

Tyre Defect Indicator (RPA)

The Tyre Defect Indicator RPA is designed to monitor the tyre status while driving. To achieve this, the speeds of the four wheels are determined by the wheel-speed sensors. A calculation logic stage implemented in the DSC control unit evaluates the received data and makes the corresponding information available to the driver as required, thus informing the driver of a possible tyre defect.

1. System structure

The Flat Tyre Monitor function is integrated in the DSC control unit.

E83 / E53 as of 03/2004: The standardisation takes place by means of a button.

E60: The standardisation takes place via iDrive.

2. Functions

The main function of the system is monitoring the tyre inflation pressure while the vehicle is being driven. The RPA button or iDrive is used to adopt the current tyre inflation pressure for the current wheel set as setpoint value. This means it is necessary to set the correct tyre inflation pressure prior to "standardisation".

Loss of inflation pressure changes the speed of the corresponding wheel. Depending on the pressure deviation, the control unit issues corresponding signals to the driver information system (indicator lamp and gong).

2.1. System statuses

2.1.1 "Active" status

After "ignition on", the RPA runs a self-test and is then in the state "active". The system monitors the tyre inflation pressure.

2.1.2 "Warning" status

The indicator lamp lights up in red and an acoustic signal sounds (ECE). The indicator lamp lights up in yellow (US version). The state "warning" (pressure drop of approx. 30 %) means that road safety is no longer ensured. Pressing the RPA button for 4 seconds or using the iDrive, resets the RPA to the state "active".

2.1.3. State "failed"

The indicator lamp lights up in yellow (E53, E83). CC message "Tyre Defect Indicator" (E60). The RPA is not functional; no warning can be issued.

2.1.4. Status "adaptation process" (standardisation)

The adaptation process is initiated after the RPA button has been pressed for 4 seconds. To confirm the start, the indicator lamp lights up in yellow for 4 seconds (E83, E53). On the E60, the adaptation process is initiated via iDrive. The adaptation process must be run after every correction of the tyre inflation pressure or after a tyre change. The responsibility correct set tire inflation pressure lies with the driver. The system is able to detect a flat of approx. 50 % of the cold inflation pressure after 10 minutes at the earliest. As the adaptation process advances, the differential pressure detected as a flat is reduced to around 30 %.

Important

A standardisation **must** always be carried out if the cold inflation pressure, the wheel position or the wheel set is changed.