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Advanced Process Control - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

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Abstracts

The Advanced Process Control Market size is estimated at USD 2.74 billion in 2024, and is expected to reach USD 4.10 billion by 2029, growing at a CAGR of 8.38% during the forecast period (2024-2029).

Advanced process control (APC) describes techniques and tools for optimizing and controlling complex industrial processes such as power generation, chemical processing, manufacturing, or other methods. The objectives of APC are to enhance the efficiency, productivity, quality, security, and environmental performance of these processes. As APC requires complex algorithms and models to manage the complicated dynamics of a process, its processing control techniques are characterized by their higher levels of sophistication than in the case of traditional process control systems.

Although the concept of APC has existed for over thirty years, it has only recently gained prominence as factory units worldwide increasingly focus on process optimization. Given the growing complexity of industrial processes, operators' difficulties in carrying out manual controls have increased.

Integrating advanced technologies such as (IoT), extensive data analysis, and AI is a characteristic feature of Industry 4.0. Industry 4.0 is already being adopted in several countries.

Increased government initiatives to increase automation adoption will support the development of modern technologies, production centers, and innovation. Governments worldwide have implemented various national policies and initiatives to promote the use

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of blockchain, AI, the Internet of Things, and robotic systems in manufacturing operations. The initiatives by various governments to foster global investment and cooperation on business expansion have also generated positive momentum for some established companies. Therefore, the demand for advanced process controls is predicted to rise due to these benefits.

The industrial sector is looking for ways to improve the efficiency of its production processes. The growing awareness of the usage and need for energy savings, along with reduced greenhouse gas emissions, has contributed to this. Advanced process control solutions help reduce costs and improve sustainability to optimize energy consumption and reduce waste. Thus, it is expected that there will be opportunities in a developed market for process control because of a growing focus on energy efficiency by the different sectors, such as oil and gas, chemicals, or power generation.

However, implementing new technological solutions is limited due to stringent legislation and compliance in some sectors, e.g., pharmaceuticals and food and drinks, which hinder growth in the advanced process control market.

Advanced Process Control Market Trends

Oil and Gas is Expected to be the Largest Segment

The oil and gas sector is expected to hold a significant market share of the advanced process control market. The demand for APC is supported by higher rates of automation adoption and the fundamental nature of operations in this sector.

Following a sharp fall in oil prices last year, the industry is now focused on improving efficiency and deferring investment in new projects to the development of existing infrastructure.

In order to increase revenues with limited investment, companies in this sector are increasingly adopting solutions that offer various long-term benefits, such as increased efficiency. Oil companies still seek advanced processes that reduce costs and improve profitability with annual production increases.

According to OPEC, the global demand for crude oil (including biofuels) in 2023 amounted to 102.21 million barrels per day. Oil demand was expected to pick up by the end of the year, with forecasts suggesting it could increase to more than 104 million barrels per day. Concurrently, the demand for advanced process control systems is

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expected to increase during the forecast period.

North America Holds the Largest Market Share

In North America, the construction of new power stations, the presence of major semiconductor manufacturing sectors, and a growing demand for automation are anticipated to facilitate the adoption of APC systems.

Energy recovery in the United States is underway. Technological advances in hydraulic fracturing and drilling of shale formations have led to an increase in oil and gas production.

It also has the world's largest installed nuclear capacity and is the world's biggest producer of nuclear energy. Of the 99 nuclear reactors in 31 states, around 20% of electricity in the United States comes from them.

The demand for APC systems is increasing significantly in the region as nuclear power plants become more reliable through advanced process control systems.

Hardware components of the APC system include controls, computers, and electronic systems that allow effective monitoring and feedback via smart sensors. The growing use of APC systems in chemical and petrochemical industries across the region is expected to drive the growth of these components in the near future.

Advanced Process Control Industry Overview

The advanced process control market is semi-consolidated, with the presence of several major players and small players. Major players apply strategic initiatives, such as acquisitions, collaborations, partnerships, expansions, and technology launches, to gain a competitive advantage over competitors and retain their market positions. Many players are investing in R&D to develop a cost-effective product portfolio.

In February 2024, ABB introduced a solution tailored for the cold block stage, aiming to enhance breweries' operational efficiency along with the brewing process and facilitate the adoption of digital solutions and processes, including fermentation, maturation,

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yeast management, filtration, bright beer tanks area, etc.

In February 2024, Schneider Electric, in collaboration with Intel and Red Hat, announced that industrial companies could move to a software-defined, plug-and-produce solution that enables them to improve their operations, ensure quality, reduce complexity, and optimize their costs by releasing a distributed control node (DCN) software framework and a new framework.

Additional Benefits:

The market estimate (ME) sheet in Excel format

3 months of analyst support

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