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Automotive Battery Management System Market by Battery Type (Lithium-ion, Lead-acid, Nickel-based, Solid-state), Topology (Modular, Centralized, Distributed), Application (Passenger Vehicles, Commercial Vehicles) and Region- Global Forecast to 2028

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Abstracts

The global automotive battery management system (BMS) market size is expected to grow from USD 4.7 billion in 2023 to USD 11.7 billion in 2028, at a CAGR of 19.8% from 2023 to 2028. Battery management systems are critical for monitoring multiple battery-related measures such as voltage, current, charge, power, health, and safety. Within the automotive industry, battery-powered vehicles are divided into three categories: passenger, commercial, and other vehicles, which cover a wide range of applications such as passenger cars, buses, trucks, e-bikes, two-wheelers, and three-wheelers. Several factors are propelling the popularity of EVs which include environmental concerns, advancements in battery technology, an expanding charging infrastructure, and others. Hence as the adoption of electric vehicles rise globally, demand for automotive BMS is anticipated to grow in the forecast period.

“Modular topology segment is projected to grow at highest CAGR during the forecast period”

A modular arrangement is also called decentralized, star, or master and slave’s topology. Each cell board handles a specific number of cells in the modular structure. Communication interfaces are employed to connect the master control board with the slave board that helps control the operations of the system. The modular architecture in an automotive BMS consists of two topologies—master-slave and peer-to-peer. The

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modular BMS architecture offers a trade-off between the advantages and drawbacks of centralized and distributed topologies. Most manufacturers prefer modular topology as it offers good computational power and is safe as it does not require extensive wire harnesses.

'The market in North America is expected to grow at a significant CAGR during the forecast period'

The North American automotive BMS market is further segmented into the US, Canada, and Mexico. With the implementation of many clean energy initiatives such as net zero emissions, across the region, the demand for electric vehicles, plug-in hybrid, and hybrid vehicles is rising. The governments of major countries in the region are taking initiatives such as providing incentives and subsidies to propel the adoption of EVs in their countries. Battery-powered vehicles such as electric vehicles, e-bikes, and automated guided vehicles are currently in high demand in the US.

Breakdown of the profiles of primary participants:

By Company Type: Tier 1 - 40%, Tier 2 - 30%, and Tier 3 - 30%

By Designation: C-level Executives - 45%, Directors - 35%, and Others - 20%

By Region: North America - 30%, Europe - 28%, Asia Pacific - 35%, and RoW – 7%

Major players profiled in this report are as follows: Ebersp?cher (Germany), Sensata Technologies, Inc. (US), AVL (Austria), LG Energy Solution (South Korea), Ficosa Internacional SA (Spain), Leclanch? SA (Switzerland), Nuvation Energy (US), Futavis GmbH (Germany), AMP (US) and others.

Research Coverage

The automotive BMS market has been classified by component, system type, battery type, topology, application, and region. The market by components has been classified into hardware and software. By system type, the market has been segmented into standalone BMS and integrated BMS. The battery type segment market is divided into lithium-ion batteries, lead-acid batteries, and others. The market has been divided into modular, centralized, and distributed topology segments. Furthermore, the application

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segment includes passenger vehicles, commercial vehicles, and other vehicles. The study also forecasts the market size in four key regions—North America, Europe, Asia Pacific, and RoW.

Key Benefits of Buying the Report:

The report provides insights on the following pointers:

> Analysis of key drivers (Growing penetration of electric vehicles, Increasing electrification of public transportation), restraints (Lack of standardization in battery management solutions, Complexity of various battery technologies), opportunities (Rising government initiatives globally for adoption of electric vehicles, Advantages of wireless battery management systems over conventional), and challenges (Complex designing process, Impact of external factors on performance) influencing the growth of the automotive BMS market

Product Development/Innovation: Detailed insights on new products, technologies, research & development activities, funding activities, industry partnerships, and new product launches in the automotive BMS market

Market Development: Comprehensive information about lucrative markets – the report analyses the automotive BMS market across regions such as North America, Europe, Asia Pacific, Middle East & Africa, and South America.

Market Diversification: Exhaustive information about new products & technologies, untapped geographies, recent developments, and investments in the automotive BMS market

Competitive Assessment: In-depth assessment of market position, growth strategies, and product offerings of leading players like Ebersp?cher (Germany), Sensata Technologies, Inc. (US), AVL (Austria), LG Energy Solution (South Korea), and Ficosa Internacional SA (Spain) among others in the automotive BMS market

Strategies: The report also helps stakeholders understand the pulse of the automotive BMS market and provides information on key market drivers, restraints, challenges, and opportunities.

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*Details on Business Overview, Products/Solutions/Services Offered, Recent Developments, and MnM View (Key strengths/Right to Win, Strategic Choices Made, and Weaknesses and Competitive Threats) might not be captured in case of unlisted companies.

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