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# Robotic Sensors Market Forecasts to 2030 – Global Analysis By Sensor Type (Proximity Sensors, Position Sensors, Temperature Sensors, Infrared Sensors, Ultrasonic Sensors, Touch Sensors and Other Sensor Types), Robot Type, Component Type, Application, End User and By Geography

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## Abstracts

According to Stratistics MRC, the Global Robotic Sensors Market is accounted for $2.4 billion in 2024 and is expected to reach $4.9 billion by 2030 growing at a CAGR of 12.4% during the forecast period. Robotic sensors are specialized devices used in robotics to detect and measure various physical parameters, providing essential feedback to the robot's control system. These sensors help robots perceive their environment and make informed decisions based on real-time data. Common types include proximity sensors, cameras, accelerometers, gyroscopes, and force sensors. They enable robots to interact with objects, navigate autonomously, and perform tasks with precision.

According to the IFR World Robotics report 2020, China adoption of industrial robots rose by 21% and shows a new record of 783000 units in 2019. According to International Federation of Robotics R & D Programs data, Government of China, being the largest investor in robotics research, invested USD 577 million in 2019 for the research & development of intelligent robots.

Market Dynamics:

Driver:

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Increased demand for industrial robots

The increased demand for industrial robots is driving growth in the market. As industries seek greater automation, robotic systems require advanced sensors to enhance precision, reliability, and efficiency. Sensors such as vision, force, and proximity sensors are essential for robots to navigate, interact with objects, and perform complex tasks in manufacturing, assembly, and logistics. This demand fuels innovation in sensor technologies, accelerating the adoption of robotic systems across industries.

Restraint:

Limited range and shelf life of sensors

The limited range and shelf life of sensors in the market can have negative effects on performance and cost-efficiency. Sensors with restricted range may hinder robots' ability to navigate or detect objects in larger or complex environments, reducing operational efficiency. Additionally, sensors with short shelf lives require frequent replacements, increasing maintenance costs and downtimes. These limitations can impact the overall reliability and long-term viability of robotic systems in various applications.

Opportunity:

Growing demand for automation and safety

The growing demand for automation and safety is significantly impacting the market. As industries prioritize efficiency and reduce human intervention, robots equipped with advanced sensors ensure precision, reliability, and safety. Sensors such as collision detection, force feedback, and environmental sensing are vital for preventing accidents and ensuring smooth operations. This increased focus on automation and safety is driving the adoption of robotic sensors across manufacturing, logistics, and other sectors.

Threat:

High initial investment costs

High initial investment costs for robotic sensors can deter businesses, especially small and medium-sized enterprises, from adopting advanced robotic systems. The steep

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upfront expenses, including sensor procurement and integration, may limit accessibility to automation technologies. This financial burden can slow market growth, particularly in industries with tight budgets. Additionally, the return on investment (ROI) might take longer to materialize, further discouraging companies from making the transition to automated solutions.

Covid-19 Impact:

The COVID-19 pandemic had a mixed impact on the market. While disruptions in manufacturing and supply chains temporarily slowed production, the increased demand for automation and contactless technologies during the pandemic accelerated the adoption of robots in sectors like healthcare, logistics, and manufacturing. The need for social distancing and safety measures highlighted the importance of robotic sensors for autonomous operation, boosting market growth in the long term.

The proximity sensors segment is expected to be the largest during the forecast period

The proximity sensors segment is expected to account for the largest market share during the projection period by enabling robots to detect the presence of objects or obstacles without physical contact. These sensors are essential for safe navigation, collision avoidance, and object handling in automated systems. Commonly used in industrial robots, drones, and autonomous vehicles, proximity sensors improve efficiency and safety, allowing robots to operate in dynamic environments while minimizing the risk of damage or accidents.

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

The controllers segment is expected to have the highest CAGR during the extrapolated period. These controllers interpret inputs from various sensors like proximity, vision, and force sensors, ensuring precise movement, task execution, and environmental interaction. They serve as the brain behind robotic systems, ensuring seamless communication between hardware and software. Advanced controllers enhance robot performance, efficiency, and safety, driving innovation in industries like manufacturing and healthcare.

Region with largest share:

North America region is anticipated to account for the largest market share during the

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forecast period due to the region's strong focus on automation, advanced manufacturing, and technological innovation. Key industries such as automotive, healthcare, and logistics are driving demand for robotic sensors like vision, proximity, and force sensors. The adoption of Industry 4.0 and the increasing use of robots in complex tasks further fuel market expansion, with significant investments in research and development to enhance sensor technologies.

Region with highest CAGR:

Asia Pacific is expected to register the highest growth rate over the forecast period driven by rapid advancements in automation, manufacturing, and robotics technologies. The robotics sector is advancing in terms of AI and machine learning, leading to a higher reliance on robotic sensors for navigation, vision, and environmental sensing. Additionally, the countries, particularly China, Japan, South Korea, and India, are heavily investing in industrial automation across sectors like manufacturing, automotive, electronics, and logistics.

Key players in the market

Some of the key players in Robotic Sensors market include ABB, Fanuc Corporation, KUKA AG, Yaskawa Electric Corporation, Omron Corporation, Cognex Corporation, Honeywell International Inc., Sick AG, Keyence Corporation, TE Connectivity, Panasonic Corporation, Denso Robotics, Mitsubishi Electric Corporation, Rockwell Automation and Zebra Technologies.

Key Developments:

In July 2024, ABB Robotics has launched OmniCore, an intelligent automation platform that is faster, more precise and more sustainable, to empower, enhance and futureproof businesses. The OmniCore platform, the result of more than $170 million of investment in next generation robotics, is a step change to a modular and futureproof control architecture that will enable the full integration of AI.

In May 2024, Astellas Pharma Inc. announced that it signed a memorandum of understanding with YASKAWA Electric Corporation to begin discussions on the creation of an innovative cell therapy ecosystem through the integration of pharmaceutical and robotics technologies. This memorandum is legally non-binding and will lead to further specific discussions between the two companies in the future.

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Sensor Types Covered:

- Proximity Sensors
- Position Sensors
- Temperature Sensors
- Infrared Sensors
- Ultrasonic Sensors
- Touch Sensors
- Other Sensor Types

Robot Types Covered:

- Articulated Robots
- Cartesian Robots
- Delta Robots
- Collaborative Robots (Cobots)
- Autonomous Mobile Robots (AMRs)
- Other Robot Types

Component Types Covered:

- Actuators
- Sensors
- Controllers

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- Power Supply
- Other Component Types

Applications Covered:

- Manufacturing & Automation
- Diagnostics & Imaging
- Customer Service
- Precision Agriculture
- Delivery & Transportation
- Bomb Disposal
- Other Applications

End Users Covered:

- Industrial
- Medical
- Agricultural
- Military & Defense
- Logistics & Warehousing
- Construction
- Other End Users

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- North America
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  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan
  - China
  - India
  - Australia
  - New Zealand
  - South Korea
  - Rest of Asia Pacific

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Brazil

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
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- Competitive Benchmarking
  - Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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