



Safety-Technology-Support

## THE EVOLUTION OF TRAILER INTELLIGENCE






### Are you a trailer builder, fleet operator or cargo owner?

Are you interested in decreasing the cost of transport, while increasing the driver's comfort, and improving the safety of the logistics environment?

This is why we offer the Intelligent Trailer Program and the Zero Accident Program.

By providing modular building blocks for trailers, WABCO helps trailer builders and fleet operators to select those functions that are of most relevance and interest for the logistics environment in which the trailer is operated.

The trailer vehicle that historically started as a simple 'one-star' pulled plateau on wheels with air brakes, can today be built as a truly 'four-star' Intelligent Trailer

TRAILER CLASSIFICATION	CORE TECHNOLOGY	KEY TRAILER CHARACTERISTICS
	Air Brakes & Basic Suspension	The trailer is linked to the air brake system on the truck, and has a basic mechanical suspension
	ABS & Basic Air Suspension	The trailer remains controllable during emergency braking, and can be raised and lowered
	EBS & Advanced Air Suspension	Advanced vehicle efficiency, safety and driver comfort, provided by electronic systems which contain pre-programmed and programmable functions
	Advanced Driver Assistance Systems (ADAS)	The vehicle intelligently anticipates and reacts in its logistics environment
	Trailer 2015	The next generation of intelligence in logistics

# DRIVER EFFECTIVENESS AND ADVANCED SAFETY FOR TRAILERS



## OptiTurn™

The trailer follows the truck driving path within curves; and manoeuvres easily on roundabouts and sharp corners



## Trailer Remote Control

Touch-screen device in the truck cabin to control the trailer functions



## Return To Ride

Automatically raises or lowers the trailer to normal driving level after loading or unloading



## Traction Help

Give more grip to the truck when pulling away on slippery surfaces



## ODR

The Trailer Black Box records all driving data like an airplane's black box, and allows driving behavior analysis and utilization optimization



## Finisher Brake

Synchronizes the trailer to an asphalt finisher while unloading

# ADVANCED SAFETY - ZERO ACCIDENT PROGRAM



## TailGUARD™

Blind spot detection with automatic braking and available in 4 different configurations



## Emergency Brake Alert

The brake lights start flashing automatically during emergency braking to alert and slow down upcoming vehicles



## Rollover Stability Support (RSS)

Automatically brakes the trailer when it tends to roll over on a bend due to excessive speed



## ABS (Anti Lock Braking system)

The trailer remains controllable during emergency braking, by preventing the wheels from blocking and slipping on the road



## Tilt Alert

Warns the driver when the tipper reaches its tilting angle, to prevent it from tilting over



## Router

Maximizes the functionality of EBS system in multi-trailer vehicles

# WABCO

## MULTIVOLT TRAILER EBS E 2.0



As one of the leading global manufacturers of electronic braking systems of trailers, WABCO has sold over 800,000 Trailer EBS systems worldwide. Building on the new standards already set by the innovative Trailer EBS D system, the Trailer EBS E Generation now offers trailer manufacturers a streamlined, optimized solution that reduces installation time and delivers fleet operators the benefits of more efficient operations and less maintenance. The E2 Update is integrated in Trailer EBS E series devices.

This update includes the new ECAS functionality, the lift axle control and the Generic Input/output (GIO). Also the Smartboard has been improved and further adjustments in connection with the new functionality of the Trailer EBS E2 have been implemented.

### Features

- Improved positioning of pneumatic and electrical connections
- New cable harness system
- More Generic Input/output functions (GIO)
- Advanced Operating Data Recorder (ODR)
- Roll Stability Support (RSS)
- Multivolt suits both US and Euro Model Trucks
- New power cable with round plug
- CAN diagnosis
- Mechanical suspension
- Automatic braking of road finishers

The logo for AirBrakeSystems, featuring the text "AirBrakeSystems" in a blue and green font, with a green swoosh graphic to the right.

# WABCO

## ROLL STABILITY SUPPORT (RSS)



For trailers equipped with WABCO's [Trailer Electronic Braking System](#) (Trailer EBS) , WABCO offers an advanced Roll Stability Support (RSS) logic control unit, which reliably prevents vehicle roll-over within physical limits. RSS is a function integrated in the software and hardware of the EBS modulator. The system assesses the vehicle data such as wheel speed, load information and by means of an integrated sensor, transverse acceleration data. By analysing this data quickly and effectively, the vehicle ECU detects the chances of vehicle roll-over and automatically applies the brakes. Although no system can fully defy the laws of physics and a trailer can still tip if the side forces are extreme or increase significantly during braking, WABCO's RSS significantly reduces the risk.

### Features

- New "Fuzzy Select" control algorithm
  - all inside wheels remain in touch with the road surface in a critical driving condition
  - active braking of all wheels with road contact
- Facilitates maximum deceleration

### Benefits

- Significantly reduces the risk of vehicle roll-over
- Easy and flexible installation due to modular design
- Reduced brake lining wear

### Application

- Centre-axle trailers
- Drawbar trailers
- Semi-trailers
- Road Train Trailers
- PBS Trailers

# WABCO

## CAN REPEATERS:

Device used on 12V US trucks that will enable the truck power to send a high speed CAN signal to trailers fitted with EBS

Using the WABCO CAN REPEATER, you gain all the advantages of WABCO Trailer EBS E in extra long vehicles by amplifying the CAN signal up to a length of 80 meters beyond the Repeater Unit, resulting in improved response time for the braking system.

### Features

- Simple DIN bayonet cabling
- Light weight and small sized housing
- Integrated fuses
- Pressure sensor link
- Diagnostic software



### Benefits

- CAN Brake indication and communication according to ISO 11992 up to a CAN connection length of 80 meters
- Allows compliance with ECE R 13 guidelines
- Pickup of external Demand Pressure Sensor and forwarding to EBS Modulator
- Easy “plug & play” solution
- Best protection against overstressing of the vehicle's power supply

### Application

- Trucks - Trailers



# WABCO

## CAN ROUTERS

The growing demand for higher transport efficiency, together with ecological considerations, has led to the introduction of customized vehicle concepts such as Multiple Combination Road trains.

The use of the WABCO CAN ROUTER allows the operation of 2 or more (up to five) Trailer EBS E systems on such vehicle concepts, communicating via CAN signals. Braking with EBS E by means of CAN improves response time for brake control and improves the vehicle's safety.

### Features

- Simple DIN bayonet cabling
- Light weight and small sized housing
- Integrated fuses
- Diagnostic software



### Benefits

- Brake indication and communication via CAN in accordance with ISO 11992 between several trailer EBS and tractor units
- Up to 4 Routers in a row allow CAN communication of up to 5 Trailer EBS
- ABS and RSS support over the whole road train
- Easy "plug & play" solution
- Protection against overstressing the vehicle's power supply

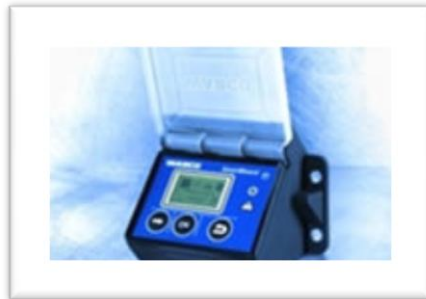
### Application

- Dog Trailers
- B Doubles
- Road Trains
- PBS Trailers



# WABCO

## SMARTBOARD:



The ability to monitor a range of trailer functions and conditions is important to ensure maximum efficiency on the road and reduce fleet operation costs. By combining separate monitoring devices into a single, easy to access, easy to use multi-functional system, the SmartBoard helps your trailers operate safely and efficiently.

### Features:

- Operating controls and information in a single, logically configured system
- Easy operation and menu navigation via an easy-to-read graphical display and just 3 buttons
- Icon oriented display for clarity and simplicity
- Main functions accessible with a single “click”
- Optical warning for safety-related functions such as trailer overload and low tire pressure
- User-defined preferences function for fastest access to i.e. suspension lifting and lowering
- User-defined individual start-up menu to an image or a company logo
- 14 language options

### Benefits:

- Automatic mileage display without EBS socket plugged through an independent sensor for enhanced safety
- Brake lining wear information – time to replace pads yes/no – assists safe operation and helps prevent the need for expensive repairs
- Axle load data function displays load and overload information for accurate, efficient trailer loading and safe operation
- Detailed tire condition information, such as target and current tire pressures (when WABCO IVTM is mounted) helps keep tires operating at optimum efficiency, reducing wear and maintenance costs
- Diagnostic and system messages provide essential information about operating status of trailer functions without the need for an additional workshop visit
- Air suspension operation – i.e. lifting, lowering, change of lift axle – with no need of an additional device for ECAS utilization
- Easy switching between 14 languages for effective communication of essential trailer operating and status data in all countries
- Extensive additional functions – such as System Information, parameter storage and Operating Data Recorder overview
- Control of advanced braking functions supports a wider range of application
- Free configurable switches - even with your own image







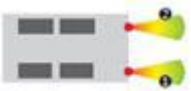











# WABCO

## TailGuard

Statistics indicate that up to 35% of incidents involving trailer damage and up to 40% of fatal accidents\* happen while reversing. WABCO TailGUARD™ helps bring your working environment toward Zero Accidents: it detects small, large, static and moving objects in the blind spot behind the trailer, and *automatically stops* the trailer at a safe distance.

### 4 RECOMMENDED CONFIGURATIONS FOR DIFFERENT LOGISTICS ENVIRONMENTS

#### Typical logistic environment

	TailGUARDlight™	TailGUARD™	TailGUARDRoof™	TailGUARDMAX™
Typical logistic environment	Large loading bays with identical layout or flat walls and no object or persons behind the trailer	Multiple and unknown loading bays with flat walls, different layouts and large objects, pallets, cars, metal and wood traffic poles	Height-limited locations: warehouses, docking gates, tree branches and roof constructions	Locations with small and / or moving objects: supermarkets, forklift loading, road signs, retail shops, villages, city distribution Compliant to ISO 12155 DIN 75031
Number of sensors	 2	 3	 5	 6
(. .) represents sensors				
Blind spot coverage area (view from top of trailer)				
Blind spot coverage area (view from side of trailer)				
Trailer Remote Control Display				
Sensitivity	Objects between the two sensors are not detected. Only objects standing directly behind the left and right sensors are detected.	Large moving objects are detected and displayed independently on Trailer Remote Control	Objects at ground and roof level are detected and displayed independently on the Trailer Remote Control	Small moving objects are detected and displayed independently on the Trailer Remote Control



# WABCO

## TailGuard

TailGUARD provides a fast return on investment by avoiding unescassry repair costs and reducing unscheduled downtime.

### HOW IT WORKS

#### *System activation*



TailGUARD is automatically activated when the truck's gearbox is placed into reverse gear. It works with all truck models.

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At the back of the trailer, the outline marker lights start flashing, and a warning signal sounds to alert people standing close to the reversing vehicle.

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The system can be turned to 'silent' mode for operation during the night.

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#### Driving in reverse



When TailGUARD detects an object within 3 meters behind the trailer, the display of the Trailer Remote Control in the cabin shows the distance to the object with green, yellow or red coloured blocks.

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TailGUARD automatically slows the trailer down to 9km/h, when the reversing speed exceeds 9 km/hour.

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When the trailer comes closer to an object, the outline marker lights blink faster and the frequency of the reverse-warning beep increases.

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#### Automatic stop



TailGUARD stops the trailer automatically at a programmable distance between 30cm and 100cm, depending on the configuration. After the automatic stop, the driver can slowly reverse the last few centimetres, for example, to dock the trailer at the loading area.

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# WABCO

## TRAILER REMOTE CONTROL

To alert the driver in the cabin, TailGUARD can come with the Trailer Remote Control. This is a unique touch-screen control unit, which is mounted in the truck cabin, as shown in the TailGUARD video above. It is designed to increase both the driver's comfort and the vehicle's efficiency. The Trailer Remote Control screen contains three areas.

### AREA 1: three warning indicators



- Replace brake pads
- Immobilizer on/off
- Low tire pressure

### AREA 2: Distance indicators

- While reversing, the green, yellow and red blocks indicate the distance between the trailer and objects in the blind spot behind the trailer.
- The 3 vertical bars of blocks indicate the location of the obstacle: left, middle or right

### AREA 3: 6 function buttons

- The 6 buttons can be programmed to control different functions of the Intelligent Trailer Program



# WABCO

## OPTITURN™

### Intelligent support for manoeuvring and steering through curves

OptiTurn increases the turning radius of the trailer significantly, which allows a truck driver to steer his trailer better through short curves, and allows better manoeuvring at loading bays.

Narrow city streets and crossings, small roundabouts and limited manoeuvring space at loading bays, are some of the daily challenges of a trucker. OptiTurn helps drivers cope with this complexity and reduces intensive tire wear while making short turns. OptiTurn automatically detects corners and curves and either releases rear axle bellows pressure or lifts the rear axle for added steerability during manoeuvring. After the curve, the axle normalizes axle position again. OptiTurn is self-activated while manoeuvring at loading bays. As the system reduces the scraping of the rear wheels on the road, the trailer tires will last longer and will suffer less damage, which will reduce the risk of tire explosions.

In many cases, OptiTurn is also a cost-effective alternative for a steering axle

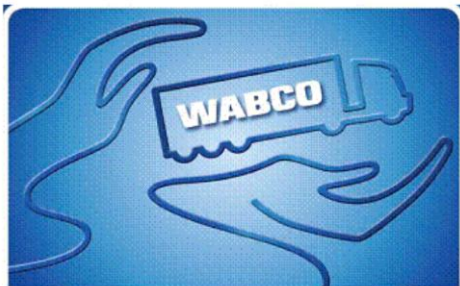
#### Benefits

- Reduced tire wear and fuel consumption
- Trailer can be dispatched through smaller routes
- Less axle distortion
- Reduced cost by eliminating the need for a steering axle
- Easier turning at crossings and roundabouts
- Reduced tire wall damage from street corners

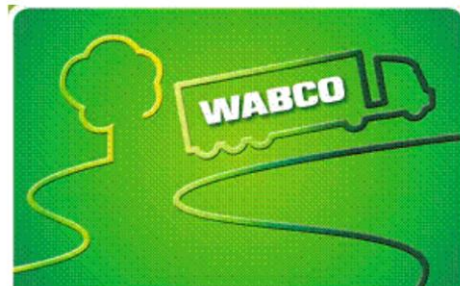


**AirBrakeSystems**

***Safety-Technology-Support***



**ADVANCED SAFETY AND  
DRIVER EFFECTIVENESS**



**VEHICLE EFFICIENCY  
AND ENVIRONMENT**

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