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Robotics and Automation Actuators Market Forecasts to 2030 – Global Analysis By Type (Linear Actuators and Rotary Actuators), Actuation (Electric Actuators, Hydraulic Actuators, Pneumatic Actuators, Mechanical Actuators and Piezoelectric Actuators), Payload Capacity, Application, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Robotics and Automation Actuators Market is accounted for $24.4 billion in 2024 and is expected to reach $54.8 billion by 2030 growing at a CAGR of 14.4% during the forecast period. Robotics and automation actuators are important components that convert energy into mechanical motion, enabling precise movement in robotic systems and automated processes. These actuators can enable joints, arms, and end effectors, ensuring precise and repeatable actions in construction, healthcare, aerospace, and other industries. They vary, like air, to suit specific applications requiring speed, power, or accuracy. With advances in materials and materials, modern actuators are increasing performance, scalability, and reliability, and driving innovation in robotics and automation systems.

According to McKinsey, the economic impact of advanced robotics could range between $1.7 and $4.5 trillion by 2025.

Market Dynamics:

Driver:

Rising demand for automation in manufacturing

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The rising demand for automation in manufacturing is a key driver of the robotics and automation actuators market. As industries strive to enhance efficiency, precision, and productivity, the adoption of automated systems is increasing. Actuators play a crucial role in these systems by enabling motion control and mechanical movements. This trend is particularly strong in sectors such as automotive, electronics, and food processing, where automation helps reduce labor costs and improve product quality. Consequently, the demand for advanced actuators continues to grow, driving market expansion.

Restraint:

High initial investment cost

High initial investment costs are a significant restraint on the robotics and automation actuators market. Implementing automated systems requires substantial capital for purchasing equipment, integrating technology, and training personnel. These costs can be prohibitive for small and medium-sized enterprises (SMEs), limiting their ability to adopt automation solutions. Additionally, the long payback period associated with these investments can deter potential buyers, slowing market growth despite the long-term benefits of increased efficiency and productivity.

Opportunity:

Increasing industrialization in emerging economies

Increasing industrialization in emerging economies presents a significant opportunity for the robotics and automation actuators market. As countries like China, India, and Brazil expand their manufacturing capabilities, there is a growing need for efficient production processes. Automation solutions, including actuators, are integral to achieving these efficiencies. Government initiatives supporting industrial growth and foreign investments further fuel this trend. As these economies continue to develop their industrial sectors, the demand for advanced actuators is expected to rise significantly.

Threat:

Competition from alternative technologies

Competition from alternative technologies poses a threat to the robotics and automation

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actuators market. Innovations such as advanced sensors and artificial intelligence can offer similar functionalities or even replace traditional actuator roles in some applications. These technologies may provide more cost-effective or efficient solutions, challenging the dominance of conventional actuators.

Covid-19 Impact:

The COVID-19 pandemic accelerated the adoption of automation as companies sought to maintain operations amid workforce disruptions. This shift increased demand for robotics and automation actuators across various industries. However, supply chain challenges initially hindered production and delivery schedules. As these issues are resolved, the market is expected to experience sustained growth driven by ongoing automation trends.

The linear actuators segment is expected to be the largest during the forecast period

The linear actuators segment is expected to account for the largest market share during the forecast period due to their versatility and widespread application across industries. These actuators are essential for precise linear motion control in manufacturing processes, robotics, and material handling systems. Their ability to provide accurate positioning and repeatability makes them indispensable in automated environments, supporting their dominance in the market.

The heavy duty segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the heavy duty segment is expected to witness the highest CAGR. This growth is driven by increasing demand for robust actuators capable of handling high loads in industries such as construction, mining, and agriculture. Heavy duty actuators offer enhanced durability and performance under extreme conditions, making them ideal for applications requiring substantial force or torque. As industrial activities expand globally, this segment's rapid growth is anticipated.

Region with largest share:

The Asia Pacific region is anticipated to account for the largest market share during the forecast period due to its strong manufacturing base and rapid industrialization. Countries like China and Japan lead in adopting automation technologies to enhance production efficiency. The region's focus on technological advancements and

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government support for industrial growth further bolster its dominant position in the global market.

Region with highest CAGR:

The Asia Pacific region is anticipated to register the highest growth rate over the forecast period due to increasing investments in infrastructure development and manufacturing capabilities. Emerging economies within this region are experiencing significant industrial expansion, driving demand for advanced automation solutions including actuators. As these countries continue to modernize their industries, Asia Pacific remains a key growth area for the market.

Key players in the market

Some of the key players in Robotics and Automation Actuators Market include ABB, Rockwell Automation, Moog Inc., Curtiss-Wright Corporation, SKF Motion Technologies, Altra Industrial Motion, Bimba Manufacturing, Tolomatic, Inc., Thomson Industries, Inc., SMC Corporation, Festo, Rotomation, MISUMI Group Inc., Macron Dynamics Inc., DVG Automation S.p.A., AUMA, IMI PLC and Flowserve Corporation.

Key Developments:

In October 2024, Tolomatic has introduced five new products to meet a wider range of industrial applications. These five sizes expand the RSX's capabilities to include forces up to 66,000 lbf (294 kN). These expansion efforts also include updated model numbering, with each number now reflecting the actuator's thrust.

In May 2024, ABB debuts its IRB 7710 and 7720 industrial robot arms designed for automotive assembly and modular construction applications at Automate 2024.

In January 2024, Moog Inc. announced a successful first flight of its new hydraulic actuators that steer United Launch Alliance’s Vulcan Rocket.

In March 2023, Regal Rexnord Corporation announced it has completed the acquisition of Altra Industrial Motion Corp., closing the deal that was signed on October 26, 2022.

Types Covered:

Linear Actuators

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- Rotary Actuators

Actuations Covered:

- Electric Actuators
- Hydraulic Actuators
- Pneumatic Actuators
- Mechanical Actuators
- Piezoelectric Actuators

Payload Capacities Covered:

- Light Duty
- Medium Duty
- Heavy Duty

Applications Covered:

- Fabrication
- Packaging
- Picking
- Arc Welding
- Assembly
- Spot Welding

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Palletizing

Machine Tending

End Users Covered:

Automotive

Oil & Gas

Chemicals

Food & Beverages

Mining

Paper & Pulp

Pharmaceutical & Healthcare

Aerospace & Defense

Electronics & Electrical

Water & Wastewater

Agriculture & Forestry

Logistics

Regions Covered:

North America

US

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- Canada
- Mexico

Europe

- Germany
- UK
- Italy
- France
- Spain
- Rest of Europe

Asia Pacific

- Japan
- China
- India
- Australia
- New Zealand
- South Korea
- Rest of Asia Pacific

South America

- Argentina
- Brazil

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Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2022, 2023, 2024, 2026, and 2030
- 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)

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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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Contents

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10 GLOBAL ROBOTICS AND AUTOMATION ACTUATORS MARKET, BY GEOGRAPHY

+357 96 030922
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11 KEY DEVELOPMENTS

12 COMPANY PROFILING

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List Of Tables

LIST OF TABLES

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Note: Tables for North America, Europe, APAC, South America, and Middle East &

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Africa Regions are also represented in the same manner as above.

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