

NEWS RELEASE

Sensata Technologies Announces Brake Force Sensors Enabling Next-Generation Electromechanical Braking Systems in Production EVs

2026-10-14

- Sensata's Brake Force sensor directly measures clamping force within the brake caliper, providing the real-time feedback required for precise electromechanical brake (EMB) control.
- Supports improved braking performance, consistency, and safety through high-accuracy force measurement and closed-loop control at each wheel.
- Enables OEMs to accelerate adoption of brake-by-wire architectures designed for electrification, software-defined vehicles, and advanced driver assistance systems.

SWINDON, United Kingdom--(BUSINESS WIRE)-- **Sensata Technologies** (NYSE: ST), today announced its brake force sensors are now enabling electromechanical braking (EMB) systems in leading electric vehicles. This milestone marks a significant step in the transition from traditional hydraulic braking to fully electric, brake-by-wire systems, as vehicle OEMs increasingly adopt architectures designed for electrification, autonomy, and software-defined control.

Electromechanical brakes represent a shift from hydraulic to electric actuation, requiring precise and continuous measurement of brake force to maintain safety, comfort, and performance. Sensata's brake force sensors are designed to provide that critical input, directly measuring clamping force within the brake caliper and enabling closed-loop control at each wheel.

Unlike conventional hydraulic and electro-hydraulic brake systems, which rely on pressure-based control, EMB systems depend on an accurate clamping force measurement to distinguish between braking scenarios such as gentle deceleration and emergency stops. Higher accuracy enables smoother, safer, and more responsive braking behavior across all driving conditions.

Sensata's Brake Force sensor integrates directly into the caliper, measuring clamping force in real time and transmitting data to the control unit at high frequency. This continuous feedback allows each wheel to operate as an independent, intelligently controlled system. The sensor builds on Sensata's Micro Strain Gauge (MSG) technology, proven in safety-critical braking applications for more than 25 years, and applies it in a new way to measure force directly rather than hydraulic pressure.

Key benefits of Sensata's Brake Force sensor include:

- **Precise EMB Control:** Directly measures clamping force within the brake caliper, providing the real-time input required for precise electromechanical brake control.
- **Improved Braking Performance:** Delivers high-accuracy force feedback to support responsive braking, consistency, and control across a wide range of driving conditions.
- **Simplified System Integration:** Connects directly to the caliper control unit without additional connectors, helping reduce system complexity.
- **Compact, Lightweight Design:** Supports integration into EMB architectures without adding unnecessary size or weight at the wheel end.
- **Functional Safety Support:** Provides caliper-level force feedback to support the highest automotive functional safety requirements.

This approach enables OEMs to optimize braking performance at each wheel, improving vehicle dynamics, consistency, and safety. EMB architectures also simplify vehicle design by eliminating hydraulic components such as brake lines and fluid systems, reducing manufacturing complexity and maintenance requirements.

"Electromechanical braking represents a fundamental shift in vehicle architecture, requiring a new level of precision in sensing and control," said **Markus Schwabe**, Executive Vice President and President, Automotive, Sensata Technologies. "Our brake force sensing technology enables OEMs to achieve accurate, real-time control of braking force at each wheel, supporting the performance, comfort and safety requirements of next-generation EVs."

Sensata's patented force sensing design delivers high signal accuracy in a compact form factor, supporting consistent performance across the full range of braking scenarios. This includes low-force events such as gradual deceleration, where detection of the pad-to-disc contact point detection is critical for comfort, as well as high-force emergency braking conditions. This precise control of clamping force contributes to shorter stopping distances and more consistent braking behavior.

Adoption of EMB systems is accelerating as OEMs pursue simpler vehicle architectures, improved vehicle performance, and advanced functions such as centralized motion control and autonomous driving. Independent

wheel control, faster response times, and elimination of brake drag can further improve vehicle efficiency and performance.

As electromechanical braking moves into mass production vehicles, accurate force sensing is becoming a critical part of safe, scalable brake-by-wire systems. Sensata's Brake Force sensors help OEMs accelerate adoption of these next-generation braking systems across EV platforms, supporting the industry's path toward zero road fatalities.

To learn more about **Sensata's Brake Force sensor**, visit **[sensata.com](https://www.sensata.com)**.

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 16,000 employees and global operations in 13 countries, Sensata serves customers in the automotive, industrial, aerospace, defense and commercial equipment markets. Learn more at **www.sensata.com** and follow Sensata on **LinkedIn, Facebook, X and Instagram**.

Media Contact:
media@sensata.com

Source: Sensata Technologies