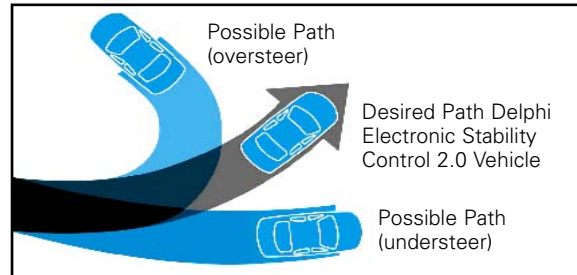


Delphi Electronic Stability Control 2.0

Description – Delphi Electronic Stability Control 2.0 is a vehicle stability enhancement system that helps reduce or prevent vehicle spins and excessive understeer. Individual wheel brake intervention assists the driver in reducing the difference between the driver's requested direction and the actual vehicle direction. Delphi Electronic Stability Control 2.0 integrates and expands the vehicle's existing anti-lock brake system (ABS) and traction control system (TCS) to control the wheel forces and engine torque that affect vehicle motion. The Delphi Electronic Stability Control 2.0 algorithm determines when and how to activate the system, based on data from additional sensors. The brake modulator applies corrective yaw moments through individual wheel brake intervention to help bring the vehicle back toward the driver's requested direction. The system contains a yaw rate sensor, a lateral accelerometer, a steering angle sensor, a pressure sensor for master cylinder pressure, ABS wheel speed sensors (already present in vehicles with ABS), an ABS/TCS/Electronic Stability Control modulator with integral ECU (electronic control unit), and a serial communication link.

Typical Applications – Delphi Electronic Stability Control 2.0 can be configured for passenger cars, vans, light-duty trucks, and SUVs, including those with front-wheel drive (FWD), rear-wheel drive (RWD), and all-wheel drive (AWD). Additional vehicle performance enhancements are available through integration of controlled suspension, steering, and collision avoidance systems.

Performance Advantages – Delphi Electronic Stability Control 2.0 enhances vehicle performance.



It assists the driver in maintaining control and avoiding a collision with features that 1) reduce the likelihood of vehicle spin-outs and excessive understeer, 2) extend consistency and capability of vehicle response over a wider range, and 3) minimize "plow" and "looseness." Delphi Electronic Stability Control 2.0 improves handling performance and control at the limits of adhesion; provides enhanced vehicle stability, especially when the driver is surprised by the environment; and improves stability and directional control on slippery or rough roads and during evasive maneuvers.

The Delphi Advantage – Delphi can provide intelligent brake and ride and handling subsystems that work together, using electronics to react in sync to a multitude of driver inputs and environmental factors. Taking advantage of technological advancement, these integrated systems can help enhance safety, improve vehicle performance, and improve ride comfort and control.

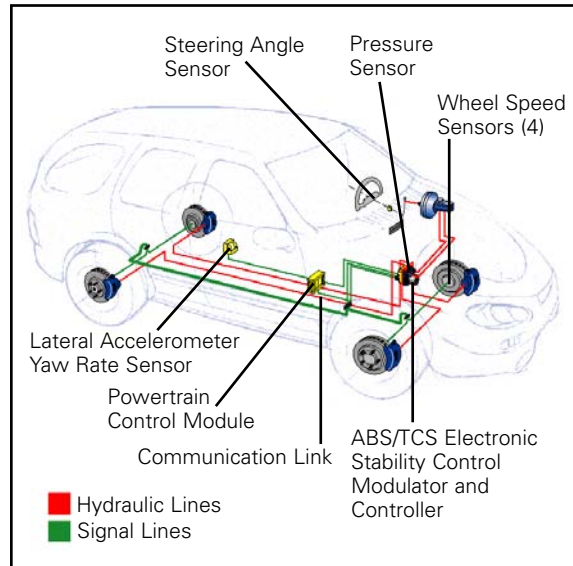
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Delphi Electronic Stability Control 2.0

Features	Benefits
Robust performance under various operating conditions	<ul style="list-style-type: none"> Enhanced vehicle performance: <ul style="list-style-type: none"> On banked road surfaces, including camber turns and large banks Over the speed range of the vehicle Under loaded conditions On road conditions such as dry, wet, snow, ice, gravel
Integrated with ABS and TCS functionality	<ul style="list-style-type: none"> Functions during braking, accelerating, or coasting Allows acceleration capability during Delphi Electronic Stability Control 2.0 activations
Configurable for specific performance applications	<ul style="list-style-type: none"> Enables unique product differentiation for vehicle manufacturers Offers ability to tailor performance characteristics to specific vehicles
Functionality comes complete with precision solenoid valves, tuned dampers, improved pump elements, and sophisticated learning algorithm technology	<ul style="list-style-type: none"> Optimizes wheel slip control and minimizes harshness Refined pedal feel and reduced noise
Core algorithm function is configurable with other hardware technologies	<ul style="list-style-type: none"> Delphi Electronic Stability Control 2.0 control may be used with emerging technologies such as rear brake-by-wire, adaptive cruise control, collision avoidance, etc.
Compatible with various hydraulic and drive wheel configurations	<ul style="list-style-type: none"> Can be used with front/rear or diagonal split hydraulic circuits Applicable to front, rear, or all-wheel drive configurations Applicable to passenger cars, vans, and light-duty trucks
Optional manually selectable performance	<ul style="list-style-type: none"> Allows drivers to select vehicle handling performance characteristics
Can be integrated with suspension, steering, and collision avoidance systems	<ul style="list-style-type: none"> Delphi—a world leader in chassis integration—can leverage experience to provide optimal vehicle performance with integrated controls
Provides maximum control and safety by recognizing the driver's intent, the vehicle's state, and the road surface conditions	<ul style="list-style-type: none"> Delphi Electronic Stability Control 2.0's fast response times and sophisticated learning algorithm provide superior wheel slip control on various road surfaces and weather conditions



Specifications

Parameters	Requirements
Sensors	<ul style="list-style-type: none"> Yaw rate, lateral acceleration, steer angle, master cylinder pressure, wheel speeds, and longitudinal acceleration (in select applications)
Brake apply system	<ul style="list-style-type: none"> 4-channel
Communication	<ul style="list-style-type: none"> Serial protocol: SAE-J1850, Keyword, or CAN