

Chassis Systems Control **Adaptive Cruise Control: More comfortable driving**



BOSCH

Invented for life



Adaptive Cruise Control (ACC)

supports the driver
in maintaining a safe distance

Driving in heavy traffic or keeping a safe distance to the preceding vehicle calls for a high level of concentration. ACC from Bosch can reduce stress for the driver by automatically controlling vehicle speed and maintaining a predefined minimum distance to the preceding vehicle. This isn't just convenient for the driver – he/she is also able to better concentrate on the traffic situation.

How and when is ACC used?

The driver selects the desired speed and sets the distance to be maintained to the vehicle ahead. This gap can be set at several distances, adapting to the driving situation and individual driving style.

Standard ACC can be activated from speeds of around 30 km/h (20 mph) upwards and can support the driver, primarily on cross-country journeys or on freeways.

ACC Stop & Go is also active at speeds below 30 km/h (20 mph). It can maintain the set distance to the preceding vehicle even at very low speeds and can decelerate to a complete standstill. When the vehicle in front accelerates within a few seconds, the ACC vehicle follows automatically. When the vehicle remains stopped longer, the driver needs only to reactivate the system, for example by briefly stepping on the gas pedal to return to ACC mode.

In this way, ACC Stop & Go can support the driver even in heavy traffic and traffic jams.

How does ACC work?

A radar sensor monitors the driving situation ahead of the vehicle. The sensor transmits radar waves that are reflected by objects in front of the vehicle. Based on the reflected signals, ACC can detect preceding vehicles by calculating distance, direction and relative speed of the vehicle ahead. In addition, ACC predicts the course of its own vehicle and can then decide whether any of the vehicles ahead are relevant for distance control.

When the road ahead is clear, ACC maintains the desired set speed



If ACC detects a preceding vehicle at lower speed ...



Heart of ACC: a long-range radar sensor that can detect preceding vehicles



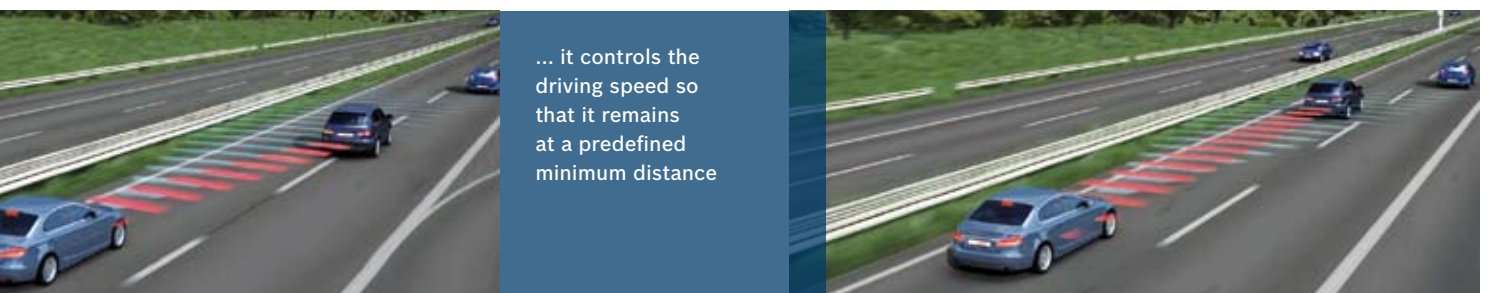
As long as the road ahead is clear, ACC maintains the speed set by the driver. If ACC detects a preceding vehicle at lower speed, it adjusts the speed to match the vehicle ahead, ensuring that the predefined minimum distance is kept. At lower speed deviations this can be realized by reducing acceleration. If the detected vehicle is slower, ACC moderately brakes the vehicle in conjunction with the Electronic Stability Program ESP® (Electronic Stability Control, ESC). If the preceding vehicle increases speed or clears the lane, ACC accelerates up to the desired preset speed.

ACC allows harmonious traffic flow on the roads. Since ACC is a comfort and convenience system, brake interventions and vehicle acceleration only take place within defined limits. Even if ACC is switched on, it remains the driver's responsibility to monitor the speed and distance from the vehicle in front. He/she can override or switch off the function at any time.

The ACC sensor control unit is also a key component for implementing functions that enable timely reaction to critical driving situations.

Where is ACC available?

ACC is available on many of today's vehicles. Due to ongoing development of radar and control technologies, Bosch is continually optimizing price and making it affordable for high volume vehicles applications.



... it controls the driving speed so that it remains at a predefined minimum distance

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Printed in Germany
29200P0N4-C/CCA-201011-En

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