# Gas Sensors - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 120 pages | Mordor Intelligence

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**Report description:**

The Gas Sensors Market size is estimated at USD 1.53 billion in 2024, and is expected to reach USD 2.52 billion by 2029, growing at a CAGR of 10.40% during the forecast period (2024-2029).

Key Highlights
-The evolution of wireless capabilities and miniaturization, along with improved communication capabilities that facilitate their integration into different devices and machines without minimizing the detection capabilities of toxic or flammable gases at safe distances, propels the gas sensors market. In addition to this, the COVID-19 pandemic further stressed the crucial role of maintaining air quality, especially indoor air quality, whether at the office, home, or other public spaces.?
-Notably, the industrial production process not only involves the use of various gases but also shares a considerable share of the overall environmental emissions. The government regulates the leakage of such gases, and this is where the demand for gas sensors is increasing. For instance, the EU incorporated Directive 2010/75/EU, an instrumental regulation in controlling pollutant emissions into the atmosphere by industrial installations. ?Moreover, recently, the EU policymakers proposed legislation for making oil and gas companies report their domestic methane emissions and fix leaks of the potent greenhouse gas. This is because Methane is the second biggest reason for climate change after carbon dioxide and has led to a significantly large warming effect, meaning deep cuts in global methane emissions are required this decade to avert disastrous climate change.
-Governments all over the world and political bodies are largely setting targets to decrease the emission of greenhouse gases. For example, the EU has set itself a goal of net-zero greenhouse gas emissions by 2050. Also, countries such as China, the United States, India, and Russia are increasingly adopting stringent regulations to tackle emission rates. ?
-Recently, in August 2022, the Union Cabinet of India approved India's updated Nationally Determined Contribution (NDC) for commitment towards the reduction of emissions intensity of its GDP by about 45 percent by 2030, compared to the 2005 level and attain about 50 percent integrated electric power installed capacity from non-fossil fuel-based energy resources by 2030.

-Moreover, government regulations for workplace and labor safety are increasingly becoming stringent, and adherence to such rules is vital in business continuity for organizations. For instance, in Europe, EU-OSHA does this by bringing together European workplaces to share information and knowledge for promoting a culture of risk prevention, and the OSH framework, announced in the European Pillar of Social Rights action plan 5, sets out the crucial priorities and actions necessary for enhancing workers' health and safety in the upcoming years in the context of the post-pandemic world.
-Such regulations have increased the demand for gas sensors by requiring employers to take measures to protect workers from hazards in the workplace, such as exposure to hazardous gases.
-Gas sensors present in conventional power plants have been surging to limit emissions of pollutants, such as sulfur oxides, mercury, nitrogen, and carbon dioxide, owing to the stringent government regulations for attaining sustainability goals. These try to minimize greenhouse emissions and other types of pollution by using resources effectively. Sensors contribute to surged turbine efficiency, more plant safety, low transmission losses, and low environmental impact.
-Furthermore, the developing nature of the market is resulting in rapid changes and the availability of different types of sensors for major gases like carbon monoxide and carbon dioxide. Additionally, increasing costs are also an issue in the ever-changing market, along with innovations and low product differentiation.

Gas Sensors Market Trends

Safety and Regulations are the Primary Drivers for Industrial Implementation

- Various sorts of gases have been utilized as raw materials in different industries in recent years. It becomes significantly crucial to control and monitor these gases, as there is a large risk of damage to property as well as human lives if a leak occurs. Therefore, the necessity to continually monitor and control the gases emitted sprouted a requirement for gas sensors in industries.
- Moreover, the stringent government regulations further mandated the gas sensors' applications in order to make the industries safer. This turned industries more confident about preventing accidents related to gas leaks. For instance, as per the Center for Disease Control and Prevention study, approximately 50 people in Canada die per year from CO poisoning. Resultantly, adopting carbon monoxide (CO) gas sensors is beneficial, as these products can unknowingly lead to dangerous levels of CO gas building up within the homes.
- Furthermore, gas sensors have witnessed increased adoption in intelligent homes due to efficient energy usage and the safety of inhabitants. Furthermore, the implementation of government standards and regulations for following and installing these devices.? For instance, the National Fire Protection Association published a standard that is referred to as NFPA 720 includes sections 5.1.1.1 and 5.1.1.2, as per which all CO sensors should be located outside of each sleeping area in the immediate vicinity of all the bedrooms, and every detector should be located on the ceiling, walls, or other locations as mentioned in the installation instructions that accompany the unit.?
- Moreover, rapid industrialization, coupled with the increasing requirement for wastewater treatment from the refining and pharmaceutical industries, are among the important factors driving the growth of the market. Also, the rising demand for potable water across the world is having a positive impact on the demand for gas sensors as they are largely used in water treatment facilities to monitor for the presence of various chemicals such as chlorine and alert workers if there is a leak or other problem. This is because of government norms such as the Central Pollution Control Board issued directions under section 18(1) b of the Water and Air Acts to the State Pollution Control Boards and Pollution Control Committees for directing the 17 categories of largely polluting industries that include Sewage Treatment Plants (STP).
- The pressing requirement for treated, clean water is being accelerated by the increasing global population and expanding manufacturing sector. Thus, gas sensors are commonly used in wastewater treatment facilities to monitor a variety of gases, such as hydrogen sulfide, methane, and carbon dioxide, that are often used in wastewater facilities.

Asia-Pacific is Expected to be the Fastest Growing Market

- The Asia-Pacific region has been considered one of the most rapidly rising regions for the gas sensors market, and it is expected to be the market leader during the forecast period. The rising awareness regarding the impact of air pollutants on human health in countries such as India and China is propelling demand for gas sensors for air quality monitoring.
- For instance, in September 2022, Figaro Engineering Inc. announced the introduction of the KE-LF series of lead-free galvanic cell oxygen sensors for safety, environmental gas monitoring, food, and educational applications. Maxell Ltd. develops this product in Japan and consists of the KE-25LF and KE-25F3LF, lead-free galvanic cell-type oxygen sensors. They incorporate a long life expectancy of around five years in excellent chemical durability, ambient air, and no influence from H2S, CO2, or SO2. Moreover, these new sensors have the same dimensions as existing KE series oxygen sensors, facilitating onsite quick and easy replacement of current KE series oxygen sensors.
- The rising use of gas sensors in automobiles for passenger comfort and safety has been further driving the growth of manufacturing gas sensing applications. As per the IBEF, India has turned out to be a strong market in terms of both domestic demand and exports, and the total passenger vehicle sales in FY22 approximated 3.07 million, with India exporting 5,617,246 vehicles.
- Furthermore, India is also the largest provider of generic drugs globally. Furthermore, the Indian pharmaceutical sector supplies 50 percent of the global demand. These pharmaceutical production facilities utilize various solvents and gases in the manufacturing process and are required to be continuously monitored, which surges the demand for gas sensors, thereby increasing the market growth.

Gas Sensors Industry Overview

The gas sensors market is fragmented due to many players operating in the market. Further, the companies providing various types of gas sensors have technological product differentiation. Hence, they are adopting competitive pricing strategies to gain market share.

In June 2023, ScioSense announced the launch of its new product, ENS161, a low-power multi-gas sensor that enables wearable and portable devices powered only by small-capacity batteries. The device is capable of continuous air quality monitoring.

In February 2023, H2scan announced the launch of its HY-ALERTA 5021 Solid-State Area Hydrogen Monitor product, which protects battery rooms from explosive hydrogen build-up and is maintenance-free for more than 10 years. The HY-ALERTA 5021 has the capability of detecting low levels of hydrogen even in the presence of other gases that can cause false alarms with other sensor technologies.

Additional Benefits:

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

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