



Mercedes-Benz C-Class

2018

Highway Assist System



AD System Name	Active Distance Assist DISTRONIC with Active Steering Assist	
Standard Active Safety Systems	AEB Car-to-Car	●
	AEB VRU	●
	LSS	●
	SAS	●
Available on	Mercedes-Benz A-Class Mercedes-Benz C-Class Mercedes-Benz E-Class Mercedes-Benz GLE (2019)	

Comments

Active Distance Assist DISTRONIC with Active Steering Assist on the Mercedes-Benz C-Class gives the driver a high level of support while maintaining the impression of the driver being in control with the car assisting them. The system is readily perceived as a system to assist the driver which aligns well with the information provided.

The name “Active Distance Assist DISTRONIC with Active Steering Assist” indicates that the system is a driver-assist system, not an autonomous one, and is not readily misunderstood. The limited scenarios tested provide a similar impression. The handbook mentions only that the system has limited performance on narrow and windy roads. The system is not geofenced and can therefore be engaged on any road with distinct lane markings. The legally-required hands-off warning tells the driver to keep his hands on the wheel, but a simple use of any control button on the steering wheel is sufficient to suppress this warning. In case of no response to the warning, the system will bring the car to a controlled stop.

Within the longitudinal scenarios, the C-Class shows a high level of support in the slower-moving and braking car scenarios. When approaching a stationary car, and in the ‘cut-in’ and ‘cut-out’ scenarios, the system offers limited support, the driver being primarily required to handle the situation.

Active Steering Assist provides subtle steering support resulting in a good balance between the driver and the system in the S-bend scenario. In the absence of lane markings or other vehicles to act as a guide, Active Steering Assist will change to a passive mode and will resume assistance when clear lane markings are detected.

Overall, the Mercedes-Benz system is balanced with little risk of driver over-reliance on the system.

Human Machine Interaction

System Name	The system name, Active Distance Assist DISTRONIC with Active Steering Assist, clearly indicates that this is an Assist System	
Official Manufacturer Information		
System Features	SPEED CONTROL	
	Automatic Speed Limit Adaptation	○
	Speed Adjustment for Road Features	○
	STEERING SUPPORT	
	Assisted Lane Change	○
User Manual	Description of Operational Design Domain (areas where the system can be used)	●
	Description of the Driver's Role	●
	Description of Adaptive Cruise Control Limitations	●
	Description of Lane Centering Limitations	●
	Description of Hands OFF Warning Sequence	✗
<p style="text-align: center;">Hands Off Warning timeline</p> <p>The chart shows three warning phases over a 100-second interval. Visual Warning starts at 0s and ends at 85s. Audible Warning starts at 30s and ends at 85s. Controlled Stop starts at 60s and ends at 75s.</p>		

- Explained in user manual
- Feature fitted as part of the system
- ✗ Not explained in user manual
- Feature not available as part of the system

Comments

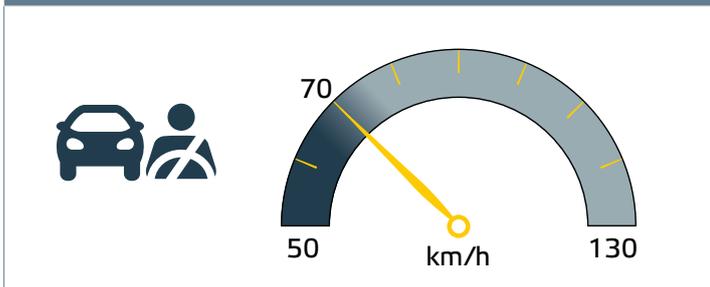
While the user manual clearly explains the limitations of the system and where it can operate reliably, system use is not limited as geofencing is not implemented. The role of the driver during the use of the system is also clearly stated and is in line with the system design. Specific scenarios where the driver must be primarily in control or where no system response is expected are not mentioned in the handbook.

Enabling of the system is performed using a button on the dashboard. Engaging the system is simple and intuitive using a dedicated cluster of buttons on the steering wheel.

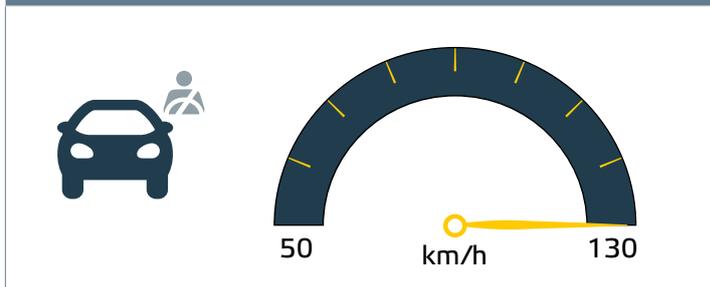
Marketing information from Mercedes-Benz clearly explains the design and intended use of the system.

Adaptive Cruise Control Tests

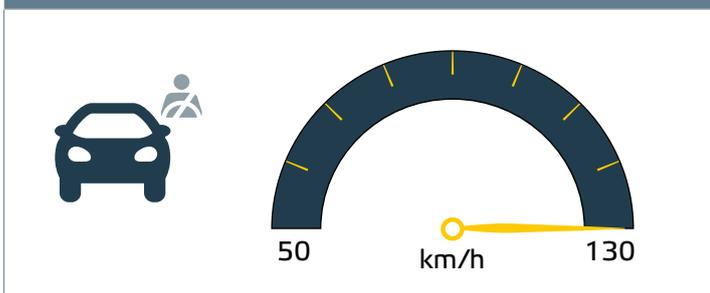
Approaching a stationary car



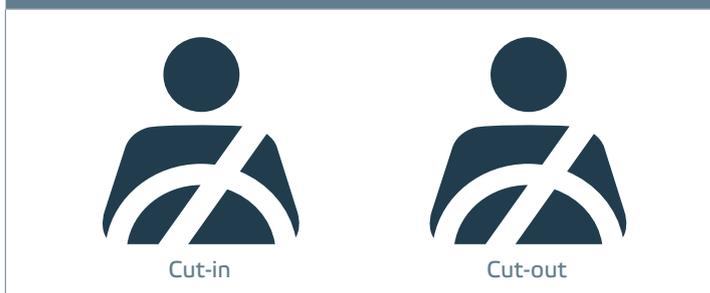
Approaching a slower moving car



Approaching a braking car



Car cutting-in or cutting-out ahead



VEHICLE PRIMARILY IN CONTROL
Level of support may result in over reliance



GOOD COOPERATION BETWEEN DRIVER AND VEHICLE
Balanced



DRIVER PRIMARILY IN CONTROL
Limited support provided by the system



NO SYSTEM SUPPORT AT ALL

ACC DESIGN LIMIT

ACC BRAKING

EMERGENCY INTERVENTION

NO RESPONSE

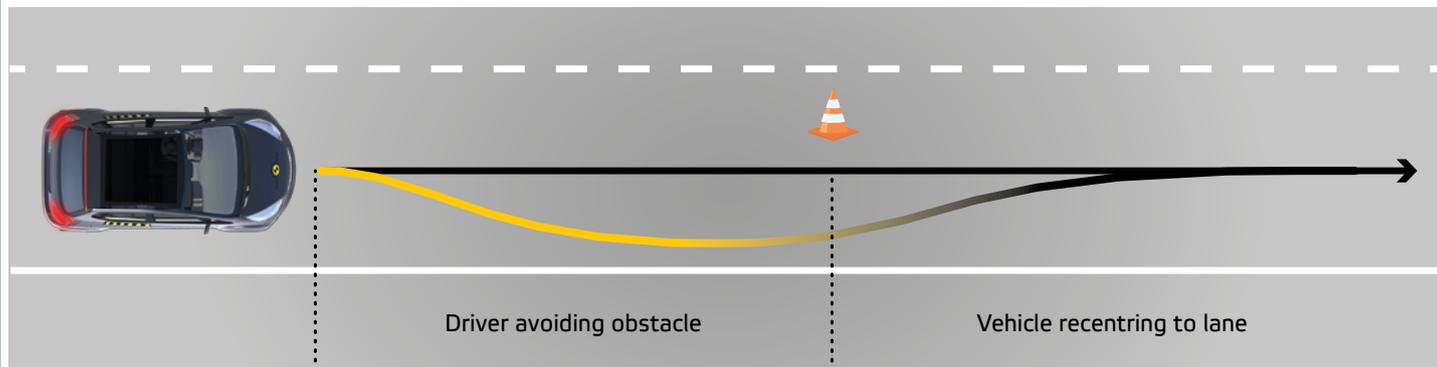
Comments

In the scenarios tested, Adaptive Distance Assist DISTRONIC responds to a stationary vehicle directly ahead and the ACC function will bring the car to a halt up to 70 km/h after which the AEB/FCW system keeps supporting the driver up to the maximum speed assessed. In both the slower-moving and braking lead vehicle scenarios, the car also responds well and provides full support across the test speed range. Very late or no ACC response was witnessed in the cut-in and cut-out scenarios which are critical and challenging due to the rapidly changing conditions. Very late or no warning was issued to alert the driver of the possible crash in these cases.

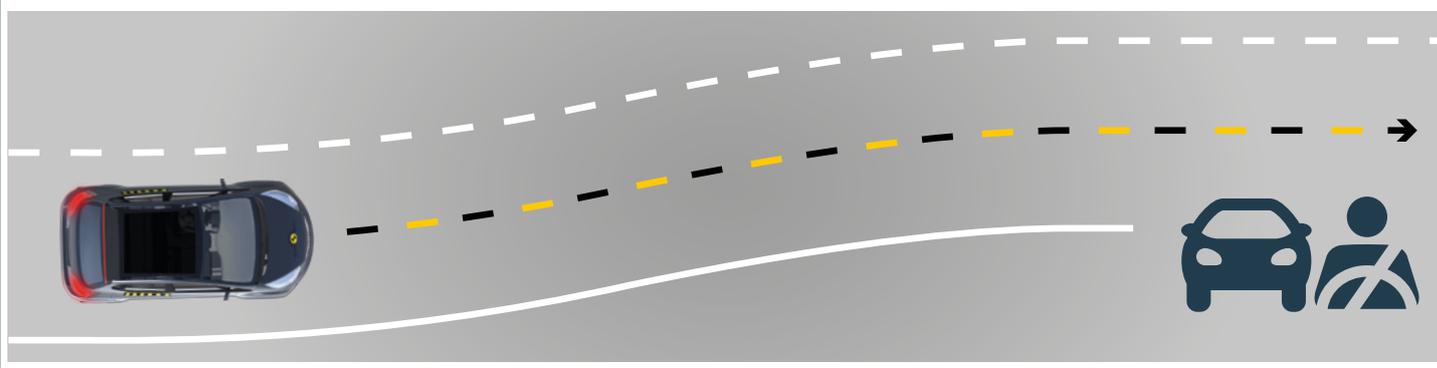
Overall the system performs well in the ACC scenarios and a good balance exists between the car and the driver. The driver clearly needs to stay alert and take appropriate action in more critical day-to-day scenarios such as the sudden cut-in situation.

Steering Support

Steering to avoid an obstacle



Steering in a S-curve



VEHICLE PRIMARILY IN CONTROL
Level of support may result in over reliance



GOOD COOPERATION BETWEEN DRIVER AND VEHICLE
Balanced



DRIVER PRIMARILY IN CONTROL
Limited support provided by the system



NO SYSTEM SUPPORT AT ALL

— STEERING SUPPORT PATH

— DRIVER STEERING PATH

Comments

In the scenarios tested, Active Steering Assist gives the impression that the driver is in control and the car is supporting by providing steering assistance, which encourages good driver engagement. Where a driver wants to reposition the car within the lane, for example to avoid an obstacle or increase clearance to adjacent traffic, the system readily accommodates driver inputs and subsequently continues to provide steering assistance.