

Temperature Sensor For Space Application Market Projected to Reach \$1.63 Billion with 8.9% CAGR by 2029

*The Business Research Company's
Temperature Sensor For Space
Application Global Market Report 2025 -
Market Size, Trends, And Global Forecast
2025-2034*

LONDON, GREATER LONDON, UNITED
KINGDOM, October 7, 2025

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What Is The Expected Cagr For The Temperature Sensor For Space Application Market Through
2025?



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[The market size for temperature sensors](#) used in space applications has seen robust growth in recent times. It is projected that this market will grow from a \$1.06 billion valuation in 2024 to \$1.16 billion in 2025, with a compound annual growth rate (CAGR) of 9.3%. Factors that contributed to the growth in the historical period include the increase in space exploration activities and satellite settlements, advancements in sensor miniaturization and resistance to radiation, heightened government and commercial investments in space programs, increased necessity for highly accurate temperature monitoring in

spacecraft, and the rise in the incorporation of artificial intelligence and wireless technologies to enhance sensor reliability.

[The market for temperature sensors for space application](#) is predicted to experience robust growth in the coming years, escalating to a value of \$1.63 billion by 2029 with an 8.9% CAGR. The expected growth during the forecast timeframe is due to a surge in demand for accurate temperature monitoring on spacecraft, increased investment in space exploration initiatives,

heightened use of compact and wireless temperature sensors, and a growing requirement for trustworthy sensors in harsh space conditions. Moreover, the commercial success of satellite and space missions plays a role in this growth. Looking forward, advancements in wireless and IoT integration, the creation of intelligent temperature sensors that can self-monitor, breakthroughs in materials science improving sensor durability, miniaturization progression for space systems, and the development of multi-point sensors for real-time thermal mapping will dominate the trends in the forecast period.

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What Are The Key Factors Driving Growth In The Temperature Sensor For Space Application Market?

The growing inclination towards space exploration is set to boost the development of the temperature sensor market in space applications. Space exploration engages the utilization of astronomy, spacecraft, and numerous related technologies for the survey and research of outer space to extend human wisdom and abilities beyond the Earth. The escalating adoption of space exploration occurs due to technological improvements, where creative advancements in spacecraft architecture, propulsion, and robotics result in more productive, safe, and economically viable missions. In severe space conditions, temperature sensors support space exploration by guaranteeing that spacecraft, instruments, and habitats function within secure thermal boundaries. For instance, the Space Foundation, in January 2024, a non-profit organization in the US focusing on space, reported that for the third consecutive year, global launching activity achieved new peaks, with 223 launch attempts and 212 successful ones. There was a 50% surge in commercial launch activity compared to 2022. As such, the burgeoning adoption of space exploration is fostering [the growth of the temperature sensor market in space applications](#).

What Are The Top Players Operating In The Temperature Sensor For Space Application Market?

Major players in the Temperature Sensor For Space Application Global Market Report 2025 include:

- RTX Corporation
- Texas Instruments Incorporated
- STMicroelectronics N.V.
- TE Connectivity Limited
- Emerson Electric Co.
- Murata Manufacturing Co. Ltd.
- Analog Devices Inc.
- Renesas Electronics Corporation
- Microchip Technology Inc.
- AMETEK Inc.

What Are The Future Trends Of The Temperature Sensor For Space Application Market?

Leading businesses in the temperature sensor for space application market are prioritizing the creation of innovative products including thermal imaging sensors. These new products are designed to allow real-time monitoring of Earth, improve spacecraft thermal regulation, increase wildfire detection accuracy, and provide precise temperature observation for key space missions. With a thermal imaging sensor, infrared radiation emitted by objects can be detected and transformed into a visual image that showcases temperature fluctuations. For example, in July 2023, German intelligence-as-a-service company Ororatech GmbH introduced the FOREST-2 thermal sensor. This sensor is used in a commercial orbit-based network to maintain consistent temperature monitoring of the Earth. It is a beneficial tool for agencies such as fire departments, forestry services, and utilities, providing immediate wildfire detection and continuous situational awareness. The predictive data the sensor provides aids organizations in implementing preventative actions to efficiently manage and limit wildfire hazards.

Comprehensive Segment-Wise Insights Into The Temperature Sensor For Space Application Market

The temperature sensor for space application market covered in this report is segmented

- 1) By Product Type: Thermocouples, Resistance Temperature Detectors, Thermistors, Infrared Sensors, Others Product Types
- 2) By Application: Satellites, Spacecraft, Launch Vehicles, Space Stations, Others Applications
- 3) By End-User: Government Space Agencies, Commercial Space Companies, Research Institutes, Others End-Users

Subsegment:

- 1) By Thermocouples: Type K Thermocouples, Type J Thermocouples, Type T Thermocouples, Type E Thermocouples
- 2) By Resistance Temperature Detectors: Wire Wound Resistance Temperature Detectors, Thin Film Resistance Temperature Detectors
- 3) By Thermistors: Negative Temperature Coefficient Thermistors, Positive Temperature Coefficient Thermistors
- 4) By Infrared Sensors: Thermal Infrared Sensors, Quantum Infrared Sensors
- 5) By Other Product Types: Solid State Temperature Sensors, Bimetallic Temperature Sensors, Fiber Optic Temperature Sensors

View the full temperature sensor for space application market report:

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Global Temperature Sensor For Space Application Market - Regional Insights

In 2024, the North American region dominated the global market for temperature sensors used in space applications. Furthermore, Asia-Pacific is anticipated to witness the most rapid growth over the forecasted period. The market report for these temperature sensors includes regions such as Asia-Pacific, Western Europe, Eastern Europe, North America, South America, as well as

the Middle East and Africa.

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