

## **Thermocouple Temperature Sensors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

Market Report | 2025-04-28 | 120 pages | Mordor Intelligence

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### **Report description:**

The Thermocouple Temperature Sensors Market is expected to register a CAGR of 3.68% during the forecast period.

#### Key Highlights

- Further, the introduction of advanced technologies in the global sensors market, along with the constantly growing trend of digital transformation in the industrial world, has resulted in the rising demand for sensors, especially for smart sensors.
- Thermocouple temperature sensors are mainly used for thermal management and automatic transmissions systems in the automotive industry. Therefore, the stringent emission norms for automobiles, aggressive development in an autonomous vehicle, and increasing penetration of electric vehicle (EV), globally, are some of the major factors driving the market growth. For instance, the Indian government is focusing on creating charging infrastructure and policy framework, so that by 2030, more than 30% of vehicles are electric vehicles.
- In February 2019, STMicroelectronics' entered into a partnership with Hyundai Autron, to launch a development lab for eco-friendly automotive sensor solutions. The collaboration will provide the environment for engineers to collaborate on pioneering solutions for eco-friendly vehicles, with a focus on powertrain controllers.
- However, technical awareness about sensor and heating issues in the extreme condition is the key restraints which hamper the market growth.

#### Thermocouple Temperature Sensors Market Trends

Automotive Industry is Expected to Register a Significant Growth

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- The need for temperature sensors for safety and precision measurements of the smart automotive equipment, to analyze and produce timely sensor data, is likely to increase because of the miniaturization of the intelligent sensor technology. This is expected to fuel the demand for thermocouple temperature sensors in this application.
- Further, Automatic Temperature Control (ATC) is a common feature in most of the electric vehicles and high-end models in the mid-range segment. The increased sales of electric vehicles among high disposable income regions, such as the United States, Germany, and China, provides an opportunity for the growth of the thermocouple temperature sensors market.
- The battery charges used for charging multiple devices in the automotive segment are equipped with temperature-sensing elements that regularly check and monitor heating issues, as this is a common problem with batteries mostly used in automated vehicles. This helps in increasing the life of devices and decreases damage. Thereby, ensuring that the batteries are sufficiently charged.
- The increasing production of electric vehicles is expected to drive the demand for thermocouple temperature sensors.

#### North America Holds the Largest Market Share

- The United States is expected to have a prominent share in the thermocouple temperature sensor market. The country is one of the largest automotive markets in the world and is home to over 13 major auto manufacturers. Electric vehicle use in the United States has risen rapidly, with an estimated 1% of automotive sales in the US market for electric vehicles.
- California dominates the US market in terms of sales of electric vehicles (EVs). It's Zero Emission Vehicle (ZEV) program is driving the demand for EVs, by requiring automakers in the states to sell a certain percentage of electric cars. The US auto market is likely to further pressurize automakers to expand their affordable EV offerings. Hence, fueling the demand for thermocouple temperature sensors in the country.
- Further, US aerospace manufacturers are very competitive internationally. In 2017, the aerospace industry contributed USD 143 billion in export sales to the US economy. Companies in the aerospace sector, such as Boeing, won contracts worth USD 12 billion in 2018, to supply 47 new 787 Dreamliner jets to American Airlines. Similarly, the company signed a deal with Singapore Airlines for the delivery of 39 new wide-body jets, worth USD 13.8 billion, in 2017. The above-mentioned trends are expected to drive the demand for thermocouple temperature sensors in the country.

#### Thermocouple Temperature Sensors Industry Overview

The thermocouple temperature sensors market is highly competitive and consists of several major players. Some of the key players are Texas Instruments Inc., STMicroelectronics, Honeywell International Inc., Danfoss Group, among others. These companies are leveraging their strategic collaborative initiatives to increase their market share and profitability. The companies operating in the market are also acquiring start-ups working on thermocouple temperature sensor technologies to strengthen their product capabilities.

- January 2019 - Honeywell Home introduced two new T-Series smart thermostats. The greatest difference between the new thermostats and earlier T-Series models is support for wireless Smart Room Sensors to balance and prioritize temperature in the home. Smart Room Sensors monitor temperature, humidity, and motion and use that information to prioritize different areas in a home. Prioritizing lets you configure which room or rooms are most important. The entire heating and cooling system will be managed, so the temperature and humidity in the higher priority rooms and areas take precedence over lower priority locations.

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Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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