

Compliant
with UN ECE-R 141
to fulfill European
General Safety
Regulation (GSR)



OptiTire™

Advanced Tire Monitoring System



Welcome to peace of mind

OptiTire™ is ZF’s advanced tire pressure monitoring system for trucks, trailers and buses, enhancing safety and operational efficiency for the widest range of commercial vehicles and all rim sizes.

Enhance uptime, extend tire life. With tires being a critical product for road safety, having the recommended level of tire pressure is crucial. An official study¹ estimated that over 25% of truck breakdowns were caused by tire failure. Further research studies² reveal that just 15% over or underinflation can reduce the life of a tire by more than 10%. An underinflated tire is more likely to suffer from sustained heat build-up and cause terminal damage to the undercarriage. OptiTire helps quickly detect tire deflation and provides early detection of slow punctures. This helps maximize tire life and enables tires to be repaired rather than replaced.

Cut fuel costs, minimize CO₂ emissions. As the largest variable cost and with fuel prices more frequently going up than down, fuel economy with correctly inflated tires is essential.

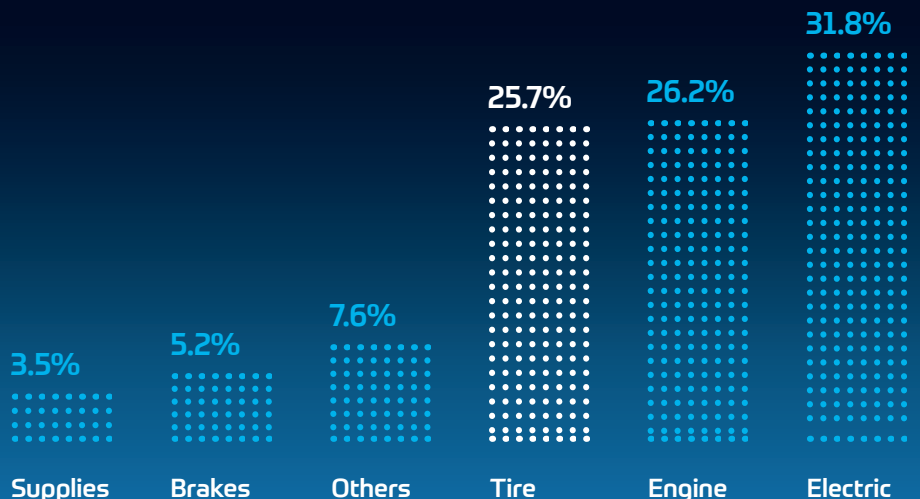
In fact, the greater the rolling resistance of underinflated tires, the lower the fuel economy – not to mention the increase of CO₂ emissions. By ensuring the right tire pressure, OptiTire delivers both fuel savings of up to 2%³ and a significant reduction of CO₂ emissions.

Reduce risk, enhance safety. Incorrect tire pressure is dangerous. Along with a deterioration in vehicle handling and extending braking distances, the risk of sudden tire failure is considerably higher in a vehicle with incorrectly inflated tires. OptiTire helps to enhance vehicle and road safety by reducing tire blowout risk.

Vehicle uptime

Tire defects are one of the most frequent reason for commercial vehicle downtime¹

Around 85% of tire pressure losses start with a small leak. With OptiTire, a decrease in tire pressure could be detected early.



¹ Source: Allgemeiner Deutscher Automobil Club

OptiTire helps to avoid underinflation, promoting fuel savings up to 2%

Connected & secure tire monitoring information.

OptiTire is designed to perform across a broad spectrum of commercial vehicles and offers solutions for all types of rims.

A choice of internal valve or strap-mounted sensors controls tire pressure and temperature information to provide precise tire monitoring. The system is compliant with UN ECE-R 141 to fulfil the European General Safety Regulation (GSR)⁴.

OptiTire internal sensors can deliver frequently updates on tire pressure from each monitored wheel to drivers or fleet managers. The information can be provided via the truck dashboard, OptiLink™ smartphone app, the SmartBoard trailer monitoring panel, or even the telematics connectivity⁵.

This provides constant reassurance that each tire is performing exactly as it should.

Flexible options, a quick & easy to retrofit. OptiTire is intelligent and flexible with the ability to monitor a motor vehicle equipped with one type of sensor and a towed vehicle with another type of sensor.

The OptiTire system is quick and easy to install and can also be retrofitted.

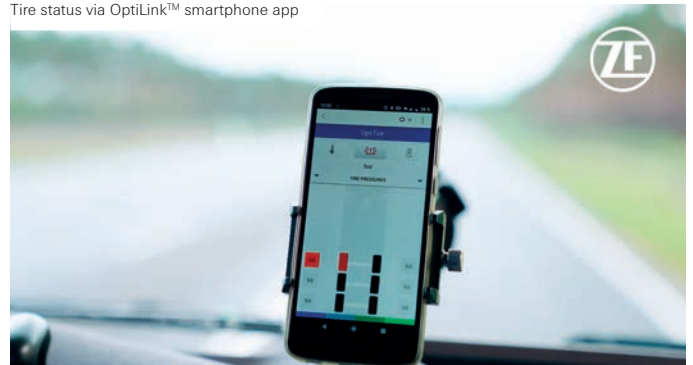
⁴ Requires connection with an ECE-R 141-compliant trailer electronic braking system for trailer applications [TEBS-E6.5 or higher in case of ZF trailer EBS]

⁵ via the Trailer Electronic Braking System

Tire status via SmartBoard trailer monitoring panel



Tire status via OptiLink™ smartphone app

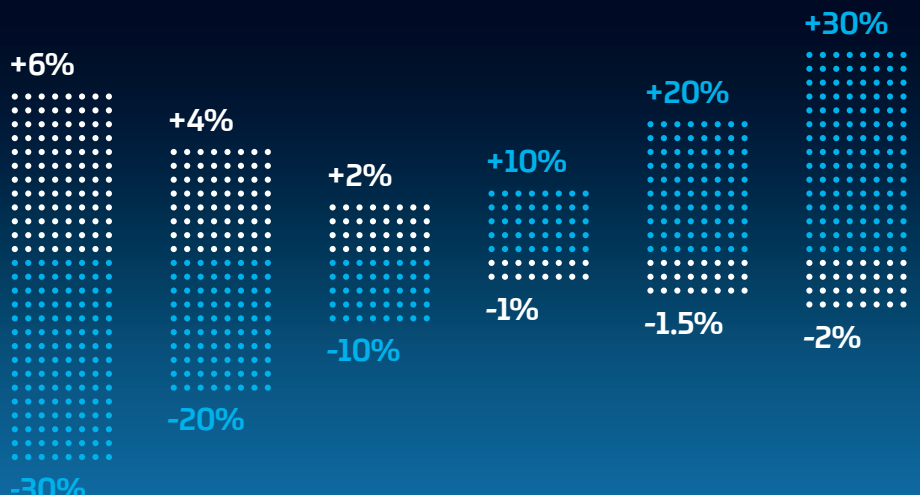


Fuel efficiency

A constantly underinflated tire leads to an increase of up to 1,400 liters in fuel consumption for long haul operations (200,000 km annual mileage)

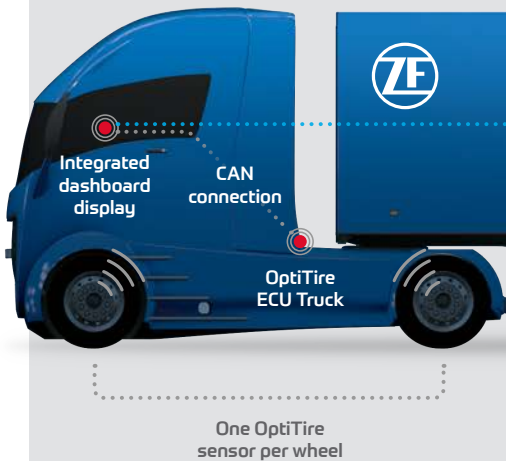
³ Source: Michelin

- Fuel Consumption
- Tire Pressure



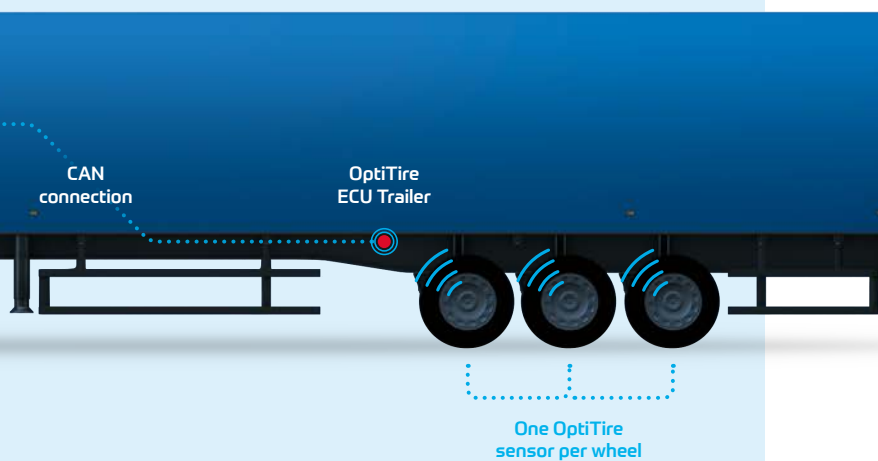
OptiTire system structure truck

CAN connection to truck system architecture



OptiTire system structure trailer

CAN connection to trailer and truck system architecture; data provision towards truck dashboard, OptiLink smartphone app or the SmartBoard trailer monitoring panel



Sensor options and ECU for truck, bus and trailer



Internal sensor (strap mounted)



Internal sensor (valve mounted)



External sensor (rim mounted)⁶



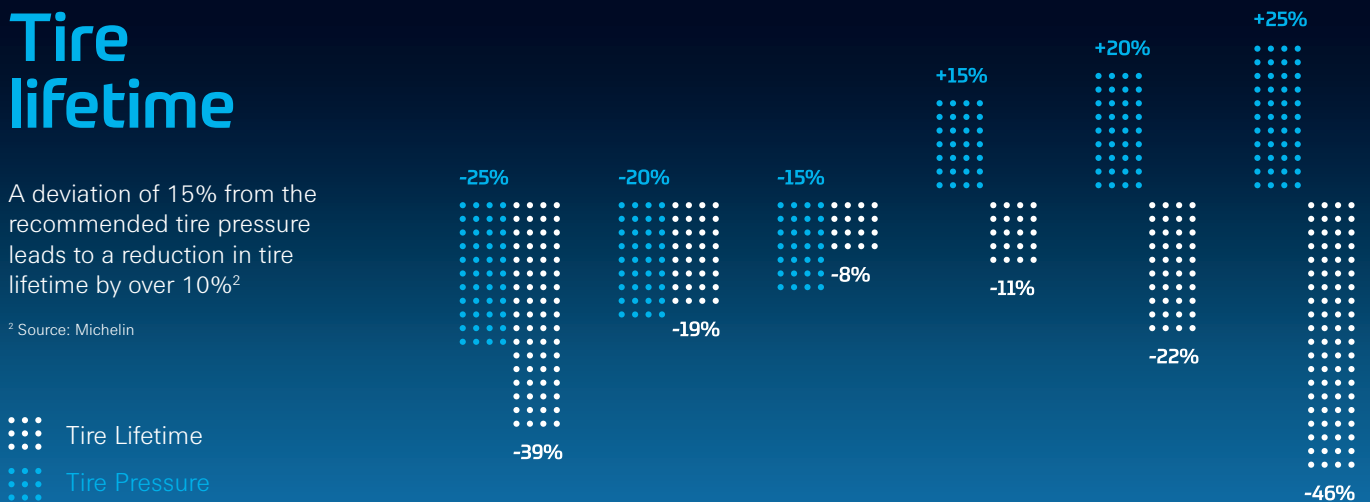
Electronic Control Unit (ECU)

⁶ not compliant with UN ECE-R 141, for applications outside EU

Tire lifetime

A deviation of 15% from the recommended tire pressure leads to a reduction in tire lifetime by over 10%²

² Source: Michelin



- Tire Lifetime
- Tire Pressure

OptiTire benefits

- Enables up to 2% fuel savings and CO₂ emission reduction
- Helps to optimize tire life and operational costs
- Helps quickly detection of tire deflation
- Enhances vehicle and road safety by helping avoid tire blowouts
- Supports maximum vehicle uptime and delivery reliability by helping prevent vehicle breakdowns
- Telematics connectivity enables real-time fleet alerts [requires ECE-R 141-compliant telematics unit]

OptiTire features

- Supports truck, trailer and bus applications including complete truck-trailer combinations
- Compliant with UN ECE-R 141 to fulfill European General Safety Regulation [Requires connection with an ECE-R 141-compliant trailer electronic braking system for trailer applications: TEBS-E6.5 or higher in case of ZF trailer EBS]
- Enables range extension with additional OptiTire ECUs for special trailer application
- Trailer iEBS Standard and Premium variants with integrated OptiTire ECU save installation and cabling effort
- Compatibility with OptiLink smartphone app and SmartBoard trailer monitoring panel
- Interfaces with ZF's SCALAR trailer telematics solutions, the next generation of fleet management with SCALAR EVO Pulse and TX-TRAILERFIT
- Easy to install and retrofit



Internal sensor (strap mounted)



For further product details contact your sales representative.
For information about our product portfolio, visit: zf.com/cv
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About Us

ZF is a global technology company supplying systems for passenger cars, commercial vehicles and industrial technology, enabling the next generation of mobility. ZF allows vehicles to see, think and act. In the four technology domains of Vehicle Motion Control, Integrated Safety, Automated Driving, and Electric Mobility, ZF offers comprehensive product and software solutions for established vehicle manufacturers and newly emerging transport and mobility service providers. ZF electrifies a wide range of vehicle types. With its products, the company contributes to reducing emissions, protecting the climate and enhancing safe mobility. With some 165,000 employees worldwide, ZF reported sales of €43.8 billion in fiscal 2022. The company operates 168 production locations in 32 countries.

ZF's Commercial Vehicle Solutions (CVS) division is helping shape the future of commercial transportation ecosystems. Our mission is to be the preferred global technology partner to the commercial vehicle industry. Powerfully combining ZF's commercial vehicle systems expertise, extensive technology portfolio and global operations, the division serves the full commercial vehicle industry value chain. As the automotive industry progresses towards an increasingly autonomous, connected, and electrified (ACE) future, ZF's CVS division innovates, integrates and supplies components and advanced control systems that help make commercial vehicles and fleets operate more safely and sustainably. CVS unites ZF's former Commercial Vehicle Technology and Commercial Vehicle Control Systems divisions, the latter being formed following ZF's acquisition of WABCO in Spring 2020.