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Programmable logic controller Market - Global Industry Size, Share, Trends, Opportunity, and Forecast Segmented By Type (Modular PLC, Compact PLC, Rack PLC), By Industry (Automotive, Chemical & Petrochemical, Paper & Pulp, Energy & Utilities, Food & Beverages, Oil & Gas, Others), By Region & Competition, 2021-2031F

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Abstracts

The Global Programmable Logic Controller (PLC) Market is projected to expand from USD 14.74 billion in 2025 to USD 19.89 billion by 2031, achieving a compound annual growth rate (CAGR) of 5.12%. PLCs serve as ruggedized industrial digital computers designed to monitor input devices and manage output mechanisms through custom programs, thereby facilitating the automation of electromechanical processes. Market growth is primarily fueled by the rising demand for industrial automation within the energy and automotive sectors, alongside a critical drive for operational efficiency to lower manufacturing costs. These core drivers are distinct from mere technological trends, as they address the fundamental necessity for reliable control infrastructure rather than just auxiliary digital capabilities.

According to VDMA Robotics and Automation, sales in the German robotics and automation sector were forecast to reach 16.5 billion euros in 2024, largely supported by international demand. Despite this positive industrial momentum, the market faces a significant hurdle regarding the shortage of a skilled workforce qualified to program and maintain these increasingly intricate control systems. This labor gap poses a threat to market expansion, particularly by restricting the pace of adoption in developing regions where technical expertise may be less accessible.

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Market Driver

The accelerating integration of Industry 4.0 and smart manufacturing initiatives is fundamentally transforming the programmable logic controller landscape by shifting focus from isolated machine control to interconnected industrial ecosystems. Modern production environments now demand controllers capable of processing intricate logic while simultaneously managing massive data streams for edge analytics and cloud integration. This transition forces manufacturers to invest heavily in advanced control systems that support open protocols and cybersecurity mandates, creating a continuous cycle of hardware replacement and upgrades. According to Rockwell Automation's '9th Annual State of Smart Manufacturing Report' from March 2024, 95% of manufacturers are currently utilizing or evaluating smart manufacturing technology, highlighting the urgent need for modern PLCs capable of supporting these digital transformation strategies.

Demand is further amplified by the rapid expansion of the electric vehicle and automotive manufacturing sectors, where legacy assembly lines are being aggressively retooled for electrification. Automotive producers are utilizing high-performance modular controllers to manage battery assembly and electric drivetrain production with extreme precision and speed. As noted in the International Energy Agency's 'Global EV Outlook 2024' released in April 2024, electric car sales are expected to reach approximately 17 million in 2024, a production volume that necessitates extensive scaling of automated infrastructure. The financial scale of this demand is evident in the performance of major industry players; for instance, Siemens AG reported third-quarter revenue of 4.9 billion euros in its Digital Industries segment in 2024, reflecting sustained capital expenditure on industrial automation technologies.

Market Challenge

The shortage of a skilled workforce capable of programming and maintaining complex control systems presents a substantial barrier to the growth of the programmable logic controller market. As industrial automation becomes more deeply integrated, the need for technicians with specialized knowledge in PLC architecture and logic design increases. When manufacturers cannot find qualified personnel to manage these systems, they often postpone the implementation of new automation infrastructure or limit the scale of their upgrades. This hesitation leads to a direct reduction in hardware procurement volumes, as companies avoid investing in technology they cannot effectively operate or repair.

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This labor shortage impacts operational continuity and restricts the adoption rate of modern control solutions. According to the National Association of Manufacturers, approximately 65 percent of manufacturing leaders cited the inability to attract and retain a quality workforce as a primary business challenge during the first quarter of 2024. This persistent lack of available talent forces organizations to rely on existing legacy systems rather than upgrading to new programmable logic controllers, thereby slowing overall market expansion in key industrial sectors.

Market Trends

The adoption of Artificial Intelligence and Machine Learning within control logic is rapidly evolving from a theoretical concept to a core operational requirement for modern industrial automation. Unlike traditional controllers that rely on static, rule-based instructions, AI-enabled PLCs can execute adaptive algorithms that optimize process loops in real-time and predict anomalies before they cause downtime. This integration allows for the deployment of generative and causal AI models directly at the control layer, enabling systems to autonomously correct inefficiencies and accelerate logic generation for complex manufacturing sequences. The momentum behind this technological shift is evident in recent investment patterns; according to Rockwell Automation's '10th Annual State of Smart Manufacturing Report' from June 2025, the number of manufacturing organizations investing in generative and causal AI technologies increased by 12 percent year-over-year, reflecting a decisive move toward autonomous control strategies.

Simultaneously, the market is experiencing a fundamental shift toward Software-Defined and Virtual PLC architectures, decoupling control software from proprietary hardware constraints. This trend is driving the migration of control workloads onto general-purpose industrial edge servers and cloud-agnostic platforms, facilitating greater scalability and interoperability under standards such as IEC 61499. By virtualizing the controller, manufacturers can update logic remotely, reduce supply chain dependency on specific hardware components, and integrate IT-based development practices like DevOps into the operational technology environment. The financial success of major automation vendors pivoting toward these digital solutions underscores the viability of this architectural transition; Siemens AG reported a net income of 10.4 billion euros in its fiscal year 2025 earnings release in November 2025, representing a 16 percent annual increase attributed largely to substantial growth in its industrial software and digital product segments.

Key Market Players

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%li%ABB Ltd

%li%Mitsubishi Electric Corporation

%li%Schneider Electric SE

%li%Rockwell Automation Inc.

%li%Siemens AG

%li%Honeywell International Inc.

%li%Omron Corporation

%li%Panasonic Corporation

%li%Robert Bosch GmbH

%li%Emerson Electric Co.

Report Scope

In this report, the Global Programmable logic controller Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

%li%Programmable logic controller Market, By Type

%li%%li%Modular PLC

%li%%li%Compact PLC

%li%%li%Rack PLC

%li%Programmable logic controller Market, By Industry

%li%%li%Automotive

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%li%%li%Chemical & Petrochemical

%li%%li%Paper & Pulp

%li%%li%Energy & Utilities

%li%%li%Food & Beverages

%li%%li%Oil & Gas

%li%%li%Others

%li%Programmable logic controller Market, By Region

%li%%li%North America

%li%%li%%li%United States

%li%%li%%li%Canada

%li%%li%%li%Mexico

%li%%li%Europe

%li%%li%%li%France

%li%%li%%li%United Kingdom

%li%%li%%li%Italy

%li%%li%%li%Germany

%li%%li%%li%Spain

%li%%li%Asia Pacific

%li%%li%%li%China

%li%%li%%li%India

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%li%%li%%li%Japan

%li%%li%%li%Australia

%li%%li%%li%South Korea

%li%%li%South America

%li%%li%%li%Brazil

%li%%li%%li%Argentina

%li%%li%%li%Colombia

%li%%li%Middle East & Africa

%li%%li%%li%South Africa

%li%%li%%li%Saudi Arabia

%li%%li%%li%UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Programmable logic controller Market.

Available Customizations:

Global Programmable logic controller Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

%li%Detailed analysis and profiling of additional market players (up to five).

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Contents

1. PRODUCT OVERVIEW

1.1. Market Definition
1.2. Scope of the Market
  1.2.1. Markets Covered
  1.2.2. Years Considered for Study
  1.2.3. Key Market Segmentations

2. RESEARCH METHODOLOGY

2.1. Objective of the Study
2.2. Baseline Methodology
2.3. Key Industry Partners
2.4. Major Association and Secondary Sources
2.5. Forecasting Methodology
2.6. Data Triangulation & Validation
2.7. Assumptions and Limitations

3. EXECUTIVE SUMMARY

3.1. Overview of the Market
3.2. Overview of Key Market Segmentations
3.3. Overview of Key Market Players
3.4. Overview of Key Regions/Countries
3.5. Overview of Market Drivers, Challenges, Trends

4. VOICE OF CUSTOMER

5. GLOBAL PROGRAMMABLE LOGIC CONTROLLER MARKET OUTLOOK

5.1. Market Size & Forecast
  5.1.1. By Value
5.2. Market Share & Forecast
  5.2.1. By Type (Modular PLC, Compact PLC, Rack PLC)
  5.2.2. By Industry (Automotive, Chemical & Petrochemical, Paper & Pulp, Energy & Utilities, Food & Beverages, Oil & Gas, Others)
  5.2.3. By Region

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5.2.4. By Company (2025)
5.3. Market Map

6. NORTH AMERICA PROGRAMMABLE LOGIC CONTROLLER MARKET OUTLOOK

6.1. Market Size & Forecast
6.1.1. By Value
6.2. Market Share & Forecast
6.2.1. By Type
6.2.2. By Industry
6.2.3. By Country
6.3. North America: Country Analysis
6.3.1. United States Programmable logic controller Market Outlook
6.3.1.1. Market Size & Forecast
6.3.1.1.1. By Value
6.3.1.2. Market Share & Forecast
6.3.1.2.1. By Type
6.3.1.2.2. By Industry
6.3.2. Canada Programmable logic controller Market Outlook
6.3.2.1. Market Size & Forecast
6.3.2.1.1. By Value
6.3.2.2. Market Share & Forecast
6.3.2.2.1. By Type
6.3.2.2.2. By Industry
6.3.3. Mexico Programmable logic controller Market Outlook
6.3.3.1. Market Size & Forecast
6.3.3.1.1. By Value
6.3.3.2. Market Share & Forecast
6.3.3.2.1. By Type
6.3.3.2.2. By Industry

7. EUROPE PROGRAMMABLE LOGIC CONTROLLER MARKET OUTLOOK

7.1. Market Size & Forecast
7.1.1. By Value
7.2. Market Share & Forecast
7.2.1. By Type
7.2.2. By Industry

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7.2.3. By Country
7.3. Europe: Country Analysis
7.3.1. Germany Programmable logic controller Market Outlook
7.3.1.1. Market Size & Forecast
7.3.1.1.1. By Value
7.3.1.2. Market Share & Forecast
7.3.1.2.1. By Type
7.3.1.2.2. By Industry
7.3.2. France Programmable logic controller Market Outlook
7.3.2.1. Market Size & Forecast
7.3.2.1.1. By Value
7.3.2.2. Market Share & Forecast
7.3.2.2.1. By Type
7.3.2.2.2. By Industry
7.3.3. United Kingdom Programmable logic controller Market Outlook
7.3.3.1. Market Size & Forecast
7.3.3.1.1. By Value
7.3.3.2. Market Share & Forecast
7.3.3.2.1. By Type
7.3.3.2.2. By Industry
7.3.4. Italy Programmable logic controller Market Outlook
7.3.4.1. Market Size & Forecast
7.3.4.1.1. By Value
7.3.4.2. Market Share & Forecast
7.3.4.2.1. By Type
7.3.4.2.2. By Industry
7.3.5. Spain Programmable logic controller Market Outlook
7.3.5.1. Market Size & Forecast
7.3.5.1.1. By Value
7.3.5.2. Market Share & Forecast
7.3.5.2.1. By Type
7.3.5.2.2. By Industry

8. ASIA PACIFIC PROGRAMMABLE LOGIC CONTROLLER MARKET OUTLOOK

8.1. Market Size & Forecast
8.1.1. By Value
8.2. Market Share & Forecast
8.2.1. By Type

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8.2.2. By Industry
8.2.3. By Country
8.3. Asia Pacific: Country Analysis
8.3.1. China Programmable logic controller Market Outlook
8.3.1.1. Market Size & Forecast
8.3.1.1.1. By Value
8.3.1.2. Market Share & Forecast
8.3.1.2.1. By Type
8.3.1.2.2. By Industry
8.3.2. India Programmable logic controller Market Outlook
8.3.2.1. Market Size & Forecast
8.3.2.1.1. By Value
8.3.2.2. Market Share & Forecast
8.3.2.2.1. By Type
8.3.2.2.2. By Industry
8.3.3. Japan Programmable logic controller Market Outlook
8.3.3.1. Market Size & Forecast
8.3.3.1.1. By Value
8.3.3.2. Market Share & Forecast
8.3.3.2.1. By Type
8.3.3.2.2. By Industry
8.3.4. South Korea Programmable logic controller Market Outlook
8.3.4.1. Market Size & Forecast
8.3.4.1.1. By Value
8.3.4.2. Market Share & Forecast
8.3.4.2.1. By Type
8.3.4.2.2. By Industry
8.3.5. Australia Programmable logic controller Market Outlook
8.3.5.1. Market Size & Forecast
8.3.5.1.1. By Value
8.3.5.2. Market Share & Forecast
8.3.5.2.1. By Type
8.3.5.2.2. By Industry

9. MIDDLE EAST & AFRICA PROGRAMMABLE LOGIC CONTROLLER MARKET OUTLOOK

9.1. Market Size & Forecast
9.1.1. By Value

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9.2. Market Share & Forecast
9.2.1. By Type
9.2.2. By Industry
9.2.3. By Country
9.3. Middle East & Africa: Country Analysis
9.3.1. Saudi Arabia Programmable logic controller Market Outlook
9.3.1.1. Market Size & Forecast
9.3.1.1.1. By Value
9.3.1.2. Market Share & Forecast
9.3.1.2.1. By Type
9.3.1.2.2. By Industry
9.3.2. UAE Programmable logic controller Market Outlook
9.3.2.1. Market Size & Forecast
9.3.2.1.1. By Value
9.3.2.2. Market Share & Forecast
9.3.2.2.1. By Type
9.3.2.2.2. By Industry
9.3.3. South Africa Programmable logic controller Market Outlook
9.3.3.1. Market Size & Forecast
9.3.3.1.1. By Value
9.3.3.2. Market Share & Forecast
9.3.3.2.1. By Type
9.3.3.2.2. By Industry

10. SOUTH AMERICA PROGRAMMABLE LOGIC CONTROLLER MARKET OUTLOOK

10.1. Market Size & Forecast
10.1.1. By Value
10.2. Market Share & Forecast
10.2.1. By Type
10.2.2. By Industry
10.2.3. By Country
10.3. South America: Country Analysis
10.3.1. Brazil Programmable logic controller Market Outlook
10.3.1.1. Market Size & Forecast
10.3.1.1.1. By Value
10.3.1.2. Market Share & Forecast
10.3.1.2.1. By Type

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10.3.1.2.2. By Industry
10.3.2. Colombia Programmable logic controller Market Outlook
10.3.2.1. Market Size & Forecast
10.3.2.1.1. By Value
10.3.2.2. Market Share & Forecast
10.3.2.2.1. By Type
10.3.2.2.2. By Industry
10.3.3. Argentina Programmable logic controller Market Outlook
10.3.3.1. Market Size & Forecast
10.3.3.1.1. By Value
10.3.3.2. Market Share & Forecast
10.3.3.2.1. By Type
10.3.3.2.2. By Industry

11. MARKET DYNAMICS

11.1. Drivers
11.2. Challenges

12. MARKET TRENDS & DEVELOPMENTS

12.1. Merger & Acquisition (If Any)
12.2. Product Launches (If Any)
12.3. Recent Developments

13. GLOBAL PROGRAMMABLE LOGIC CONTROLLER MARKET: SWOT ANALYSIS

14. PORTER'S FIVE FORCES ANALYSIS

14.1. Competition in the Industry
14.2. Potential of New Entrants
14.3. Power of Suppliers
14.4. Power of Customers
14.5. Threat of Substitute Products

15. COMPETITIVE LANDSCAPE

15.1. ABB Ltd

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15.1.1. Business Overview
15.1.2. Products & Services
15.1.3. Recent Developments
15.1.4. Key Personnel
15.1.5. SWOT Analysis
15.2. Mitsubishi Electric Corporation
15.3. Schneider Electric SE
15.4. Rockwell Automation Inc.
15.5. Siemens AG
15.6. Honeywell International Inc.
15.7. Omron Corporation
15.8. Panasonic Corporation
15.9. Robert Bosch GmbH
15.10. Emerson Electric Co.

16. STRATEGIC RECOMMENDATIONS

17. ABOUT US & DISCLAIMER

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