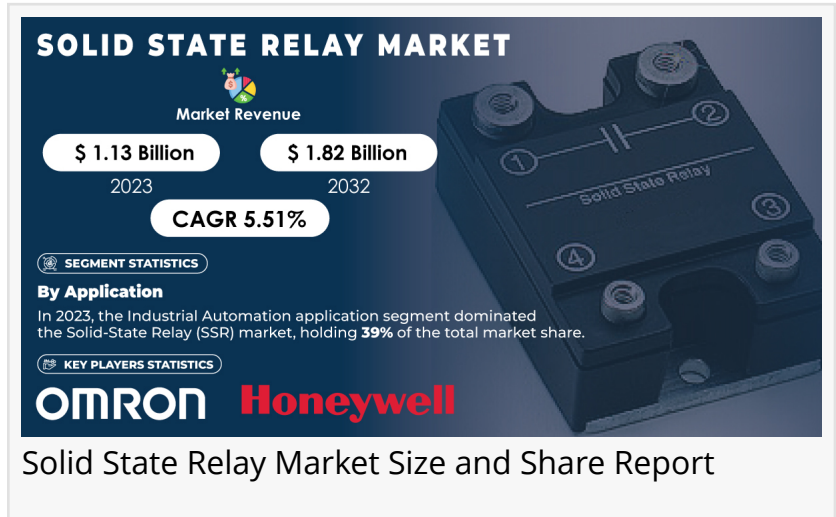


Solid State Relay Market to Surpass USD 1.82 Billion at 5.51% CAGR by 2032 | S&S Insider

A solid-state relay (SSR) is an electronic switching device that uses semiconductor components to perform the switching function, unlike mechanical relays.

AUSTIN, TX, UNITED STATES, November 13, 2024 /EINPresswire.com/ -- Market Size & Industry Insights

As Per the S&S Insider, "The [Solid State Relay Market](#) was valued at USD 1.13 billion in 2023 and is expected to reach USD 1.82 billion by 2032, growing at a CAGR of 5.51% over the forecast period of 2024–2032."



Solid State Relay Market Poised for Growth Driven by Renewable Energy and Industrial Automation Demand.

The manufacturing and industries all over the world need efficient production, for which the SSRs work as the best solution by offering a reliable and efficient switching performance. With accelerating adoption of renewable energy sources, SSRs are fast becoming integral to solar inverters and other renewable-based systems owing to their durability, fast-switching, and high-voltage handling ability. Global solar power capacity is forecasted to amount to 4,500 GW by 2028 and wind energy to 1,700 GW. Annual investment in renewable energy is projected to surpass USD 500 billion.

Such a scenario, therefore, clearly underlines the role of SSRs in sustainable energy infrastructures. In health care too, SSR technology is emerging as an indispensable tool, especially for the accurate regulation of equipment used in hospitals, with the ultimate goal of improving patient safety and efficiency. SSRs are the critical load controls in the automobile industry, while its use enhances the overall performance in that area of application. Since the technology enables further miniaturization of electronic devices and is thus compatible with consumer electronics and intelligent appliances, its adoption expands even more rapidly in other industries.

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SWOT Analysis of Key Players as follows:

- Omron Corporation
- Crydom (Sensata Technologies)
- Panasonic Corporation
- Siemens AG
- Schneider Electric
- TE Connectivity
- Fujitsu Limited
- IXYS Corporation
- STMicroelectronics
- Broadcom Inc.
- Vishay Intertechnology
- Mitsubishi Electric
- NEC Corporation
- Bourns Inc.
- NTE Electronics
- Littelfuse Inc.
- Solid State Devices Inc.
- Omni Pro Electronics
- Honeywell International Inc.
- Apcos GmbH

Solid State Relay Market Driven by IoT Integration and Advanced Thermal Management Solutions.

The Internet of Things and intelligent manufacturing spur the demand for SSR because advanced features such as remote monitoring and diagnostics become integral to the industrial setting. These can provide real-time data acquisition and process optimization that supports predictive maintenance and lowers the downtime experienced in the operations. Given the current revolution of industries through smart technologies, rapid growth is experienced in demand for SSRs with an intelligent capacity.

The SSR market is adopting advanced thermal management solutions for high-power applications. The power-intensive uses require efficient heat dissipation, and innovative solutions like advanced heat sinks and smart cooling technologies are improving the performance and longevity of SSRs. These developments lead to the adoption of SSRs in applications demanding durability and high performance, and thermal management becomes a critical development focus.

SEGMENT ANALYSIS

By Mounting Type

As of 2023, Panel Mount has the largest market share and is on account of ease of installation and reliability in industrial applications like motor control and automation. With fast-switching SSRs, panel mounts are associated with the trend of automation, and so a number of manufacturers prefer panel mounts over other types of mounting styles. It is the DIN Rail Mount segment that is growing most rapidly, with a potential CAGR of 6.13%, mainly driven by modular electrical systems wherein maximum control panel space gets utilized. With smart manufacturing and Industry 4.0, the demand is increasing for easily integrable components like DIN railmounted SSRs.

By Output Voltage

The AC solid-state relay segment dominated the market in 2023 with a 53% share, widely used in manufacturing, lighting, and HVAC for high-voltage handling and reliability. AC SSRs support effective energy management as companies look toward energy-efficient solutions. The DC solid-state relay segment is expected to grow at a CAGR of 5.99%, driven by renewable energy demand, especially in solar and battery storage systems. Electric vehicles and battery development have also increased the demand for DC SSRs and become an integral part of electrification and sustainable energy applications.

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KEY MARKET SEGMENTS:

By Mounting type

- Panel mount
- DIN rail mount
- PCB mount

By Output voltage

- AC solid-state relay
- DC solid-state relay
- AC/DC solid-state relays

By Application

- Automotive and Transportation
- Food and Beverages
- Industrial Automation
- Healthcare

- Building Equipment
- Energy and Infrastructure

REGIONAL ANALYSIS

North America remains leading regional SSR market with 33% in 2023, fueled by a well-developed industrial base and advanced manufacturing. Innovation in this region continues through Omron Corporation and Rockwell Automation, with the incorporation of SSRs in industrial automation systems, for instance robotics and conveyors. Further underpinning

The Asia Pacific region is likely to grow with a projected CAGR of 6.03% over the forecast period. National Infrastructure Pipeline and large-scale infrastructure projects in India are fueling the demand for SSR in smart grids and automation. China and India are also expanding smart manufacturing, which in turn fuels the demand for SSR in renewable energy sectors. Asia Pacific is an important region in the uptake of SSRs. For one, China produces nearly half of the solar panels across the world. India plans to add 450 GW of renewable capacity by 2030.

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RECENT TRENDS:

- In August 2024, Littelfuse launched the SRP1 family of SSRs to meet growing demands in industrial and commercial applications, focusing on enhanced reliability.
- In March 2024, Carlo Gavazzi expanded its RM1D series of SSRs with a new 3 Amp DC-rated version, broadening its applicability across diverse industry requirements.

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