control and data acquisition (SCADA) based monitoring, synchrophasors provide faster measurements, better insight into grid stability, capture real-time dynamics, and provide wide area monitoring and control. They aid in integrating renewable and intermittent resources, managing transmission congestion, automating controls, improving system modeling, and lowering operational costs.

Synchrophasors Market Trends:

The rising product utilization in power grids is one of the key factors driving the market

growth. Synchrophasors are widely used for continuous monitoring, measurement, and protection of various elements of a power grid, such as generation, transmission, sub-transmission, and loads, which, in turn, increase the observability of the system, enhance awareness, improve grid reliability, reduce energy losses, and ensure long-term stability. In addition, the widespread product adoption to identify, locate, and resolve potential threats in a grid by providing an accurate and dynamic view of the system to operators due to the increasing incidences of power outages due to inclement weather, equipment failure, load-shedding, maintenance shutdown, and cyberattacks are favoring the market growth. Furthermore, the growing utilization of synchrophasors in smart grid technology to collect, distribute, and analyze critical data and convert it into information and insights that improve grid automation and operations is providing an impetus to the market growth. In line with this, the rising product adoption to facilitate the integration of renewable energy sources in smart grids to improve overall efficiency, reduce carbon emission, and decrease reliance on non-renewable sources, is propelling the market growth. Additionally, the integration of machine learning (ML) and cloud computing technologies for analyzing and processing data collected by synchrophasors to enhance situational awareness, detect system-wide anomalies, validate models, and predict equipment malfunction is positively influencing the market growth. Apart from this, the implementation of various government initiatives to promote the sale of efficient and sustainable products, such as synchrophasors that reduce the environmental impact of energy consumption and improve grid reliability, is creating a positive outlook for the market growth. Other factors, including rapid advancements in smart city infrastructures, rising investment in research and development (R&D) activities, and the recent development of central power management systems, are anticipated to drive the market growth.

Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global synchrophasors market, along with forecasts at the global, regional, and country level from 2023-2028. Our report has categorized the market based on component and application.

Component Insights:

Hardware

Software

The report has also provided a detailed breakup and analysis of the synchrophasors market based on the component. This includes hardware and software.

Application Insights:

- Fault Analysis
- State Estimation
- Stability Monitoring
- Power System Control
- Operational Monitoring
- Improve Grid Visualization
- Others

A detailed breakup and analysis of the synchrophasors market based on the application has been provided in the report. This includes fault analysis, state estimation, stability monitoring, power system control, operational monitoring, improve grid visualization, and others.

Regional Insights:

- North America
 - United States
 - Canada
- Asia Pacific
 - China
 - Japan
 - India
 - South Korea
 - Australia
 - Indonesia
 - Others
- Europe
 - Germany
 - France
 - United Kingdom
 - Italy
 - Spain
 - Russia
 - Others
- Latin America
 - Brazil

Mexico

Others

Middle East and Africa

The report has also provided a comprehensive analysis of all the major regional markets that include North America (the United States and Canada); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Latin America (Brazil, Mexico, and others); and Middle East and Africa. According to the report, North America was the largest market for synchrophasors. Some of the factors driving the North America synchrophasors market include the presence of a large number of prominent players, extensive research and development (R&D) activities, adoption of smart grid, etc.

Competitive Landscape:

The report has also provided a comprehensive analysis of the competitive landscape in the global synchrophasors market. Detailed profiles of all major companies have also been provided. Some of the companies covered include ABB Ltd., Arbiter Systems Inc., Electric Power Group LLC, General Electric Company, NR Electric Co. Ltd., Qualitrol Company LLC (Fortive Corporation), Schweitzer Engineering Laboratories Inc., Siemens AG, Toshiba Corporation, Vizimax Inc., etc. Kindly note that this only represents a partial list of companies, and the complete list has been provided in the report.

Key Questions Answered in This Report:

How has the global synchrophasors market performed so far and how will it perform in the coming years?

What are the drivers, restraints, and opportunities in the global synchrophasors market?

What are the key regional markets?

Which countries represent the most attractive synchrophasors markets?

What is the breakup of the market based on the component?

What is the breakup of the market based on the application?

What is the competitive structure of the global synchrophasors market?

Who are the key players/companies in the global synchrophasors market?

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