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Current Sensor Market by Measurement (Less than 10A, 10-100A, Above 100A), Offering (Isolated, Non-isolated), Technology (Hall-effect, AMR, GMR, TMR, Flux Gate, Current Sensing Amplifier, Opto-isolated and Shunt Isolated OP Amp) - Global Forecast to 2030

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Abstracts

The global current sensor market was valued at USD 3.24 billion in 2025 and is estimated to reach USD 5.41 billion by 2030, registering a CAGR of 10.8% during the forecast period. Increasing use of battery-driven systems and rising focus on renewable power, creating demand for low-power-consuming power monitoring solutions. The pervasive adoption of Hall-effect current sensors and the picking up demand from the consumer electronics market further substantiates the growth in the market. Furthermore, the swift production of hybrid and electric vehicles is spurring the demand for precise and resilient current sensing technology.

“Closed-loop current sensors to contribute significant share in current sensor market.”

In current sensor market by loop type, the closed-loop segment accounted for the highest share in 2024 owing to more accuracy, has quick response time, and high stability in the measurement of current for a wide range of applications. Closed-loop current sensors employ a compensation coil that counteracts the magnetic field developed by the primary current, hence producing accurate and linear measurements with less drift with time. These sensors are predominantly used in industrial automation, automotive, and energy industries where precise current monitoring is critical for motor control, power conversion, and battery management systems. Increasing use of electric vehicles (EVs) and hybrid electric vehicles (HEVs) has increased demand for closed-loop sensors as they have high bandwidth and low temperature dependence, and thus are well suited for power inverters and charging infrastructure. Moreover, the growing

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applications of renewable energy sources like solar and wind power have necessitated highly precise current sensing in the fields of energy storage and grid management. As semiconductor technologies improve and the demand for stable, high-performance sensing applications grows, closed-loop current sensors remain the industry leader.

“Magnetic current sensors to grow significantly in the current sensor market.”

Magnetic current sensors are anticipated to have the highest CAGR during the forecast period in the market for current sensors because they can offer non-intrusive, high-precision current measurements with low power loss. Hall-effect, AMR, GMR, TMR, and flux gate technologies are some of the sensors that are becoming more popular due to their versatility, small size, and high efficiency in measuring AC and DC currents. Growing demand for electric vehicles (EVs) and hybrid electric vehicles (HEVs) has been the key driver for market growth, as magnetic current sensors are central to battery management systems (BMS), power inverters, and motor controllers. The growing number of renewable energy projects, especially solar and wind power projects, has created demand for accurate current sensing in energy storage and grid stabilization. Industrial automation, consumer electronics, and telecommunications are also major industries that are leading growth. Demand for accurate power monitoring in high-frequency switching applications keeps growing. In addition, improvements in semiconductor technology have made highly sensitive and cost-effective magnetic current sensors possible, which continue to gain popularity across industries.

“Asia Pacific will contribute significantly to the growth rate in current sensor market.”

The Asia Pacific is anticipated to exhibit highest CAGR for the current sensor market over the forecast period through speedy industrialization, rising auto manufacturing, and heightened utilization of alternative sources of energy. Some of the prime countries like China, Japan, South Korea, and India lead electric vehicle (EV) manufacturing where existing sensors find pivotal functions in battery control systems, power inverters, and motor drive units. Also, the growing emphasis on smart grids and renewable energy infrastructure, particularly solar and wind power, has stimulated demand for high-accuracy current sensing solutions. The consumer electronics market in the region, with strong demand for smartphones, wearables, and home automation devices, also stimulates market growth. Expanding industrial automation and robotics, especially in manufacturing and process industries, have also increased the adoption of current sensors for real-time monitoring and energy efficiency. Moreover, government initiatives promoting electrification, energy efficiency, and smart infrastructure projects are driving

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further investments in advanced current sensing technologies, contributing to the region’s strong market growth.

In-depth interviews have been conducted with chief executive officers (CEOs), Directors, and other executives from various key organizations operating in the current sensor market place.

By Company Type: Tier 1 – 40%, Tier 2 – 35%, and Tier 3 – 25%

By Designation: C-level Executives – 48%, Directors – 33%, and Others – 19%

By Region: North America– 35%, Europe – 18%, Asia Pacific– 40% and RoW- 7%

The study includes an in-depth competitive analysis of these key players in the current sensor market, with their company profiles, recent developments, and key market strategies.

Research Coverage

This research report categorizes the current sensor market by current sensing methods, loop types, technologies, mounting types, measurement ranges, output types, industries and region (North America, Europe, Asia Pacific). The report scope covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of the current sensor market. A detailed analysis of the key industry players has provided insights into their business overview, solutions and services, key strategies, Contracts, partnerships, and agreements. New product and service launches, acquisitions, and recent developments associated with the current sensor market. This report covers competitive analysis of upcoming startups in the current sensor market ecosystem.

Reasons to buy this report

The report will help the market leaders/new entrants with information on the closest approximations of the revenue numbers for the current sensor market, and subsegments. This report will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report also helps stakeholders understand the market pulse and

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provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (Growing use of battery-powered systems and increasing focus on renewable energy, high adoption of hall-effect current sensors, increasing demand from consumer electronics industry), restraints (Intense pricing pressure resulting in fluctuations in average selling price (ASP), accuracy and sensitivity trade-offs with high electromagnetic interference (EMI)), opportunities (Increase in number of networked devices, increase in manufacturing of hybrid and electric cars, miniaturization of current sensors, global investments for renewable energy adoptions), and challenges (Fluctuations in accuracy of current sensors over varying temperature ranges and need for product differentiation and development of innovative solutions) influencing the growth of the current sensor market.

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product launches in the current sensor market

Market Development: Comprehensive information about lucrative markets – the report analyses the current sensor market across varied regions.

Market Diversification: Exhaustive information about new products, untapped geographies, recent developments, and investments in the current sensor market

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like as Asahi Kasei Corporation (Japan), Infineon Technologies AG (Germany), Allegro MicroSystems, Inc. (US), LEM International SA (Switzerland), and TDK Corporation (Japan) among others in the current sensor market.

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