

# **Encoder Market Forecasts to 2032 – Global Analysis By Type (Rotary Encoders and Linear Encoders), Signal Type (Incremental Encoders and Absolute Encoders), Output Signal, Technology, End User and By Geography**

<https://marketpublishers.com/r/E2C0D1AA4D7FEN.html>

Date: August 2025

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: E2C0D1AA4D7FEN

## **Abstracts**

According to Statistics MRC, the Global Encoder Market is accounted for \$3.3 billion in 2025 and is expected to reach \$6.7 billion by 2032 growing at a CAGR of 10.8% during the forecast period. Encoder is an electronic or electromechanical device that converts information from one format into a coded output, typically binary. In digital systems, it transforms multiple input signals into a simplified, unique code that represents the active input. Encoders are essential in applications requiring position, speed, or directional feedback, such as robotics, automation, and motion control. They operate using technologies like optical, magnetic, or mechanical sensing to generate signals that guide control systems in executing precise functions.

Market Dynamics:

Driver:

Accelerating growth of industrial automation and robotics

As factories and production lines increasingly adopt automated machinery, precise motion control and position measurement have become essential, directly boosting demand for both linear and rotary encoders. Industries such as automotive, electronics, and logistics rely on encoders for high accuracy in movement and data feedback, ensuring optimal performance of robotic and CNC systems. The integration of Industry 4.0 principles and smart factories is further embedding encoders as vital components in

industrial infrastructure.

#### Restraint:

Sensitivity to harsh environmental conditions and mechanical failures

Encoders, despite their importance, often face challenges in environments with excessive dust, temperature fluctuations, humidity, and vibrations factors that can compromise their performance and longevity. In addition, ongoing exposure to harsh industrial conditions may result in mechanical failure or decreased measurement accuracy over time. These vulnerabilities necessitate frequent maintenance and sometimes specialize protective enclosures, driving up operational costs hampering markets growth.

#### Opportunity:

Development of smart encoders with integrated diagnostics and predictive maintenance

The next-generation solutions not only provide precise positional information but also offer real-time health monitoring and analytics, enabling proactive maintenance and minimizing unexpected downtime. Integration with industrial IoT platforms allows users to remotely access data, optimize operational efficiency, and extend the service life of equipment. This technological shift is opening doors for encoder manufacturers to differentiate their offerings and address the evolving needs of modern industrial users.

#### Threat:

Technological substitution by non-encoder sensing technologies

Contactless systems like laser displacement sensors, machine vision, and other non-encoder-based technologies are gaining ground, especially where installation flexibility, minimal maintenance, or contamination resistance are priorities. These alternatives can sometimes provide similar or enhanced precision without the physical components that are vulnerable to wear and tear requiring incumbent manufacturers to continuously innovate their products and demonstrate clear advantages in performance, integration, or total cost of ownership.

#### Covid-19 Impact:

The COVID-19 pandemic introduced disruptions and adaptations into the encoder market. Initial supply chain interruptions and labor shortages hampered production and delivery schedules, dampening market activity in affected quarters. However, the crisis also accelerated digital transformation and automation efforts across industries seeking greater resilience and remote monitoring capabilities.

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

The linear encoders segment is expected to account for the largest market share during the forecast period due to their essential role in delivering high-precision position and displacement measurements in a wide range of applications. Sectors such as 3D printing, semiconductor fabrication, and advanced CNC machinery heavily depend on linear encoders for achieving exacting operational standards and product quality. The rising trend toward miniaturization and the demand for tighter tolerances in industrial manufacturing are further amplifying their importance.

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

Over the forecast period, the magnetic segment is predicted to witness the highest growth rate underpinned by their resilience to contaminants, compatibility with harsh operating conditions, and the flexibility to function where optical encoders may struggle. As applications expand into rugged environments ranging from automotive systems to heavy industrial machinery magnetic encoders offer both cost efficiency and robust performance boosting the market.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share driven by extensive industrialization and major investments in manufacturing infrastructure across countries like China, India, and South Korea. The surge in adoption of automation technologies for electronics, automotive, and consumer goods manufacturing is fueling strong demand for encoders in this geography. Additionally, the presence of a robust supplier base and the expansion of local and international OEMs fortify Asia Pacific's market position.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest

CAGR reflecting its ongoing transformation into a global manufacturing and innovation hub. The convergence of expanding digital infrastructure, rising labor costs incentivizing automation, and strategic government support for industrial modernization drives exceptional growth opportunities for encoders. As new industries and production facilities emerge, the need for sophisticated, reliable motion and position control will continue to climb.

### Key players in the market

Some of the key players in Encoder Market include Sensata Technologies, Schneider Electric, Rockwell Automation, Renishaw plc, Pepperl+Fuchs GmbH, Panasonic Corporation, Omron Corporation, Mitutoyo Corporation, Maxon Group, Honeywell International Inc., HEIDENHAIN GmbH, FAULHABER Group, Dynapar Corporation, CTS Corporation, Broadcom Inc., Bourns, Inc., Baumer Holding AG and Autonics Corporation.

### Key Developments:

In May 2025, Omron launched the OL?450S autonomous mobile robot (AMR)—a low?profile omni?directional AMR with 450 kg payload, wireless charging, and advanced safety for material handling. It is optimized for flexible intralogistics in confined manufacturing and warehouse environments.

In February 2025, Sensata launched its new PyroFuse STPS500 Series, a high?voltage pyrotechnic circuit breaker enabling rapid and reliable protection in EV systems. The STPS500 is designed to interrupt currents up to 30kA within milliseconds, enhancing safety in battery electric vehicles. It supports both 500V and 1000V architectures, aligning with evolving OEM requirements for EV power systems.

### Types Covered:

Rotary Encoders

Linear Encoders

### Signal Types Covered:

Incremental Encoders

## Absolute Encoders

### Output Signals Covered:

Analog

Digital

### Technologies Covered:

Optical

Magnetic

Photoelectric

Capacitive

Other Technologies

### End Users Covered:

Manufacturing

Automotive

Healthcare

Electronics

Aerospace & Defense

Food & Beverage

Energy & Utilities

Other End Users

Regions Covered:

North America

US

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

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 2024, 2025, 2026, 2028, and 2032
- 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

## Contents

### **1 EXECUTIVE SUMMARY**

### **2 PREFACE**

- 2.1 Abstract
- 2.2 Stake Holders
- 2.3 Research Scope
- 2.4 Research Methodology
  - 2.4.1 Data Mining
  - 2.4.2 Data Analysis
  - 2.4.3 Data Validation
  - 2.4.4 Research Approach
- 2.5 Research Sources
  - 2.5.1 Primary Research Sources
  - 2.5.2 Secondary Research Sources
  - 2.5.3 Assumptions

### **3 MARKET TREND ANALYSIS**

- 3.1 Introduction
- 3.2 Drivers
- 3.3 Restraints
- 3.4 Opportunities
- 3.5 Threats
- 3.6 Technology Analysis
- 3.7 End User Analysis
- 3.8 Emerging Markets
- 3.9 Impact of Covid-19

### **4 PORTERS FIVE FORCE ANALYSIS**

- 4.1 Bargaining power of suppliers
- 4.2 Bargaining power of buyers
- 4.3 Threat of substitutes
- 4.4 Threat of new entrants
- 4.5 Competitive rivalry

## **5 GLOBAL ENCODER MARKET, BY TYPE**

- 5.1 Introduction
- 5.2 Rotary Encoders
- 5.3 Linear Encoders

## **6 GLOBAL ENCODER MARKET, BY SIGNAL TYPE**

- 6.1 Introduction
- 6.2 Incremental Encoders
- 6.3 Absolute Encoders

## **7 GLOBAL ENCODER MARKET, BY OUTPUT SIGNAL**

- 7.1 Introduction
- 7.2 Analog
- 7.3 Digital

## **8 GLOBAL ENCODER MARKET, BY TECHNOLOGY**

- 8.1 Introduction
- 8.2 Optical
- 8.3 Magnetic
- 8.4 Photoelectric
- 8.5 Capacitive
- 8.6 Other Technologies

## **9 GLOBAL ENCODER MARKET, BY END USER**

- 9.1 Introduction
- 9.2 Manufacturing
- 9.3 Automotive
- 9.4 Healthcare
- 9.5 Electronics
- 9.6 Aerospace & Defense
- 9.7 Food & Beverage
- 9.8 Energy & Utilities
- 9.9 Other End Users

## **10 GLOBAL ENCODER MARKET, BY GEOGRAPHY**

10.1 Introduction

10.2 North America

10.2.1 US

10.2.2 Canada

10.2.3 Mexico

10.3 Europe

10.3.1 Germany

10.3.2 UK

10.3.3 Italy

10.3.4 France

10.3.5 Spain

10.3.6 Rest of Europe

10.4 Asia Pacific

10.4.1 Japan

10.4.2 China

10.4.3 India

10.4.4 Australia

10.4.5 New Zealand

10.4.6 South Korea

10.4.7 Rest of Asia Pacific

10.5 South America

10.5.1 Argentina

10.5.2 Brazil

10.5.3 Chile

10.5.4 Rest of South America

10.6 Middle East & Africa

10.6.1 Saudi Arabia

10.6.2 UAE

10.6.3 Qatar

10.6.4 South Africa

10.6.5 Rest of Middle East & Africa

## **11 KEY DEVELOPMENTS**

11.1 Agreements, Partnerships, Collaborations and Joint Ventures

11.2 Acquisitions & Mergers

11.3 New Product Launch

11.4 Expansions

11.5 Other Key Strategies

## **12 COMPANY PROFILING**

12.1 Sensata Technologies

12.2 Schneider Electric

12.3 Rockwell Automation

12.4 Renishaw plc

12.5 Pepperl+Fuchs GmbH

12.6 Panasonic Corporation

12.7 Omron Corporation

12.8 Mitutoyo Corporation

12.9 Maxon Group

12.10 Honeywell International Inc.

12.11 HEIDENHAIN GmbH

12.12 FAULHABER Group

12.13 Dynapar Corporation

12.14 CTS Corporation

12.15 Broadcom Inc.

12.16 Bourns, Inc.

12.17 Baumer Holding AG

12.18 Autonics Corporation

## List Of Tables

### LIST OF TABLES

- Table 1 Global Encoder Market Outlook, By Region (2024-2032) (\$MN)
- Table 2 Global Encoder Market Outlook, By Type (2024-2032) (\$MN)
- Table 3 Global Encoder Market Outlook, By Rotary Encoders (2024-2032) (\$MN)
- Table 4 Global Encoder Market Outlook, By Linear Encoders (2024-2032) (\$MN)
- Table 5 Global Encoder Market Outlook, By Signal Type (2024-2032) (\$MN)
- Table 6 Global Encoder Market Outlook, By Incremental Encoders (2024-2032) (\$MN)
- Table 7 Global Encoder Market Outlook, By Absolute Encoders (2024-2032) (\$MN)
- Table 8 Global Encoder Market Outlook, By Output Signal (2024-2032) (\$MN)
- Table 9 Global Encoder Market Outlook, By Analog (2024-2032) (\$MN)
- Table 10 Global Encoder Market Outlook, By Digital (2024-2032) (\$MN)
- Table 11 Global Encoder Market Outlook, By Technology (2024-2032) (\$MN)
- Table 12 Global Encoder Market Outlook, By Optical (2024-2032) (\$MN)
- Table 13 Global Encoder Market Outlook, By Magnetic (2024-2032) (\$MN)
- Table 14 Global Encoder Market Outlook, By Photoelectric (2024-2032) (\$MN)
- Table 15 Global Encoder Market Outlook, By Capacitive (2024-2032) (\$MN)
- Table 16 Global Encoder Market Outlook, By Other Technologies (2024-2032) (\$MN)
- Table 17 Global Encoder Market Outlook, By End User (2024-2032) (\$MN)
- Table 18 Global Encoder Market Outlook, By Manufacturing (2024-2032) (\$MN)
- Table 19 Global Encoder Market Outlook, By Automotive (2024-2032) (\$MN)
- Table 20 Global Encoder Market Outlook, By Healthcare (2024-2032) (\$MN)
- Table 21 Global Encoder Market Outlook, By Electronics (2024-2032) (\$MN)
- Table 22 Global Encoder Market Outlook, By Aerospace & Defense (2024-2032) (\$MN)
- Table 23 Global Encoder Market Outlook, By Food & Beverage (2024-2032) (\$MN)
- Table 24 Global Encoder Market Outlook, By Energy & Utilities (2024-2032) (\$MN)
- Table 25 Global Encoder Market Outlook, By Other End Users (2024-2032) (\$MN)

Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

## I would like to order

Product name: Encoder Market Forecasts to 2032 – Global Analysis By Type (Rotary Encoders and Linear Encoders), Signal Type (Incremental Encoders and Absolute Encoders), Output Signal, Technology, End User and By Geography

Product link: <https://marketpublishers.com/r/E2C0D1AA4D7FEN.html>

Price: US\$ 4,150.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/E2C0D1AA4D7FEN.html>