

# **Piezoelectric Devices Market by Product (Sensors, Actuator, Motor, Generator, Transducer, Transformers, Resonator), Material (Polymer, Crystal, Ceramic, Composites), Element (Discs, Rings, Plates), Application and Region - Global Forecast to 2028**

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## **Abstracts**

The piezoelectric devices market is valued at USD 32.7 billion in 2023 and is projected to reach USD 46.0 billion by 2028, growing at a CAGR of 7.0% from 2023 to 2028. Developing alternative materials to PZT ceramic materials having similar properties is one of the major challenge in the market.

“Market for piezoelectric transducers to hold second-largest share during the forecast period.”

Piezoelectric transducer is expected to have second largest market size in terms of product during the forecast period. Piezoelectric transducers use the piezoelectric effect to measure changes with respect to acceleration, force, pressure, strain, and temperature. They produce an electric output voltage by converting these parameters into an electric charge. Piezoelectric ultrasonic transducers transmit and receive ultrasonic waves used in sensing and imaging applications. These devices possess the properties of both sensors and actuators.

“Market for piezoelectric crystal segment is expected to hold the significant share during the forecast period”

Piezoelectric crystals are small-scale energy sources. They change their shapes in small amounts, mostly in nanometers, and generate electricity whenever subjected to vibrations or external mechanical stress. When a mechanical force is applied for

ultrasound applications, piezoelectric crystals are automatically deformed and produce a tiny voltage, which is used for producing and detecting ultrasonic sound waves.

“Market for healthcare application segment to witness highest growth during the forecast period ”

The healthcare application is expected to record the highest CAGR in the piezoelectric devices market during the forecast period. The healthcare sector depends on advanced techniques, including imaging, diagnostic scanning, and robotic surgeries, to provide the best possible care to patients. Medical device manufacturers are aware of the benefits of integrating piezoelectric components and materials into life-saving medical devices such as respirators, ventilators, and atomization systems.

“Germany is expected to have largest market size in Europe during the forecast period”

Germany is one of the largest manufacturing hubs for automobile companies in Europe. Technological innovations in the automotive sector of the country contribute to the growth of the piezoelectric devices market in Germany. Along with the automotive industry, piezoelectric devices are also likely to be adopted in industrial and manufacturing, consumer electronics, and healthcare applications. As Germany has the largest automotive sector, it witnesses a higher consumption of piezoelectric actuators, motors, and sensors.

In the process of determining and verifying the market size for several segments and subsegments gathered through secondary research, extensive primary interviews have been conducted with key industry experts in the piezoelectric devices space. The break-up of primary participants for the report has been shown below:

By Company Type: Tier 1 – 40%, Tier 2 – 40%, and Tier 3 – 20%

By Designation: C-level Executives – 40%, Directors –40%, and Others – 20%

By Region: North America –40%, Asia Pacific– 30%, Europe – 20%, and RoW – 10%

The report profiles key players in the piezoelectric devices market with their respective market ranking analysis. Prominent players profiled in this report are include CeramTec

GmbH (Germany); CTS Corporation (US); Kistler Group (Switzerland); Physik Instrumente (PI) GmbH & Co. KG. (Germany); piezosystem jena GmbH (Germany); Piezo Technologies (US); Aerotech Inc. (US); APC International, Ltd., (US); Mad City Labs, Inc. (US). Apart from these, Kinetic Ceramics (US), Johnson Matthey Piezo Products GmbH (Germany), PI Ceramic (Germany), Piezo Solutions (US), DYTRAN INSTRUMENTS INCORPORATED (US), Piezomechanik Dr. Lutz Pickelmann GmbH (Germany), PiezoMotor (Sweden), PCB Piezotronics, Inc. (US) are among a few emerging companies in the piezoelectric devices market.

## Report Coverage

The report defines, describes, and forecasts the piezoelectric devices market based on product, material, application, element, operation mode and region. It provides detailed information regarding drivers, restraint, opportunities, and challenges influencing the growth of piezoelectric devices market. It also analyzes competitive developments such as product launches, acquisition, expansion contract, partnership and action carried out by the key players to grow the market.

## Reasons to Buy This Report

The report will help the market leaders/new entrants in the market with information on the closest approximations of the revenue for the overall piezoelectric devices market and the subsegments. The report will help stakeholders understand the competitive landscape and gain more insight to position their business better and plan suitable go-to-market strategies. The report also helps stakeholders understand the pulse of the market and provides them information on key drivers, restraint, opportunities, and challenge.

The report will provide insights to following pointers:

Analysis of key drivers ( High adoption of piezoelectric devices in aerospace & defense industry), restraints (High costs associated with piezoelectric materials), opportunities (growing use of piezoelectric nanomaterials in electronic devices) and challenges ( Developing alternative materials to PZT ceramic materials having similar properties) of the piezoelectric devices market.

Product development /Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the piezoelectric devices market.

**Market Development:** Comprehensive information about lucrative markets, the report analyses the piezoelectric devices market across various regions.

**Market Diversification:** Exhaustive information about new product & services, untapping geographies, recent developments, and investments in the piezoelectric devices market.

**Competitive Assessment:** In depth assessment of market share, growth strategies, and services, offering of leading players like CeramTec GmbH (Germany); CTS Corporation (US); Kistler Group (Switzerland); Physik Instrumente (PI) GmbH & Co. KG. (Germany); piezosystem jena GmbH (Germany) among others in piezoelectric devices market.

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### **7.5 PIEZOELECTRIC POLYMERS**

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### 8.7.1 INCREASING USE OF PIEZOELECTRIC SENSORS IN CONSUMER ELECTRONICS TO DRIVE MARKET

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9.2.1 CONSUME LOW POWER AND PROVIDE FAST RESPONSE

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9.3.1 DESIGNED FOR HEALTHCARE AND ULTRASONIC APPLICATIONS

### **9.4 PIEZOELECTRIC PLATES**

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11.2.2.1 To be largest North American piezoelectric devices market

11.2.3 CANADA

11.2.3.1 To witness significant investment for R&D of piezoelectric technology

11.2.4 MEXICO

11.2.4.1 Increasing number of industrial & manufacturing facilities to support market

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11.3.2.1 Growing automotive sector to contribute to market growth

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11.3.4.1 Thriving aerospace & defense industry to witness high demand for piezoelectric devices

11.3.5 ITALY

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11.3.6 REST OF EUROPE

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11.4.2.1 Emphasis on R&D of piezoelectric materials to accelerate market growth

11.4.3 CHINA

11.4.3.1 To be fastest-growing market in Asia Pacific

11.4.4 SOUTH KOREA

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\*Details on Business Overview, Products/Solutions/Services Offered, Recent Developments, MnM view (Key strengths/Right to win, Strategic choices made, Weakness/competitive threats)\* might not be captured in case of unlisted companies.

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