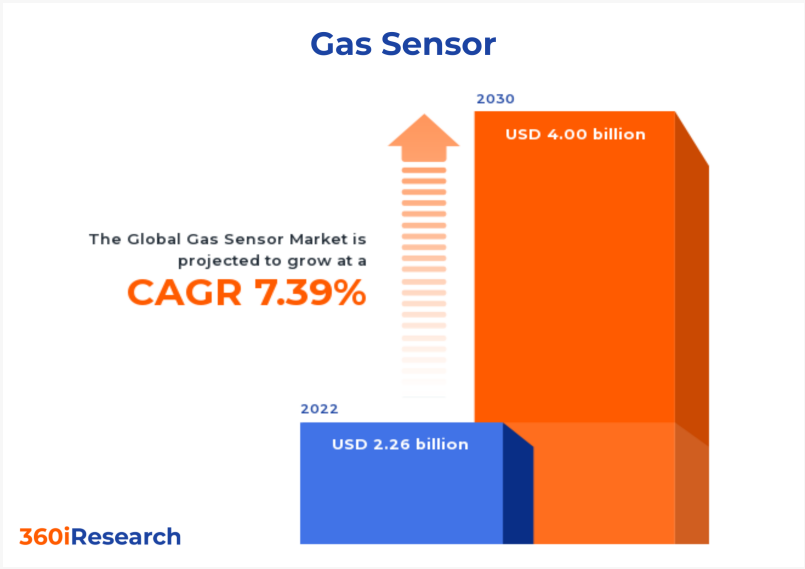
Gas Sensor Market worth $4.00 billion by 2030, growing at a CAGR of 7.39% - Exclusive Report by 360iResearch

The Global Gas Sensor Market to grow from USD 2.26 billion in 2022 to USD 4.00 billion by 2030, at a CAGR of 7.39%.



Gas Sensor Market - Exclusive Report by 360iResearch

PUNE, MAHARASHTRA, INDIA, November 16, 2023 / EINPresswire.com/ -- The "Gas Sensor Market by Technology (Catalytic, Electrochemical, Laser), Gas Type (Ammonia, Carbon Dioxide, Carbon Monoxide), End Use - Global Forecast 2023-2030" report has been added to 360iResearch.com's offering.

The Global Gas Sensor Market to grow from USD 2.26 billion in 2022 to USD 4.00 billion by 2030, at a CAGR of 7.39%.

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Gas sensors are devices that detect and respond to the presence and variation of specific gaseous pollutants. Gas sensors are used to monitor and prevent potential hazards in industries, commercial establishments, and homes where the presence of certain gases may lead to health hazards, fire, or explosion. In most instances, gas sensors operate based on the principle of interaction between the specific gas in the atmosphere and the sensor material, resulting in a change in resistance that triggers an alarm once it exceeds certain thresholds. Escalating concerns over environmental pollution with the stringent implementation of safety regulations by government and regulatory authorities are driving the usage of gas sensors. Furthermore, the recent advancements in wireless connectivity in sensor technology are creating a platform for market growth. High costs associated with the production and maintenance of advanced gas sensors and the availability of technical issues related to miniaturization and long-term stability

hamper market growth. Growing development of cost-efficient production techniques and increasing focus on the reliability and longevity of the sensors are expected to create opportunities for market growth. Moreover, the ongoing creation and implementation of gas sensors with better accuracy, specificity, and less power consumption are expected to expand the scope of the market.

End Use: Rising use of gas sensors in the automotive sector owing to emission regulations
The automotive industry demands gas sensor technology for emission controls and cabin air quality measurements. Consumer electronics utilize gas sensors for air quality monitoring in smart home devices. Environmental monitoring requires gas sensors for air pollution surveillance, including surveillance of environmental safety. Industrial applications use gas sensors for safety measures, process control, and leak detection. The medical sector depends on gas sensors for patient monitoring, diagnostics, and therapeutic applications. In the petrochemical industry, gas sensors are crucial for detecting harmful gases, maintaining plant safety, and process efficiency. The demand for gas sensors stretches across many industries; each segment has specific needs and preferences, driving technological advancements and impacting market share.

Technology: Expanding usage of non-dispersive infrared technology-based sensors due to their robustness and extended lifetime
Catalytic technology is best suited for detecting combustible gases in industrial environments. This method excels in detecting combustible gases such as methane and propane, rendering it highly effective for safety measures in industrial applications. Electrochemical technology-based gas sensors utilize an electrochemical reaction initiated by the target gas to detect its presence or measure its concentration. These sensors are highly sensitive and selective, ideal for monitoring low-level gas concentrations in medical, occupational safety, and environmental applications. Laser-based gas sensors are one of the newest digital gas detection technologies, making use of laser radiation to detect gases. The non-dispersive infrared (NDIR) gas sensor has established itself as a pivotal tool in gas detection, monitoring, and analysis industries due to its notable features of precision, longevity, and susceptibility to fewer interferences. The non-dispersive infrared (NDIR) technology is suited to detecting gases such as carbon dioxide in HVAC systems. The thermal type NDIR gas sensor operates on the principle of variation in gas concentration, impacting the heat loss from a heated filament. It is known for its elevated sensitivity to a vast array of gases, including CO, CO2, and HC gases. Their robustness and extended lifetime, compared to other sensor types, make them an ideal choice for fixed installation systems in factories, smart buildings, or households. Quantum-type NDIR sensors utilize the photoacoustic effect for detection. This means they measure the sound wave induced when a modulated light is absorbed by the gas. Specific gases, including CO2, methane, and refrigerants, can be detected with high selectivity and precision, making quantum-type NDIRs extremely proficient in their task. They are best suited for applications where short-term, high-concentration gas exposure is expected, such as in gas leak detection and air quality monitoring. A Photo ionization detector (PID) technology uses ultraviolet light to ionize gas molecules, making them detectable. The PID technology is sensitive and has a rapid response rate, making it

an ideal choice for detecting volatile organic compounds (VOCs) and other specific gases. Semiconductor gas sensors work on the principle that the conductivity of a semiconductor changes when it comes into contact with gases. The sensing materials typically used are metal oxides, which react with the gas to cause a change in resistance.

Gas Type: Significant demand for carbon dioxide sensors in the HVAC systems
Ammonia is a highly reactive yet colorless gas used widely in the refrigerating and fertilizer industry, posing health and explosion risks. Carbon dioxide is a pale, odorless gas, a byproduct of fossil fuel combustion, and is current in confined spaces. Carbon monoxide is a silent killer and an odorless yet poisonous gas produced during incomplete combustion. Chlorine is a greenish-yellow gas with an irritating odor, used in water purification, bleach, and disinfectants. Hydrocarbons are compounds that possess only hydrogen and carbon, often detected in the petroleum industry or areas involved in the combustion process. Hydrogen is the most delicate and abundant element in the universe, used in fuel cells and rocket fuel. Nitrogen oxide is a pollutant gas produced from vehicle exhaust and power plants. Oxygen is vital for human life, but oxygen depletion can be a major hazard in confined spaces. The gas sensor market shows dynamic range and diversity, governed by the specific requirements of various gases. Its prospective growth is largely dependent on the individual strides and innovations of the manufacturing companies.

Regional Insights:
The gas sensor market in the Americas is rapidly expanding due to advancements in the industry sectors, including petrochemical, healthcare, and the automotive industry. The market is further boosted by a strong demand for portable gas detectors in the country. Europe, specifically the European Union countries, possesses a strong market due to stringent government regulations for safety at workplaces and residential areas, subsequently expanding the usage of gas sensors in Europe. Increased investment in smart city projects and sustainable building infrastructure with a shift towards renewable energy sources further fuels the market for gas sensors in Europe. The Middle East and Africa represent a potential region for market vendors due to the rapid growth of the oil & gas industry, including refineries and petrochemical plants, with a rising demand for gas leak detection devices. Rapid industrialization, coupled with accelerating urbanization and increasing awareness towards health & safety, is expanding the gas sensor market in Asia-Pacific. Accelerating digitalization and industry 4.0 initiatives by governments across the region is expected to create a platform for the gas sensor market in Asia-Pacific.

FPNV Positioning Matrix:

The FPNV Positioning Matrix is essential for assessing the Gas Sensor Market. It provides a comprehensive evaluation of vendors by examining key metrics within Business Strategy and Product Satisfaction, allowing users to make informed decisions based on their specific needs. This advanced analysis then organizes these vendors into four distinct quadrants, which represent varying levels of success: Forefront (F), Pathfinder (P), Niche (N), or Vital(V).

Market Share Analysis:

The Market Share Analysis offers an insightful look at the current state of vendors in the Gas Sensor Market. By comparing vendor contributions to overall revenue, customer base, and other key metrics, we can give companies a greater understanding of their performance and what they are up against when competing for market share. The analysis also sheds light on just how competitive any given sector is about accumulation, fragmentation dominance, and amalgamation traits over the base year period studied.

Key Company Profiles:

The report delves into recent significant developments in the Gas Sensor Market, highlighting leading vendors and their innovative profiles. These include ABB Ltd., AerNos, Inc., Alphasense Ltd. by AMETEK, Inc., Amphenol Corporation, ams-OSRAM AG, Asahi Kasei Corporation, Bartels Mikrotechnik GmbH, Danfoss A/S, eLichens, Flusso Limited, Fuji Electric Co., Ltd., Gas Sensing Solutions Ltd., Honeywell International Inc., Interlink Electronics, Inc., MEMBRAPOR AG, Microsens SA, Msa Safety Incorporated, NEW COSMOS ELECTRIC CO.,LTD., Nissha Co., Ltd., Niterra North America, Inc., Process Sensing Technologies Ltd., Robert Bosch GmbH, Sciosense B.V., Sensirion AG, Sensorix GmbH, and Toshiba Corporation.

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Market Segmentation & Coverage:

This research report categorizes the Gas Sensor Market in order to forecast the revenues and analyze trends in each of following sub-markets:

Based on Technology, market is studied across Catalytic, Electrochemical, Laser, Non-Dispersive Infrared, Photo Ionization Detector, Semiconductor, and Solid State. The Non-Dispersive Infrared is further studied across Quantum Type and Thermal Type. The Non-Dispersive Infrared is projected to witness significant market share during forecast period.

Based on Gas Type, market is studied across Ammonia, Carbon Dioxide, Carbon Monoxide, Chlorine, Hydrocarbons, Hydrogen, Nitrogen Oxide, and Oxygen. The Carbon Monoxide is projected to witness significant market share during forecast period.

Based on End Use, market is studied across Automotive, Consumer Electronics, Environmental, Industrial, Medical, and Petrochemical. The Medical is projected to witness significant market share during forecast period.

Based on Region, market is studied across Americas, Asia-Pacific, and Europe, Middle East & Africa. The Americas is further studied across Argentina, Brazil, Canada, Mexico, and United

States. The United States is further studied across California, Florida, Illinois, New York, Ohio, Pennsylvania, and Texas. The Asia-Pacific is further studied across Australia, China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam. The Europe, Middle East & Africa is further studied across Denmark, Egypt, Finland, France, Germany, Israel, Italy, Netherlands, Nigeria, Norway, Poland, Qatar, Russia, Saudi Arabia, South Africa, Spain, Sweden, Switzerland, Turkey, United Arab Emirates, and United Kingdom. The Europe, Middle East & Africa commanded largest market share of 37.82% in 2022, followed by Asia-Pacific.

Key Topics Covered:

The report provides insights on the following pointers:
1. Market Penetration: Provides comprehensive information on the market offered by the key players
2. Market Development: Provides in-depth information about lucrative emerging markets and analyzes penetration across mature segments of the markets
3. Market Diversification: Provides detailed information about new product launches, untapped geographies, recent developments, and investments
4. Competitive Assessment & Intelligence: Provides an exhaustive assessment of market shares, strategies, products, certification, regulatory approvals, patent landscape, and manufacturing capabilities of the leading players
5. Product Development & Innovation: Provides intelligent insights on future technologies, R&D activities, and breakthrough product developments

The report answers questions such as:
1. What is the market size and forecast of the Gas Sensor Market?
2. Which are the products/segments/applications/areas to invest in over the forecast period in the Gas Sensor Market?

3. What is the competitive strategic window for opportunities in the Gas Sensor Market?
4. What are the technology trends and regulatory frameworks in the Gas Sensor Market?
5. What is the market share of the leading vendors in the Gas Sensor Market?
6. What modes and strategic moves are considered suitable for entering the Gas Sensor Market?

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