

## Tyre pressure monitoring systems

Resolution taken by the DVR Board on 24 May 2016 based on a recommendation by the DVR Executive Committee on Vehicle Technology

### Background

With effect from November 2014 all new motor vehicles of category M1<sup>1</sup> have to be equipped with tyre pressure monitoring systems (TPMS) in accordance with regulation (EC) No 661/2009 of 13 July 2009.

The regulation states that this requirement is appropriate due to the “availability of tyre pressure monitoring systems which enhance at the same time the safety and environmental performance of tyres”.

The German Road Safety Council (DVR) supports this statement. As early as 2007 the introduction of TPMS was recommended by DVR responding to a consultation on preparation of this regulation.

Mandatory installation of TPMS however applies only to vehicles of category M1. TPMS also has positive effects for other vehicles and their safety such as motorcycles, delivery vans, goods vehicles and buses as well as trailers (categories L3e, L4e L5e, N1, N2, N3, M2, M3, O2, O3, O4<sup>1</sup>).

---

<sup>1</sup> **Category L3e:** Two-wheel vehicles without a sidecar fitted with an engine having a cylinder capacity of more than 50 cm<sup>3</sup> if of the internal combustion type and/or having a maximum design speed of more than 45 km/h

**Category L4e:** Two-wheel vehicles with a sidecar fitted with an engine having a cylinder capacity of more than 50 cm<sup>3</sup> if of the internal combustion type and/or having a maximum design speed of more than 45 km/h

**Category L5e:** Vehicles with three symmetrically arranged wheels fitted with an engine having a cylinder capacity of more than 50 cm<sup>3</sup> if of the internal combustion type and/or a maximum design speed of more than 45 km/h

**Category N1:** Vehicles for the carriage of goods and having a permissible maximum mass not exceeding 3.5 tonnes

**Category N2:** Vehicles for the carriage of goods and having a permissible maximum mass exceeding 3.5 tonnes but not exceeding 12 tonnes

**Category N3:** Vehicles for the carriage of goods and having a permissible maximum mass exceeding 12 tonnes

**Category M1:** Vehicles designed and constructed for the carriage of passengers and comprising no more than eight seats in addition to the driver's seat

## Resolutions

1. **DVR recommends mandatory installation of tyre pressure monitoring systems for vehicles of categories L3e, L4e, L5e, N1, N2, N3, M2, M3, O2, O3, O4. The Federal Ministry of Transport and Digital Infrastructure (BMVI) and relevant European bodies are asked to develop appropriate technical specifications as well as an European regulation.**

### Reasons:

Under-inflation of motorcycle tyres leads to deformation of the tyres which affects stability and steering of the motorcycle. In particular, drivers of large vehicles or vehicles with two or more axles often may not notice changes in vehicle dynamics caused by gradual tyre pressure loss or may not notice them until too late. Gradual tyre pressure loss does not only affect road safety but also rolling resistance and hence CO2 emissions of the vehicle. Installation of TPMS in goods vehicles, trailers and buses therefore is particularly useful for accident prevention and environmental protection.

In view of different technical characteristics of the above vehicles compared to passenger cars as well as differences in loading conditions and load requirements, it is necessary to adapt ECE regulation 64 for these vehicles. In particular, the following aspects have to be taken into consideration:

- Compatibility between road tractor and trailer systems
- Common TPMS standard protocols
- Indication of actual tyre pressure

---

**Category M2:** Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a permissible maximum mass not exceeding 5 tons

**Category M3:** Vehicles designed and constructed for the carriage of passengers, comprising more than eight seats in addition to the driver's seat, and having a permissible maximum mass exceeding 5 tons

**Category O2:** Trailers with a permissible maximum mass exceeding 0.75 tonnes, but not exceeding 3.5 tonnes

**Category O3:** Trailers with a permissible maximum mass exceeding 3.5 tonnes, but not exceeding 10 tonnes

**Category O4:** Trailers with a permissible maximum mass exceeding 10 tonnes

- 2. Drivers of motor vehicles have to be informed which measures have to be taken to ensure permanent performance of indirect and direct TPMS (e.g. information in car owner's manuals, public relations by DVR and others). DVR also recommends including TPMS as a topic in driver education and driving tests.**

**Reasons:**

TPMS alerts the driver when the tyre is below its optimum pressure.

Many drivers do not understand this warning. Moreover indirect systems have to be reset in case of pressure change, e.g. due to changed loading conditions or wheel/tyre combination. Drivers may not be fully aware of the procedure.

If the wheel/tyre combination is changed for a vehicle fitted with direct TPMS, the driver may have to visit a service center to ensure safe operation.

signed  
Dr. Walter Eichendorf  
President