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Power Quality & Harmonics Mitigation Market Forecasts to 2034 – Global Analysis By Product Type (Active Harmonic Filters, Passive Harmonic Filters, Hybrid Harmonic Filters, Power Conditioners and Voltage Regulation Devices), Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Power Quality & Harmonics Mitigation Market is accounted for $5.99 billion in 2026 and is expected to reach $10.14 billion by 2034 growing at a CAGR of 6.80% during the forecast period. Power quality and harmonics mitigation aim to ensure smooth and dependable operation of electrical networks by controlling voltage and current distortions. Harmonics arise mainly from non-linear electrical loads such as inverters, rectifiers, and electronic control systems. If left unmanaged, they can cause excessive heating, power losses, interference with sensitive equipment, and premature failure of electrical assets. Mitigation techniques involve the use of active and passive harmonic filters, reactors, power factor correction systems, and intelligent monitoring solutions. As renewable integration, automation, and electric mobility expand, addressing power quality challenges has become increasingly important across industrial, commercial, and utility sectors.

According to IEEE Standard 519 (2014 revision): Total Harmonic Distortion (THD) for voltage must remain below 5% at the point of common coupling. This regulation has driven widespread adoption of harmonic mitigation equipment across industrial and utility sectors.

Market Dynamics:

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Driver:

Growing use of non-linear loads

The widespread deployment of non-linear loads, including inverters, rectifiers, UPS units, and variable speed drives, is significantly increasing harmonic distortion in electrical networks. These distortions negatively impact voltage quality, cause thermal stress on equipment, raise power losses, and shorten asset lifespan. Sectors such as manufacturing, IT infrastructure, and commercial facilities are particularly vulnerable because of their dependence on precision-driven electrical systems. As a result, end users are increasingly adopting power quality improvement technologies such as active and passive filters, reactors, and real-time monitoring systems, which is accelerating demand in the power quality and harmonics mitigation market.

Restraint:

Maintenance and operational challenges

Maintenance-related challenges hinder the growth of the power quality and harmonics mitigation market. Sophisticated mitigation systems need regular servicing, technical oversight, and occasional component replacement to maintain performance. Many organizations lack trained personnel to manage these systems effectively. The added operational burden and associated costs can make such solutions less attractive, especially for smaller users. This concern over long-term system upkeep limits wider market penetration.

Opportunity:

Rapid growth of renewable energy and microgrids

The accelerating development of renewable energy systems and microgrids presents major growth opportunities for the power quality and harmonics mitigation market. Inverter-based renewable sources generate harmonic distortion and power instability that must be managed for reliable operation. Microgrids, which often integrate multiple distributed energy resources, demand advanced power quality solutions to maintain performance and grid compliance. As investments in clean energy and decentralized power systems rise, the need for harmonic mitigation technologies is expanding rapidly, creating new avenues for market growth.

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Threat:

Availability of low-cost and low-quality alternatives

The presence of inexpensive and inferior-quality power quality products threatens the growth of the harmonics mitigation market. Cost-conscious customers may choose basic or substandard solutions that provide only minimal harmonic reduction. While initially attractive due to lower prices, these alternatives often result in poor long-term performance and increased maintenance issues. Intense price competition from low-cost suppliers limits revenue potential for established vendors and slows adoption of advanced power quality technologies.

Covid-19 Impact:

The COVID-19 outbreak significantly impacted the power quality and harmonics mitigation market by causing project postponements, supply chain disruptions, and financial uncertainties. Industrial slowdowns and facility closures decreased the need for new mitigation installations and maintenance. Delays in equipment supply, including harmonic filters and monitoring systems, further affected project timelines. Budget restrictions and deferred investments in power infrastructure constrained market activity. Despite these challenges, ongoing industrial recovery, the rise of remote operations, and growing renewable energy integration are anticipated to drive renewed demand for power quality solutions, facilitating market growth in the post-pandemic period.

The active harmonic filters segment is expected to be the largest during the forecast period

The active harmonic filters segment is expected to account for the largest market share during the forecast period because they effectively address dynamic and fluctuating harmonic distortions in electrical networks. Offering real-time compensation, these filters enhance system reliability, reduce energy losses, and ensure stable voltage levels. They are widely implemented in industrial plants, commercial buildings, and utility grids to safeguard sensitive equipment and optimize power performance. Their adaptability and superior precision in mitigating harmonics compared to passive solutions make them the most preferred technology, driving their significant market share in the power quality and harmonics mitigation sector.

The grid & renewables segment is expected to have the highest CAGR during the forecast period

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Over the forecast period, the grid & renewables segment is predicted to witness the highest growth rate. Increasing deployment of renewable energy technologies, including wind, solar, and hybrid systems, contributes to higher harmonic disturbances in electrical networks, driving the need for mitigation solutions. Power utilities and grid operators are implementing advanced filters, voltage regulators, and conditioning systems to maintain stable and reliable energy supply. The rising adoption of microgrids, decentralized generation, and smart grid infrastructure further boosts demand, positioning Grid & Renewables as the fastest-expanding segment in the market.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share owing to its developed industrial base, widespread automation, and reliance on sensitive electronics. The region's power-intensive sectors, data centers, and commercial establishments necessitate high-quality, reliable electricity. Strict regulations on harmonics and power quality, along with the increasing integration of renewable energy sources, boost the adoption of mitigation solutions. Additionally, the implementation of smart grids, microgrids, and energy-efficient systems supports the demand for advanced power quality technologies, securing North America's position as the region with the largest market share.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by rapid industrial expansion, urban development, and increasing renewable energy integration. The region's focus on smart grids, microgrids, and industrial and commercial electrification increases demand for effective harmonic mitigation solutions. Rising power consumption, growth of data centers, and expansion of EV charging networks further enhance the need for power quality management. Government initiatives promoting energy efficiency and grid modernization support this trend, positioning Asia-Pacific as the fastest-growing region in the global power quality and harmonics mitigation market.

Key players in the market

Some of the key players in Power Quality & Harmonics Mitigation Market include Danfoss, Hitachi Energy Ltd., TE Connectivity, TCI, MTE Corporation, Comsys, Merus

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Power, Staco Energy, Green Power Co., Mitsubishi Electric, InPhase Power Technologies, MIRUS International, Neptune Power Quality, Trans-Coil and Hatch Power.

Key Developments:

In April 2025, Hitachi Energy India Ltd declared over a major contract won by a joint venture of Hitachi Energy and Bharat Heavy Electricals Limited (BHEL). Rajasthan Part I Power Transmission Limited, a wholly-owned subsidiary of Adani Energy Solutions Ltd (AESL), awarded the contract, for a high-voltage direct current?(HVDC) transmission endeavor. The project involves the development of a 6,000 MW, ±800 kilovolt (kV) bi-pole and bi-directional HVDC transmission system.

In February 2025, TE Connectivity plc has entered into a definitive agreement to acquire Richards Manufacturing Co. from funds managed by Oaktree Capital Management, L.P. and members of the Bier family, long-standing owners and leaders of the business. The transaction will strengthen TE’s position in serving electrical utilities in North America by combining complementary product portfolios and adding the expertise of the Richards team, enabling TE to benefit from strong growth trends in underground electrical networks.

In June 2024, Danfoss Drives is pleased to announce that we have signed a non-binding memorandum of understanding (MoU) with Honeywell to explore a possible collaboration on innovating automation solutions with an integrated architecture, aiming to reduce downtime and lower engineering costs.

Product Types Covered:

Active Harmonic Filters

Passive Harmonic Filters

Hybrid Harmonic Filters

Power Conditioners

Voltage Regulation Devices

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Applications Covered:

- Industrial
- Commercial
- Residential
- Grid & Renewables

End Users Covered:

- Utilities
- OEMs
- Large Enterprises
- SMEs

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy

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- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE

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Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical

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presence, and strategic alliances

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Africa Regions are also represented in the same manner as above.

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