Global Air Circuit Breakers Market Assessment, By Type [Plain Air Circuit Breaker, Air Blast Circuit Breaker, Others], By Current Capacity [Low, Medium, High], By End-user [Utility, Commercial, Industrial, Others], By Region, Opportunities and Forecast, 2018-2032F

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Report description:

Global air circuit breakers market is projected to witness a CAGR of 6.18% during the forecast period 2025-2032, growing from USD 3.64 billion in 2024 to USD 5.89 billion in 2032. Air circuit breakers are critical components in modern electrical systems, designed to protect circuits from overloads and short circuits. The air circuit breakers market has experienced significant growth in recent years due to rising investment in reliable and efficient electricity distribution power infrastructure, and the rising need for advanced circuit protection solutions in industrial sectors is expected to maintain a strong pace of expansion in the coming years.

Air circuit breakers help maintain operational efficiency in power generation and industrial operations by preventing electrical faults that could cause equipment damage, which drives their demand in the market. Furthermore, developing countries are witnessing a surge in power infrastructure development, commercial construction, and expanding industrial sectors, creating significant market opportunities for air circuit breakers during the forecast period.

Additionally, the use of smart grid technology and digital monitoring systems is also influencing the market since air circuit breakers can deal with varying loads and ensure system dependability. In addition, air circuit breakers complement the energy efficiency and environmental sustainability objectives with enhanced energy management that propels its use in the market.

For instance, in September 2024, as per the International Renewable Energy Agency, the 32 largest utilities and energy companies in the world announced to invest more than USD 116 billion per year in clean power generation and power system grid infrastructure in the coming years in partnership with the World Trade Organization. This development showcases that the power sector will be investing in power grid infrastructure which will drive the demand for advanced air circuit breakers in the market.

Expansion of Power Infrastructure and Grid Modernization Amplifying Market Growth

The growing investment in upgrading and expanding electrical grids and the integration of renewable energy sources in power infrastructure are driving the demand for air circuit breakers in the market. The expansion of power infrastructure heightens the need for reliable and advanced circuit protection systems that are able to manage complexity and fluctuating loads. Air circuit breakers are able to manage variable power flows and safeguard grids which drive their demand in the market.
Additionally, aging power infrastructure in developed economies and rapidly building new distribution networks are driving the investment in grid modernization. The grid modernization development necessitates the deployment of air circuit breakers to protect against short-circuit and overload surges in both new and retrofitted systems. Air circuit breakers are capable of handling power fluctuations and overcoming the challenges and requirements of managing high fluctuations from renewable sources. Regulatory mandates and government initiatives aimed at modernizing aging power infrastructure and enhancing energy efficiency further propel the adoption of air circuit breakers in the market.
For instance, in August 2024, the United States Department of Energy (DOE) announced to invest around USD 2.2 billion in the nation's grid for eight projects across 18 states to protect against extreme weather, lower costs for communities, and catalyze additional grid capacity to meet load growth from an increase in manufacturing and data centers. These investments will help to enhance the strength and resilience of grids in the country, especially in more climate-fueled extreme weather events like wildfires, flooding, and extreme heat. Similarly, in November 2024, the Canadian government decided to invest around USD 500 million in the Smart Renewables and Electrification Pathways (SREPs) program to modernize its electricity grid. The SREPs program has already delivered impressive results, adding over 2,700 megawatts of renewable energy capacity across 72 projects. This new allocation focuses on grid modernization, ensuring utilities have the tools to integrate renewable energy sources like solar, wind, and geothermal effectively. This development highlights that higher authorities are investing in grid modernization which drives the demand for air circuit breakers in the market.
Inclination Towards Power Protection Equipment Drives Market Opportunity
Industries focus on the financial risks associated with equipment damage due to power surges. The increasing use of electronically controlled equipment in industrial processes fuels the demand for power protection solutions like circuit breakers in the industry. Air circuit breakers are needed to protect the equipment from transient overvoltage which provides safe and efficient operation. Additionally, industrial automation growth increases the use of sensitive electronic devices that may be damaged by voltage surges, thereby increasing demand for air circuit breakers in the market. Air circuit breakers offer a safer way to handle risks posed by voltage fluctuations, which is required for big machinery.
Utility, heavy industries, and commercial organizations are increasingly focusing on electrical reliability and safety equipment which boosts the demand for advanced power protection solutions across various industries. Currently, the development of digital infrastructure and data centers in the commercial industry has increased the demand for reliable air circuit protection devices across numerous applications. Furthermore, the production factories have multiple electrical equipment which may be affected by power fluctuations due to which demand for power protection equipment is increasing in the market. Additionally, more stringent electrical safety and power quality regulations are encouraging industries to implement protection schemes. Meeting the standards frequently requires the installation of air circuit breakers in the essential infrastructure of industries.
For instance, in 2023, the committees of the National Fire Protection Association (NFPA) published the updates for the National Electrical Code (NEC) regarding safe electrical design, installation, and inspection to protect people and property from electrical hazards. The revised 2023 NEC requires a Type 1 or Type 2 surge protection device for all services supplying a dwelling. These provide a complete and independent living facility for one or more persons and require surge protection devices (SPDs) located within the equipment or adjacent to it. Hence, Type 1 protectors must be placed on the load or service side of the electrical panel, while Type 2 are designed to be placed on the load side only.
Air Blast Circuit Breaker Segment to Hold the Dominant Market Share
Air blast circuit breakers are dominating the market and are expected to hold dominance in the forecast period. The air blast circuit breaker has superior arc extinction capability to make devices suitable for use in medium and high-voltage applications. The devices are able to rapidly quench the arc in the operating system which drives its demand in the market. The demand for air blast circuit breakers is increasing due to the expansion and modernization of power infrastructure, which requires advanced protection solutions capable of handling higher voltages and larger currents with enhanced safety and reliability.
Furthermore, the utility sector is looking to integrate more renewable energy sources and smart grid technologies which drive the

need for efficient circuit breakers in the market. Air blast circuit breakers come with fast operation and robust performance which are well-suited for evolving new installations and upgrades in power distribution networks and large industrial facilities, thereby driving its demand in the market.

Asia-Pacific Region Leads the Air Circuit Breaker Market

Asia-Pacific dominates the air circuit breaker market due to the rising upgradation of power infrastructure in the commercial and industrial sectors. The region comprises developing nations like China, India, and Japan, making the region lead the global market. Countries in the Asia-Pacific region are seeking to invest in smart grids and renewable energy integration into grids, which fuels the demand for air circuit breakers in the region. Over the last few years, the renewable energy industry has witnessed strong growth because of a high rate of adoption which provides the chance for the air circuit breaker market during the forecast period. Moreover, the government is also encouraging the industry sector towards the implementation of advanced power protection solutions which increases the demand for the air circuit breakers market size in the Asia-Pacific.

There is a growing emphasis on maintaining power quality in industrialized economies due to frequent voltage spikes and surges, which drives the adoption of air circuit breakers as a preventive measure. Government initiatives and substantial investments in modernizing power infrastructure support the air circuit breaker market growth in the region.

For instance, in July 2024, in China, Beijing is planning to invest around USD 800 billion over the next six years to upgrade its electricity grid, due to the increasing demand and supporting the transition from coal to renewable energy in the region. This development highlights that the state government is investing in grid modernizations which drive the demand for air circuit breakers in the market.

Future Market Scenario (2025-2032F)

- Massive investments in upgrading and expanding electrical infrastructure across the regions are driving the demand for air circuit breakers in the coming years.
- Governments are focusing on modernizing existing power facilities, including power plants, transportation systems, and commercial buildings which are fostering the demand for air circuit breakers in the forecast period.
- The adoption of smart technologies, which involves integrating advanced technologies, necessitates the deployment of air circuit breakers in the operations which drive its demand in the market.
- The industrial sector is heavily investing in automation which drives the demand for air circuit breakers in the forecast period.

Key Players Landscape and Outlook

The global air circuit breaker (ACB) market is marked by continuous innovation, with manufacturers competing on energy efficiency, product longevity, and advanced features. The industry outlook remains optimistic, driven by rising demand for renewable energy integration and industrial automation. Key market dynamics such as product launches, strategic agreements, business expansions, collaborations, and technological advancements are expected to intensify competition in the market in the forecast period.

For instance, in July 2023, Siemens AG launched two additional versions of Sentron 3WA Power Circuit Breakers, which will be helpful for switchgear manufacturers and OEMs producing systems for both standardization areas, such as IEC and UL. This additional version will help customers to accelerate their digital transformation more easily and faster. The 3WA series meets the requirements of UL 1066 and IEC 60947-2 standards, which enables customers to use it worldwide.

Table of Contents:

*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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