

# **Smart Sensors Market by Type (Temperature & Humidity Sensor, Pressure Sensor, Motion & Occupancy Sensor), Technology (CMOS, MEMS), Component (Microcontrollers, Amplifiers, Transceivers), End-User Industry and Region - Global Forecast to 2029**

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## **Abstracts**

The smart sensors market was valued at USD 61.9 billion in 2024 and is projected to reach USD 136.3 billion by 2029; it is expected to grow at a CAGR of 17.1% from 2024 to 2029. Government support for construction of green buildings, rising demand for smart sensor-enabled wearable devices, and growing need for predictive maintenance in industries provide lucrative opportunities to the smart sensors market.

“Temperature & Humidity sensors segment to register highest growth rate during the forecast period.”

The temperature & humidity sensors segment is expected to record the highest CAGR during the forecast period due to their expanding application areas and increasing demand in various sectors. Temperature and humidity are one of the the major parameters monitored by smart sensors in smart homes and automotives.

Several emerging trends are driving the demand for temperature and humidity sensors in various industries. One of them is the increasing demand for smart home and building automation systems. These systems rely heavily on temperature and humidity sensors to regulate heating, ventilation, and air conditioning (HVAC) systems, resulting in increased energy efficiency and improved comfort. Another trend is the growing use of connected agriculture, where sensors are utilized to monitor and optimize crop growth

conditions, including temperature and humidity. This helps in improving agricultural yields and resource management. Lastly, the expansion of the Internet of Things (IoT) has resulted in various devices and appliances becoming connected. This has led to an increased need for environmental monitoring sensors like temperature and humidity sensors to collect data and enable intelligent decision-making.

“MEMS technology segment is expected to register highest growth rate during the forecast period.”

The MEMS technology segment holds the largest market share and is expected to grow with the highest growth rate during the forecast period from 2024 to 2029. MEMS-based sensors are versatile and widely used across various sectors. They have a significant market share in the smart sensor market. They are used in automotive for airbag deployment, tire pressure monitoring, and navigation systems. For consumer electronics, they are used in smartphones and wearables for motion tracking and image stabilization. In industrial automation, they are used for process control, liquid flow monitoring, and vibration monitoring. In healthcare, they are used for blood pressure monitoring, activity monitoring, and acceleration measurement.

“Germany in Europe is expected to hold the largest market share during the forecast period.”

In 2023, Germany accounted for the largest share of the European smart sensors market. Germany has a large number of automobile and chemical manufacturing plants. The growth of the market in this country can be attributed to the fact that Germany has emerged as a global automobile hub in the world. As such, the country witnesses increased demand for automobile sensors that are intelligent and can be used to control and process oil pressure and temperature in automobiles. They also regulate vehicle emission levels, coolant levels, etc. Also, a surge in the adoption of industrial automation and predictive maintenance in various manufacturing industries is likely to drive market growth in Germany.

Following is the breakup of the profiles of the primary participants for the report.

By Company Type: Tier 1 – 45 %, Tier 2 – 35%, and Tier 3 – 20%

By Designation: C-Level Executives –32%, Directors- 40%, and Others – 28%

By Region: Americas– 37%, Europe- 15%, Asia Pacific – 40%, and RoW – 8%

The report profiles key smart sensors market players and analyzes their market shares. Players profiled in this report are Analog Devices, Inc. (US), Infineon Technologies AG (Germany), Texas Instruments Incorporated (US), Microchip Technology Inc. (US), STMicroelectronics (Switzerland), TE Connectivity (Switzerland), Siemens (Germany), ABB (Switzerland), etc.

## Research Coverage

The report defines, describes, and forecasts the smart sensors market based on Type, Component, Technology, Network Connectivity, End-user Industry, and Region. It provides detailed information regarding drivers, restraints, opportunities, and challenges influencing the growth of the smart sensors market. It also analyses competitive developments such as product launches, acquisitions, expansions, contracts, partnerships, and actions conducted by the key players to grow in the market.

## 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 overall high-speed data converter and the 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 provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (Surging demand for IOT-based devices and consumer electronics, increasing use of smart sensors to meet Industry 4.0 requirements, high demand for smart sensors in automobile industry, and increasing demand for wireless technology to monitor and control security devices), restraints (High installation and maintenance costs), opportunities (Rising demand for smart sensor-enabled wearable devices, government support for construction of green buildings, and growing need for predictive maintenance in industries), and challenges (Stringent application-based performance requirements, and lack of skilled workforce) influencing the growth of the smart sensors market.

**Product Development/Innovation:** Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the smart sensors market

**Market Development:** Comprehensive information about lucrative markets – the report analyses the smart sensors market across varied regions.

**Market Diversification:** Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the smart sensors market

**Competitive Assessment:** In-depth assessment of market shares, growth strategies, and service offerings of leading players like Analog Devices, Inc. (US), Infineon Technologies AG (Germany), Texas Instruments Incorporated (US), Microchip Technology Inc. (US), STMicroelectronics (Switzerland), TE Connectivity (Switzerland), Siemens (Germany), ABB (Switzerland), Honeywell International Inc. (US), Robert Bosch GmbH (Germany), TDK Corporation (Japan), Sensirion AG (Switzerland), Eaton (Ireland), Emerson Electric Co. (US), NXP Semiconductors (Netherlands), General Electric (US), Legrand (France), Balluff GmbH (US), among others in the smart sensors market strategies. The report also helps stakeholders understand the pulse of the smart sensors market and provides them with information on key market drivers, restraints, challenges, and opportunities.

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\*Details on Business Overview, Products/Solutions 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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