Continental
The Future in Motion

ContiPressureCheck™

The Tire Pressure Monitoring System

Truck Tires EMEA

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* Under preparation

1. Current Truck Industry Trends

Why do you need a ContiPressureCheck System?

How will the ContiPressureCheck system

…save costs?

…improve safety?

…reduce emissions?

1. Current Truck Industry Trends
The Reason for the ContiPressureCheck System

Underinflated Tire

Impact on costs	Impact on safety	Impact on emissions
› Increased fuel consumption, higher fuel costs › Breakdowns, costs of standstill / downtimes › Reduction in tread life, higher lifetime costs	› Poor vehicle handling › Increased stopping distance › Loss of control in curve or lane changes	› Reduction in tire life › Increased fuel consumption, higher CO_2 output › Debris on road from blowout, environmental costs
RISK for costs	RISK for accidents	RISK for environment

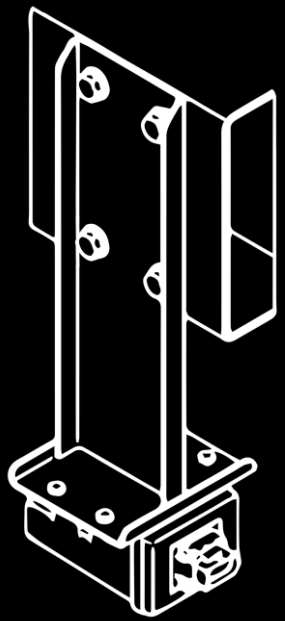
The ContiPressureCheck system can dramatically improve your vehicle's efficiency, safety performance and contribution to the environment.

2. General System Overview – Components
Tire Sensor (TS)

- Integrated battery-powered tire sensor with radio frequency transmitter
- One tire sensor per running wheel with individual coding
- Tire-mounted on inner liner
- Typical service life time: 600.000 km or 6 years
- Pressure:
  - Operating range: 0 to 12 bar (rel.)
  - Recommended pressure: 1,8 bar (26psi) to 11,9 bar (173psi)
  - Survival pressure: up to 20 bar
- Temperature:
  - Operating range: -40 °C to +120 °C

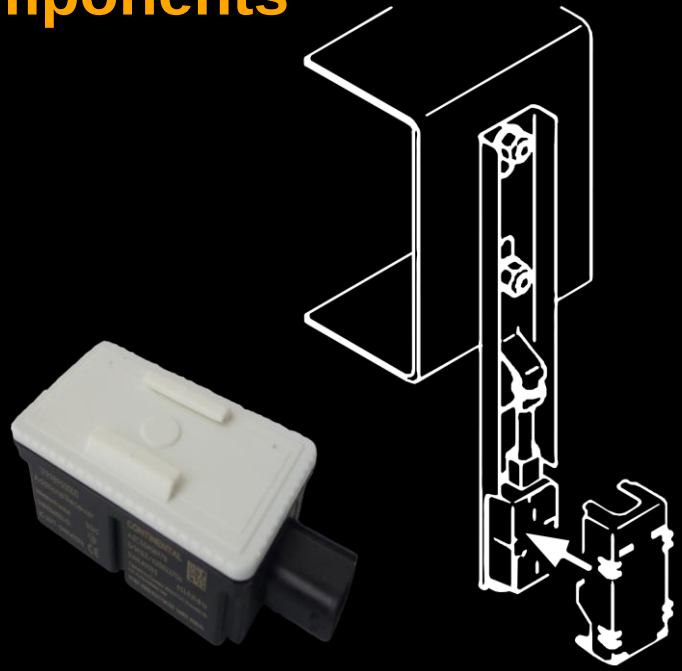
2. General System Overview – Components
Central Control Unit (CCU)

- Receives and evaluates signals from tire sensors
- Generates warnings and provides them for display
  - up to 24 tires
  - fitted on up to 6 axles
- Manual learning of tire sensor's location (via Hand-held Tool)
- Waterproof and stone chip-resistant
- To be affixed on vehicle with bracket (no drilling into chassis)



2. General System Overview – Components
Additional Receiver (RX)

- Integrated antenna and receiver
- Waterproof and stone-chip resistant
- To be used if:
  - vehicle has an axle spread of more than 6m
  - vehicle has more than 3 axles
  - a trailer is docked



2. General System Overview – Components
Monitoring Display (MD)

- Display shows the status of truck and trailer tires
- The display indicates 7 different types of warnings and the related tire position
- Pressure values and warnings are displayed with position information (apart from ATL)
- The status and position of trailer tires is shown in the display if the CCU-truck is configured as a MARRIED configuration

2. General System Overview – Components

Priority	Level	Symbol	Warning message	Error
High	High	7.2 2*)	FAST PRESS. LOSS	Continuous, fast pressure loss. Tire damage and tire destruction will occur.
		6.2 1*), 2*)	VERY LOW PRESSURE	The tire pressure falls below the recommended alarm threshold value. Tire damage or even tire destruction is possible.
		2*)	CHECK SENSOR	The Tire Sensor is no longer properly affixed.
	Low	8.2 1*)	LOW PRESSURE	The tire pressure falls below the recommended warning threshold value. Tire damage and tire destruction is possible.
		115	TEMPERATURE	The measured temperature in the tire exceeds 115 °C (239 °F). The tire sensor does not function at 120 °C (248 °F).
			NO SIGNAL	Due to insufficient signal strength, it is not possible to display a Tire Sensor protocol.
Low			SENSOR DEFECT	Tire Sensor is defective

2. General System Overview – Components
Hand-held tool (HHT)

- Initial configuration of entire system
  - Wireless communication with tire sensors
  - Synchronizes tire sensors to each wheel position
  - Wired communication with CCU

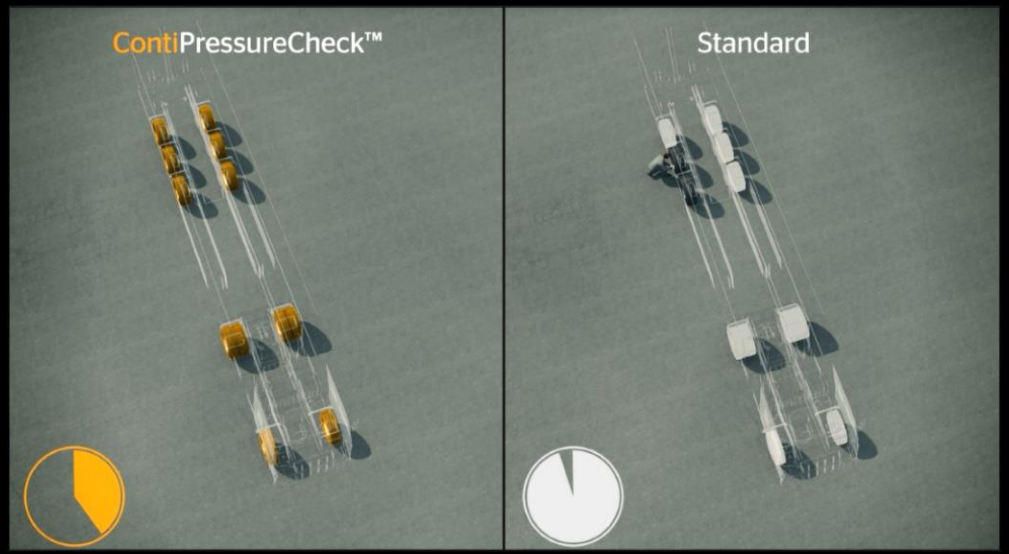
3. New Portfolio Matrix

	ContiPressureCheck Light	ContiYardReader*	ContiPressureCheck	ContiPressureCheck + Connection
Visualization to office				
Connection				
Visualization on Vehicle				
Data processing				
Hand-held tool				
Tire Sensor				

* Under preparation

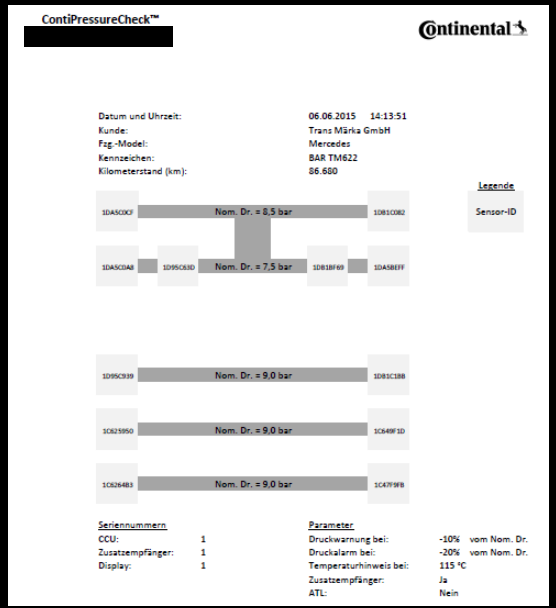
3.1 ContiPressureCheck Light

- Components
  - Tire sensors in tire
  - Hand-held tool for pressure check
- Benefits
  - Low investment costs
  - Basic data availability
  - Timesaving compared to regular pressure check



3.1 ContiPressureCheck Light

- Report Creator
  - Bird view per vehicle
  - Vehicle overview
- Benefits
  - Low investment costs
  - Basic data availability
  - Timesaving compared to regular pressure check



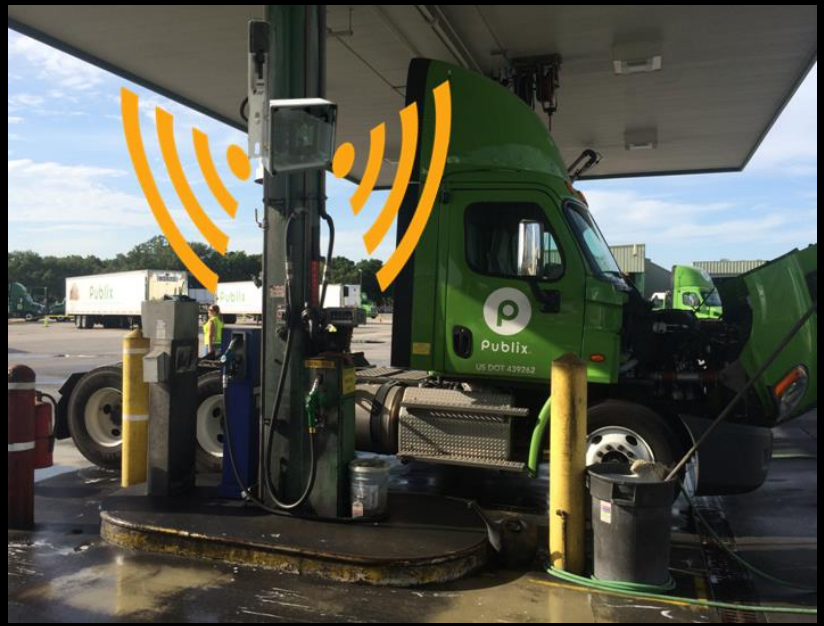
3.2 ContiYardReader

- Components
  - Tire sensor in tire
  - Hand-held tool for vehicle registration
  - CPC-Station

- Benefits
  - CPC-Station fitted on premises (maintenance area)
  - Web portal for tire management
  - Low investment costs
  - Automatic measurement

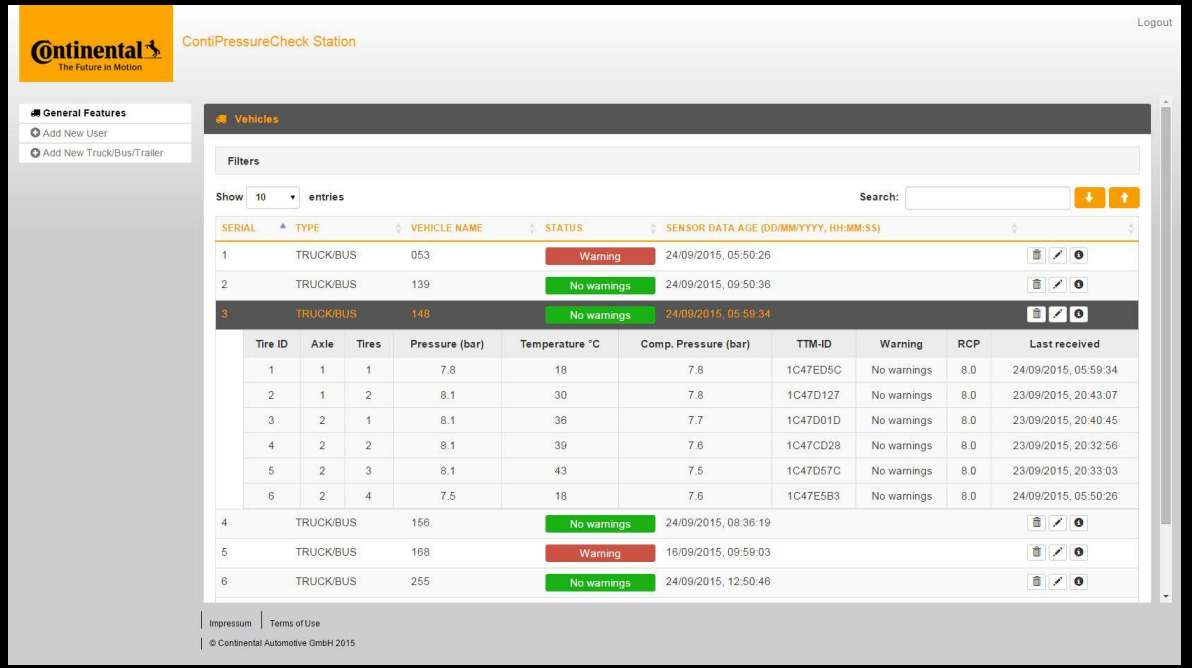
3.2 ContiYardReader

- Place in zone where vehicles rest for 2 min
  - Petrol station, maintenance area
- ~20 meters signal range
- Automatic check of every vehicle in reception area
- Delivers daily data to fleet manager or technician



3.2 ContiYardReader

- ContiYardReader web portal provides:
  - Vehicles overview
  - Latest measuring per tire
  - Measurement history
  - Warning messages
  - Recommended pressure
  - Pressure
  - Temperature
  - Compensated pressure



3.3 ContiPressureCheck

- Components
  - Tire sensor in tire
  - Central Control Unit
  - Display installed on vehicle
  - Hand-held tool for system configuration
- Features:
  - Married configuration
  - Automatic Trailer Learning
  - Surrounding Observer
- Benefit
  - Live data to drivers cabin on display

3.3 ContiPressureCheck

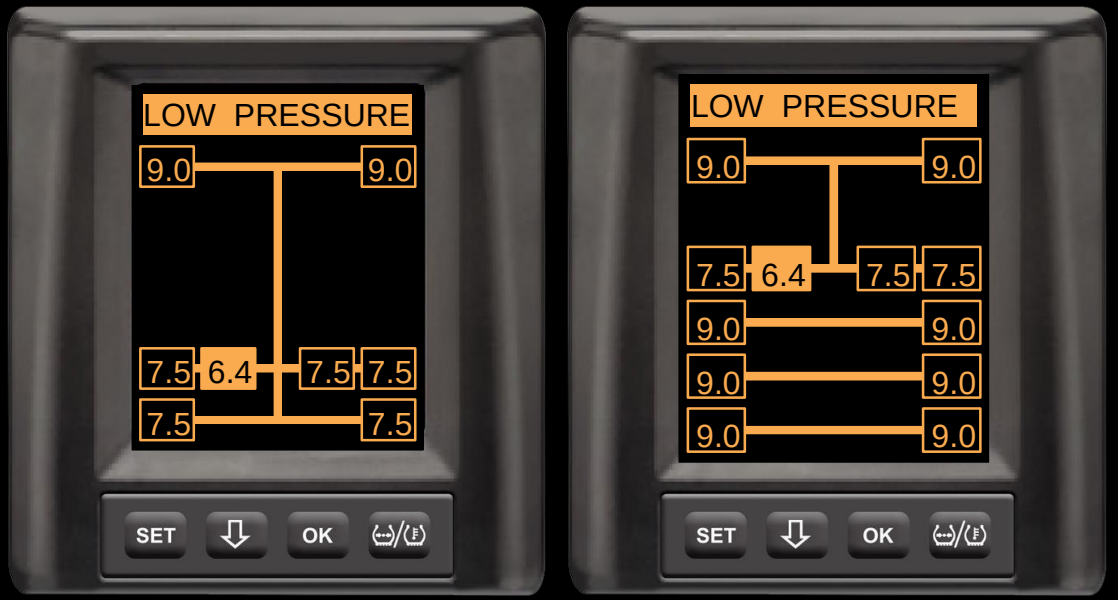
› Tractor is equipped with complete ContiPressureCheck system

› Changing trailers are equipped with sensors only

Trailer is supervised by ContiPressureCheck installed on tractor.

3.3 ContiPressureCheck
MARRIED Configuration

- The display indicates 7 different kind of warnings and the related tire position.
- If the trailer is configured in the CCU-truck as MARRIED combination the status including position of the trailer tires is shown.
- Additionally, the driver can be alarmed by a buzzer-tone



3.3 ContiPressureCheck
Automatic Trailer Learning (ATL)

- New trailer is connected to tractor
- Automatic trailer learning process starts:
  - new trailer detection takes up to 9 minutes ride
  - Latest trailer detection takes 4 minutes ride only
- Change of trailer is recognized automatically
- Unlimited trailer exchange possible
- In addition to tractor bird view, trailer tire warnings are shown on the lower part of the display

3.3 ContiPressureCheck
Surrounding Observer (SO)

- In addition to ATL, the Surrounding Observer (SO) can be activated
- As far ATL is not finished, SO observes the surrounding of the truck
- If unknown tire sensors with VERY LOW PRESSURE are detected, a warning will be shown on display
  - The driver has the chance to check if the tires of his trailer is affected, before he starts driving
- If the vehicle is already in operation, only unknown tire sensors in motion with VERY LOW PRESSURE are considered
- If ATL is finished, only the learnt trailer tire sensors will be monitored

3.3 ContiPressureCheck
Compatibility with Telematic Systems

- The ContiPressureCheck system is compatible with telematic system as it operates on an industry standard protocol J1939

- Continental supports the telematic provider with the integration by:
  - Providing the ContiPressureCheck interface description
  - Providing the ContiPressureCheck validation tool

3.4 ContiPressureCheck + Connection

- Benefits
  - Visualization on integrated displays in the truck cabin
  - Connection to telematic networks with industry standard protocols
  - Data availability for driver & fleet manager (fleet management)

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4. Pricing List

Truck < 6m		Trailer (fully equiped)		Truck & Trailer		Truck/Buses > 6m		Coaches	
Short Trucks with a axle spread less than 6 m		For independet trailer use with indicator light		for truck tractors with an additional receiver		Trucks and busses with a axle spread more than 6 m		For coaches with an additional receiver and associated 13 m cable	
Module-Kit 1		**Module-Kit 3**		**Module-Kit 2 + Sensor-Kit**		**Module-Kit 2**		**Module-Kit 5**	
Kit 1.2: without RX	170,00 €	Kit 3.2: Trailer	250,00 €	Kit 2.2: with RX	230,00 €	Kit 2.2: with RX	230,00 €	Kit 5.2: Coach	230,00 €
Kit 4.2.6: Tire sensors 6	270,00 €	Kit 4.2.6: Tire sensors 6	270,00 €	2x Kit 4.2.6: Tire sensors 6	540,00 €	Kit 4.2.6: Tire sensors 4	270,00 €	2x Kit 4.2.4: Tire sensors 4	360,00 €
Kit 6.2: TireView	80,00 €			Kit 6.2: TireView	80,00 €	Kit 6.2: TireView	80,00 €	Kit 6.2: TireView	80,00 €
520,00 €		**520,00 €**		**850,00 €**		**580,00 €**		**670,00 €**	

Advanced-Kit	Advanced-Kit 6.2	Advanced-Kit 7.2	Advanced-Kit 8.2	Hand-held tool
	TireView	TireConnect	TisWeb Starter Kit Tire	incl. **accessory**
	80,00 €	**130,00 €**	**159,00 €**	**520,00 €**

5. Summary
All Benefits at a Glance

- Critical tire under-inflation is prevented
  Benefit: driving safety
- Vehicle handling is optimized
  Benefit: driving safety
- Fuel efficiency is maximized
  Benefit: fuel cost saving
- Optimum tire life is achieved
  Benefit: tire cost saving
- Excess CO_2 emissions prevented
  Benefit: environmental protection
- Reduction of risk of standstill
  Benefit: productivity saving
- Reduced probability of breakdowns
  Benefit: improved productivity
- Optimized fleet management
  Benefit: improved productivity

5. Summary

The ContiPressureCheck system contributes to reduce operating costs by:

› Improving fuel efficiency

› Improving reliability and helping to avoid tire-related breakdowns

› Increasing tire mileage

› Reducing emissions

› Protection and value retention of the casing

ContiPressureCheck enhances the efficiency of your fleet.

› For further information please visit contipressurecheck.com