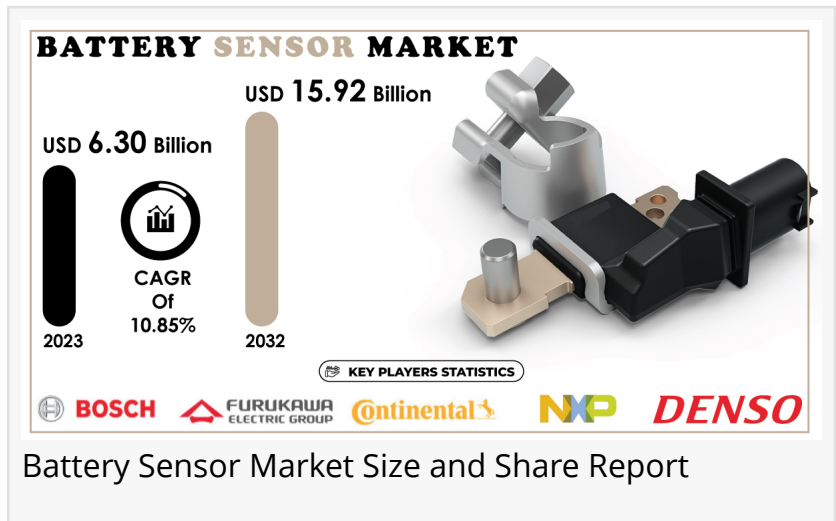


Battery Sensor Market to Reach USD 15.92 Billion by 2032, Driven by Rising Electric Vehicle Adoption | S&S Insider

The increasing demand for efficient battery management systems in electric vehicles (EVs) and renewable energy applications significantly drives market growth

AUSTIN, TX, UNITED STATES, October 31, 2024 /EINPresswire.com/ -- Market Size & Industry Insights

As Per the S&S Insider, "The [Battery Sensor Market size](#) was valued at USD 6.30 Billion in 2023 and is expected to reach USD 15.92 Billion by 2032 and grow at a CAGR of 10.85% over the forecast period 2024-2032."



Surge in Battery Sensor Demand Driven By Electric Vehicles and Sustainability

The growing need for efficient battery management systems in electric vehicles (EVs) and renewable energy applications is a significant factor propelling market growth. Battery sensors play a crucial role in enhancing performance and extending battery life by delivering real-time information on temperature, voltage, and current, thus ensuring optimal health and safety. Furthermore, the increasing focus on energy efficiency and sustainability across various industries is anticipated to drive the adoption of advanced battery sensor technologies, further stimulating market expansion in the coming years.

Accelerating Growth of the Battery Sensor Market Driven By Electric Vehicles

The battery sensor market is experiencing significant growth driven by rising demand for battery management systems (BMS) in electric vehicles (EVs), renewable energy storage, and portable electronics. Modern BMS are crucial for ensuring the safety, efficiency, and longevity of battery packs. Advanced BMS software is projected to save automakers USD 18 billion by 2030, up from USD 76 billion in 2024. For instance, Tesla employs advanced battery sensors to optimize the

performance of its lithium-ion battery packs. With increasing adoption of EVs due to environmental concerns and regulations like the EU's CO2 targets, sales surged by 35% in 2023, further boosting the demand for battery sensors.

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SWOT Analysis of Key Players as follows:

- Continental AG
- Furukawa Electric
- Bosch
- Vishay Technologies
- NXP Semiconductors
- Texas Instruments
- Inomatic
- Hella
- TE Connectivity
- Denso Corporation
- AMS AG
- Autotec Components
- Renesas Corporation
- Insplorion AB

Battery Sensor Market Dynamics: CAN and LIN Segments Drive Growth Amid Rising Voltage Demands

The controller area network (CAN) segment leads the battery sensor market, holding a 55% share in 2023. CAN sensors monitor critical parameters such as battery cell voltage, current, temperature, and remaining capacity, ensuring optimal battery operation. In electric vehicles, these sensors continuously track battery conditions and relay data to the battery management system, which optimally regulates charging and discharging, preventing overheating and complete depletion, thereby extending battery lifespan and enhancing safety. Conversely, the local interconnect network (LIN) segment is projected to grow faster, with a CAGR of 10.59% from 2024 to 2032, due to its cost-effectiveness and suitability for secondary battery monitoring in budget-friendly vehicles.

The 12V segment dominated the battery sensor market, accounting for over 46.18% market share in 2023, and is expected to maintain its lead throughout the forecast period. These low-cost 12V battery sensors are vital for regenerative and start/stop systems, supporting car batteries with capacities ranging from 400 to 1,000 amps, essential for implementing advanced technologies in vehicles. Conversely, the 24V segment is projected to grow significantly, with an expected CAGR of over 10.75% from 2024 to 2032. This voltage is commonly used in electric

commercial vehicles, buses, and military trucks, where higher power is needed for heavy equipment. For instance, a 24V battery sensor in a UPS system monitors battery health and alerts users when voltage is low, preventing critical power outages that could damage vital equipment.

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KEY MARKET SEGMENTS:

By Communication

- Local Interconnect Network (LIN)
- Controller Area Network (CAN)

By Voltage

- 12V
- 24V
- 48V

By Category

- Passenger Car
- Light Commercial Vehicle
- Heavy Commercial

By Type

- BEV
- HEV
- PHEV

Driving Forces: The Surge of Battery Sensor Markets in APAC, North America, and Europe

The Asia-Pacific (APAC) battery sensor market dominated the global landscape in 2023, capturing a substantial share of 44.17%. This growth is primarily driven by the surge in electric vehicle (EV) production and the increasing demand for sustainable mobility solutions. A key contributor to this expansion is the significant number of electric vehicle manufacturers operating in the region. In China alone, the number of registered electric cars reached 8.1 million in 2023, marking a 35% increase compared to the previous year. This robust growth in electric vehicle sales has become a cornerstone for the overall automotive market, even as traditional internal combustion engine vehicle sales experienced an 8% decline. As the market matures, manufacturers are investing in innovative battery sensor technologies and forging partnerships with startups. Concurrently, governments in APAC are imposing stricter regulations to curb CO2 emissions and combat air pollution.

Meanwhile, North America's battery sensor market is expected to grow steadily at a CAGR of

10.90% from 2024 to 2032, fueled by investments in EV charging infrastructure and stringent emission regulations. In the U.S., the share of EVs in the total vehicle market reached 7.6% in 2023, highlighting the rising demand for advanced battery sensors. Europe also shows substantial growth, with countries like Germany, France, and Norway leading in EV adoption and driving the need for high-performance battery sensors.

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Recent Development

- November 2023: United Safety & Survivability Corporation launched a Lithium-Ion Battery Failure Detection Sensor to improve electric vehicle safety.
- February 2024: Tekscan introduced a pressure mapping sensor for battery R&D and manufacturing, helping to identify design issues.
- May 2022: Continental launched the Current Sensor Module and Battery Impact Detection system, emphasizing battery protection and parameter retention in electric vehicles.

Key Takeaways

- The report provides a comprehensive analysis of the Battery Sensor Market, covering market size, growth potential, and competitive landscape.
- Insights into recent developments and technological advancements will help stakeholders identify opportunities for innovation and investment.
- The data presented will guide companies in navigating the evolving battery sensor landscape, ensuring they remain competitive in the growing market.

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