

Capacitive Sensors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Capacitive Sensors Market size is estimated at USD 32.87 billion in 2025, and is expected to reach USD 41.79 billion by 2030, at a CAGR of 4.92% during the forecast period (2025-2030).

Capacitive sensing technology is witnessing swift developments to meet modern applications' advanced user interface requirements. The increasing preference for capacitive sensors, due to their exceptional durability, superior sensitivity, and higher measurement accuracy than resistive or inductive sensors, is one of the primary factors driving the market's growth.

Key Highlights

- The rise in automation of complex production systems has increased the demand for components capable of providing critical data related to the production process. These sensors facilitate process control in factories by detecting the presence and position of metal objects.
- Implementing touchscreen display systems as human-machine interaction by end-users, such as consumer, industrial, automotive, and medical, is also anticipated to drive the demand for capacitive sensors. Additionally, the increasing factory automation of production processes is expected to spur the demand for capacitive sensors in the healthcare and automotive industries.
- The outlook of the market studied is positive. It is expected to grow significantly due to the emergence of enhanced applications in high-growth sectors, such as healthcare and machine handling. These sensors offer better price-performance than other sensors by relying on economies of scale advantages. The growth of capacitive ceramic pressure sensors has been driven by the development of medical, industrial, and automotive applications, majorly in the oil and gas, marine, and chemical industries.
- The spread of advanced electronic control systems has provided sensor users with advances in sensor accuracy, reliability, response time, robustness, miniaturization, communications capability, and efficiency. This has fueled research and development

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in the sensors industry, creating opportunities for technological advancements in the industrial sector. Capacitive ceramic pressure sensor manufacturers have significantly improved measurement technology for industries.

- Indium is used to make touchscreens and other smart devices, but its supply is not guaranteed long-term. Indium tin oxide is utilized in a wide range of high-tech gadgets, including touch displays, smartphones, solar panels, and smart windows. This substance is both optically transparent and electrically conductive, which are necessary for touch screens to function correctly. However, issues related to the supply shortage of indium tin oxide are estimated to challenge the market's growth studied during the forecast period.

Capacitive Sensors Market Trends

The Automotive End-user Industry is Expected to Hold Significant Market Share

- Human-machine interface technologies have witnessed a paradigm shift due to the increasing information interchange between social and various car systems. This has resulted in a surge in demand for capacitive sensors deployed to implement human-machine interface (HMI) applications, such as indoor illumination control, navigation control, etc.
- The automated vehicle will be nested with a position, humidity, temperature, and capacitive sensor, among others. These sensors are used in the infotainment system, keyless entry system, 3D gesture, interior lighting control, etc. With the increase in global automotive penetration, the demand for these sensors, including the capacitive sensor, will increase in the forecast period.
- For example, in the parking assistance system, these sensors can detect the presence of objects in the pathway of the reversing vehicle and can raise the alarm to warn the driver. These sensors also prevent collisions with pedestrians while parking, and the demand is expected to continue during the forecast period.
- The global pandemic has influenced the automotive and manufacturing industries significantly over the period of last year. The manufacturing industry shrunk significantly due to the pandemic as the industry faced unprecedented challenges in the supply chain and procurement of raw materials, which resulted in significant losses for manufacturers.
- According to OICA, In 2023, approximately 85 million motor vehicles were produced globally. This figure translates into an increase of around six percent compared with the previous year. China, Japan, and Germany were the largest producers of cars and commercial vehicles in 2022.

Asia Pacific is Expected to Hold Significant Market Share

- The established electronics industry in Asia Pacific and the adoption of innovative technologies have provided the regional organizations a competitive edge in the market studied. Moreover, the region enjoys the presence of several major capacitive sensor vendors, such as Omron Corporation (Japan) and Fujitsu Ltd (Japan), among others.
- The growing strategic collaborations in the country to boost the electric vehicle production are set to boost the market in the country. Sony Group Corporation and Honda Motor Co., Ltd. stated in March 2022 that they would continue to discuss and explore the possibility of forging a strategic alliance to usher in a new era of mobility and mobility services. The two firms have signed a memorandum of understanding outlining their intention to form a joint venture to collaborate on the development and sale of high-value-added battery electric vehicles, as well as to commercialize them in conjunction with mobility services.
- India is one of the major countries leading in electronics and automotive manufacturing sector. The country is one of the largest consumer electronics market in Asia Pacific region. As stated by the India Brand Equity Foundation, Indian appliance and consumer electronics industry is expected to double to reach RUP 1.48 lakh crore (USD 18 Billion) by 2025. According to Retailers Association of India (RAI), sales of consumer electronics and appliances in the third quarter of FY21 increased by 23.5 percent, as compared with same period in the last fiscal year.

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- Moreover in 2020, the Indian government targeted China with new restrictions on color television and mobile phones which is set to increase their production by 5-8 percent in FY22. Furthermore, the government anticipates that the Indian electronics manufacturing sector will reach USD 300 billion by 2024-25.
- Under a national roadmap devised by the South Korean Government, Samsung Electronics Co. and SK Hynix Inc. would lead more than 510 trillion won in investment in semiconductor research and production in the years through 2030. Samsung plans to increase its spending by 30 percent to USD 151 billion by 2030, while Hynix plans to invest USD 97 billion in current facilities in addition to its USD 106 billion investment in four new factories.

Capacitive Sensors Industry Overview

The capacitive sensors market is fragmented, with the presence of major players like Fujitsu Limited, Omron Corporation, 3M Company, Analog Devices Inc., and NXP Semiconductors NV. Players in the market are adopting strategies such as partnerships and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

- May 2024: Delta Faucet Company is set to unveil its latest innovation, the Touch2O, featuring cutting-edge Touchless Technology. Unlike traditional infrared motion-activation, this Touchless Technology employs capacitive sensing. This advancement enables the faucet to detect human presence, specifically, within a four-inch range of the surface-rather than mere objects. As a result, users can swiftly activate the water while ensuring the faucet remains pristine. Additionally, the built-in TempSense LED light transitions from blue to magenta and finally to red, mirroring the rising temperature. This feature is designed to eliminate any unexpected temperature surprises or discomfort.
- November 2023 - Infineon Technologies AG introduced the PSoC 4000T family of microcontrollers (MCUs). These advanced MCUs provide a superior low-power capacitive sensing solution, featuring an excellent signal-to-noise ratio, liquid tolerance, and multi-sense capabilities, all while ensuring the highest levels of reliability and robustness. The PSoC 4000T MCUs expand the PSoC 4 product family, which is based on the Arm Cortex-M0+ architecture. They incorporate Infineon's fifth-generation high-performance CAPSENSE capacitive sensing technology. This latest generation offers a tenfold improvement in signal-to-noise ratio performance and a tenfold reduction in power consumption compared to previous generations and competing solutions.

Additional Benefits:

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

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