ELECTRONIC BRAKING SYSTEM

THE FULL RANGE OF BRAKING PERFORMANCE

Electronic Control Unit
1ch Axle Modulator
Wheel Speed Sensor
ABS Valve

Steering Angle Sensor
Brake Signal Transmitter
2ch Axle Modulator
Trailer Control Valve
ESCsart™ Module
FEATURES AND INNOVATIONS

- Transfers driver’s deceleration request electronically to all braking system components
- Transmits electronic pressure commands from ECU to pressure modulators very fast
- Facilitates a sensitive dosage of the applied air pressure according to a wide range of vehicle information such as axle load status, vehicle speed and vehicle mass, trailer brake system information
- Balances brake forces between axles of truck-trailer combination during braking procedure
- Provides efficient brake management between service and endurance brakes
- Based on two pneumatic and one electronic circuit for highly reliable braking performance
- Fulfills regulatory requirements on braking systems (ECE R13)
- Standardized modular system design seamlessly integrates with mBSP™ concept
- Scalable software approach provides diverse upgrade options
- Able to recuperate braking energy in most of the braking maneuvers of a full-electric or hybrid-driven commercial vehicle
- Integrated diagnostic functionalities constantly monitor system performance

A Wide Choice of Value-Adding Functionalities

<table>
<thead>
<tr>
<th>Stability Control</th>
<th>Anti-Lock Braking Function (ABS)</th>
<th>Roll Stability Control (RSC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Automatic Traction Control (ATC)</td>
<td>Engine / Drag Torque Control</td>
</tr>
<tr>
<td></td>
<td>Yaw Control (YC)</td>
<td>Stability Optimization</td>
</tr>
<tr>
<td>Brake Control</td>
<td>Brake Force Distribution</td>
<td>Halt Brake</td>
</tr>
<tr>
<td></td>
<td>Brake Blending</td>
<td>Hill Start Aid (HSA)</td>
</tr>
<tr>
<td></td>
<td>Hybrid Support</td>
<td>External Brake Request (XBR)</td>
</tr>
<tr>
<td></td>
<td>Deceleration Control</td>
<td>Brake Assist</td>
</tr>
<tr>
<td></td>
<td>Coupling Force Control</td>
<td></td>
</tr>
<tr>
<td>Performance</td>
<td>Brake Pad / Lining Wear Control</td>
<td>Brake Performance Monitoring</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Brake Temperature Monitoring</td>
<td>Supervised Differential Lock Control</td>
</tr>
</tbody>
</table>

Stability Control
- Anti-Lock Braking Function (ABS)
- Roll Stability Control (RSC)
- Automatic Traction Control (ATC)
- Engine / Drag Torque Control
- Yaw Control (YC)
- Stability Optimization

Brake Control
- Brake Force Distribution
- Halt Brake
- Brake Blending
- Hill Start Aid (HSA)
- Hybrid Support
- External Brake Request (XBR)
- Deceleration Control
- Brake Assist
- Coupling Force Control

Performance Monitoring
- Brake Pad / Lining Wear Control
- Brake Temperature Monitoring
- Brake Performance Monitoring
- Supervised Differential Lock Control
VALUE TO CUSTOMER

- Improves driver and vehicle safety and stability
- Enables shorter stopping distances compared to a conventional braking system
- Provides comfortable braking experience independent of the load status
- Increases vehicle efficiency through optimized brake wear
- Offers a wide choice of value-adding functionalities without any need for additional hardware
- Adapts easily to a wide range of commercial vehicle types, different drivelines as well as individual customer needs
- Accelerates time-to-market with highly cost and time-efficient application process
- Provides full-electric and hybrid-driven commercial vehicles with optimal energy recovery
- Comes with integrated state-of-the-art stability control system ESCsmart™
- Ready to connect to OnGuard™ Advanced Emergency Brake Systems
- Ready for TailGUARD™ Rear Blind Spot Detection System
- Improves driver effectiveness across all levels of experience
- Optimizes vehicle uptime through reduced service and maintenance efforts
THE WABCO DIFFERENCE

- World’s leading braking system supplier for commercial vehicles
- Industry’s first standardized EBS for full-electric and hybrid driven commercial vehicles
- Experienced engineers support customers across the globe throughout the application process
- First in series production in 1996 with more than 20 years of technology experience

About WABCO

WABCO (NYSE: WBC) is a leading global supplier of technologies and services that improve the safety, efficiency and connectivity of commercial vehicles. Originating from the Westinghouse Air Brake Company founded nearly 150 years ago, WABCO continues to pioneer breakthrough innovations to enable autonomous driving in the commercial vehicle industry. Today, leading truck, bus and trailer brands worldwide rely on WABCO’s differentiating technologies, including advanced driver assistance, braking, steering and stability control systems. Powered by its vision for accident-free driving and greener transportation solutions, WABCO is also at the forefront of advanced fleet management systems that contribute to commercial fleet efficiency. In 2018, WABCO reported sales of $3.8 billion and more than 16,000 employees in 40 countries. For more information, visit [www.wabco-auto.com](http://www.wabco-auto.com).