NEWS RELEASE

Sensata Technologies Launches High Efficiency Contactor to Enable Seamless 400V/800V EV Charging Compatibility

2025-07-17

- Sensata's new High Efficiency Contactor (HEC) enables safe and efficient 400V/800V battery reconfiguration, allowing 800V EVs to charge at 400V charge stations without the need for costly boost converter systems.
- Reduces component count by over 50% compared to traditional battery switching systems, while enhancing safety, efficiency, and system integration.
- Supports all battery configurations, enabling critical functions that extend battery life and ensure continued drive capability for maximum flexibility and performance.

SWINDON, United Kingdom--(BUSINESS WIRE)-- **Sensata Technologies** (NYSE: ST), today announced the launch of its High Efficiency Contactor (HEC), a breakthrough innovation designed to simplify the transition from 400V to 800V electric vehicle (EV) architectures. The HEC enables seamless compatibility with both legacy and next generation charging infrastructure, while delivering superior safety, efficiency, and simplified system integration.

As the EV industry accelerates toward 800V systems for faster charging and improved efficiency, compatibility with the existing 400V charging infrastructure remains a critical challenge. Sensata's HEC addresses this by enabling battery reconfiguration between 400V and 800V.

In addition to standard 400V/800V switching, the HEC uniquely supports independent access to either of the two 400V battery packs, enabling critical functions like battery balancing and limp-home mode. This capability addresses key challenges in modern 800V EVs, such as pack imbalance due to aging or uneven usage, and loss of drive capability if one pack fails. By allowing selective isolation of each pack, the HEC helps extend battery life, improves reliability, and reduces the risk of stranding in critical situations.

The HEC integrates three high-voltage contactor poles into a patent-pending design featuring mechanically synchronized contacts, providing an inherently safe and highly efficient switching mechanism. The design removes the risk of short circuits that can occur in traditional battery switching systems with multiple contactors, which may be caused by software errors, welded contacts, or mechanical shocks, resulting in best-in-class safety and reliability. Energy loss and heat generation are negligible due to its bi-stable design and ultra-low contact resistance (<50μΩ).

Key benefits of Sensata's High Efficiency Contactor include:

- Flexible Configuration: Supports standard battery configurations (Series-800V, Parallel-400V, Open-Isolated) and single-pack selection (A-only / B-only) for battery balancing and limp-home modes.
- Inherently Safe: Unique mechanical design prevents incorrect switching, eliminating short-circuit risk.
- Robust Performance: Withstands short-circuit events up to 25 kA and mechanical shocks over 90 g.
- Compact & Lightweight: Reduces system component count by over 50%; no extra cooling or special equipment required.
- High Efficiency: Bi-stable design requires no holding power; extremely low contact resistance (less than 50 μΩ) minimizes energy loss and heat generation.

Engineered for high-performance and safety-critical applications, the HEC supports continuous currents over 1000 A. Real-time diagnostics are enabled through an integrated ASIL-D compliant position sensor. Beyond 400V/800V battery reconfiguration, Sensata's HEC is also compatible with Vehicle-to-Grid (V2G) systems, Megawatt (MW) charging, and the North American Charging Standard (NACS/J3400), making it a versatile solution for modern EV and energy ecosystems.

"The launch of the HEC reflects Sensata's commitment to solving real-world electrification challenges with innovative, efficient solutions," said Brian Wilkie, EVP, Vehicle Business at Sensata Technologies. "Our HECs power safer, more efficient vehicles with seamless charging, making EVs more practical and accelerating the adoption of next-generation platforms."

Learn more about Sensata's new High Efficiency Contactor (HEC) and explore its full technical capabilities at **www2.sensata.com/HEC**.

Discover how Sensata is enabling the shift to next-generation EV architectures. Register for our webinar and hear from our experts as they share insights on overcoming infrastructure challenges and optimizing system performance at **www2.sensata.com/HEC-webinar**.

About Sensata Technologies

Sensata Technologies is a global industrial technology company striving to create a safer, cleaner, more efficient and electrified world. Through its broad portfolio of mission-critical sensors, electrical protection components and sensor-rich solutions, Sensata helps its customers address increasingly complex engineering and operating performance requirements. With more than 18,000 employees and global operations in 14 countries, Sensata serves customers in the automotive, heavy vehicle & off-road, industrial, and aerospace markets. Learn more at **www.sensata.com** and follow Sensata on **LinkedIn**, **Facebook**, **X** and **Instagram**.

Investor Contact:

James Entwistle

+1 (508) 954-1561

jentwistle@sensata.com

Media Contact:

Leila Beardsmore

+1 (805) 452-2165

leila.beardsmore@sensata.com

Source: Sensata Technologies