

“Enhancing Cooking Equipment Safety with Altran Magnetics’ SSRs”

Introduction

In the food industry, manufacturers of heating and cooking equipment such as ovens, griddles, steamers, and toasters face the critical task of ensuring food quality and safety. Improving production processes and guaranteeing a long operating lifetime for equipment are essential to meet these goals. As global legislation enforces restrictions and bans on the use of mercury, Altran Magnetics’ solid state relays (SSRs) and contactors emerge as a compliant and efficient solution. Our SSRs are RoHS compliant and mercury-free, designed to operate reliably even in humid conditions where vapors may be present.

Product Overview

Altran Magnetics’ solid state relay series, including ASR-SIM, ASR-SI, ASR-SID, ASR-SQF, and ASR-SN, provide robust solutions for modern heating and cooking equipment. These SSRs integrate protection against uncontrolled transients and overvoltages, ensuring reliable operation in demanding environments. Altran can also offer high flexibility by providing customized PWM control solutions paired with one or more single phase SSRs for single phase or three phase resistive heating solutions.

Key Features and Benefits

Compliance and Safety

All our SSRs are RoHS compliant and mercury-free, aligning with global legislative requirements. They are capable of operating in humid conditions without being affected by surrounding vapors. The materials used in our SSRs conform to the IEC/EN 60335-1 standards for household and similar electrical appliances, ensuring safe and reliable performance in food processing environments.

Advanced Control and Protection

Our SSRs feature zero-crossing or random-on switching, which allows for smooth and efficient power control. With SCR or TRIAC outputs and options for DC or AC control, our relays provide flexibility and precision in controlling heating elements. Built-in protection circuits, such as internal RC/MOV and optional TVS, safeguard the relays and connected equipment from voltage surges and transients.

Application in Heating and Cooking Equipment

The use of solid state relays in heating and cooking equipment offers several advantages:

Improved Temperature Control

Our SSRs enable precise temperature control in ovens, griddles, steamers, and toasters. The zero-crossing feature reduces electromagnetic interference, ensuring stable operation. For instance, the ASR-SQF series can handle high power loads, making it suitable for large industrial ovens that require consistent temperature regulation.

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Space Optimization

Space is often a constraint in commercial kitchens and food processing plants. Our SSRs are designed for panel space efficiency, with some models occupying significantly less space compared to traditional relays. This allows for more compact and efficient equipment design.

Enhanced Durability and Longevity

Altran Magnetics’ SSRs are built to withstand harsh operating conditions, including high temperatures and humid environments. The robust construction and protective features ensure a long operational life, reducing maintenance costs and downtime.

Technical Specifications Overview

The ASR series relays cover a wide range of specifications to meet diverse application needs:

- **Control Voltage Range:** Available in both AC and DC control options, accommodating a variety of system requirements.
- **Load Voltage Range:** Supports voltages up to 660VAC, suitable for high-power applications.
- **Rated Load Current:** Ranges from 10A to 125A, providing solutions for both low and high current requirements.
- **Protection Features:** Includes built-in RC snubber circuits, MOV/TVS protection, and optional IP20 safety covers to enhance durability and safety.

Conclusion

Altran Magnetics’ solid state relays offer a comprehensive solution for the heating and cooking equipment industry, combining compliance with global standards, advanced control features, and significant space-saving designs. By integrating our SSRs into cooking equipment, manufacturers can enhance food quality and safety, improve production processes, and ensure a long operating lifetime for their machinery.

For more information on our solid state relays and how they can benefit your operations, please contact us or visit our website.