

Global Acceleration and Yaw Rate Sensors Market-Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The global Acceleration and Yaw Rate Sensors market is expected to grow at a CAGR of 11.68% over the forecast period (2022-2027). A yaw rate sensor is a gyroscope gadget that detects a vehicle's angular motion around its vertical axis. In most cases, the output is expressed in degrees per second or radians per second. The slip angle, related to the yaw rate, is the angle formed between the vehicle's driving and real direction. The Coriolis Effect is used to calculate this value. The Coriolis effect provides precise readings and results. Thus it is projected to maintain its market dominance. Coriolis acceleration is sensed through a micromechanical capture acceleration sensor on the oscillating element in the micromechanical type. The acceleration is proportional to the product of the yaw rate and the oscillation speed, which is maintained electronically.

Key Highlights

The employment of various safety sensors in many end-use sectors has been driven by the expanding urbanization process and the huge demand for automation. Cars and aircraft employ a variety of sensors. These sensors ensure vehicle safety while providing accuracy and ease of use. The yaw angular velocity sensor is a gyroscope device commonly used in automobiles that determines the vehicle's angular velocity around its vertical axis.

Yaw rate sensors have been integrated with the vehicle's electronic stability control because safety is a priority. The growing number of passenger car manufacturers, particularly in emerging markets such as China and India, is analyzed to boost demand for and sales of yaw rate sensors, boosting the market's growth.

One of the primary factors boosting demand for automotive sensors is autonomous driving. Most automotive sensors are increasing in unison with the total automotive market. The increased demand for automotive sensors is due to the widespread use of ADAS and AD systems.

Because of the underdeveloped aftermarket for automobile sensors, the automotive sensors industry is dominated by OEMs. Other business categories, such as industrial sensors and home automation electronics, rely heavily on the aftermarket to drive

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market growth. However, most technical standards for automotive sensors are provided by the car manufacturer or a tier 1 supplier, which is the primary reason for the challenge in commercializing automotive sensors.

COVID-19 has significantly impacted the automotive sector with the halt in production and disruption in the supply chains. However, the significant boost in the development of autonomous and electric vehicles and the need for advanced sensors is analyzed to bolster the demand for the acceleration and yaw rate sensors market during the forecast period.

Acceleration & Yaw Rate Sensors Market Trends

Automotive Segment is analyzed to grow at highest rate during the forecast period

Passenger safety standards drive the notion behind sensor installation or function in the automotive industry, and its information is sent to the ESC (electronic control system) to manage the yaw moment. Sensors are primarily employed to improve the reliability of associated systems, and manufacturers utilize this attribute as a marketing assurance. Considering these crucial elements of the application and the relative simplicity of product availability, demand for yaw rate sensors is expected to rise during the forecast period, resulting in significant growth possibilities for global manufacturers.

As the demand for automobiles has grown in recent years, the automotive industries' innovation and development have evolved significantly. Automotive aftermarkets in advanced and emerging economies have progressed more rapidly since the beginning of the automation era. This encourages the use of modern internal systems in automobiles, such as yaw rate sensors, and thus the expansion of the yaw rate sensor market. OEMs have begun to integrate yaw rate sensors in vehicles, in addition to the aftermarket, to provide optimum confidence in terms of vehicle stability.

In February 2022, BMW deployed BMW's all-electric BMW xDrive system in BMW iX and BMW i4 M50. The all-electric BMW xDrive system enables remarkable drive power to be transformed. The drive torque must be distributed precisely. This is achieved by integrating the DSC (Dynamic Stability Control) with the design of the actuator-related wheel slip limits and the Combined Charging Unit (CCU), a highly integrated range of functions that, for the first time, encompasses both charging and drive electronics. The DSC determines the parameters within which the electric BMW xDrive system can function. The vehicle's wheel speeds, steering angle, driving speed, longitudinal and lateral acceleration, and yaw rate are all constantly monitored.

Mitsubishi Motors launched the Outlander PHEV model in October 2021, with sales in December. Sales began in December 2021 in Japan, with Australia and New Zealand following in the first half of 2022 and North America following in the second half of 2022. The S-AWC (Super-All Wheel Control) integrated vehicle dynamics control system has a new brake AYC (Active Yaw Control) function for the rear wheels, based on a twin-motor 4WD system with one drive motor in front and another in the back.

Asia Pacific Region is Expected to Register the Fastest Growth Rate

Asia Pacific is analyzed to grow at the highest CAGR during the forecast period due to the significant automotive manufacturing increase. The government in this region is also promoting the use of EVs to reduce vehicular emissions. This is expected to influence the given market's growth positively.

The electrification of the vehicles and the higher adoption rates in the Asia-pacific region is analyzed to contribute to the market growth rate during the forecast period. For instance, Tata Motors launched the T-Series smart trucks in India in March 2021 to address the increased need for urban mobility. These light commercial and intermediate trucks are offered in three different types.

As NITI Aayog and Rocky Mountain Institute (RMI) stated, India's EV finance sector is expected to reach INR. 3.7 lakh crore by 2030. According to the India Energy Storage Alliance, the EV industry in India is expected to grow at a CAGR of 36% by 2026. Major automakers have increased their investments in various parts of the business to meet rising demand in recent months.

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Hyundai announced plans to invest INR 4,000 crores in R&D in India in December 2021 to launch six electric vehicles by 2028. Tata Motors stated in October 2021 that private equity firm TPG and Abu Dhabi's ADQ had agreed to invest INR 7,500 crore in its electric vehicle sector.

Acceleration & Yaw Rate Sensors Market Competitor Analysis

Major players operating in the global Acceleration and Yaw Rate Sensors market include Epson Europe Electronics GmbH, Robert Bosch GmbH, ST Microelectronics Continental AG, Baumer Holding AG, DIS Sensors BV, InnaLabs, Silicon Sensing Systems Ltd, Xsens Technologies B.V., Diversified Technical Systems, Inc., MEMSIC Semiconductor (Tianjin) Co., Ltd., CTS corporation among others.

June 2022- Silicon Sensing Systems Ltd is bringing its whole portfolio of all-silicon MEMS inertial sensors and systems to Sensors Converge in June, from tiny, low-cost navigation and pointing gyros to compact, tactical grade 9 degree of freedom inertial measurement units (IMUs).

Additional Benefits:

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

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