

Automotive Pressure Sensors Market Forecasts to 2032 – Global Analysis By Vehicle Type (Passenger Cars, Commercial Vehicles and Alternative Fuel Vehicle Type), Transduction Type (Piezoresistive, Capacitive, Resonant, Optical and Other Transduction Types), Technology, Application and By Geography

<https://marketpublishers.com/r/AED1CE2D443DEN.html>

Date: June 2025

Pages: 150

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

ID: AED1CE2D443DEN

Abstracts

According to Statistics MRC, the Global Automotive Pressure Sensors Market is accounted for \$14.81 billion in 2025 and is expected to reach \$30.79 billion by 2032 growing at a CAGR of 11.03% during the forecast period. Automotive pressure sensors are essential components of contemporary automobiles because they track and communicate critical information regarding the different pressure levels in the tires, fuel system, and engine. By identifying variations in pressure and notifying the vehicle's electronic control unit (ECU) to make the required adjustments, these sensors guarantee optimum performance, safety, and efficiency. Manifold absolute pressure (MAP), fuel rail pressure, and oil pressure monitoring are typical uses. Moreover, the need for accurate and dependable pressure sensing is increasing due to the popularity of electric and hybrid cars, which is spurring advancements in sensor durability, miniaturization, and integration with advanced driver assistance systems (ADAS).

According to the U.S. Department of Energy states that under-inflated tires can lower gas mileage by about 0.2% for every 1 PSI drop in tire pressure. This aligns with the general estimate that a 10% drop in tire pressure can reduce fuel economy by approximately 1%. Proper tire inflation is crucial for optimizing fuel efficiency, and TPMS plays a key role in monitoring tire pressure to prevent unnecessary fuel loss.

Market Dynamics:

Driver:

Transition to hybrid vehicles and electrification

The adoption of hybrid and electric vehicles is being propelled by the increased emphasis on carbon emission reduction and the shift to sustainable mobility solutions on a global scale. Automotive pressure sensors are essential components of electric and hybrid vehicles (HEVs) because they monitor and control pressure in a number of subsystems, including the HVAC, fuel cell, battery cooling, and brake systems. Additionally, the need for these sensors is anticipated to increase dramatically as more nations enact laws eliminating internal combustion engine (ICE) vehicles and encouraging zero-emission vehicles.

Restraint:

Expensive advanced sensor technologies

The relatively high cost of automotive pressure sensors, particularly in developing markets, is one of the major obstacles preventing their widespread adoption. Advanced versions, like those that use MEMS technology or provide wireless connectivity or are made for EV-specific applications, can be costly to develop and produce, even though basic pressure sensors are reasonably priced. The requirement for durable packaging to endure high temperatures, vibrations, and corrosive fluids in automotive environments drives up the costs even more. These extra costs can serve as a deterrent for entry-level car models and cost-sensitive markets, driving OEMs to look for less expensive or sophisticated substitutes, which slows sensor adoption.

Opportunity:

Innovation in material science and sensor technology

Next-generation pressure sensors that are more compact, robust, and energy-efficient are becoming possible owing to ongoing developments in materials, sensor architectures, and manufacturing processes like additive manufacturing, flexible electronics, and nanotechnology. Multifunctional sensors that can lower component counts and increase system reliability are made possible by innovations such as graphene-based materials, piezoresistive and capacitive sensing elements, and sensor fusion with temperature/humidity detection. Manufacturers' addressable market is

increased by these technological advancements, which enable them to produce sensors appropriate for specialized applications like high-performance sports cars, hydrogen fuel cell vehicles, and ultra-compact urban mobility solutions.

Threat:

Supply chain volatility for raw materials and components

The market for automotive pressure sensors is largely dependent on materials such as silicon, metals, semiconductors, and specialty polymers, many of which are vulnerable to supply chain disruptions on a global scale. Natural disasters, trade restrictions, pandemics, and geopolitical tensions are some of the factors that can disrupt the continuous flow of raw materials or critical components. Schedules for manufacturing, cost inflation, profit margin reduction, and automakers' trust in sourcing from impacted suppliers can all be negatively impacted by such unpredictability. Because just-in-time production models are prevalent in globalized markets, this threat is especially serious.

Covid-19 Impact:

Due to widespread disruptions in global supply chains, factory shutdowns, and a sharp drop in vehicle production and sales in 2020, the COVID-19 pandemic had a significant short-term impact on the automotive pressure sensors market. The demand for pressure sensors crashed as a result of auto factories running at reduced capacity or temporarily ceasing operations, which had an impact on supply chain revenues. The pandemic did, however, also hasten long-term trends like digital transformation, vehicle electrification, and the use of smart sensors for remote diagnostics and predictive maintenance, laying the groundwork for a robust post-pandemic recovery and innovation-driven expansion in the industry.

The piezoresistive segment is expected to be the largest during the forecast period

The piezoresistive segment is expected to account for the largest market share during the forecast period. Since piezoresistive pressure sensors are robust, highly accurate, and dependable in harsh environments like high temperatures, vibrations, and pressure fluctuations—all of which are typical in automotive settings—they are widely used. Electric vehicles (EVs) and internal combustion engines (ICEs) both depend on these sensors because they are widely utilized in vital systems like airbag deployment, brake systems, fuel injection, and engine control. Additionally, supporting their dominance in global automotive applications are their sophisticated technology, affordability, and simplicity of

integration with electronic control units (ECUs).

The micro-electro mechanical systems (MEMS) segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the micro-electro mechanical systems (MEMS) segment is predicted to witness the highest growth rate. MEMS-based pressure sensors are perfect for modern cars that need multiple sensor integrations for automation and real-time monitoring because they are small, energy-efficient, and extremely dependable. They can be integrated into electric vehicle (EV) battery management systems, tire pressure monitoring systems (TPMS), and advanced driver-assistance systems (ADAS) owing to their small size. Fast growth is being driven by MEMS sensors' scalability and cost-effectiveness as automakers embrace smart and connected technologies more and more.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share, fueled by the existence of important centers for the production of automobiles, including China, Japan, South Korea, and India. Rapid urbanization, high vehicle production volumes, and rising passenger and commercial vehicle demand all benefit the area. Sensor deployment is also being aided by government policies that support emission control, vehicle safety, and the use of electric vehicles (EVs). Furthermore, mass integration of pressure sensors is supported by the region's robust component supplier base and technological developments in automotive electronics. Asia-Pacific dominates this market due to its cost-effective manufacturing and rising domestic consumption.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR because of the quick development of automotive technology, the growing popularity of electric and driverless cars, and the strict regulations governing emissions and vehicle safety. Strong R&D investments and early adoption of state-of-the-art sensor solutions are encouraged by the presence of top automakers and sensor technology innovators in the United States and Canada. Additionally, consumers' increasing preference for high-performance cars with sophisticated monitoring systems and their growing demand for connected and smart cars are speeding up the integration of pressure sensors across applications, which are propelling the region's market

expansion.

Key players in the market

Some of the key players in Automotive Pressure Sensors Market include Denso Corporation, Honeywell International Inc., Infineon Technologies AG, Continental AG, Allegro Microsystems, LLC, NXP Semiconductors, CTS Corporation, Robert Bosch GmbH, Analog Devices Inc., Sensata Technologies Inc., TE Connectivity, BorgWarner Inc., STMicroelectronics NV, Texas Instruments Incorporated and Elmos Semiconductor Inc.

Key Developments:

In April 2025, Infineon Technologies AG is accelerating the build-up of its system capabilities for software-defined vehicles with the acquisition of Marvell Technology's Automotive Ethernet business, complementing and expanding its own market-leading microcontroller business. Infineon and Marvell Technology, Inc. have entered into a definitive transaction agreement for a purchase price of US\$2.5 billion in cash.

In December 2024, Honeywell announced the signing of a strategic agreement with Bombardier, a global leader in aviation and manufacturer of world-class business jets, to provide advanced technology for current and future Bombardier aircraft in avionics, propulsion and satellite communications technologies. The collaboration will advance new technology to enable a host of high-value upgrades for the installed Bombardier operator base, as well as lay innovative foundations for future aircraft. Honeywell estimates the value of this partnership to the company at \$17 billion over its life.

In September 2024, Denso Corporation and ROHM Co., Ltd. hereby announce that the two companies have agreed to start consideration of strategic partnership in the semiconductor field. As the development and spread of electric vehicles accelerate toward the realization of carbon neutrality, the demand for electronic components and semiconductors required for electrification of vehicles is rapidly increasing.

Vehicle Types Covered:

Passenger Cars

Commercial Vehicles

Alternative Fuel Vehicle Type

Transduction Types Covered:

Piezoresistive

Capacitive

Resonant

Optical

Other Transduction Types

Technologies Covered:

Micro-Electro Mechanical System (MEMs)

Strain Gauge

Ceramic

Applications Covered:

Antilock Braking System (ABS)

Airbag System

Direct Tire Pressure Monitoring System

Engine Control System

HVAC System

Power Steering

Transmission System

Automatic Transmission (AT)

Automatic Manual Transmission (AMT)

Continuously Variable Transmission (CVT)

Dual-Clutch Transmission (DCT)

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 Application 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 AUTOMOTIVE PRESSURE SENSORS MARKET, BY VEHICLE TYPE

- 5.1 Introduction
- 5.2 Passenger Cars
- 5.3 Commercial Vehicles
 - 5.3.1 Light Commercial Vehicles (LCVs)
 - 5.3.2 Medium and Heavy Commercial Vehicles (HCVs)
- 5.4 Alternative Fuel Vehicle Type
 - 5.4.1 Battery Electric Vehicle (BEV)
 - 5.4.2 Fuel Cell Electric Vehicle (FCEV)
 - 5.4.3 Hybrid Electric Vehicle (HEV)
 - 5.4.4 Plug-In Hybrid Electric Vehicle (PHEV)

6 GLOBAL AUTOMOTIVE PRESSURE SENSORS MARKET, BY TRANSDUCTION TYPE

- 6.1 Introduction
- 6.2 Piezoresistive
- 6.3 Capacitive
- 6.4 Resonant
- 6.5 Optical
- 6.6 Other Transduction Types

7 GLOBAL AUTOMOTIVE PRESSURE SENSORS MARKET, BY TECHNOLOGY

- 7.1 Introduction
- 7.2 Micro-Electro Mechanical System (MEMs)
- 7.3 Strain Gauge
- 7.4 Ceramic

8 GLOBAL AUTOMOTIVE PRESSURE SENSORS MARKET, BY APPLICATION

- 8.1 Introduction
- 8.2 Antilock Braking System (ABS)
- 8.3 Airbag System
- 8.4 Direct Tire Pressure Monitoring System
- 8.5 Engine Control System
 - 8.5.1 Engine
 - 8.5.2 Fuel Injection Pump

- 8.5.3 Exhaust
- 8.6 HVAC System
- 8.7 Power Steering
 - 8.7.1 Hydraulic Power Steering
 - 8.7.2 Electrohydraulic Power Steering (EHPS)
- 8.8 Transmission System
- 8.9 Automatic Transmission (AT)
- 8.10 Automatic Manual Transmission (AMT)
- 8.11 Continuously Variable Transmission (CVT)
- 8.12 Dual-Clutch Transmission (DCT)

9 GLOBAL AUTOMOTIVE PRESSURE SENSORS MARKET, BY GEOGRAPHY

- 9.1 Introduction
- 9.2 North America
 - 9.2.1 US
 - 9.2.2 Canada
 - 9.2.3 Mexico
- 9.3 Europe
 - 9.3.1 Germany
 - 9.3.2 UK
 - 9.3.3 Italy
 - 9.3.4 France
 - 9.3.5 Spain
 - 9.3.6 Rest of Europe
- 9.4 Asia Pacific
 - 9.4.1 Japan
 - 9.4.2 China
 - 9.4.3 India
 - 9.4.4 Australia
 - 9.4.5 New Zealand
 - 9.4.6 South Korea
 - 9.4.7 Rest of Asia Pacific
- 9.5 South America
 - 9.5.1 Argentina
 - 9.5.2 Brazil
 - 9.5.3 Chile
 - 9.5.4 Rest of South America
- 9.6 Middle East & Africa

- 9.6.1 Saudi Arabia
- 9.6.2 UAE
- 9.6.3 Qatar
- 9.6.4 South Africa
- 9.6.5 Rest of Middle East & Africa

10 KEY DEVELOPMENTS

- 10.1 Agreements, Partnerships, Collaborations and Joint Ventures
- 10.2 Acquisitions & Mergers
- 10.3 New Product Launch
- 10.4 Expansions
- 10.5 Other Key Strategies

11 COMPANY PROFILING

- 11.1 Denso Corporation
- 11.2 Honeywell International Inc.
- 11.3 Infineon Technologies AG
- 11.4 Continental AG
- 11.5 Allegro Microsystems, LLC
- 11.6 NXP Semiconductors
- 11.7 CTS Corporation
- 11.8 Robert Bosch GmbH
- 11.9 Analog Devices Inc.
- 11.10 Sensata Technologies Inc.
- 11.11 TE Connectivity
- 11.12 BorgWarner Inc.
- 11.13 STMicroelectronics NV
- 11.14 Texas Instruments Incorporated
- 11.15 Elmos Semiconductor Inc

List Of Tables

LIST OF TABLES

Table 1 Global Automotive Pressure Sensors Market Outlook, By Region (2024-2032) (\$MN)

Table 2 Global Automotive Pressure Sensors Market Outlook, By Vehicle Type (2024-2032) (\$MN)

Table 3 Global Automotive Pressure Sensors Market Outlook, By Passenger Cars (2024-2032) (\$MN)

Table 4 Global Automotive Pressure Sensors Market Outlook, By Commercial Vehicles (2024-2032) (\$MN)

Table 5 Global Automotive Pressure Sensors Market Outlook, By Light Commercial Vehicles (LCVs) (2024-2032) (\$MN)

Table 6 Global Automotive Pressure Sensors Market Outlook, By Medium and Heavy Commercial Vehicles (HCVs) (2024-2032) (\$MN)

Table 7 Global Automotive Pressure Sensors Market Outlook, By Alternative Fuel Vehicle Type (2024-2032) (\$MN)

Table 8 Global Automotive Pressure Sensors Market Outlook, By Battery Electric Vehicle (BEV) (2024-2032) (\$MN)

Table 9 Global Automotive Pressure Sensors Market Outlook, By Fuel Cell Electric Vehicle (FCEV) (2024-2032) (\$MN)

Table 10 Global Automotive Pressure Sensors Market Outlook, By Hybrid Electric Vehicle (HEV) (2024-2032) (\$MN)

Table 11 Global Automotive Pressure Sensors Market Outlook, By Plug-In Hybrid Electric Vehicle (PHEV) (2024-2032) (\$MN)

Table 12 Global Automotive Pressure Sensors Market Outlook, By Transduction Type (2024-2032) (\$MN)

Table 13 Global Automotive Pressure Sensors Market Outlook, By Piezoresistive (2024-2032) (\$MN)

Table 14 Global Automotive Pressure Sensors Market Outlook, By Capacitive (2024-2032) (\$MN)

Table 15 Global Automotive Pressure Sensors Market Outlook, By Resonant (2024-2032) (\$MN)

Table 16 Global Automotive Pressure Sensors Market Outlook, By Optical (2024-2032) (\$MN)

Table 17 Global Automotive Pressure Sensors Market Outlook, By Other Transduction Types (2024-2032) (\$MN)

Table 18 Global Automotive Pressure Sensors Market Outlook, By Technology

(2024-2032) (\$MN)

Table 19 Global Automotive Pressure Sensors Market Outlook, By Micro-Electro Mechanical System (MEMs) (2024-2032) (\$MN)

Table 20 Global Automotive Pressure Sensors Market Outlook, By Strain Gauge (2024-2032) (\$MN)

Table 21 Global Automotive Pressure Sensors Market Outlook, By Ceramic (2024-2032) (\$MN)

Table 22 Global Automotive Pressure Sensors Market Outlook, By Application (2024-2032) (\$MN)

Table 23 Global Automotive Pressure Sensors Market Outlook, By Antilock Braking System (ABS) (2024-2032) (\$MN)

Table 24 Global Automotive Pressure Sensors Market Outlook, By Airbag System (2024-2032) (\$MN)

Table 25 Global Automotive Pressure Sensors Market Outlook, By Direct Tire Pressure Monitoring System (2024-2032) (\$MN)

Table 26 Global Automotive Pressure Sensors Market Outlook, By Engine Control System (2024-2032) (\$MN)

Table 27 Global Automotive Pressure Sensors Market Outlook, By Engine (2024-2032) (\$MN)

Table 28 Global Automotive Pressure Sensors Market Outlook, By Fuel Injection Pump (2024-2032) (\$MN)

Table 29 Global Automotive Pressure Sensors Market Outlook, By Exhaust (2024-2032) (\$MN)

Table 30 Global Automotive Pressure Sensors Market Outlook, By HVAC System (2024-2032) (\$MN)

Table 31 Global Automotive Pressure Sensors Market Outlook, By Power Steering (2024-2032) (\$MN)

Table 32 Global Automotive Pressure Sensors Market Outlook, By Hydraulic Power Steering (2024-2032) (\$MN)

Table 33 Global Automotive Pressure Sensors Market Outlook, By Electrohydraulic Power Steering (EHPS) (2024-2032) (\$MN)

Table 34 Global Automotive Pressure Sensors Market Outlook, By Transmission System (2024-2032) (\$MN)

Table 35 Global Automotive Pressure Sensors Market Outlook, By Automatic Transmission (AT) (2024-2032) (\$MN)

Table 36 Global Automotive Pressure Sensors Market Outlook, By Automatic Manual Transmission (AMT) (2024-2032) (\$MN)

Table 37 Global Automotive Pressure Sensors Market Outlook, By Continuously Variable Transmission (CVT) (2024-2032) (\$MN)

Table 38 Global Automotive Pressure Sensors Market Outlook, By Dual-Clutch Transmission (DCT) (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: Automotive Pressure Sensors Market Forecasts to 2032 – Global Analysis By Vehicle Type (Passenger Cars, Commercial Vehicles and Alternative Fuel Vehicle Type), Transduction Type (Piezoresistive, Capacitive, Resonant, Optical and Other Transduction Types), Technology, Application and By Geography

Product link: <https://marketpublishers.com/r/AED1CE2D443DEN.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

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/AED1CE2D443DEN.html>