

Data Acquisition System Market - A Global and Regional Analysis: Focus on Application, Product, Region, and Competitive Landscape - Analysis and Forecast, 2025-2034

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Abstracts

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Global Data Acquisition System Market: Industry Overview

The global data acquisition system market is driven by the increasing demand for advanced solutions that enable real-time data collection, analysis, and monitoring across various industries. These systems are crucial for improving operational efficiency, ensuring regulatory compliance, and enhancing product performance. The market is influenced by technological advancements, the growing need for data-driven insights, and the rise of smart manufacturing, particularly in industries such as automotive, aerospace, and energy. Key technologies include sensors, modular systems, cloud integration, and real-time data processing. As industries continue to embrace automation and digitization, the market for data acquisition systems is expected to experience substantial growth in the coming years.

Market Lifecycle Stage

The global data acquisition system market is currently in the growth stage of its lifecycle. Driven by advancements in industrial automation, the increasing demand for real-time data collection and analysis, and the rise of smart technologies, this market is expanding rapidly. Innovations in sensor technology, cloud integration, and real-time

data processing are fueling market demand. As industries seek to enhance operational efficiency and meet regulatory standards, the market is expected to experience steady growth. The increasing adoption of IoT and AI-driven solutions presents significant opportunities for data acquisition systems, leading to further expansion as technological advancements continue to shape industries such as automotive, aerospace, and manufacturing.

Global Data Acquisition System Market Segmentation:

Segmentation 1: by Application

R&D

Field

Manufacturing

R&D is one of the prominent application segments in the global data acquisition system market.

Segmentation 2: by End Use Industry

Automotive & Transportation

Aerospace & Defense

Wireless Communications & Infrastructure

Power & Energy

Environmental Monitoring

Healthcare

Food & beverage

Others

The global data acquisition system market is estimated to be led by the aerospace and defense.

Segmentation 3: by Speed

High Speed (>100 KS/s)

Low Speed (100 KS/s) is one of the prominent product segments in the global data acquisition system market.

Segmentation 4: by System

Hardware

External Chassis and Modules

Plug-In Analog I/O Boards

Software

Bundled

3rd Party

Hardware is one of the prominent product segments in the global data acquisition system market.

Segmentation 5: by Region

North America - U.S., Canada, and Mexico

Europe - Germany, France, Italy, U.K., and Rest-of-Europe

Asia-Pacific - China, Japan, South Korea, Australia, and Rest-of-Asia-Pacific

Rest-of-the-World - South America and Middle East and Africa

In the global data acquisition system market, North America is anticipated to gain traction in terms of production, owing to the continuous growth and the presence of key manufacturers in the region.

Demand – Drivers and Limitations

The following are the demand drivers for the Global Data Acquisition System Market :

Growing Need for Real-Time Data

Technological Advancements

The Global Data Acquisition System Market is expected to face some limitations as well due to the following challenges:

High Initial Costs

Compatibility Issues

Key Market Players and Competition Synopsis

The global data acquisition system market is highly competitive, with key players like National Instruments, Honeywell, ABB, and General Electric dominating through advanced manufacturing techniques and strong research and development capabilities. These companies focus on delivering high-precision, scalable systems that meet diverse industry needs. Emerging players are prioritizing cost-effective and sustainable solutions, catering to the growing demand for smart, automated systems. The market is further driven by technological advancements, regulatory compliance, and the increasing need for real-time data in sectors like automotive, energy, and aerospace. Strategic partnerships with automakers and industrial firms enhance innovation and market expansion.

Some prominent names established in this market are:

ABB Group

AMETEK Inc.

Emerson Electric Co.

Fortive Corporation

General Electric (GE) Company

Honeywell International Inc.

Keysight Technologies

National Instruments Corporation

Rockwell Automation Inc.

Schneider Electric SE

Siemens

Spectris PLC

Yokogawa Electric Company

AVL

Fluke Corporation

Companies that are not a part of the previously mentioned pool have been well represented across different sections of the report (wherever applicable).

Contents

Executive Summary
Scope and Definition
Market/Product Definition
Key Questions Answered
Analysis and Forecast Note

1. MARKETS: INDUSTRY OUTLOOK

1.1 Trends: Current and Future Impact Assessment
1.2 Supply Chain Overview
 1.2.1 Value Chain Analysis
 1.2.2 Pricing Forecast
1.3 R&D Review
 1.3.1 Patent Filing Trend by Country, by Company
1.4 Regulatory Landscape
1.5 Stakeholder Analysis
1.6 Market Dynamics Overview
 1.6.1 Market Drivers
 1.6.2 Market Restraints
 1.6.3 Market Opportunities
1.7 Startup Funding Summary

2. DATA ACQUISITION SYSTEM MARKET BY APPLICATION

2.1 Application Summary
2.2 Data Acquisition System Market, by Application, Value, 2024-2034
 2.2.1 R&D
 2.2.2 Field
 2.2.3 Manufacturing
2.3 Data Acquisition System Market, by End Use Industry, Value, 2024-2034
 2.3.1 Automotive & Transportation
 2.3.2 Aerospace & Defense
 2.3.3 Wireless Communications & Infrastructure
 2.3.4 Power & Energy
 2.3.5 Environmental Monitoring
 2.3.6 Healthcare
 2.3.7 Food & beverage

2.3.8 Others

3. DATA ACQUISITION SYSTEM MARKET BY PRODUCTS

3.1 Product Summary

3.2 Data Acquisition System Market, by Speed, Value, 2024-2034

3.2.1 High Speed (>100 KS/s)

3.2.2 Low Speed (

List Of Figures

LIST OF FIGURES

Figure 1: Data Acquisition System Market (by Scenario), \$Billion, 2025, 2028, and 2034

Figure 2: Data Acquisition System Market (by Region), \$Billion, 2024, 2027, and 2034

Figure 3: Data Acquisition System Market (by Application), \$Billion, 2024, 2027, and 2034

Figure 4: Data Acquisition System Market (by Product), \$Billion, 2024, 2027, and 2034

Figure 5: Competitive Landscape Snapshot

Figure 6: Supply Chain Analysis

Figure 7: Value Chain Analysis

Figure 8: Patent Analysis (by Country), January 2021-April 2025

Figure 9: Patent Analysis (by Company), January 2021-April 2025

Figure 10: Impact Analysis of Market Navigating Factors, 2024-2034

Figure 11: U.S. Data Acquisition System Market, \$Billion, 2024-2034

Figure 12: Canada Data Acquisition System Market, \$Billion, 2024-2034

Figure 13: Mexico Data Acquisition System Market, \$Billion, 2024-2034

Figure 14: Germany Data Acquisition System Market, \$Billion, 2024-2034

Figure 15: France Data Acquisition System Market, \$Billion, 2024-2034

Figure 16: U.K. Data Acquisition System Market, \$Billion, 2024-2034

Figure 17: Italy Data Acquisition System Market, \$Billion, 2024-2034

Figure 18: Rest-of-Europe Data Acquisition System Market, \$Billion, 2024-2034

Figure 19: China Data Acquisition System Market, \$Billion, 2024-2034

Figure 20: Japan Data Acquisition System Market, \$Billion, 2024-2034

Figure 21: Australia Data Acquisition System Market, \$Billion, 2024-2034

Figure 22: South Korea Data Acquisition System Market, \$Billion, 2024-2034

Figure 23: Rest-of-Asia-Pacific Data Acquisition System Market, \$Billion, 2024-2034

Figure 24: South America Data Acquisition System Market, \$Billion, 2024-2034

Figure 25: Middle East and Africa Data Acquisition System Market, \$Billion, 2024-2034

Figure 26: Strategic Initiatives (by Company), 2021-2025

Figure 27: Share of Strategic Initiatives, 2021-2025

Figure 28: Data Triangulation

Figure 29: Top-Down and Bottom-Up Approach

Figure 30: Assumptions and Limitations

List Of Tables

LIST OF TABLES

Table 1: Market Snapshot

Table 2: Opportunities across Region

Table 3: Trends Overview

Table 4: Data Acquisition System Market Pricing Forecast, 2024-2034

Table 5: Application Summary (by Application)

Table 6: Product Summary (by Product)

Table 7: Data Acquisition System Market (by Region), \$Billion, 2024-2034

Table 8: North America Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 9: North America Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 10: U.S. Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 11: U.S. Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 12: Canada Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 13: Canada Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 14: Mexico Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 15: Mexico Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 16: Europe Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 17: Europe Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 18: Germany Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 19: Germany Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 20: France Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 21: France Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 22: U.K. Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 23: U.K. Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 24: Italy Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 25: Italy Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 26: Rest-of-Europe Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 27: Rest-of-Europe Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 28: Asia-Pacific Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 29: Asia-Pacific Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 30: China Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 31: China Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 32: Japan Data Acquisition System Market (by Application), \$Billion, 2024-2034

Table 33: Japan Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 34: Australia Data Acquisition System Market (by Application), \$Billion,
2024-2034

Table 35: Australia Data Acquisition System Market (by Product), \$Billion, 2024-2034

Table 36: South Korea Data Acquisition System Market (by Application), \$Billion,
2024-2034

Table 37: South Korea Data Acquisition System Market (by Product), \$Billion,
2024-2034

Table 38: Rest-of-Asia-Pacific Data Acquisition System Market (by Application), \$Billion,
2024-2034

Table 39: Rest-of-Asia-Pacific Data Acquisition System Market (by Product), \$Billion,
2024-2034

Table 40: Rest-of-the-World Data Acquisition System Market (by Application), \$Billion,
2024-2034

Table 41: Rest-of-the-World Data Acquisition System Market (by Product), \$Billion,
2024-2034

Table 42: South America Data Acquisition System Market (by Application), \$Billion,
2024-2034

Table 43: South America Data Acquisition System Market (by Product), \$Billion,
2024-2034

Table 44: Middle East and Africa Data Acquisition System Market (by Application),
\$Billion, 2024-2034

Table 45: Middle East and Africa Data Acquisition System Market (by Product), \$Billion,
2024-2034

Table 46: Market Share

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