

Programmable Logic Controller (Plc) Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The programmable logic controller (PLC) market is expected to grow by registering a CAGR of 4.56% during the forecast period (2022-2027). A major growth indicator for PLCs in the discrete-manufacturing sectors is the amplified deployment of robots across the automotive manufacturing, electrical, and electronics industries.

Key Highlights

The deployment of PLC systems enables the identification and rectification of errors and can initiate rapid responses even without human intervention. The industrial output and the investment funneled into computers and software strongly impacted the market. These PLC systems have traditionally been the foundation of process and discrete factory automation. The growing adoption of Industry 4.0 across the industrial verticals has augmented the demand for Programmable Logic Controllers (PLCs). Moreover, the increasing demand for improved control, secured connectivity, and enhanced performance has pushed PLC manufacturers to bank on IIoT technologies, such as machine-to-machine communication, smart sensors, industrial cloud, and cybersecurity. Also, to accommodate advanced features, cost-effectiveness, and interoperability, PLC manufacturers have begun to innovate and integrate conventional PLC systems with modern and contemporary technologies.

Another major growth indicator for PLCs in the discrete-manufacturing sectors is the amplified deployment of robots across the automotive manufacturing, electrical, and electronics industries. With robots being one of the primary end-users of PLCs, the market is expected to benefit significantly from the global robotics boom. For instance, according to IFR, the operational stock of industrial robots is expected to reach 3,788 (in thousand units) by 2021, from 2,731 (in thousand units) in 2019.

However, with a growing number of I/O points in the industry, there is an increasing preference for DCS over PLCs due to the limited number of I/O points in a PLC system. For instance, in the process industries, such as chemicals, paper and pulp, and power generation, a PLC can operate only with a few hundred I/O points. The DCS can conveniently handle more than a thousand I/O points.

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The demand for automation equipment in the industry is primarily driven by the rising need to enhance productivity and improve workers' safety. The outbreak of COVID-19 has caused the demand for automation and is expected to increase over the long run, primarily to cope with the labor shortage and rising costs.

Programmable Logic Controller (PLC) Market Trends

Increased Adoption of Automation Systems to Drive the Market

Industry automation is one of the major factors driving the growth of the PLC market. Automation can be defined as automatic processing systems to decrease human intervention and increase the efficiency of the process through the optimal utilization of resources.

The industries have now realized the reliability and long-term profits that can be achieved by using automated systems. Conveyor systems and packaging systems, among others, can be automated by using PLC systems.

Automation of manufacturing processes can offer various benefits, such as effortless monitoring, reduction of waste, and speed of production. This technology offers customers improved quality with standardization and dependable products within time and at a much lower cost.

Additionally, automation helps the sector cut costs on extra labor expenses. Because these systems can operate around the clock, it also aids in expanding production scale. These systems make better use of the available resources and are more dependable and efficient. PLC-based automation systems also aid in lowering industrial pollutants. Automating processes is expected to reduce CO2 emissions by about 34 million metric tons annually.

The automation industry has been revolutionized by the combination of the digital and physical aspects of manufacturing, aimed at delivering optimum performance. Further, the focus on achieving zero waste production and shorter time to market has augmented the growth of the market.

Automated systems can also help cut energy consumption. Energy costs are predicted to decrease by up to 70% as a result of automation. Studies indicate that by using automation, 20-25 percent of the overall energy might be saved. To boost production capacity and efficiency, companies are now resorting to automated systems.

Automation through smart technologies is gaining traction in the manufacturing sector, as it is not only helping in achieving enhanced productivity with efficiency in a more advanced and protective environment but is also eliminating the chances of human error. The IoT is driving change in industrial automation.

Among the automation solutions, robots and robotic processes are witnessing increased sales due to their ability to complete dangerous or repetitive tasks, such as grinding, deburring, bin picking, part inspections, etc.

Asia Pacific to Hold the Largest Market Share

Owing to the rapid growth of the industrial sector and increasing investment in automation solutions across various sectors, the Asia-Pacific region is expected to register the highest growth. China is expected to remain the leading market for PLCs in the APAC region.

The manufacturing sector forms a significant part of China's economy, which is undergoing a rapid transformation with the recent growth in IIoT due to the rise in Industry 4.0 across the manufacturing industries globally. For instance, according to the International Federation of Robotics (IFR), China's manufacturing robot density is now 9th in the world (246 units), up from 25th (49 units) five years ago. Furthermore, by 2025, the country expects the robotics industry's average annual operating income growth rate to exceed 20%. This large-scale transformation has put the country in one of the leading positions in the PLC market globally.

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Additionally, some of the collaborations and partnerships in the recent past across the region have further fueled the application of PLCs in the region's marketplace. For instance, In July 2021, a large programmable logic controller product was launched by Shanghai Besought Software Co Ltd in Shanghai, which is a key component in industrial control systems. The company stated that the release of the PLC product had made a breakthrough into the field dominated by producers from the European Union, the United States, and Japan.

Similarly, the Government of India aims to increase the manufacturing sector's share in the gross domestic product (GDP) to 25% by 2022. Thus, manufacturers will likely incorporate Industry 4.0 and other digital technologies to achieve this target. Additionally, according to the Central Electricity Authority of India, about 50% of the country's power supply will be generated by renewable energy sources by 2030. Such trends are expected further to drive the demand for PLCs in the country.

Further, the Government of Japan had announced that by 2035 all new passenger cars sold domestically should be electrified, creating expectations for the growth of electric vehicles in Japan. Japan has also vowed to become carbon neutral by 2050, due to which electric vehicles have become more of a necessity for the country to meet these targets. As the internet users are increasing at a fast pace in Japan, the usage of internet connectivity has multiplied the possibilities, especially when it comes to PLC.

Programmable Logic Controller (PLC) Market Competitor Analysis

The Programmable Logic Controller (PLC) Market is highly competitive and consists of several major players. In terms of market share, few of the major players currently dominate the market. Major players with a prominent share in the market are focusing on expanding their customer base across foreign countries. These companies are leveraging on strategic collaborative initiatives to increase their market share and increase their profitability.

May 2022 - Panasonic Industry presented one of its first motion controllers in its wide lineup: the GM1 includes features of motion operations with the functionality of a PLC like positioning, network modules, I/O modules, and a high-frequency counter in one compact controller. As the modules are integrated into the GM1 motion controller, the space-saving "all-in-one" solution reduces the occupied space in the cabinet and allows for response times to be as low as 0.5 ms.

August 2021 - Nozomi Networks Labs announced that it had discovered five vulnerabilities affecting Mitsubishi safety PLCs that relate to the authentication implementation of the MELSOFT communication protocol. According to Nazomi Networks, security weaknesses concern the implementation of an authentication mechanism in the MELSEC communication protocol that's used to communicate and exchange data with the target devices by reading and writing data to the CPU module. The company was expected to release a fixed version of the firmware soon.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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