SCOTTS INTERNATIONAL

Functional Safety Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The global functional safety market is expected to reach a value of USD 8,572.00 million by 2027, registering a CAGR of 10.64% during the forecast period. The increasing adoption of functional safety systems in a wide range of industries and the growing industrial safety standards are the factors driving the market growth.

Key Highlights
Oil and gas facilities are prone to accidents that can negatively impact society and the environment. Functional safety measures, including emergency shutdown systems, can significantly minimize the risk of disasters in oil and gas facilities.
The increasing use of connected devices and the rapid installation of software solutions using over-the-air (OTA) are also expected to drive the demand for functional safety systems. Industrial Revolution 4.0 has increased the need for reliable security systems to protect individuals and property. These are the factors anticipated to contribute to the market's revenue growth during the forecast period.
The adoption of functional safety systems and a datacentric approach provides enterprises in a wide range of industries with the required functionality that enables automatic prevention of dangerous failures and control in instances of such occurrences. They also offer facilities that humans cannot mimic.
Although functional safety systems are driving the demand for the market across the world, the increasing complexity of these systems, coupled with high maintenance costs and the high initial cost of setting up these systems, is dissuading enterprises from investing in functional safety systems technology, thus leading to slow market penetration.
The COVID-19 pandemic and lockdown restrictions around the world were impacting industrial activity. The lockdown impacts include supply chain disruptions, unavailability of raw materials used in the manufacturing process, labor shortages, price volatility that can cause end-product production to inflate, budget overruns, and shipping issues.

Functional Safety Market Trends

Automation to be the Fastest-growing End-user Sector

The automotive industry has undergone various changes over the past few years, integrating technological advancements into multiple types of vehicles. Previously, cars were mechanical, mostly with basic electrical systems that offered power for headlights and spark plugs. As technology progressed, vehicles were now equipped with advanced safety purposes, such as airbag deployment systems.

The increase in these sensor-dependent features has driven engineers to develop more accurate sensors with automotive applications in mind. The industry's adoption of functional safety is predicted to increase due to these trends. It will enable automakers to react faster to market requirements, reduce manufacturing downtimes, enhance supply chains' efficiency, and expand productivity.

The widespread use of modern vehicles powered by automotive electronic control units (ECU) has necessitated sophisticated safety measures. The process of functional safety has grown to be crucial to the process of developing ECU software. To reduce risks and damage in software or hardware failures, functional safety schemes for automobiles help diagnose malfunctions (electric and electronic) and specify the actions and procedures to be used.

Electrification and automation are the two significant trends in the automotive sector. The emergence of electric vehicles in the industry has dramatically impacted the demand for sensors in the long term. More electric cars mean increased demand for sensors and a rise in sensors for applications, such as battery monitoring, various positioning, and detection of moving parts of automobiles.

The automotive industry is among the prominent sectors that hold a significant share of the world's automated manufacturing facilities. The production facilities of various automakers are automated to maintain efficiency. The growing trend of replacing conventional vehicles with EVs is expected to augment the automotive industry's demand further.

North America Expected to Hold Significant Market Share

The United States is one of the largest markets for functional safety systems globally. The country is renowned for its innovation capabilities and is at the forefront of significant developments surrounding the emerging technologies of the 4th Industrial Revolution. Newfound shale resources in the United States and an increasing number of oil and gas projects are additional indicators of market potential. Prominent vendors such as Honeywell International, Rockwell Automation, Banner Engineering Corp, and General Electric are headquartered in the country.

The government is also focusing on increasing its energy generation capacity and is investing in such projects. For instance, in October 2022, the US Department of Energy (DOE) announced that the Idaho National Laboratory (INL) would receive USD 150 million in financing from the President's Inflation Reduction Act to modernize its infrastructure and advance nuclear energy research and development. The funding will help almost a dozen projects at INL's Advanced Test Reactor (ATR) and Materials Fuels Complex (MFC), both of which have been in operation for more than 50 years and play a critical role in developing nuclear technologies for governmental organizations, business, and global collaborations. With nuclear energy accounting for approximately 5% of domestic electricity production and 50% of all domestic clean energy production, it is essential to achieving President Biden's target of 100% clean electricity by 2035.

Furthermore, in October 2022, the United States Department of Energy (DOE) announced more than USD 28 million across three funding opportunities to support research and development initiatives that promote and sustain hydropower as a crucial source of clean energy. The expansion of low-impact hydropower and pumped storage hydropower, the construction of new pumped storage hydropower facilities, and engagement with influential voices on issues like hydropower fleet modernization,

sustainability, and environmental impacts will all be supported by funding provided by Bipartisan Infrastructure Law. Such initiatives of power-generating project investments certainly increase the demand for functional safety devices in the country.
The US Energy Information Administration Stated that, in 2021, petroleum accounted for around 36% of American energy consumption. Still, it was also the main contributor to 46% (about 2,241 million metric tons) of all American energy-related CO_2emissions. As government laws become more stringent, several firms focus on tracking and reducing their carbon emissions per product, which is anticipated to increase demand for fire and gas monitoring systems nationwide.
According to the Government of Canada, the Canadian manufacturing industry accounts for approximately CAD 174 billion of its GDP, representing more than 10% of the country's total GDP. The manufacturing sector is the largest investor in R&D and implements new technologies that are expected to create scope for the market.

Functional Safety Market Competitor Analysis

The functional safety market comprises several global players vying for attention in a reasonably competitive market space, such as Rockwell Automation Inc., Emerson Electric Company, and Honeywell International Inc. The players in the market studied are looking to strengthen their competitiveness through various efforts, such as the innovation of products. Overall, the intensity of competitive rivalry is expected to be high.

October 2022: Emerson launched its PlantWeb digital ecosystem to incorporate the AspenTech portfolio of asset-optimizing software powered by industrial artificial intelligence, creating the industry's most comprehensive digital transformation portfolio.
September 2022: Votiva Singapore Pte Ltd, a Southeast Asian IT consultant that offers services for the deployment of enterprise resource planning (ERP) and customer relationship management (CRM) software, was acquired by Yokogawa Electric Corporation. ERP systems are at the heart of the solutions that Yokogawa offers to customers in the manufacturing industry to support smart manufacturing and digital transformation (DX). With this acquisition, the business will be able to increase the geographic scope of its Southeast Asian consulting, implementation, and technical support services for ERP solutions. Votiva will become Yokogawa Votiva Solutions as a result of the transaction.

Additional Benefits:

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

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