

Built on WABCO  
Technology

Faster  
installation  
with  
iEBS Premium



# TailGUARD<sup>®</sup>

Reversing Collision Avoidance System with Active Braking



# Reversing collision avoidance system

## Safer reversing – neat trailers – undamaged infrastructure

Reversing a trailer is one of the most challenging truck operating procedures - it accounts for up to 35% of incidents involving trailer damage and up to 40% of fatal accidents\*.

TailGUARD® reduces risks during reversing by detecting static and moving objects in the rear blind spot behind the trailer. It also automatically stops the trailer at a safe distance.

The system assists drivers during reversing and helps to avoid collisions with pedestrians, pallets, docking stations, gates, trees, forklifts, cars and any other object behind the trailer.

\* source: TBG (Berufsgenossenschaft Tiefbau)

## Ultrasonic sensors and integration with trailer electronic braking systems

TailGUARD®  
sensor



- Preventive slow-down alert at high reversing speed by pulsing the trailer brakes
- Object detection in the rear trailer blind spot
- Automatic braking reversing trailers at a set distance from detected objects
- Variable configurations (with 2–6 ultrasonic sensors) for different logistic environments with ground and roof level monitoring
- Improved rear blind spot monitoring coverage
- Sensor enables smart integration into the trailer lighting bar

# Variable configurations for different logistic environments

	TailGUARD® light	TailGUARD®	TailGUARD® Roof
Typical logistic environment	Large loading bays with identical layout or flat walls, no other objects or people	Multiple and unknown loading bays with flat walls, different layouts and objects, pallets, cars, traffic poles	Height-limited locations: warehouses, docking gates, trees and roof constructions
TailGUARD® sensor representation			
Blind spot coverage indication (top view)			
Blind spot coverage indication (side view)			
Number of sensors	2	3	5
Coverage	Basic Detection Ground Level (Ramp Approach System)	Advanced Detection Ground Level	Advanced Detection Ground & Roof Level



## Increased safety, reduced repair costs and downtime



Preventing even minor damage can result in a fast return on investment with the TailGUARD® reversing collision avoidance system. In addition, neat trailers, undamaged infrastructure and sound cargo help to ensure good reputation of trailer brands, fleet companies and cargo shippers.

## Technical information

TailGUARD® is a reversing collision avoidance system with an autonomous active braking function suitable for all trailer types and part of ZF's Intelligent Trailer Program.



- TailGUARD® consists of 2 - 6 ultrasonic sensors connected to a central ECU (TailGUARD® Electronic Control Unit or ELEX Electronic Extension Module 5.5 or higher)
- TailGUARD® requires Trailer-EBS E2 or higher to perform autonomous braking
- iEBS Premium with integrated TailGUARD® ECU reduces installation effort by direct sensor connection, eliminating the need for an external ECU

TailGUARD® supports the driver; it does not remove their responsibility to drive carefully.

### Typical repair reasons

### Indicative repair time

### Indicative repair cost

Typical repair reasons	Indicative repair time	Indicative repair cost
Repair or replacement of trailer doors	0.5 – 1 day	500 – 3,000 €
Repair of lights and outside marker lights	0.5 – 2 hours	400 – 800 €
Repair of under-run protection	1 – 3 hours	200 – 600 €
Repair of loading dock, roof, gates etc.	0.5 – 1 day	600 – 2,000 €
Downtime of trailer	0.5 – 1 day	lost income

# Towards 'zero accidents': Automatic reversing braking function for all trailer types\*



## System activation

TailGUARD® is automatically activated when the truck's gearbox is shifted into reverse gear. It works with any type of truck and trailer.

At the back of the trailer, the outline side marker lights can start flashing (optional), and an acoustic warning signal (optional) can alert nearby traffic participants to the reversing vehicle.

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

## Driving in reverse

TailGUARD® alerts the driver to slow down when reversing speed exceeds 9 km/h by pulsing the trailer brakes.

When TailGUARD® detects an object within 3.5 meters behind the trailer, the optional acoustic and visual alerts become active.

Moving closer to an object, the frequency of visual and acoustic warning signals increases.

## Automatic stop

TailGUARD® stops the trailer automatically at a programmable distance between 50 cm and 200 cm from detected objects.

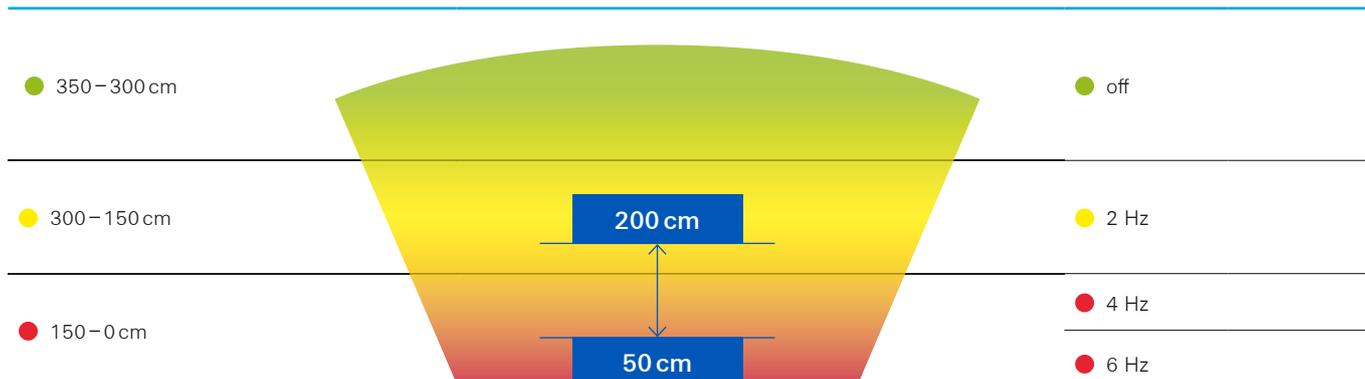
The driver can then slowly reverse the last few centimeters to dock the trailer to the loading bay.

\* Quoted performances are indicative and not legally binding.

### Warning distance

### Programmable braking distance

### Acoustical warning



# iEBS – The Industry’s Game Changer

Intelligent Electronic Braking Systems for Trailers



iEBS Premium  
integrates  
TailGUARD®  
reversing aid ECU

Less  
installation  
effort

**iEBS variants** bring market-leading intelligence and safety to pneumatically and mechanically suspended trailers

Closing the technology gap: **Improved vehicle control** also for mechanically suspended trailers through **ABS and RSS**

**Integrated Emergency Function** with ABS-controlled emergency braking and quick drive-off after parking, enhancing safety, uptime and installation [with new PRV]

Comes with a **unique single button Park Release Valve [PRV]** to improve control of trailer [un]coupling procedures, replacing conventional two-button PREVs

Compliant with **ISO 26262 functional safety standard** for greater reliability and robustness, accelerating autonomous and electrified driving

Intelligent **3-dimensional axis acceleration sensing** for unparalleled trailer utilization monitoring and mounting flexibility

Evolutionary **electric connection concept** and **modular cable portfolio** to conveniently connect more devices faster

**Advanced pneumatic** design speeds up installation and serviceability with integrated components and a simplified layout

Scalable and **customizable ‘brain’** for all trailer types and fleet needs [variants, 5V CAN, GIOs, etc.]

Superb space efficiency with **17% smaller volume and 29% less weight** compared to the previous generation

**Flexible multi-voltage capability** provides connectivity to all types of trucks [8 to 32 V] in different regions

**New diagnostics software tool** supports touch screens and single-window concept for quick end-of-line tests

**iEBS Standard integrates OptiTire TPMS ECU** and is electronically controlled air suspension [ECAS] supported

**iEBS Premium integrates OptiTire TPMS ECU** and **TailGUARD® reversing aid ECU** and is ECAS supported

# Intelligent Trailer Program

It's what's inside that counts.



## Advanced Safety

- Anti-Lock Braking Function
- Bounce Control
- Electronic Park Brake\*\*
- Emergency Brake Alert
- Rollover Stability Support
- Router & Repeater
- SafeStart
- TailGUARD®
- TiltAlert

## Operational Efficiency



- Advanced MultiVoltage
- Battery Control
- Brake Pad Wear Indicator
- Immobilizer
- Memory Level
- Notebook Memory
- Operating Data Recorder
- OptiLevel®
- OptiLink® \*\*\*
- OptiTurn®
- Return-to-Load Level
- SCALAR® EVO Guard
- SCALAR® EVO Pulse
- SCALAR® Software Services
- ServiceMind
- Trailer Extension Control



## Load Optimization

- Air Bellows Protector
- Forklift Control
- OptiLevel® 2-Point Control
- OptiLoad®
- Overload Indicator



## Fuel & CO<sub>2</sub> Reduction

- Fuel Saving Suspension
- Lift Axle Control
- OptiFlow® AutoTail
- OptiFlow® Tail
- OptiFlow® TrailerSkirt
- OptiTire®

## Driver Comfort & Effectiveness



- Brake Release
- Finisher Brake
- Optimum Traction\*
- Return-to-Ride Level
- SmartBoard
- Steering Axle Lock
- Traction Help
- Trailer Length\*\*



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

Intelligent Trailer Program functions which are accessible via SmartBoard if appropriate trailer equipment or sensors are installed

All functions only available upon region, product availability and TEBS/iEBS compatibility

\* only available with iEBS | \*\* only available with TEBS-E | \*\*\* only available with TEBS-E in regions without requirements for UN ECE-R 156 regulation [SUMS] and/or UN ECE-R 155 [cybersecurity]

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#### **About ZF**

ZF, which acquired WABCO in Spring 2020, is a global technology company supplying advanced mobility products and systems for passenger cars, commercial vehicles and industrial technology. Its comprehensive product range is primarily aimed at vehicle manufacturers, mobility providers and start-up companies in the fields of transportation and mobility. ZF electrifies a wide range of vehicle types. With its products, the company contributes to reducing emissions, protecting the climate as well as enhancing safe mobility. Alongside the automotive sector – passenger cars and commercial vehicles – ZF also serves market segments such as construction and agricultural machinery, wind power, marine propulsion, rail drives and test systems.

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