The Predictive Emergency Braking System at speeds below 30 km/h (18 mph)

Many road traffic crashes occur at speeds below 30 km/h (18 mph), such as driving in city centers or in slow-moving traffic. Fortunately, the consequences of such crashes are usually limited to bodywork damage, but in some cases, expensive repairs still may be required.

At speeds below 30 km/h (18 mph), the Predictive Emergency Braking System works to avoid a collision with the vehicle ahead by initiating full braking. If the rear-end collision is unavoidable, the system reduces the impact speed and is therefore able to mitigate the consequences of the crash.

Prepares the braking system when the situation is critical

When, at a vehicle speed below 30 km/h (18 mph), the Predictive Emergency Braking System detects a critical proximity to a moving or stationary vehicle ahead, it prepares the braking system for potential emergency braking. Thus, full braking power is available valuable hundredths of seconds earlier.

Intelligent driver support at speeds below 30 km/h (18 mph)

When the system detects a critical approach to a moving or stationary vehicle ahead and the driver does not react, it prepares the braking system for emergency braking.

Brakes when the driver fails to react

If the driver fails to react to the critical situation, the system can automatically initiate full braking to potentially avoid the collision. Should the rear-end collision be unavoidable, this action can at least minimize the severity of the collision, reducing the risk of injury to the passengers of both vehicles.

The design of the Predictive Emergency Braking System may vary depending on the vehicle manufacturer and model.
Predictive Emergency Braking System

In order to reduce the risk of a rear-end collision and mitigate the consequences of such a collision, Bosch has developed the Predictive Emergency Braking System. The system, which is based on the networking of a radar sensor with the Electronic Stability Program (ESP®) or Electronic Stability Control (ESC), continuously analyzes the traffic ahead.

The Predictive Emergency Braking System becomes active as soon as the vehicle is started, and supports the driver at all speeds — both by day and by night. Nevertheless, the driver still has a responsibility to pay attention and drive carefully at all times.

At speeds over 30 km/h (18 mph), the Predictive Emergency Braking System warns the driver at an early stage if there is a risk of collision and, if necessary, provides active braking support. If the collision is unavoidable, the system reduces impact speed and is therefore able to mitigate the consequences of the crash.

Prepares the braking system and warns the driver when the situation is critical

When the Predictive Emergency Braking System detects that the distance to the preceding vehicle is becoming critically short at a vehicle speed above 30 km/h (18 mph), it prepares the braking system for potential emergency braking. Thus, full braking power is available to the driver valuable hundreds of seconds earlier.

The Predictive Emergency Braking System at speeds over 30 km/h (18 mph)

If the driver fails to react to the critical situation and the Predictive Emergency Braking System detects that the vehicle is continuing to approach the vehicle ahead, it warns the driver by means of a visual and/or audible signal. The driver is made aware of the immediate risk of a collision and can react earlier to potentially avoid the rear-end collision by braking or by an avoidance maneuver.

Reduces speed and supports the driver when braking

Valuable time can pass before a driver reacts to a critical situation. The Predictive Emergency Braking System can use this time effectively. Following the collision warning, it initiates partial braking in the detected rear-end collision situation. This intervention decelerates the vehicle and gives the driver more time to react.

You might be fumbling for something in the glove compartment, having an animated discussion with a passenger or simply not paying attention for a moment — when driving in traffic, this could have serious consequences.

If the driver presses the brake pedal, braking support is provided as necessary. If the driver does not react and the system assesses the collision to be unavoidable, it initiates full braking in order to mitigate the consequences of the crash.

The initiation of full braking can be supplemented by an additional surround sensor, such as a video camera.