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North America Safety Relay And Timers - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2029)

https://marketpublishers.com/r/N572F6642374EN.html
Date: July 2024
Pages: 120
Price: US$ 4,750.00 (Single User License)
ID: N572F6642374EN

Abstracts

The NA Safety Relay And Timers Market size is estimated at USD 1.98 billion in 2024, and is expected to reach USD 2.72 billion by 2029, growing at a CAGR of 6.56% during the forecast period (2024-2029).

Over the last decade, the demand for low-cost, accurate, small-sized, bounce-less operation and long shelf-life protective systems increased in industrial, automotive, energy and infrastructure, healthcare, and building equipment. Increased demand for upgrading the power infrastructure in developed countries to reduce heat generation through thermal dissipation using safety relays is expected to drive the market.

Key Highlights

Safety relays are critical for monitoring safety-related inputs and protecting machines and operators by enabling equipment via outputs only when normal and safe conditions are confirmed. However, traditional hardwired safety relays have limited functionality, leading many to search for upgraded solutions.

Safety relays and timers are employed in applications like controlling, starting, and protecting circuits in the oil and gas sector. Various process machines employ industrial timers for material handling, machine tools, and process control. According to the EIA, Texas is a significant oil-producing state in the United States. In 2023, Texas produced a total of over 2 billion barrels. In a distant second location was New Mexico, which recorded 667.5 million barrels in the same year.

According to Baker Hughes, at the end of 2023, 500 active rotary oil rigs were in the

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United States. The number of operational US oil and gas rigs has increased from a pandemic-induced slump on the back of tighter fuel supplies due to the Russia-Ukraine War. The deployment of process machines has increased due to the considerable rise in the region's offshore oil and gas exploration activities. Offshore oil and gas exploration activities require complex drilling operations, making logistics and operations challenging, hence the need for safety relays.

Furthermore, the significant advantages of Industry 4.0 have also persuaded OEMs and SMEs to adopt IoT across their operations. IoT is spread across various industries, such as energy and power, healthcare, and the automotive and pharmaceutical industries. Thus, factory automation technologies are witnessing increased demand due to these factors.

With the increasing technological developments in segments such as healthcare and life sciences, food and beverage, and others, the adoption of cleanroom lighting has continuously increased, demanding the players to invest in this technology through product innovation, expansion activities, mergers, partnerships, etc.

For instance, in February 2023, ABB launched a Relay Retrofit Program to replace select SPACOM protection relays with the latest protection and control technology, REX610. The REX610 is a safety relay designed to adapt to the requirements of evolving power grids, making it a flexible, sustainable, and future-proof choice.

However, the complexity of standards and high market competition are expected to hinder the growth of the safety relay and timers market. Additionally, the Russia-Ukraine War caused an additional disruption and affected the supply chains of semiconductors, leading to further increases in the prices of electronics. Overall, the impact of the competition on the electronics industry is expected to be significant. This would hamper the production of safety instrumented systems.

North America Safety Relay and Timers Market Trends

The Automotive Segment is Expected to Drive the Market

Automotive relays are utilized in harnesses and box modules throughout a vehicle, including rear and front, passenger and engine areas, body control, powertrain, roof, seat, door, and fan modules. The automotive relay types include plug-in, PCB, high-current, high-voltage, and automotive contactors.

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The automotive industry is expected to be one of the highest adopters of safety features. According to the Argonne National Laboratory, in December 2023, the market shares of battery and plug-in hybrid electric vehicles reached 8.34% and 2.82% in the United States, respectively. In addition, according to the Kelley Blue Book estimates, the share of electric vehicles in the overall US vehicle market was 7.6% in 2023, up from 5.9% in 2022. Such expansion may further create demand in the market studied.

In addition, North America is witnessing robust growth in its automotive industry. According to the OICA, North American motorists purchased around 3.98 million passenger cars in 2023, whereas the United States accumulated approximately 3.12 million.

Furthermore, high-voltage systems are becoming more prevalent, especially with the increased adoption of EVs in the region. Numerous market players are focused on finding new ways for system designers to solve complex isolation challenges, like ensuring reliable and safe car operation as the enterprise transitions to 800 V batteries and reducing solution size and cost. Advanced solid-state relays can disconnect and connect loads through a single isolation barrier in microseconds, compared to milliseconds for electromechanical relays, to enable the safer operation of high-voltage automotive systems.

To cater to this requirement, in April 2023, Fujitsu Components America Inc. expanded its offering in the automotive relay market and offered an option of 14 VDC PCBs that are ideally suited to applications with limited space. With the capability to switch 30 A of current in a very compact, plastic-sealed package, measuring 6.6 mm x 13.7 mm x 14 mm, the FTR-G3 is the world’s most miniature automotive relay in the 30 A class. Such innovations would drive the growth of the market studied by offering lucrative expansion opportunities.

United States is Expected to Hold Significant Market Share

The United States is one of the most significant and advanced markets for safety relays and timer solutions in the world. The strong economy, with notable energy and power sector and key manufacturing indices, results in significant growth in manufacturing, and it is poised to drive the demand for the market studied in the region. Sectors, including automotive, pharmaceutical, oil and gas, and manufacturing, are the region's most significant sources of demand for safety relay solutions.

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According to the World Robotics Report 2023, published by the International Federation of Robotics, the United States is the world's third major industrial robot user. According to the IFR, manufacturing firms in the United States significantly increased their investment in automation, as the total installations of industrial robots surged by 12%, reaching 44,303 units in 2023.

Furthermore, the increasing manufacturing and mining activities and rising power generation and consumption in the country are expected to provide lucrative opportunities for the safety relays and timers market. For instance, according to the United States Energy Information Administration, energy in the United States comes in a broad mixture of forms and sources, which can be broadly divided into primary and secondary, renewable and nonrenewable, and fossil fuels.

According to EIA, fossil fuels are the primary energy source in the United States, with a consumption of 77.18 quadrillion Btu in 2023. Closely following this, the US had 8.24 quadrillion Btu of energy derived from renewable energy. Such massive consumption will significantly create an opportunity for the growth of the market studied.

Moreover, in the oil and gas sector, safety relays and timers are used in applications such as controlling, starting, and protecting circuits. Safety relays are an integral component of the oil and gas industry as they require heavy machinery that must be maintained through safety relays. Industrial timers are suitable for material handling, machine instruments, and process control in various process machines.

According to EIA, in 2023, the demand for natural gas reached 89.1 billion cubic feet per day. By comparison, residential natural gas demand amounted to 12.3 billion cubic feet per day in the United States. Such instances may create a high demand for the safety relays and timers market over the forecast period.

North America Safety Relay and Timers Industry Overview

The North American safety relay and timers market is a semi-consolidated market with significant players like Rockwell Automation, TE Connectivity, and OMRON Industrial Automation. The market players are innovating comprehensive and configurable safety relays and timers to stay competitive.

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In August 2023, Siemens launched a new generation of line monitoring relays. The SIRIUS 3UG5 line monitoring relays integrate proven technology with new procedures and applications. The relays are the easiest way to monitor standards-compliant grid stability and quality, ensuring proper system operation and long service life of components such as motors or compressors.

In May 2023, OMRON, the world's significant single-brand relay manufacturer, launched its latest industrial 6 mm electromechanical relay – the G2RV-ST. This unique design offers the machine manufacturers and panel builders the ideal solution for compact panels and equipment. It also provides the durability and reliability required for industrial applications.

Additional Benefits:

The market estimate (ME) sheet in Excel format

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