

# SmartTrac™ Stability Control Systems

**SAFETY**



# SmartTrac™

## Stability Control Systems



### **SmartTrac™ brings stability to your vehicles – and your bottom line.**

Meritor WABCO is a recognized pioneer in delivering advanced stability control solutions that have been proven to help drivers reduce vehicle accidents and help you reduce overall vehicle operating costs. The SmartTrac family of Stability Control Systems integrates our active safety systems technologies into a comprehensive suite of innovative products to meet your specific operational needs.

- **Anti-Lock Braking Systems (ABSs)**
  - The industry leader for truck, tractor and trailer ABSs
- **Automatic Traction Control (ATC)**
  - Improved stability when driving/accelerating on low-friction surfaces; improved traction under difficult conditions
- **Stability Control Systems, Truck/Tractor**
  - ESC – Full Electronic Stability Control providing both Roll Stability Control (RSC) functionality and added directional stability control
  - RSC – Highest-value Roll Stability Control, fewest components and simplified maintenance
- **Trailer**
  - RSS*plus*™ – Dedicated trailer stability support applies trailer brakes at rollover threshold to reduce speed and lower lateral acceleration

Designed for vehicle applications such as commercial trucks/tractors and trailers, construction, fire and rescue, bus and coach, and military, SmartTrac utilizes advanced Electronic Control Units (ECUs) with enhanced capabilities.



## Anti-Lock Braking Systems (ABS).

More commercial vehicle operators trust Meritor WABCO ABSs than any other system. And for good reason: proven performance, simple diagnostics and fewer parts.

Available in 4S/4M, 6S/4M and 6S/6M configurations, our complete range of systems ensures you get the right solution based on your needs, vehicle application, number of axles and type of suspension system.

- Front ABS valve package combines ABS modulator valves with quick-release valve functions
- Rear ABS valve package with optional Automatic Traction Control (ATC) requires less maintenance than competitive systems
- Optional Power Line Carrier (PLC) provides drivers with critical trailer information via the Meritor WABCO InfoLink™ Gateway, which links tractor and trailer systems
- Simple diagnostics come in three options: PC-based TOOLBOX™ software, standard blink code or Pro-Link 9000

## Automatic Traction Control (ATC).

Each Meritor WABCO ABS configuration is available with Automatic Traction Control for improved traction and drive stability in extreme road conditions.

- Reduces potential of jackknifing caused by excessive wheel spin during acceleration or in curves
- When one drive wheel is spinning at a different speed than the other, ATC momentarily applies the brake until traction is regained
- When both drive wheels are on a poor-traction surface, ATC automatically reduces engine power to attain optimum tire-to-road traction
- “Wheel spin” indicator light gives early warning of slippery road conditions



## Meritor WABCO ABS Configurations

<b>4S/4M</b>	Optional for most air-brake vehicles, the 4-sensor/4-modulator valve design meets FMVSS 121 certification requirements
<b>4S/4M WITH ATC</b>	The 4-sensor/4-modulator valve design improves traction in adverse conditions; driver must manually engage Inter-Axle Differential (IAD) for optimum performance – not on a 4x2
<b>6S/4M WITH ATC</b>	High-performance 6-sensor/4-modulator valve design automatically provides increased traction when needed
<b>6S/6M WITH ATC</b>	Fully automatic system provides the highest level of ATC traction enhancement with a 6-sensor/6-modulator valve
<b>6S/4M</b>	Optional for most air-brake vehicles, the 6-sensor/4-modulator valve design meets FMVSS 121 certification requirements
<b>6S/6M</b>	Optional for most air-brake vehicles, the 6-sensor/6-modulator valve design meets FMVSS 121 certification requirements



40 mph, System Off



40 mph, System On

## Roll Stability Control (RSC).

Meritor WABCO Roll Stability Control delivers one of the industry's highest levels of tractor rollover stability while helping fleets realize improved performance, ease of maintenance and minimized operating costs associated with vehicle downtime/replacement, cargo replacement and insurance. RSC is an active vehicle safety system that assists drivers in maintaining control of the vehicle by continually monitoring conditions that can lead to a rollover, and it automatically intervenes if a high rollover risk is detected.

- The system checks and updates the lateral acceleration of the tractor and compares it to a critical threshold at which rollover may occur
- When the critical threshold is met, RSC intervenes by reducing engine torque and engaging the engine retarder while automatically applying drive axle and trailer brakes
- After potential rollover conditions cease, normal vehicle operation resumes
- The ECU has data recording capabilities for various functions
- By integrating RSC into the existing ABS architecture, this system offers ease of maintenance due to having fewer components

## Electronic Stability Control (ESC).

Electronic Stability Control (ESC) combines Roll Stability Control (RSC) with the added capability of yaw or rotational control. ESC can assist the driver in reducing the risk of vehicle instability while in a slippery curve or taking an evasive action, reducing the potential for jackknifing and driftout conditions through select braking of the tractor and application of the trailer brakes. If loss of stability is detected, tractor-trailer speed is reduced through engine control and application of the engine brake, tractor and trailer foundation brakes.

- Lateral accelerometer, steer angle sensor and yaw rate sensor enhance driver control in situations (such as rapid lane changes and cornering on slippery surfaces) that could lead to loss of vehicle control or rollover
- Controls and reduces tractor-trailer speed when lateral acceleration limits are about to be exceeded
- The ECU has data-recording capabilities for various functions

## Safety benefits of Stability Control Systems for tractor-semitrailers.\*

A study released by the National Highway Traffic Safety Administration (NHTSA) uses post-crash data to show the potential safety benefits of RSC and ESC.

- If all existing 5-axle tractor-trailers operating on U.S. roads were fitted with RSC, 3,489 crashes, 106 fatalities and 4,384 injuries could potentially be prevented
- Annual savings from rollovers prevented by RSC are estimated at \$1.409 billion and from loss-of-control crashes prevented at \$47 million
- If all existing 5-axle tractor-trailers operating on U.S. roads were fitted with ESC, 4,659 crashes, 126 fatalities and 5,909 injuries could potentially be prevented
- Annual savings from rollovers prevented by ESC are estimated at \$1.527 billion and from loss-of-control crashes prevented at \$210 million

\*Study conducted by the University of Michigan Transportation Research Institute (UMTRI) under a cooperative agreement between the National Highway Traffic Safety Administration (NHTSA) and Meritor WABCO.



## **RSSplus™ Roll Stability Support for trailers.**

RSSplus is the next generation of Meritor WABCO's roll stability support system for trailers. It incorporates industry-leading ABS performance, key safety features and improved roll mitigation. RSSplus helps the driver maintain trailer and overall vehicle stability while integrating the ABS, Power Line Carrier (PLC) communications for the transfer of data to an in-cab PLC Display, and telematics capability for transmitting real-time trailer data to fleet headquarters.

The system simultaneously monitors trailer wheel speed, lateral acceleration and suspension pressure or spring deflection. If the vehicle approaches its rollover threshold, RSSplus automatically applies the trailer brakes as needed to help the driver bring the vehicle under control.

- Compatible for use with spring suspensions as well as air-ride suspensions
- Optional stoplight activation power cable to illuminate the brake lights during an RSS event
- Operating data recorder to store recorded information:
  - RSS activations
  - ABS activations
  - Built-in odometer
  - Number of brake activations
  - Lift and tag axle control systems
  - Meritor® Tire Inflation System (MTIS™) by PS.I. interface
  - Supports Meritor WABCO Electronic Stability Control (ESC) and Roll Stability Control (RSC)
- Premium 2-modulator (2M) roll mitigation system
- ABS and PLC functionality
- Incorporates diagnostics and meets Society of Automotive Engineers (SAE) recommendations using TOOLBOX™ software, via a PLC at the nose of the trailer, or simple blink codes

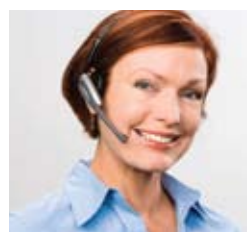
- Advanced “intelligent” communications capabilities through onboard data recording with instant event broadcasting capability via PLC communications or telematics devices for fleet management
- Anti-corrosion treated cast valve
- Integrated filters for both control and supply air
- Available for aftermarket retrofits on trailers already equipped with Meritor WABCO ABS or a different ABS brand



RSC, ESC and RSSplus are advanced vehicle control systems that reduce the chances of rollover and assist the driver in maintaining control of the vehicle. No system can prevent loss of control, rollover or collision in all driving conditions. It remains the responsibility of the driver to ensure that the physical limits of the vehicle are not exceeded and to follow safe driving procedures.

### **Smart choice.**

For the right stability control system to meet your specific needs, look no further than the innovation leader: Meritor WABCO. As North America's first and only full-line supplier of stability solutions with systems for both tractors and trailers, we offer advanced solutions backed by world-class service and support.



For more information on the SmartTrac™ Stability Control Systems, call our customer service team at 1-800-535-5560 or visit [meritorwabco.com](http://meritorwabco.com).

# MERITOR WABCO

Litho in USA  
Issued 3-10  
SP-1079 (13028/11900)

Meritor WABCO Vehicle Control Systems  
2135 West Maple Road  
Troy, Michigan 48084-7121 USA  
Phone: 800-535-5560  
Fax: 248-435-8002

[meritorwabco.com](http://meritorwabco.com)

©2010 Meritor WABCO Vehicle Control Systems  
Meritor WABCO Vehicle Control Systems is a  
joint venture of ArvinMeritor™ and WABCO

