Automotive Intelligence Battery Sensor Market is expected to reach $ 10.3 BN by 2031, tracks battery health.

Automotive Intelligence Battery Sensor Market Report Provides Growth Factors, Industry Analysis, Size, Share, Trends and Outlook 2031

Automotive Intelligence Battery Sensor Market Analysis

AUSTIN, TEXAS, UNITED STATES, June 12, 2024 /EINPresswire.com/ -- The Automotive Intelligence Battery Sensor Market Size was valued at USD 4.85 billion in 2023 and is expected to reach USD 10.03 billion by 2031 and grow at a CAGR of 9.5% over the forecast period (2024-2031).

Market Drivers

The Automotive Intelligence Battery Sensor (IBS) market is fueled by a confluence of factors. Stringent emission regulations and consumer demand for eco-friendly vehicles are pushing car manufacturers towards increased production of electric and hybrid vehicles, which rely heavily on efficient battery management. IBS sensors play a critical role here, providing real-time data on voltage, current, and temperature, enabling optimal battery performance and lifespan. Additionally, growing concerns about environmental impact are driving the demand for fuel-efficient vehicles across segments, leading to a wider adoption of IBS in conventional gasoline and diesel cars as well. Furthermore, the increasing complexity of electrical systems in modern vehicles necessitates precise battery monitoring to prevent malfunctions and ensure passenger safety. This, coupled with rising production volumes across all vehicle categories, is creating a strong growth trajectory for the IBS market.

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Segment Analysis

By Technology

-LIN

-CAN

-MCU

By Technology

The local interconnect network (LIN) currently dominates the market due to its affordability. LIN excels in applications requiring low data transmission and simple protocols, making it ideal for battery sensors in vehicles. However, the controller area network (CAN) segment is rapidly growing due to its superior speed, strength, and reliability, which are crucial for complex communication within modern car electrical systems.

By Voltage

-12 Volt

-14 Volt

-24 Volt

-48 Volt

By Voltage

Reigning supreme in the market, 12-volt batteries hold the largest share due to their ease of recycling and efficient energy storage. This dominance is expected to continue as demand for electric vehicles (EVs) soars. The affordability of 12-volt batteries makes them attractive, further boosted by the growing need for advanced electronics in cars. Their safety in DC circuits adds another layer of appeal for manufacturers.

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The economic impact of the conflict and crisis between Russia and Ukraine

The Russia-Ukraine conflict has sent shockwaves through the Automotive Intelligence Battery Sensor (IBS) market. Ukraine housed production facilities for some IBS components, and sanctions on Russia have hampered access to raw materials crucial for sensor production. This has led to shortages and price hikes for IBS sensors. Additionally, car manufacturers, particularly

in Europe which relied heavily on Ukrainian parts, have faced production slowdowns due to a lack of IBS units. The overall impact is a potential dampening of market growth, especially in the short term. However, this crisis could also act as a catalyst for diversification of the IBS supply chain, potentially leading to new production hubs and a more resilient market in the long run.

Regional Analysis

The Asia Pacific region reigns supreme in the Automotive Intelligence Battery Sensor (IBS) market, driven by the dominance of China and Japan's rapidly developing automotive industries. Government backing in these countries fuels this growth, outpacing the progress of other regional players. Furthermore, the rise of the entire Asia Pacific market is fueled by a confluence of factors booming automobile manufacturing, a surge in demand for fuel-efficient vehicles across countries like China, Japan, South Korea, and India, and particularly strong growth in passenger car production within China and India. This has directly translated to a significant rise in 12V batteries used in the region. Additionally, stricter emission regulations like China VI and India VI are pushing car manufacturers to adopt IBS technology, further propelling the market forward. The cherry on top is the growing demand for luxury cars in the region, which also necessitates the use of advanced battery sensor technology. In conclusion, the Asia Pacific market is a powerhouse in the IBS sector, driven by a combination of strong governmental support for automotive development, a rising focus on fuel-efficiency, and increasing car production, particularly in the luxury segment.

Improvements in the market for Automotive Intelligence Battery Sensors

Draw attention to new developments in IBS technology applications and trends, which enables companies to find untapped markets and adjust their product offers.
A business may create a sensor especially for these smaller vehicles if the research indicates an increasing need for IBS in electric scooters or motorbikes.
Keeping up with IBS technology improvements might help organizations stay competitive. The creation of more affordable or efficient sensors may be covered in the report, enabling a business to modify its own production processes or research initiatives in order to stay competitive.
Indicate a need for IBS sensors to have extra functionality, including battery management system integration, and lead a manufacturer to concentrate R&D resources on those aspects.
The major key players are

-DENSO CORPORATION (Japan),

-Continental AG (Germany),

-HELLA GmbH and Co. KGaA (Germany),

-Vishay Intertechnology Inc. (U.S.),

-Inomatic GmbH (Germany)

-NXP Semiconductors (Netherlands),

-ams AG (Austria),

-Robert Bosch GmbH (Germany),

-Furukawa electric co., ltd. (Japan),

-MTA S.p.A. (Italy),

and other key players.

Recent Development

In May 2024, Continental AG introduced new sensors designed specifically for electric vehicles. These include the high-voltage Current Sensor Module (CSM), which measures both current and temperature to ensure battery safety and longevity, and the Battery Impact Detection (BID) system, which provides lightweight underfloor protection for batteries.

In July 24, 2023, Stellantis has made strides with its Intelligent Battery Integrated System (IBIS), which integrates inverter and charger functions into a single unit. This development is part of Stellantis's broader strategy to advance battery technology and establish new gigafactories in the U.S., reflecting the industry's push towards more efficient and integrated battery management systems

In September 2023, Honeywell increased the safety measures for lithium-ion batteries and EV workers by introducing Honeywell's battery safety sensors. This detects overheating risks, warns passengers, and helps EV makers meet global safety rules.

In August 2021, Faurecia completed the acquisition of Hella GmbH & Co. KGaA. The main purpose of this acquisition was to expand the former's offerings of automotive battery sensors and other automotive components.

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