



News Release

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FOR IMMEDIATE RELEASE
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BENDIX HIGHLIGHTS GLOBAL SCALABLE BRAKE CONTROL
DURING ADVANCED CLEAN TRANSPORTATION EXPO

*Electronic Braking Systems' "Brake-by-Wire" Technology Enhances
Clean Tech Vehicles and Advanced Driver Assistance*

AVON, Ohio – May 20, 2024 – Bendix Commercial Vehicle Systems highlighted its Global Scalable Brake Control (GSBC®) compatibility with electric vehicle (EV) powertrains and its capacity to enhance driver assistance safety systems on Monday at the Advanced Clean Transportation Expo in Las Vegas, Nevada. GSBC is Bendix's electronic braking system (EBS) technology. EBS, sometimes called "brake-by-wire" or electropneumatic braking system technology, uses electronic signals to control brake applications – as opposed to current antilock braking systems, where that control signal is pneumatic.

Bendix – the North American leader in the development and manufacture of active safety, air management, steering, and braking system technologies for commercial vehicles – has anticipated the emergence of EBS in the North American market for some time.

"Around the globe, EBS is an established and road-tested technology that's been serving commercial vehicles and drivers for more than two decades," said TJ Thomas, director of marketing and customer solutions, Controls Group, at Bendix. "With increased adoption of electric vehicles and the widespread use of advanced driver assistance systems (ADAS) like collision mitigation, we see tech like Global Scalable Brake Control becoming widely used in many applications.

"It's also important to note that on an EBS-equipped vehicle, the air system remains the means of actuation," Thomas continued. "The fundamentals of braking are unchanged, and in the event of an electrical failure, the existing air brake actuation helps meet system safety

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requirements. For autonomous vehicles, GSBC® leverages the same EBS safety mechanism and adds a secondary control layer, providing increased braking availability in the event of certain malfunctions with the primary braking system.”

Thomas noted that with an evolving propulsion landscape for heavy vehicles, Bendix solutions remain flexible to integrate into traditional internal combustion engines or new zero-emission drivetrains.

GSBC® and EVs

Bendix Global Scalable Brake Control is compatible with single, dual, and per-wheel-end electric and hybrid powertrains, which supports brake blending – the combined use of pneumatic braking with the slowing of electric engines to provide stopping power. The seamless integration of foundation braking with the regenerative braking systems on many hybrid and full-electric vehicles provides consistent deceleration and brake feel.

“Regenerative braking involves capturing energy at the wheel-end during the vehicle slowdown and sending it back to the vehicle to use for propulsion or heating purposes,” Dan Zula, director, Brake Redundancy Product Group at Bendix, explained. “It’s a feature most often found in heavy stop-and-go applications, like refuse and delivery trucks. Bendix GSBC prioritizes regenerative braking, which can help extend EV driving range by replenishing the batteries as the vehicle is in use.”

During regenerative braking, incorporated safety features such as antilock braking systems (ABS) and stability control remain available, enabling higher-level driver assistance systems like collision mitigation to function normally.

Supporting Drivers Through Safety Technologies

Bendix GSBC better optimizes technologies like full stability and collision mitigation by providing more precise control during every brake application, down to the individual axles and wheel-ends.

“Pressure applications by the driver are monitored and controlled to ensure the desired brake response while adjusting to meet the air pressure needed in different situations,” Zula said. “And our full-range External Brake Request (XBR) feature integrates with both brake and acceleration control to deliver improved braking with better balance and feel across different load conditions, as well as smoother acceleration. GSBC also enhances the capabilities of automated driver-assist features beyond current ABS technologies.”

From medium- to heavy-duty trucks to school buses, drivers of vehicles equipped with

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GSBC® won't have to change their brake pedal pressure under different load conditions, and they'll experience more consistent braking, particularly at low speeds. In the maintenance bay, GSBC's mechatronic design uses fewer components so technicians will be able to diagnose and address potential issues more quickly and precisely. GSBC is also positioned to support future enhancements in tractor-trailer communications.

"Utilizing cleaner commercial vehicles doesn't mean sacrificing safety," Thomas said. "The same leading-edge safety systems Bendix has developed for traditionally powered trucks and buses are just as important and effective when they're equipped on the electric, hybrid, and alternative fuel vehicles fleets are turning to in an effort to improve the environmental future of our planet."

Global Scalable Brake Control is a part of Bendix's ever-growing portfolio of air management, braking, and safety technologies aimed at delivering safety, equipment reliability, performance, and efficiency to fleets and owner-operators. By helping address these areas critical to their success, Bendix drives lower total cost of ownership and encourages investments that enhance driver and vehicle safety across the roads of North America. For more information about Bendix technologies, visit www.bendix.com or call 1-800-AIR-BRAKE (1-800-247-2725).

About Bendix Commercial Vehicle Systems LLC

Bendix Commercial Vehicle Systems, a member of Knorr-Bremse, develops and supplies leading-edge active safety technologies, energy management solutions, and air brake charging and control systems and components under the Bendix® brand name for medium- and heavy-duty trucks, tractors, trailers, buses, and other commercial vehicles throughout North America. An industry pioneer, employing more than 4,400 people, Bendix – and its wholly owned subsidiary, R.H. Sheppard Co., Inc. – is driven to deliver the best solutions for improved vehicle safety, performance, and overall operating cost. Contact us at 1-800-AIR-BRAKE (1-800-247-2725) or visit bendix.com. Stay connected and informed through Bendix expert podcasts, blog posts, videos, and other resources at knowledge-dock.com. Follow Bendix on X, formerly known as Twitter, at twitter.com/Bendix_CVS. Log on and learn from the Bendix experts at brake-school.com. And to learn more about career opportunities at Bendix, visit bendix.com/careers.

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