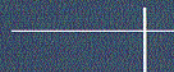




Electronic tire pressure monitoring system

tire pressure monitoring system



Perfection built in



Electronic Tire Pressure Monitoring System

More mobility. More safety. More comfort.

1. Introduction

The vehicle tire and thus the tire inflation pressure is one of the few safety-relevant factors in a vehicle which are not subject to permanent control. Despite that the tires hold one of the first positions among the technical reasons for accidents with personal injury or severe material damage in the accident statistics of the German Association of Automotive Manufacturers.

Former attempts to introduce systems for tire pressure control were not successful due to either the insufficient functionality (electromechanical threshold value systems), or excessive costs (inductively coupled measuring systems). It was only in the last few years that the progress in the miniaturization of electronic parts and the increase in the capacity of batteries, allowed the development of electronic battery-powered sensors which are installed in automotive tires and transmit data by means of high-frequency transmission. Tire pressure monitoring systems based on this principle can be made at costs which allow a wide distribution in passenger cars.

In 1992, the car manufacturers AUDI, BMW, DAIMLER-BENZ, PORSCHE and VOLKSWAGEN established a work-group for the development of a tire pressure monitoring system, with the target of defining a standard for basic

functions to create the preconditions for an economical system by means of standardization of the components. In 1995, the project partners ALLIGATOR – valve and housing engineering – and BERU – electronic and connection engineering – were entrusted with the development of the system which is now ready for series production. BERU was given responsibility for the system.

2. Description of Function

2.1 An Overview of the Function

The tire pressure monitoring system is applied for the permanent control of the tire pressure during driving and also during standstill periods.

An electronic system which is installed in the interior of the tire measures the tire pressure and the temperature in regular intervals and transmits information to a central control unit by means of a high-frequency transmission line. The control unit evaluates the incoming data and transmits the information to the driver, if required. In the case of a puncture, the driver is given a warning, and he is also informed when the tire pressure should be corrected.

The advantages of this tire pressure monitoring system are:

■ Safety

An early warning is given in the case of slow loss of pressure. The bursting

