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Industrial Automation Semis Market Forecasts to 2034 – Global Analysis By Product Type (Analog Semiconductors, Digital Semiconductors and Sensor Semiconductors), Material Type, Device Type, Business Model, Operating Mode, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Industrial Automation Semis Market is accounted for $33.3 billion in 2026 and is expected to reach $76.7 billion by 2034 growing at a CAGR of 11.0% during the forecast period. Industrial automation semiconductors consist of advanced chips that power, monitor, and streamline automated manufacturing operations. These components are widely applied in robotics systems, PLC units, sensing devices, motor control mechanisms, and machine vision technologies used in modern factories. They significantly improve operational accuracy, productivity, safety, and instant decision processes within industrial settings. Driven by Industry 4.0 expansion, the requirement for high-performance semiconductor solutions is rising to enable smart and connected production environments. These chips combine artificial intelligence, Internet of Things, and edge computing features to support predictive maintenance and workflow optimization, ultimately enhancing efficiency and reducing operational downtime across industries.

According to the International Federation of Robotics (IFR), global industrial robot installations reached 553,000 units in 2022, with continued growth expected as automation spreads across automotive, electronics, and logistics sectors.

Market Dynamics:

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Driver:

Increasing demand for smart manufacturing

Growing demand for intelligent manufacturing systems is driving the Industrial Automation Semis Market forward. Smart production facilities use connected machines, artificial intelligence-based analytics, and automated workflows that rely on advanced semiconductor components. These chips support live monitoring, predictive insights, and adaptive process control in industrial environments. Companies are increasingly implementing smart factory technologies to enhance productivity, lower costs, and improve output quality. Semiconductors play a key role in linking robotics, sensors, and control units into integrated digital systems.

Restraint:

High initial capital investment requirements

A key limitation of the Industrial Automation Semis Market is the large upfront investment needed for implementing advanced automation systems. Industries must spend heavily on semiconductor components, robotics equipment, sensors, and integrated control platforms. For small and medium businesses, these costs can be difficult to manage, restricting adoption levels. Additional expenses such as system setup, customization, and employee training further increase total investment requirements. Moreover, the extended time needed to recover costs discourages many firms from adopting automation technologies.

Opportunity:

Growth of edge computing in industrial applications

The expansion of edge computing technologies presents a major opportunity for the Industrial Automation Semis Market. Edge computing allows data to be processed near industrial equipment and sensors, minimizing delays and enhancing real-time decision-making. Semiconductor devices are critical in enabling edge systems used across manufacturing, logistics, and energy industries. These chips facilitate local data processing, analytics, and efficient communication within industrial networks. As businesses demand faster and more decentralized computing solutions, the need for edge-based semiconductor technologies is rising. This shift is expected to significantly boost growth in advanced automation applications across global industrial sectors.

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Threat:

Intense market competition

A key threat to the Industrial Automation Semis Market is the high level of competition among global semiconductor and automation technology providers. Many established corporations and emerging firms are constantly introducing new innovations, creating strong pricing pressure and reducing profitability. Companies are required to invest significantly in research and development to stay competitive, which raises overall costs. Frequent technological advancements and short product life cycles make it difficult to maintain a lasting market edge. Smaller players face difficulties competing with large firms that benefit from strong supply networks and large-scale production advantages, creating an increasingly challenging competitive landscape.

Covid-19 Impact:

The COVID-19 pandemic affected the Industrial Automation Semis Market in both negative and positive ways. Initially, lockdowns across countries disrupted semiconductor production, supply chains, and transportation networks, causing delays and shortages of essential components. Many industrial automation projects were delayed or canceled as factories shut down and companies reduced investments. However, the crisis also pushed industries to adopt automation, remote monitoring, and digital manufacturing solutions to reduce reliance on human labour. This led to increased demand for robotics, IoT-based systems, and artificial intelligence technologies. In the long run, the pandemic accelerated automation trends despite short-term market disruptions.

The digital semiconductors segment is expected to be the largest during the forecast period

The digital semiconductors segment is expected to account for the largest market share during the forecast period because they are essential for computation, control, and data processing in automation systems. They are extensively utilized in programmable logic controllers, microcontrollers, industrial PCs, and communication infrastructures that support modern manufacturing operations. These components provide fast data handling, accurate control functions, and seamless integration across industrial processes. As industries increasingly adopt smart manufacturing, IoT technologies, and artificial intelligence-driven automation, the demand for digital semiconductor solutions

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is growing.

The silicon carbide (SiC) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the silicon carbide (SiC) segment is predicted to witness the highest growth rate because of its strong performance in demanding industrial conditions. These semiconductors are extensively used in motor control systems, robotics, power conversion units, and energy management applications. SiC devices provide better voltage tolerance, quicker switching capabilities, and reduced power losses compared to conventional silicon technologies. As industries increasingly focus on energy savings, electrification, and advanced automation, the adoption of SiC solutions is expanding quickly.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share, supported by its well-established manufacturing sector, fast-paced industrial growth, and widespread adoption of automation technologies. Major countries like China, Japan, South Korea, and India play a significant role, utilizing semiconductor-based automation systems across automotive, electronics, and heavy industries. The region advantages from large production capacities, affordable workforce, and strong government support for smart factory development and digitalization. Rising investments in robotics, IoT solutions, and industrial infrastructure are further boosting demand for automation semiconductors in this region.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, driven by fast-paced industrial development, expanding digital adoption, and supportive government policies promoting smart factories. Countries like China, India, and several Southeast Asian nations are increasingly investing in automation solutions, robotics, and semiconductor-enabled industrial systems. The transition toward Industry 4.0, along with the need for efficient and modern production capabilities, is boosting demand. Furthermore, the region’s strong semiconductor manufacturing ecosystem and established electronics industry contribute to rapid growth.

Key players in the market

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Some of the key players in Industrial Automation Semis Market include ABB Ltd, Siemens AG, Rockwell Automation, Inc., Schneider Electric, Emerson Electric Co., Mitsubishi Electric Corporation, Honeywell International Inc., Yokogawa Electric Corporation, FANUC Corporation, Yaskawa Electric Corporation, Omron Corporation, KUKA AG, Festo SE & Co. KG, Bosch Rexroth AG, Beckhoff Automation GmbH & Co. KG, Intel Corporation, Texas Instruments and Infineon Technologies.

Key Developments:

In December 2025, Mitsubishi Electric Corporation announced that it has invested in and signed a strategic alliance agreement with Tulip Interfaces, Inc., a Massachusetts, USA-based leader no-code platforms for system operations without programming to support manufacturing digitalization. Tulip Interfaces is also an expert in introducing manufacturing-targeted microservices, which divide large-scale systems into small, independent services to enable flexible development and operations.

In December 2025, ABB and HDF Energy have signed a joint development agreement (JDA) to co-develop a high-power, megawatt-class hydrogen fuel cell system designed for use in marine vessels. The project targets use of the system on various vessel types, including large seagoing ships such as container feeder vessels and liquefied hydrogen carriers.

In November 2025, Schneider Electric announced a two-phase supply capacity agreement (SCA) totaling $1.9 billion in sales. The milestone deal includes prefabricated power modules and the first North American deployment of chillers. The announcement was unveiled at Schneider Electric'sInnovation Summit North America in Las Vegas, convening more than 2,500 business leaders and market innovators to accelerate practical solutions for a more resilient, affordable and intelligent energy future.

Product Types Covered:

Analog Semiconductors

Digital Semiconductors

Sensor Semiconductors

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Material Types Covered:

- Silicon
- Gallium Nitride (GaN)
- Silicon Carbide (SiC)

Device Types Covered:

- Optoelectronics
- MEMS Devices
- Integrated Circuits

Business Models Covered:

- Integrated Device Manufacturer (IDM)
- Fabless Vendor

Operating Modes Covered:

- Single-Mode
- Multi-Mode

Applications Covered:

- Industrial Automation Systems
- Networking & Telecommunications Equipment
- Power Electronics Systems

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- Consumer Electronics Devices

End Users Covered:

- Manufacturing
- Transportation
- Energy & Power
- Healthcare

Regions Covered:

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - United Kingdom
  - Germany
  - France
  - Italy
  - Spain
  - Netherlands

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- Belgium
- Sweden
- Switzerland
- Poland
- Rest of Europe

Asia Pacific

- China
- Japan
- India
- South Korea
- Australia
- Indonesia
- Thailand
- Malaysia
- Singapore
- Vietnam
- Rest of Asia Pacific

South America

- Brazil
- Argentina

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- Colombia
- Chile
- Peru
- Rest of South America

Rest of the World (RoW)

- Middle East
  - Saudi Arabia
  - United Arab Emirates
  - Qatar
  - Israel
  - Rest of Middle East
- Africa
  - South Africa
  - Egypt
  - Morocco
  - Rest of Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants

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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 presence, and strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Rest of the World (RoW) Regions are also represented in the same manner as above.

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