

MEMS Pressure Sensor Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2025 – 2034

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Abstracts

The Global MEMS Pressure Sensor Market, valued at USD 2.5 billion in 2024, is projected to experience robust growth at a CAGR of 6.5% from 2025 to 2034. These cutting-edge sensors are gaining widespread traction due to their versatile applications across industries such as automotive, healthcare, and industrial automation.

By type, the MEMS pressure sensor market encompasses resonant MEMS pressure sensors, optical MEMS pressure sensors, capacitive MEMS pressure sensors, piezoresistive MEMS pressure sensors, and thermal MEMS pressure sensors. Among these, capacitive MEMS pressure sensors are emerging as the fastest-growing segment, boasting a remarkable CAGR of 8.3% during the forecast period. Known for their superior sensitivity and broad dynamic range, piezoresistive MEMS pressure sensors remain a popular choice. These sensors measure resistance changes under pressure, making them indispensable for applications such as engine control in vehicles, blood pressure monitoring in medical devices, and process automation in industrial settings.

Based on pressure range, the market segments include medium-pressure sensors (10 kPa - 1 MPa), low-pressure sensors (10 kPa), and high-pressure sensors (>1 MPa). Low-pressure sensors (10 kPa) are poised to achieve significant growth, with the segment projected to reach USD 1.9 billion by 2034. These sensors excel in detecting minimal pressure changes with high precision, making them ideal for applications in medical devices like ventilators and HVAC systems for optimized climate control and environmental monitoring solutions. Their compact size, reliability, and accuracy have driven widespread adoption in these critical applications.

In the United States, the MEMS pressure sensor market captured a commanding share of 74.6% in 2024. This dominance is fueled by the rapid integration of advanced automotive safety systems, surging demand for industrial automation solutions, and substantial investments in healthcare technologies. Key market players and robust R&D activities further strengthen the country's leadership in this domain. Regulatory requirements, such as those mandating tire pressure monitoring systems (TPMS), also contribute to market expansion. The U.S. commitment to innovation, coupled with sustainable manufacturing practices, reinforces its pivotal role in the global MEMS pressure sensor market.

Contents

CHAPTER 1 METHODOLOGY & SCOPE

- 1.1 Market scope & definitions
- 1.2 Base estimates & calculations
- 1.3 Forecast calculations
- 1.4 Data sources
 - 1.4.1 Primary
 - 1.4.2 Secondary
 - 1.4.2.1 Paid sources
 - 1.4.2.2 Public sources

CHAPTER 2 EXECUTIVE SUMMARY

- 2.1 Industry synopsis, 2021-2034

CHAPTER 3 INDUSTRY INSIGHTS

- 3.1 Industry ecosystem analysis
 - 3.1.1 Factor affecting the value chain
 - 3.1.2 Profit margin analysis
 - 3.1.3 Disruptions
 - 3.1.4 Future outlook
 - 3.1.5 Manufacturers
 - 3.1.6 Distributors
- 3.2 Supplier landscape
- 3.3 Profit margin analysis
- 3.4 Key news & initiatives
- 3.5 Regulatory landscape
- 3.6 Impact forces
 - 3.6.1 Growth drivers
 - 3.6.1.1 Increasing adoption in automotive applications
 - 3.6.1.2 Rising demand in healthcare applications
 - 3.6.1.3 Expansion of consumer electronics
 - 3.6.1.4 Growing industrial automation
 - 3.6.1.5 Advancements in mems technology
 - 3.6.2 Industry pitfalls & challenges
 - 3.6.2.1 Complex manufacturing processes and high costs

- 3.6.2.2 Susceptibility to environmental Interference
- 3.7 Growth potential analysis
- 3.8 Porter's analysis
- 3.9 PESTEL analysis

CHAPTER 4 COMPETITIVE LANDSCAPE, 2024

- 4.1 Introduction
- 4.2 Company market share analysis
- 4.3 Competitive positioning matrix
- 4.4 Strategic outlook matrix

CHAPTER 5 MARKET ESTIMATES & FORECAST, BY TYPE, 2021-2034 (USD BILLION & UNITS)

- 5.1 Key trends
- 5.2 Piezoresistive MEMS pressure sensors
- 5.3 Resonant MEMS pressure sensors
- 5.4 Capacitive MEMS pressure sensors
- 5.5 Optical MEMS pressure sensors
- 5.6 Thermal MEMS pressure sensors

CHAPTER 6 MARKET ESTIMATES & FORECAST, BY PRESSURE RANGE, 2021-2034 (USD BILLION & UNITS)

- 6.1 Key trends
- 6.2 Low pressure sensors (1 MPa)

CHAPTER 7 MARKET ESTIMATES & FORECAST, BY SENSING TECHNOLOGY, 2021-2034 (USD BILLION & UNITS)

- 7.1 Key trends
- 7.2 Absolute pressure sensors
- 7.3 Gauge pressure sensors
- 7.4 Differential pressure sensors

CHAPTER 8 MARKET ESTIMATES & FORECAST, BY PACKAGING TYPE, 2021-2034 (USD BILLION & UNITS)

- 8.1 Key trends
- 8.2 Surface-Mount Devices (SMD)
- 8.3 Through-Hole Technology (THT)
- 8.4 Chip-On-Board (COB)

CHAPTER 9 ESTIMATES & FORECAST, BY SALES CHANNEL, 2021-2034 (USD BILLION & UNITS)

- 9.1 Key trends
- 9.2 Direct sales
- 9.3 Online sales

CHAPTER 10 ESTIMATES & FORECAST, BY END USE INDUSTRY, 2021-2034 (USD BILLION & UNITS)

- 10.1 Key trends
- 10.2 Automotive
- 10.3 Healthcare
- 10.4 Consumer electronics
- 10.5 Industrial manufacturing
- 10.6 Aerospace & defense
- 10.7 Oil & gas
- 10.8 Environmental monitoring
- 10.9 Others

CHAPTER 11 MARKET ESTIMATES & FORECAST, BY REGION, 2021-2034 (USD BILLION & UNITS)

- 11.1 Key trends
- 11.2 North America
 - 11.2.1 U.S.
 - 11.2.2 Canada
- 11.3 Europe
 - 11.3.1 UK
 - 11.3.2 Germany
 - 11.3.3 France
 - 11.3.4 Italy
 - 11.3.5 Spain
 - 11.3.6 Russia

11.4 Asia Pacific

11.4.1 China

11.4.2 India

11.4.3 Japan

11.4.4 South Korea

11.4.5 Australia

11.5 Latin America

11.5.1 Brazil

11.5.2 Mexico

11.6 MEA

11.6.1 South Africa

11.6.2 Saudi Arabia

11.6.3 UAE

CHAPTER 12 COMPANY PROFILES

12.1 AKM (Asahi Kasei Microdevices)

12.2 Amphenol Advanced Sensors

12.3 Analog Devices

12.4 Bosch Sensortec

12.5 Endress+Hauser

12.6 First Sensor AG

12.7 Honeywell

12.8 Infineon Technologies

12.9 MEMSIC

12.10 Melexis

12.11 Avnet, Inc.

12.12 Murata Manufacturing Co., Ltd.

12.13 NXP Semiconductors

12.14 Omron Corporation

12.15 ROHM Semiconductor

12.16 Sensata Technologies

12.17 Silicon Microstructures, Inc.

12.18 STMicroelectronics

12.19 TDK Corporation

12.20 TE Connectivity

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