

Capacitive Pressure Sensor - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

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Report description:

The Capacitive Pressure Sensor Market size is estimated at USD 4.03 billion in 2024, and is expected to reach USD 5.92 billion by 2029, growing at a CAGR of 8% during the forecast period (2024-2029).

Key Highlights

- Pressure sensors with a capacitive cell have been designed to offer unique and accurate results to the existing equipment. The distinct advantages of ceramic material allow sensors to provide long-term stability and reliability with high resistance to pressure.
- Capacitive pressure sensors have become increasingly popular compared to resistive sensing technology due to their impressive sensitivity, accuracy, and lack of wear and tear issues. Due to their numerous standout features, these sensors increasingly replace resistive sensors in many applications. Additionally, advancements in sensor technology have resulted in the creation and shift towards smaller sensors, presenting numerous opportunities for industry leaders.
- The capacitive pressure sensor's simple and robust mechanical structure enables several industrial applications. Capacitive pressure sensors can sustain harsh industrial conditions due to the use of ceramics and provide a quicker response rate.
- As MEMS technology has improved, capacitive pressure sensors have become smaller, which has made them useful in more industries. The miniaturization of capacitive pressure sensors has reduced their production costs. Hence, the capacitive pressure sensor market is growing with its cheap, efficient, and wide array of applications.
- Furthermore, sales of automobiles, particularly electric vehicles, have increased significantly in the last year. That is expected to grow more in the future and thus will impact the market for capacitive pressure sensors as well.
- Additionally, the COVID-19 impacted the market very heavily due to lockdowns and other rules and regulations imposed by governments around the globe. However, in the post pandemic scenario, the market had grown a lot due to the fast growth of the industries that used it, such as the automotive, medical, oil and gas, and other industries.

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-However, there is not as much of a barrier to entry, many companies now offer capacitive pressure sensors. This makes prices very competitive and makes it hard to differentiate one product from another, which is slowing market growth.

Capacitive Pressure Sensor Market Trends

Automotive Segment is Expected to Observe Significant Market Growth

- One of the most important things when designing and making pressure sensors for use in cars is that they work well in a wide range of temperatures, vibrations, media, shocks, and electromagnetic conditions. In other words, the sensor must be durable enough to do its job.
- The rapid evolution of the automotive sector, with the advent of autonomous vehicles or electric vehicles, emphasizes the miniaturization of equipment for applications, primarily driving the market's growth.
- Major automotive manufacturers are currently increasing their manufacturing capacity in the electric vehicle sector. An example is the announcement by Volkswagen and Siemens made in June 2022. They stated their intention to invest a significant amount of USD 450 million, which would value Electrify America at USD 2.45 billion. This collaborative effort aims to double the number of Electrify America charging stations across the US and Canada by 2026.
- The global sales of electric vehicles will cross 4.3 million new BEVs and PHEVs during the first half of 2022, as stated by EV-Volumes.com. The huge demand for automotive vehicles and their rapid developments are expected to augment the capacitive pressure sensor market.
- Additionally, According to IEA, In 2022, an estimated 10.2 million units of plug-in electric light vehicles (PEVs) were sold. Additionally, electric vehicle sales in Europe's five major markets witnessed a significant increase in 2022. Also, United States sales of all-electric and plug-in electric vehicles peaked in 2022. For instance, according to EERE and the U.S. Department of Energy's Argonne National Laboratory, plug-in electric vehicle (PEV) sales reached 918,500 units in the United States in 2022, compared to 607,600 units in 2021. Such rise in electric vehicles is likely to boost the demand for capacitive pressure sensors globally.

North America Region is Expected to Dominate the Market

- North America is expected to dominate the capacitive pressure sensor market due to the stable industrial structure across the continent. More and more research and development (R&D) is being done in the area, making it the leader in innovation and getting it to market.
- Medical applications of capacitive sensors have shown significant growth over the past year. Respirators, ventilators, vital sign monitors, and airflow applications are major medical end-user applications. Many tech companies are conducting new research and launching their products on the market for monitoring blood pressure. For instance, technology giant Apple Inc. filed a patent application for a blood pressure monitoring cuff.
- The region also leads the aerospace and defense industries. The United States is the country with the highest defense spending. According to SIPRI, World military expenditure increased by 3.7% in real terms in 2022, reaching a new peak of USD 2,240 billion. Global spending has experienced a significant growth of 19.0% over the span of 2013-22 and has consistently risen each year since 2015. In addition, NASA has announced its plans for future projects, focusing on expanding and exploring the solar system. Such rise in aerospace and industries are likely to bring more demand for capacitive pressure sensors in the region.
- Additionally, These massive investments across various industries by organizations in the region are driving the market for capacitive pressure sensors and their applications.

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Capacitive Pressure Sensor Industry Overview

The Capacitive Pressure Sensor Market is highly fragmented with numerous players. With the declining product cost of capacitive pressure sensors, a rise in the number of players offering the product is observed. Additionally, the need for more differentiation in the product offerings made the vendors adopt competitive pricing strategies. The market has several leading players, such as ACS-Control-System GmbH, BD Sensors GmbH, Infineon Technologies, TE Connectivity, etc.

- June 2023: Infineon Technologies AG introduced its two new XENSIV barometric air pressure (BAP) sensors: the KP464 and KP466. These sensors are specifically designed for automotive applications and offer a range of benefits. The KP464 is ideal for engine control management, while the KP466 BAP sensor is specifically intended for enhancing seat comfort functions. The KP464 and KP466 sensors are high-performance, high-precision, and compact digital absolute pressure sensors that utilize the capacitive measurement principle.

- May 2023: Dwyer Instruments released its latest industrial differential pressure transmitter. The Series IDPT industrial differential pressure transmitter from Dwyer is designed with durable and water-resistant housing, ensuring it can withstand challenging industrial environments. It offers exceptional accuracy and stability, making it ideal for long-term use in various industrial applications. This pressure transmitter features a capacitive pressure sensor for ranges of 0 to 0.25 in w.c. to 0 to 1 in w.c. and a piezo sensor for ranges of 0 to 2.5 in w.c. to 0 to 10 in w.c. Customers can choose between accuracy options of 0.25% or 0.5% full-scale.

Additional Benefits:

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

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