Automotive Sensors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

Automotive Sensors Market Analysis

The automotive sensors market reached USD 28.83 billion in 2025 and is forecast to climb to USD 38.67 billion by 2030 on a 6.05% CAGR. The market's growth is anchored in accelerating deployments of advanced driver-assistance systems (ADAS), electrification mandates that add new sensing points, and the semiconductor industry's ability to deliver cost-effective micro-electromechanical systems (MEMS) at scale. Momentum also reflects the shift from mechanical to electronic sensing, particularly in propulsion systems, where premium-priced perception technologies replace legacy components. Regulatory pressure for emissions reduction and crash-avoidance performance keeps demand steady, while falling average selling prices (ASPs) for MEMS lower adoption barriers across vehicle segments. The automotive sensors market, therefore, evolves from basic measurement functions toward intelligent, connected edge devices able to process data locally.

Global Automotive Sensors Market Trends and Insights

ADAS and autonomous-driving sensor proliferation

Automatic emergency braking, lane-keeping assist, and pedestrian detection in upcoming safety ratings drive higher sensor counts per vehicle. Semiconductor roadmaps anticipate that ADAS will capture nearly one-third of automotive chip demand by 2027 as Level 2+ functions become standard. Chinese brands intensify price competition by bundling full ADAS suites at minimal cost, compelling global suppliers to slash system prices without eroding performance. Radar, LiDAR, and camera fusion are about to reach 99.97% detection accuracy, yet create terabyte-scale data loads that are increasingly processed at the sensor edge to cut latency. Edge AI capability, therefore, becomes the next differentiation lever in the automotive sensors market.

Emission and safety mandates driving pressure / gas sensors

The U.S. Environmental Protection Agency's 2027-2032 rules require a 50% cut in greenhouse-gas output, forcing real-time sensing of exhaust after-treatment efficiency. Parallel hydrogen-vehicle regulations (FMVSS 307/308) add pressure and leak-detection requirements for new fuel systems. Euro 7 extends particulate and NOx limits, spurring precision gas-sensor demand, while the U.K. Progressive Safe System introduces blind-spot sensing on heavy trucks to protect vulnerable road users. The overlapping mandates tighten design windows and secure multi-year demand for high-accuracy pressure and gas sensors.

Sensor cost pressure on mass-market vehicles

Between 2023 and 2029, vehicles are set to see a swift uptick in their average semiconductor content, compressing OEM margins in price-sensitive segments. Low-cost Chinese EV brands already offer full ADAS suites at no extra charge, escalating pricing pressure on established suppliers. Tier-one sensor makers must, therefore, integrate functions, shrink packages, and adopt system-on-chip designs to deliver value without eroding profitability.

Other drivers and restraints analyzed in the detailed report include:

EV thermal-battery sensing boom / Falling MEMS ASP enabling mass adoption / Semiconductor wafer-supply volatility /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Inertial sensors generated 28.13% of 2024 revenue because accelerometers and gyroscopes anchor electronic stability control, navigation, and ADAS stacks. Higher-resolution inertial measurement units (IMUs) are now embedded inside zonal architectures, and suppliers integrate self-diagnostics that meet AEC-Q100 grade 1 to cut cabling and lower overall system weight. Magnetic sensors gain traction in EV traction-motor control, while gas sensors rebound on emissions and cabin-air mandates. Pressure and temperature sensors expand beyond combustion engines into battery thermal-runaway detection.

System-level integration is accelerating: combo packages merge accelerometer, gyroscope, and magnetometer functions, reducing OEM SKU counts and simplifying qualification cycles. Falling MEMS ASPs keep inertial devices economically feasible for mass-market cars, and edge AI blocks are starting to appear on-die to pre-filter motion data locally. The net result is a sustainable 6.47% CAGR through 2030 for this cornerstone category, as every additional autonomy layer requires finer motion awareness.

Powertrain sensing delivered 40.55% of 2024 revenue, through indispensable roles in fuel metering, ignition, turbo boost, and after-treatment control. Yet battery-electric architectures omit several legacy measurements, softening long-range growth. In contrast, telematics sensors post the quickest 8.86% CAGR as usage-based insurance and fleet optimization adopt GPS, accelerometer, and OBD data streams to lower crash frequency by up to 43%.

Body electronics maintain mid-single-digit expansion as comfort functions proliferate, and vehicle security evolves from alarms to integrated intrusion-detection radar. Software-defined vehicles shift value from mechanical actuation to data, and OEMs increasingly monetize sensor payloads via predictive-maintenance subscriptions. This realignment cushions the tapering of pure powertrain demand and diversifies revenue toward connected services.

The Automotive Sensors Market is Segmented by Vehicle Type (Passenger Cars, and Commercial Vehicles), Type (Temperature Sensors, Pressure Sensors, and More), Application (Powertrain, Body Electronics, and More), Propulsion Technology (ICE Vehicles, Battery-Electric Vehicles (BEV), and More), Sales Channel (OEM-Fitted Sensors, and More), and Geography. The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

Asia-Pacific led with 42.30% revenue share in 2024 and is expected to post the quickest 9.10% CAGR to 2030. China already manufactures around 62% of global EVs and 77% of batteries, providing a vast indigenous market for sensors and guaranteeing scale advantages. Vertically integrated champions such as BYD build up to 70% of semiconductor content in-house, including camera and electromagnetic devices, tightening local supply loops. Japan leverages decades of sensor know-how while attracting new wafer capacity via government incentives, and Taiwan's foundries remain pivotal to leading-edge MEMS production. Government subsidies and aggressive electrification targets reinforce the region's expansion.

North America maintains a premium ADAS focus, aided by robust safety regulations and funding to localize chip fabrication. The CHIPS Act's capital grants plus tax incentives reduce reliance on overseas foundries, supporting a resilient supply base. NHTSA's added ADAS metrics under the New Car Assessment Program guarantee baseline installation of critical sensors from model-year 2026 onwards, underpinning steady demand across vehicle classes.

Europe emphasizes emissions compliance and urban-safety mandates that raise sensor density in both passenger cars and heavy trucks. Euro 7 rules and Progressive Safe System requirements trigger new opportunities for gas detectors and blind-spot solutions. At the same time, cost competition from imported Chinese EVs forces European suppliers to accelerate cost-down initiatives without sacrificing precision, creating a challenging but innovation-rich environment for the automotive sensors market.

List of Companies Covered in this Report:

Robert Bosch GmbH / DENSO Corporation / Continental AG / Infineon Technologies AG / NXP Semiconductors NV / Sensata Technologies PLC / Texas Instruments Inc. / Analog Devices Inc. / Aptiv PLC / ST Microelectronics NV / Valeo SA / Honeywell International Inc. / Allegro MicroSystems LLC / Murata Manufacturing Co. / CTS Corporation / Littelfuse Inc. / ON Semiconductor Corp. / TE Connectivity Ltd. / Autoliv Inc. / Melexis NV /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

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