

Mercedes-Benz Intelligent Drive Next Level Generation 4.0 & 4.5 Parking and Assistance Systems:

Vehicles for Germany



GSP/TPC

Editorial

Driving assistance system make driving easier while helping to support and protect the driver. They have become a major aspect of the public's fascination with the Mercedes-Benz brand.

This manual has been created to provide you with all the important information surrounding the driving assistance systems available in Mercedes-Benz cars. In a clear and compact format, it contains all the key facts on how the systems work along with practical information about service and diagnosis.

Driving Assistance and Brake Systems Team
Dept. GSP/TPC

Note:

This manual is not subject to the ongoing update service. When working on the vehicle, always use the most up-to-date workshop aids (e.g. WIS, XENTRY, special tools) for the vehicle in question.

See the respective sales documentation for country-specific special considerations.

Note

This booklet discusses vehicle features available globally. Not all features are available in every market or for every vehicle. Always verify that the vehicle in question has the applicable feature.

The features discussed are driver assist features designed to help the driver operate the vehicle. The driver is always responsible for operating the vehicle safely and obeying all applicable laws. See the Operator's Manuals for additional information and warnings

Mercedes-Benz Intelligent Drive Next Level Generation 4.0 & 4.5 Parking and Assistance Systems:

Vehicles for Germany

Active Distance Assist DISTRONIC

- ▲ Route based speed adjustment
- ▲ Active Speed Limit Assist

ATTENTION ASSIST

Active Steering Assist

- ▲ Active Lane Change Assist
- ▲ Active Emergency Stop Assist

Car-to-X Communication

PRE-SAFE® PLUS

Beltbag

PRE-SAFE® Sound



Active Lane Keeping Assist

Active Brake Assist

standard with Pedestrian Detection,
in combination with Driver Assistance
package with Cross-Traffic Function and
Congestion Emergency Braking Function

MULTIBEAM LED

▲ ULTRA RANGE high beam

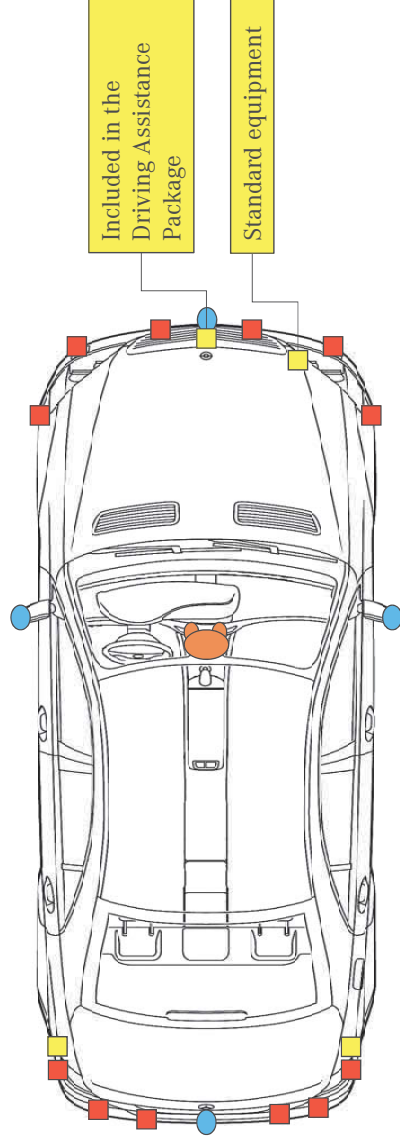
Remote Parking Assist

Evasive Steering Assist

Generation 4.0 assistance systems are found in the following model series:
213, 238

Generation 4.5 assistance systems are found in the following model series:
177, 217 Facelift, 222 Facelift, 257 213 & 238 as of modification year 18/1

Overview of Assistance and Parking Systems (SA code dependent) -
 217 Facelift/222 Facelift/238



PTS = Parktronic System consisting of ultrasonic sensors

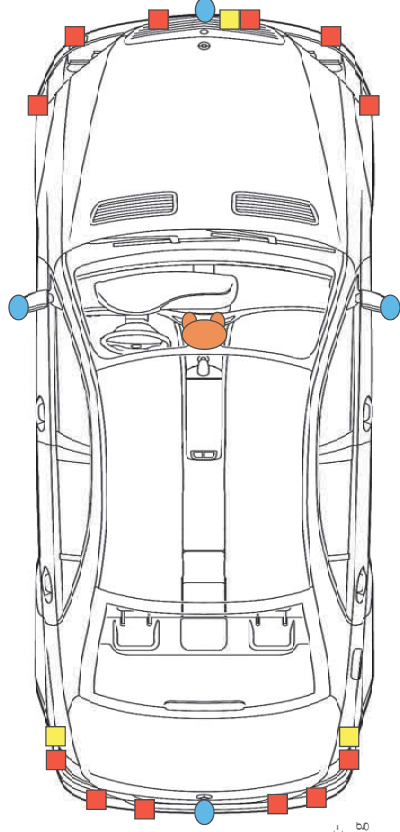
MMS = Multi-Mode Radar Sensors

SVS = Surround View System (360° camera system)

- Consisting of a front end camera, reversing camera and cameras in the outside mirrors

MPC = Multi-Purpose Camera

Overview of Assistance and Parking Systems (SA code dependent) - Model Series 177



* The installation position of the front-end radar sensors may vary depending on the exterior equipment line.

PTS = Parktronic System consisting of ultrasonic sensors

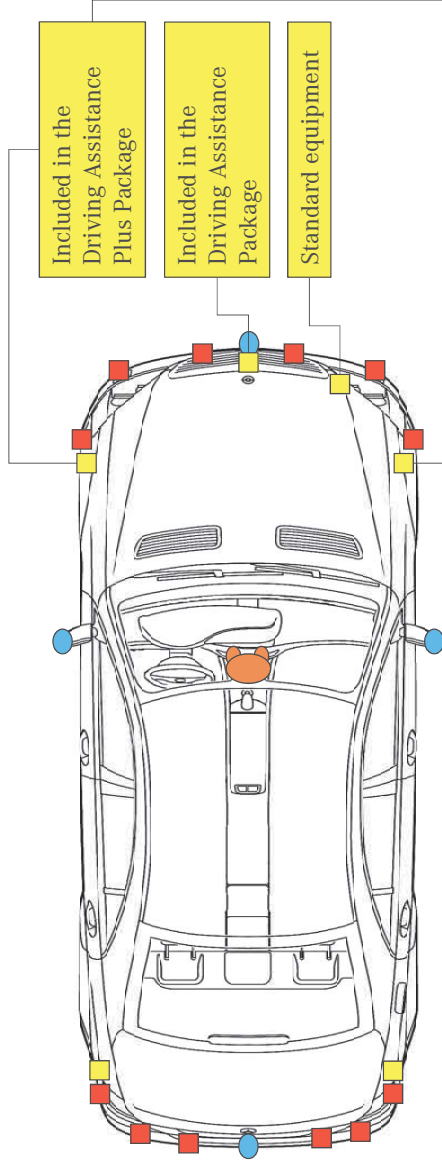
MMS = Multi-Mode Radar Sensors

SVS = Surround View System (360° camera system)

MPC = Multi-Purpose Camera

- Consisting of a front end camera, reversing camera and cameras in the outside mirrors

Overview of Assistance and Parking Systems (SA code dependent) - Model Series 213/257



Included in the Driving Assistance Plus Package

Included in the Driving Assistance Package

Standard equipment

PTS = Parktronic System consisting of ultrasonic sensors

MMS = Multi-Mode Radar Sensors

SVS = Surround View System (360° camera system)

MPC = Multi-Purpose Camera

- Consisting of a front end camera, reversing camera and cameras in the outside mirrors

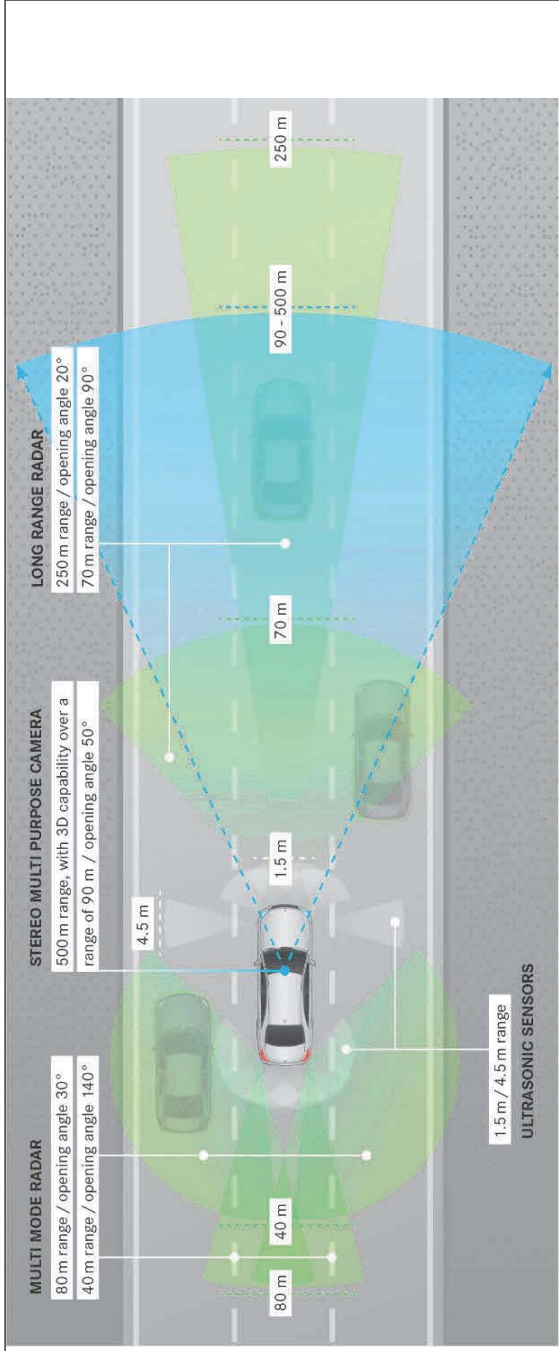
Mercedes-Benz Intelligent Drive Next Level Contents Overview: Modular Driving Assistance Systems

Standard equipment	Special equipment	Driving Assistance Package (Plus)
Active Brake Assist (code 258)	Lane Tracking Package <ul style="list-style-type: none"> Active Lane Keeping Assist (code 243) Blind Spot Assist (code 234) 	Active Distance Assist DISTRONIC (code 233): <ul style="list-style-type: none"> Active Speed Limit Assist (code 546) Extended automatic restart in stop & go traffic (code K33) Route-based speed adaptation orange (code K34)
ATTENTION ASSIST	Traffic Sign Assist (code 513) {only in combination with COMMAND Online (code 531)}	Active Brake Assist (with code 23P or P20): <ul style="list-style-type: none"> Cross-traffic function Congestion emergency braking function
Speed Limit Assist (code 504) (only in 177, 257)	Active Distance Assist DISTRONIC (code 239)	Active Steering Assist: <ul style="list-style-type: none"> Active Lane Change Assist (code K32) Active Emergency Stop Assist
PRE-SAFE® (code 299)		Evasive Steering Assist
PRE-SAFE® Impulse		Active Lane Keeping Assist
Crosswind Assist		Active Blind Spot Assist (code 237)
		PRE-SAFE® PLUS
		PRE-SAFE® Impulse Side (only with Driving Assistance Plus Package)

- PTS
- MMS
- SVS
- MPC

Overview of Sensors for Driving Assistance Package

Radar and stereo camera for all-round protection through sensor fusion

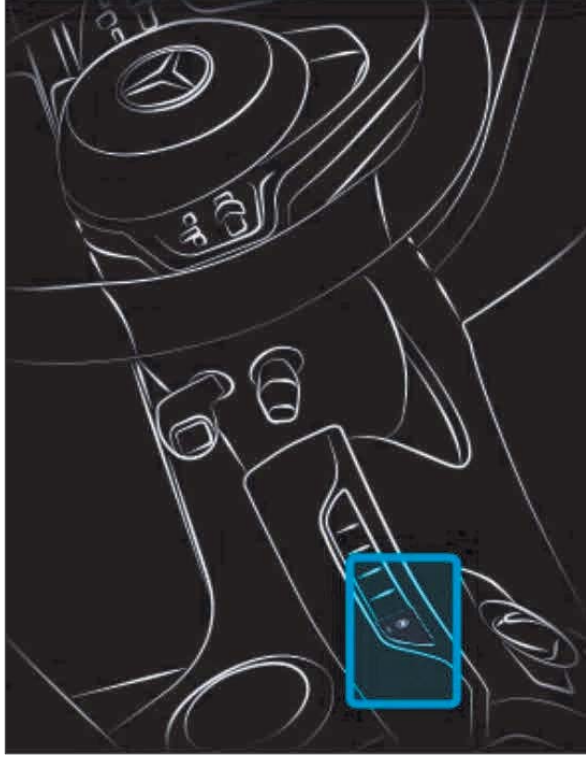


Schematic illustration, not to scale

Switching Assistance Functions & Head-Up Display On and Off

Controls above the light switch

Active Steering Assist, Active Lane Keeping Assist and Head-up Display



Above the light switch you will find a row of switches used for switching the following assistance systems on and off (does not apply to model series 177):

- ✓ Active Steering Assist
- ✓ Active Lane Keeping Assist

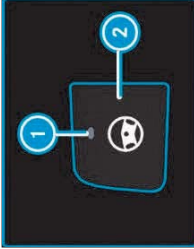
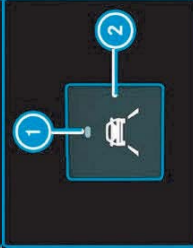
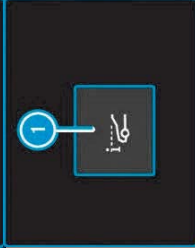
You can also switch the Head-up Display on and off (incl. model series 177).

- The Head-up Display projects information from the navigation and driver assistance systems, as well as certain warning messages, to the driver's field of view above the cockpit.

Switching Assistance Functions & Head-Up Display On and Off

Controls above the light switch

Active Steering Assist, Active Lane Keeping Assist and Head-up Display

	<p><u>Active Steering Assist</u></p>	<p>To switch a function on and off, press the appropriate button. The function is on when the indicator lamp for the given assistance system is lit.</p>
	<p><u>Active Lane Keeping Assist</u> Prerequisites for having green lines shown in the assistance system graphic:</p> <ul style="list-style-type: none">• The vehicle is being driven at a speed greater than approx. 60 km/h and the system detects lane boundary markings	<p>Note: The Head-up Display button does not have an indicator lamp. When the button is pressed, projected information will either appear in or disappear from the driver's field of view above the cockpit.</p>
	<p><u>Head-up Display</u></p>	<p>Prerequisites:</p> <ul style="list-style-type: none">• ESP® is switched on but not intervening• Active Distance Assist DISTRONIC is switched on

Standard equipment

System name	Code	Page
Active Brake Assist	258	12-15
ATTENTION ASSIST	None	16-18
Speed Limit Assist	504	19-20
PRE-SAFE® System	299	21-24
Crosswind Assist	None	25-26

Standard equipment

Active Brake Assist (code 258)

Standard equipped protection against rear-end collisions and collisions with crossing pedestrians

- *Distance and collision warning*
- *Autonomous braking for preceding vehicles and crossing pedestrians (in model series 177 also cyclists)*
- *Situation-specific braking assistance*

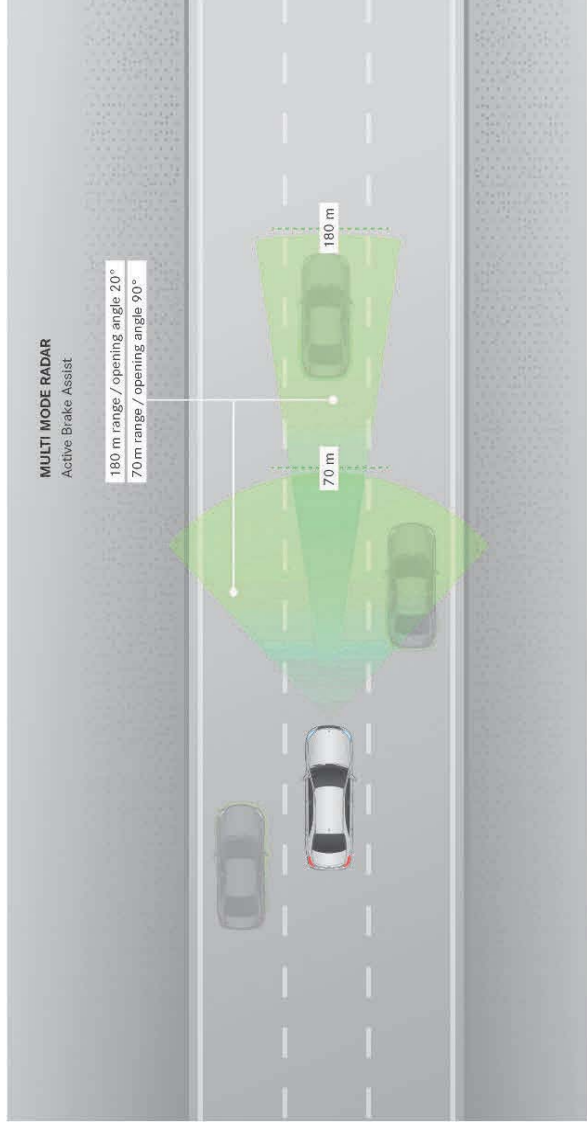
This system can help to prevent rear-end collisions with preceding vehicles and with crossing pedestrians or to mitigate the impact of such accidents. It includes a distance and collision warning function, situation-specific braking assistance and autonomous braking.

Consisting of a distance and collision warning function, situation-specific braking assistance and autonomous braking to avoid collisions with preceding vehicles and crossing pedestrians. In model series 177, crossing cyclists and cyclists traveling in the same direction are also detected.

Active Brake Assist (code 258)

Standard equipped protection against rear-end collisions and collisions with crossing pedestrians

- *Distance and collision warning*
- *Autonomous braking for preceding vehicles and crossing pedestrians (in model series 177 also cyclists)*
- *Situation-specific braking assistance*





Standard equipment

Active Brake Assist (code 258)

Model series

177, 217 Facelift, 222 Facelift, 257

Properties

- When the system's radar sensors (model series 177 also uses a multifunction camera) detects an impending collision with another road user, it responds by issuing a visual and acoustic warning
- When the brake pedal is pressed, the Active Brake Assist ensures that the optimum amount of brake pressure is applied (up to approx. 250 km/h)
- Autonomous braking if driver fails to respond (up to approx. 200 km/h)
- Also responds to stationary vehicles and crossing pedestrians (up to approx. 60 km/h) in the danger zone ahead of the vehicle
- The Active Brake Assist consists of:
 - ✓ **Distance warning function**
 - Warns the driver when, given the speed of travel, his/her vehicle is too close to the preceding vehicle for a period of several → The distance warning lamp  in the instrument cluster lights up
 - Warns the driver when his/her vehicle comes critically close to a vehicle or pedestrian → Intermittent tone and distance warning lamp  in the instrument cluster
 - ✓ Autonomous braking function
 - In certain vehicle speed ranges (see operator's manual) this function is able to respond to stationary vehicles and crossing pedestrians
 - ✓ Situation-specific braking assistance
 - In certain vehicle speed ranges (see operator's manual) this function is able to respond to stationary vehicles and crossing pedestrians

Active Brake Assist (code 258)

Model series

177, 217 Facelift, 222 Facelift, 257

System limit

The system may become impaired or nonfunctional in the following situations:

- In case of snow, rain, fog, heavy spray, glare, direct sunlight or changing light conditions
- If the sensors are soiled, fogged, damaged or obscured
- If the sensors are disrupted by other radar sources, for example strong radar reflection in multi-level car parks
- If tire pressure loss or a defective tire is detected and indicated



Standard equipment

ATTENTION ASSIST

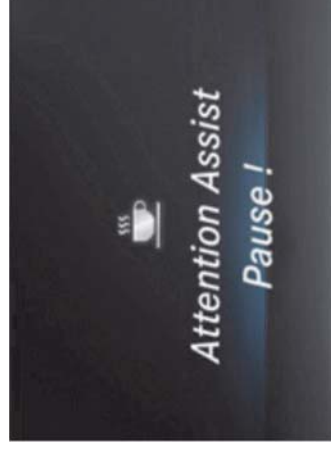
Remaining alert over the long haul

The ATTENTION ASSIST function is integrated into the Electronic Stability Program control unit and is designed to support the driver on long and monotonous journeys, for example on freeways and other long-distance highways.

By analyzing the driver's behavior, the system can detect typical signs of fatigue and warn the driver of increasing drowsiness or inattentiveness. This system can enhance driving safety particularly on long journeys and at night.

By evaluating the driver's steering behavior, the ATTENTION ASSIST recognizes the typical signs of fatigue and sharp drops in attentiveness and issues a visual and acoustic warning to keep the driver from nodding off.

ATTENTION ASSIST is only an aid. It cannot always promptly detect fatigue or increasing inattentiveness. The system is no substitute for a rested and alert driver. On long journeys, make sure that you take regular and truly refreshing breaks before it's too late.




ATTENTION ASSIST

Model series

177, 217 Facelift, 222 Facelift, 257

Properties

- Two setting options:
 - Standard: Normal system sensitivity
 - Sensitive: Higher system sensitivity
- Always activated after the engine is started
- System switched on/off in the assistance system menu in the instrument cluster
- When ATTENTION ASSIST is off, the assistance graphic in the Instrument Display will show the  symbol (when engine is running).
- Assesses fatigue/inattentiveness by analyzing:
 - Personal driving and steering behavior
 - Time of day/night and driving time
 - Manual operation activities
 - Longitudinal and lateral acceleration
- If increasing fatigue or inattentiveness is detected in the driver
 - A warning appears in the instrument display: Attention Assist: Take a Break
- After one break warning is issued, the system waits at least 15 minutes before issuing another one
- System is reset by shutting off the engine or changing driver – detected when the seat belt buckle is unlatched and the door opened

ATTENTION ASSIST

Model series

177, 217 Facelift, 222 Facelift, 257

System limits

- ATTENTION ASSIST is active in the vehicle speed range between approx. 60 km/h and approx. 200 km/h
- The ATTENTION ASSIST function is impaired in the following situations and warnings may be delayed or not issued at all:
 - If the elapsed driving time is less than approx. 30 minutes
 - Poor roadway conditions (deep undulations, pot holes)
 - Strong crosswind
 - Sporty driving style (high cornering speed or hard acceleration)
- If the Steering Assist function of Active Distance Assist DISTRONIC is activated
- If the clock is set incorrectly

- In active driving situations, indicated by frequent lane and speed changes

Components

- Steering wheel angle sensor in the steering wheel



Speed Limit Assist (code 504)

Sensing and applying speed limits

Speed Limit Assist detects and displays the current speed limit. The application of a detected speed limit may be done manually using the RES button on the steering wheel (press button 4 upward (see page 45 – Chapter "Operating the Active Distance Assist DISTRONIC[®])). The driver can choose between a visual or an acoustic warning to indicate that the maximum permissible speed has been exceeded.

Speed Limit Assist (code 504)

Model series
177 and 257

Properties

- The system uses a camera located behind the windshield and image recognition to determine the speed limit and detect stop signs
- Also recognizes camera images of stop signs for use with the ECO function
 - The engine will not switch off when the vehicle is stopped at a stop sign
- A speed limit symbol is shown in the instrument cluster or optionally in the Head-up Display
- Additional qualifying panels (e.g. speed limits that apply only when wet or only for trucks) are also evaluated
- The current driving speed is compared with the maximum permissible speed.
If this speed is exceeded, a warning message is issued (visual or visual/acoustic)

System limits

- In case of snow, rain, fog, heavy spray, glare, direct sunlight or changing light conditions
- Soiled, fogged, damage or obscured sensors
- Damaged, soiled or rusted signs that cannot be clearly read by the camera
- If corners are taken sharply, signs may be missed if they are outside of the camera's visual range



Standard equipment

PRE-SAFE System® (code 299)

Preventive occupant protection

The PRE-SAFE System® is able to predict certain critical driving situations and initiate preventive action to avert impending accidents and protect the vehicle's occupants. This includes, for example, PRE-SAFE® Sound, reversible belt tensioners and the automatic closing of any open windows.

PRE-SAFE® Sound can activate the body's inherent hearing protection mechanism by emitting a brief noise signal (provided the multimedia system is on) to "alert" the auditory system and in this way help protect the inner ear against high sound pressure levels. The aim is to reduce the impact of accident noise on the auditory system.

PRE-SAFE® (code 299)

Model series

177, 217 Facelift, 222 Facelift, 257

Properties

- PRE-SAFE® can initiate the following actions independently of one another:
 - Pre-tension driver and front passenger seat belts
 - Close side windows
 - In vehicles with sliding sunroof: Close sliding sunroof
 - In vehicles with memory function: Adjust driver and front passenger seats to safer position
 - Adjust outboard rear seats to safer position
 - In vehicles with multicontour seat: Increase air pressure in the side bolsters of the seat backrest
 - Pre-tension seat belts of outboard rear seats

System limits

- If no accident occurs, the initiated precautionary measures will be reversed
- If the seat belt tension does not lessen, move the seat backrest back a bit
 - The belt pretension will be released

PRE-SAFE® Sound

Preventive occupant protection

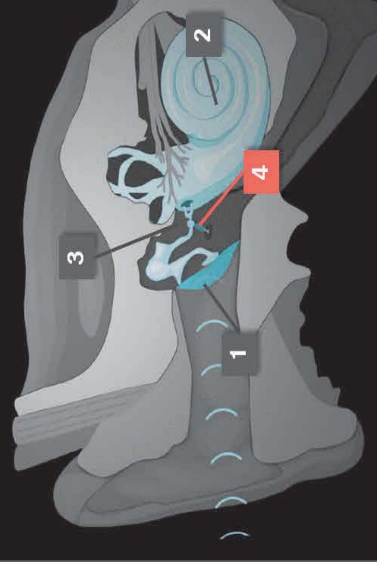
Preventive occupant preconditioning:

- When a hazardous situation is identified:
 - A brief noise signal is emitted through the sound system
 - This triggers the stapedius reflex
 - "Alerts" the auditory system

Reflex mechanism:

- A sound stimulus can cause the stapedius muscle to involuntarily contract
- The effect is to briefly weaken the connection between the eardrum and the inner ear
- This serves to protect the inner ear against high sound pressures (biomechanical hearing protection)

PRE-SAFE® Sound



1. Eardrum

2. Stapes

3. Inner ear

4. Stapedial muscle

Standard equipment

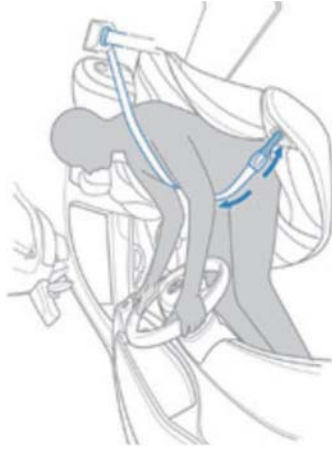
PRE-SAFE® Impulse

Preventive occupant protection

Model series

217 Facelift, 222 Facelift

During the early phase of a frontal impact, the seat belts pull the front occupants deeper into their seats. When the maximum impact load is reached, the system releases the pull in a controlled manner along the reverse path. In this way, PRE-SAFE® Impulse can significantly reduce the risk of injury.



Crosswind Assist

Keeping the vehicle on track

When crosswinds are strong and gusty, this system can help the driver keep to his or her lane. The system performs targeted braking actions that sharply reduce the vehicle's track offset. This increases the driver's sense of security and helps to avoid inappropriate reactions.

Crosswind Assist

Model series

177, 213, 238, 217 Facelift, 222 Facelift, 257

Properties

- Supports the driver during strong crosswind situations
- The ESP® Crosswind Assist is active during straight-ahead driving and in slight bends when the vehicle is traveling between approx. 80 km/h to approx. 200 km/h
- The vehicle is stabilized by means of targeted and single-side brake applications
- How it works:
 - Detects crosswind effects through the ESP® sensor system
 - Dynamic correction through single-side brake applications (as for Active Lane Keeping Assist and Blind Spot Assist)
 - In vehicles with Magic Body Control (code 487 – only in model series 217 and 222, incl. facelift), the system intervenes by changing the load placed on particular wheels

Advantages

- Reduction of lane drift and yaw response, improved straight ahead running
- Significantly less track offset and steering effort in case of strong gusts and gale-force winds



Standard equipment

Special equipment

System name	Code	Page
Lane Tracking Package: <ul style="list-style-type: none">• Active Lane Keeping Assist and• Blind Spot Assist	243 and 234	28-35
Traffic Sign Assist	513	36-38
Active Distance Assist DISTRONIC	239	39-41

Active Lane Keeping Assist (code 243)

Keeping you safely on track

Active Lane Keeping Assist can identify when a vehicle unintentionally departs its lane. It warns the driver through vibrations in the steering wheel and brakes the vehicle on one side to help guide it back into its lane. The system promotes safe driving on rural roads, expressways and freeways.

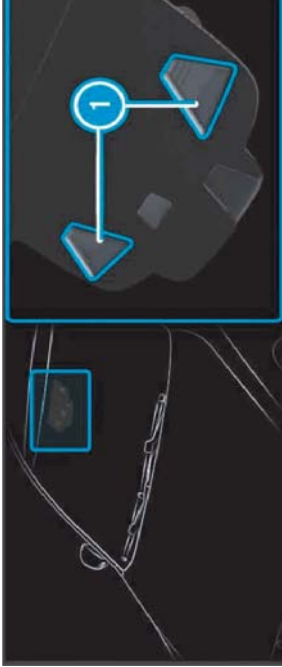
Crossing over lane markings is optically identified and processed by the mono multifunction camera.

The system also takes the driver's behavior into consideration and uses this information to decide when to issue a warning.

The Active Lane Keeping Assist system can neither reduce the risk of accident due to an inappropriate driving style nor can it override the laws of physics. It is not able to take account of road and weather conditions or of the prevailing traffic situation. The Active Lane Keeping Assist system is only an aid. You continue to be responsible for maintaining a safe following distance and speed, for prompt braking and for keeping in your lane.

Active Lane Keeping Assist (code 243)

Keeping you safely on track



Surveillance of area ahead of vehicle using a multifunction camera (stereo MFC only in combination with the Driving Assistance Package)



Lane-correcting brake application is indicated in the multifunction display

Active Lane Keeping Assist (code 243) without Driving Assistance Package

Model series

177, 213, 217 Facelift, 222 Facelift, 257

Properties

Steering wheel vibrations warn the driver when:

- The system detects a lane boundary marking
- One front wheel crosses the lane boundary marking

Lane-correcting brake application

- Solid lane boundary marking on both sides and the driver does not respond to warning → Lane-correcting brake application
- Brake system intervention available between approx. 60 km/h and approx. 200 km/h

No lane-correcting brake application:

- If the system detects that the driver is actively steering, braking, accelerating
- If the turn signal indicator is on

- If a driving safety system (e.g. ESP®) is intervening

- At high cornering speeds/rapid acceleration
- If ESP® is inactive
- When driving with a trailer and the electrical connection to the trailer is correctly established

- If tire pressure loss or a defective tire is detected

Active Lane Keeping Assist (code 243) without Driving Assistance Package

Model series

177, 213, 217 Facelift, 222 Facelift, 257

The system is impaired/nonfunctional in the following situations:

- In case of snow, rain, fog, heavy spray, glare (e.g. from oncoming traffic), direct sunlight/strongly changing light conditions, reflections, poor visibility (e.g. insufficient roadway illumination)
- If the part of the windshield near the camera is soiled, fogged, damaged/obscured, a message to this effect will appear to inform the driver
- If there are no clear lane boundary markings or if several ambiguous markings are present for one lane
- If the distance to the preceding vehicle is so small that the system cannot identify the lane boundary markings
- If the lane boundary markings are worn down, dark/obscured
- If lane boundary markings alternate rapidly, for example where lanes branch off, cross or merge
- On very narrow and winding roadways
- In case of obstacles standing on / projecting into the lane

Blind Spot Assist (code 234)

For safe lane changes

Included in the Driving Assistance Package (23P) and Driving Assistance Plus Package (P20)

This system makes visible one of the greatest dangers on the road today: vehicles in the blind spot. In both freeway and urban traffic, the Blind Spot Assist system can warn drivers when there is a danger of a side-impact collision.

Blind Spot Assist uses short range radar (two lateral, rear-facing radar sensors) to monitor the areas to the rear and side of the vehicle. If the driver has set his or her turn signal and a danger is detected, the system notifies the driver that the intended lane change is not recommended right now.

Blind Spot Assist and Active Blind Spot Assist are only aids. They may fail to detect some vehicles and are no substitute for attentive driving. Always be sure to maintain sufficient side clearance to other road users and to obstacles.

Blind Spot Assist (code 234)

For safe lane changes

How it works

- If immediately after being detected a vehicle enters the monitoring range next to your vehicle, the warning lamp in the outside mirror will light up red
- If a vehicle is detected close to your vehicle in the side monitoring range and you switch your turn signal to this direction, a warning tone will sound once and the red warning lamp in your outside mirror will flash
- If the turn signal indicator remains on, all other detected vehicles will be indicated only by the flashing of the red warning lamp



Blind Spot Assist (code 234)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

Properties

- Radar-based system for monitoring the area up to approx. 40 m behind and approx. three meters directly next to the vehicle
- System is inactive at speeds under approx. 12 km/h
- When the system is inactive, a yellow triangle will appear in both outside mirrors
- When vehicles are detected in the blind spot, the system issues warnings in two stages
- Stage 1: A red triangle appears in the outside mirror
- Stage 2: If the turn signal is switched on despite the warning, the red triangle will flash and a warning tone will sound in the instrument cluster
- Can be switched on and off in the vehicle settings

System limits

The detection capability of Blind Spot Assist can be restricted in the following situations:

- If the sensors are soiled or obscured
- In case of poor visibility, e.g. due to fog, heavy rain, snow or spray
- If narrow vehicles such as bicycles are within the monitoring range
- Guiderails or other structural boundaries may result in false warnings
- System is not available when a trailer is being pulled
- Warnings may be interrupted when driving alongside long vehicles, for example trucks, for a prolonged time
- Blind Spot Assist is not operational when reverse gear is engaged
- If you pass a vehicle quickly, no warning will be given
- The system does not respond to vehicles that approach and pass at a much higher speed

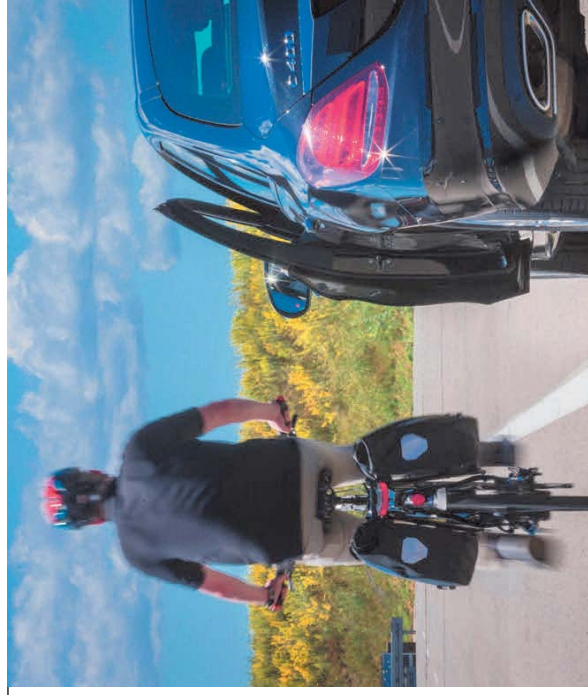
Blind Spot Assist (code 234)

Exit warning (warning function when car door is opened)

Model series
177

Properties:

- Can cause a symbol to appear in the outside mirror to warn the driver when an object is passing in close proximity to his or her vehicle
- This is supplemented by an acoustic warning if the door handle is operated
- Passing objects must be moving faster than 2 m/s (about 7 km/h)
- The function is active for as long as the vehicle is stationary and deactivated three minutes after the ignition is turned off or the vehicle locked



Special equipment

Traffic Sign Assist (code 513)

Traffic sign recognition including wrong-way warning function and display of speed limit in the instrument cluster

Included in COMMAND Online (code 531)

In model series 177 also in combination with navigation system (CONNECT20 with hard-disk navigation)

The Traffic Sign Assist system reads traffic signs and supports the driver by detecting speed limits, do not enter signs and no passing zones and displays this information in the instrument cluster or in the central display. It also tells the driver when such restrictions are lifted.

Depending on the situation, the system will give priority either to the speed limits detected by the camera or to those found in map data and then display this information to the driver. Additional panels that qualify the main sign (e.g. "when wet") are also recognized by the system. If the vehicle enters a road going in the wrong direction as indicated by a sign, a visual and acoustic warning is triggered.

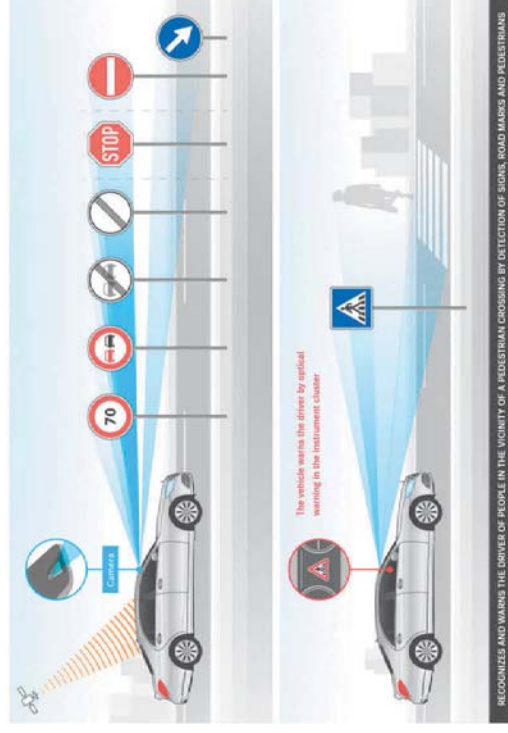
Traffic Sign Assist (code 513)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

Properties

- Warns when the maximum permissible speed is exceeded (difference to maximum permissible speed and the type of warning can be set manually with a choice between visual or visual and acoustic)
- Also makes use of data stored in the navigation system
→ Displayed information can refresh even if a traffic sign is not recognized
- Warns when the vehicle is approaching a pedestrian crossing → Message in instrument cluster (only in vehicles with DAP)
- Country availability adapted to current location



Special equipment

Traffic Sign Assist (code 513)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

System limits

The system may display incorrect information in the following situations:

The traffic sign does not conform to the rules of the Vienna Convention on Road Signs and Signals

In case of poor visibility, e.g. due to insufficient roadway illumination, highly variable shade conditions, rain, snow, fog or heavy spray

In case of glare (e.g. from oncoming traffic) direct sunlight or reflections

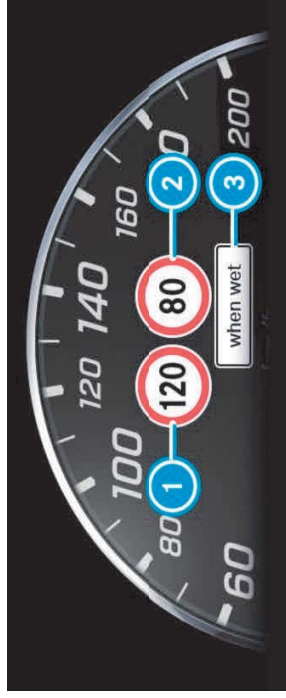
If the part of the windshield near the multifunction camera is soiled, or if the camera is fogged, damaged or obscured

If the traffic signs are difficult to identify, e.g. due to dirt, obscuring, snow or insufficient lighting

If corners are taken sharply, signs may be missed if they are outside of the camera's visual range

If the information in the navigation system's digital road map is flawed or outdated

If the meaning of a sign is unclear, e.g. traffic signs that apply to construction sites or adjacent lanes



- 1) Maximum permissible speed
- 2) Maximum speed with qualification
- 3) Additional qualifying panels

Active Distance Assist DISTRONIC (code 239)

Automatic speed and distance control

Active Distance Assist DISTRONIC automatically regulates the speed and the distance to a preceding vehicle according to the settings made the driver by decelerating and, where possible, accelerating again. It provides relief to drivers in dense freeway and highway traffic, particularly in stop-and-go situations.

The Active Distance Assist DISTRONIC system is only an aid and can neither reduce the risk of accident due to an inappropriate driving style nor can it override the laws of physics. Active Distance Assist DISTRONIC is not able to take account of road and weather conditions or of the prevailing traffic situation. You continue to be responsible for maintaining a safe following distance and speed, for prompt braking and for keeping in your lane.

Active Distance Assist DISTRONIC (code 239)

Model series
177, 213, 257, 238

Properties

- Maintains the set speed, accelerates or decelerates the vehicle if permitted by its proximity to the preceding vehicle.
- Helps the driver maintain a safe distance to the preceding vehicle, bringing the vehicle to a stop if necessary.
- Brakes the vehicle with up to 50 % of maximum possible deceleration. If greater deceleration is required, a visual and acoustic warning is issued to the driver, who must then intervene personally
- The speed can be set between approx. 20 km/h and 200 km/h

System limits

The system may become impaired or nonfunctional in the following situations:

- In case of snow, rain, fog, heavy spray, glare, direct sunlight or strongly changing light conditions
- If the part of the windshield near the camera is soiled, fogged, damaged or obscured
- If the radar sensors are soiled or obscured

Display of the Active Distance Assist DISTRONIC (code 239)
in the Assist System Graphic and in the Speedometer

Model series
213, 257, 238, 177



1. Preceding vehicle
2. Distance scale
3. Own specified distance
4. Own vehicle

Special equipment

Driving Assistance Package (code 23P) Driving Assistance Plus Package (code P20)

System name	Condition	Code	Page
Active Distance Assist DISTRONIC: <ul style="list-style-type: none"> Active Speed Limit Assist Extended automatic restart in stop & go traffic Route-based speed adaptation 	COMMAND COMMAND PTS COMMAND, or in model series 177: CONNECT20 with hard-disk navigation	Code 233 Code 546 Code K33 Code K34	43-52
Active Brake Assist: <ul style="list-style-type: none"> Cross-traffic function Congestion emergency braking function 			53-57
Active Steering Assist: <ul style="list-style-type: none"> Active Lane Change Assist Active Emergency Stop Assist 	COMMAND	266 K32	58-66
Evasive Steering Assist			67-68
Active Lane Keeping Assist		243	69-71
Active Blind Spot Assist		234	72-74
PRE-SAFE® PLUS			75-77

Driving Assistance Package (code 23P) Driving Assistance Plus Package (code P20)

Consisting of Active Distance Assist DISTRONIC, Active Steering Assist, Active Brake Assist with cross-traffic function, Evasive Steering Assist, Active Blind Spot Assist, Active Lane Keeping Assist and PRE-SAFE® PLUS.

Only in combination with COMMAND Online: Active Speed Limit Assist; Active Lane Change Assist; up to 30s extended automatic restart in stop & go traffic on freeways (Parking Assist (code 235) also required); route-based speed adaptation.

Additional function in Driving Assistance Plus Package: PRE-SAFE® Impulse Side.

Active Distance Assist DISTRONIC (code 233)

Included in Driving Assistance Package (23P) and Driving Assistance Plus Package (P20)

- Active Speed Limit Assist (code 546)
- Extended automatic restart in stop & go traffic (code K33)
- Route-based speed adaptation (code K34) and Active Lane Change Assist (code K32)

This intelligent system can be used on all types of roads (freeway, rural, city) not only to automatically maintain the proper distance to preceding vehicles but also to follow them in the lane, even up to speeds 210 km/h and even in stop & go traffic with extended automatic restart (up to approx. 30 seconds) on freeways and other multi-lane divided highways.

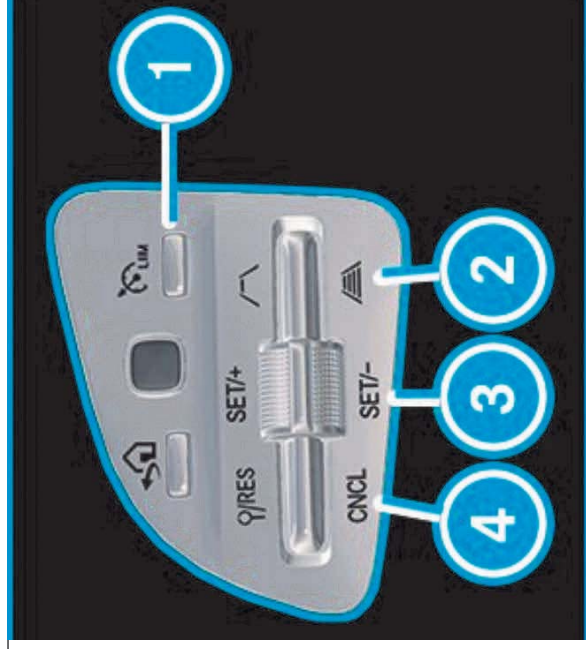
The Active Distance Assist DISTRONIC is only an aid.

The driver continues to be responsible for maintaining a safe following distance and speed and for prompt braking.

Operating the Active Distance Assist DISTRONIC System

Functions of the steering wheel controls

- Switch between Limiter and Active Distance Assist DISTRONIC:
Press button 1
- Increase or decrease the specified distance to the preceding vehicle: Move rocker switch 2 up or down
- Activate function based on current driving speed:
Move rocker switch 3 up or down
- Then increase or decrease speed:
Move rocker switch 3 up or down
- Apply displayed speed limit to Active Distance Assist DISTRONIC or Limiter: Press button 4 up
- Deactivate Active Distance Assist DISTRONIC:
Press button 4 down



Active Distance Assist DISTRONIC (code 233)

Included in *Driving Assistance Package (code 23P)* and *Driving Assistance Plus Package (code P20)*

Model series

213, 238, 217 Facelift, 222 Facelift, 257, 177

Properties

- Radar-based adaptive cruise control
- Response to stationary obstacles takes place with the aid of the multifunction camera
- Speed (approx. 20 km/h – approx. 210 km/h) and distance are set and stored on the steering wheel
- Initiates quick acceleration to stored specified/maximum speed when turn signal indicates intention to move to fast lane
- Full throttle acceleration depending on selected drive program
- Takes account of single-side passing restrictions on freeways or multi-lane divided highways (in combination with COMAND Online)

System limits

- The system may become impaired or nonfunctional in the following situations:
 - In case of snow, rain, fog, heavy spray, glare, direct sunlight/strongly changing light conditions
 - If the part of the windshield near the camera is soiled, damaged or obscured
 - If the radar sensors are soiled or obscured
 - On slippery, slick roads: danger of skidding due to braking and propelling
 - In multi-level car parks or on very steep roads

Active Speed Limit Assist (code 546)

Anticipatory application

Automatic application of speed limits by DISTRONIC.

When the system detects that the speed limit has changed and the Active Distance Assist DISTRONIC is switched on, this speed will be applied as the specified speed for the system.

The speed will be adjusted at the latest when the vehicle reaches the traffic sign. If a town's limits are stored in the map data, the vehicle's speed will be adjusted in anticipation in accordance with the stored position.

The speed limit displayed in the instrument display is always updated when the vehicles reaches the traffic sign.

The specified speed is changed when the vehicle reaches the traffic sign.

Active Speed Limit Assist (code 546)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

Properties

- If a road or a freeway has no speed limit, the recommended maximum speed will be applied as the set speed
- The recommended speed can be set by the driver for each ignition sequence → On roads with no speed limit, the system uses the speed set in that ignition sequence as the new recommended speed
- If during the ignition sequence no change is made to the set speed for roads with no speed limit, the official recommended speed will be applied → Example: recommended speed of 130 km/h on German federal freeways (autobahns)
- If Active Distance Assist DISTRONIC is switched to passive mode by the driver pressing the accelerator, only those speed limits will be applied that are greater than the stored speed
- Configuration in the multimedia system is possible

System limits

- Conditional speed limits (in effect, for example, at specific times or under certain weather conditions) cannot be unambiguously identified by the system
- The system does not detect the speed limit for vehicle/trailer combinations



Extended Automatic Restart in Stop & Go Traffic (code K33)

The Active Distance Assist DISTRONIC system can not only maintain the proper distance to preceding vehicles but can also follow them in the lane, even in stop & go traffic with significantly extended automatic restart on freeways and other multi-lane divided highways up to approx. 30 seconds).

- In vehicles with Active Parking Assist and COMAND Online and with code K33:

- If a vehicle traveling on a multi-lane divided highway (as reported by map data) is brought to a halt by the DISTRONIC system and then the driver ahead starts to move forward again, this system can within approx. 30 seconds automatically move the vehicle forward to follow

- If a critical situation is detected prior to start-off:

- Start-off readiness is ended

- Driver must personally operate the accelerator pedal or Resume

- If a critical situation is detected during start-off:

- A visual and acoustic take-over warning is issued

- The driver must intervene, the vehicle will not be accelerated further

Route-Based Speed Adaptation (code K34)

**Availability depends on country*

**In combination with COMAND Online (code 531)*

Model series

177, 217 Facelift, 222 Facelift, 257

With the Active Distance Assist DISTRONIC, the vehicle speed is adjusted in anticipation of what lies ahead on your route. Depending on the selected drive program, the upcoming route event will be taken in either the economy, comfort or dynamic mode. After passing the route event, the vehicle is accelerated back up to the preset speed. This is done taking account of the set distance, of detected vehicles ahead and of upcoming speed limits.

Upcoming route events include:

- Bends
- T-intersections, traffic circles and toll booths
- Turns and exits

When the toll station is reached, Active Distance Assist DISTRONIC applies the speed as the stored speed.

The speed is also reduced if a turn signal is switched on and one of the following situations is detected:

- Turning at intersection
- On deceleration lane
- On lane next to deceleration lane

Route-Based Speed Adaptation (code K34)

Model series

177, 257, 217 Facelift and 222 Facelift

Properties

- Anticipatory reduction of vehicle speed based on map data before bends, intersections, traffic circles, toll booths and when turning
- Speeds chosen depending on the selected drive program (ECO/COMFORT/SPORT)
- In ECO mode, cornering speeds are aligned to the Steering Assist system
- Increases ride comfort and reduces how often the driver needs to take control
- If an intended turn is detected at an intersection or on a deceleration or adjacent lane, the speed is adjusted when the turn signal is operated
- If route guidance is active in the COMAND Online navigation system, the initial adaptation will take place automatically



Route-Based Speed Adaptation (code K34)

Model series
177, 257, 217 Facelift and 222 Facelift

System limits

Speed adaptation will be terminated if:

- The driver operates the accelerator pedal or the brake pedal
- The system does not take account of right-of-way rules



The speed chosen by the system may in the following cases not be suited to the situation:

- Difficult environmental conditions (e.g. route ahead unclear, narrowing roads, wet weather, snow or ice
- When the vehicle is pulling a trailer, the speed chosen by the system may not be suited to the situation:
→ The driver must intervene as required

Active Brake Assist (with code 23P or P20)

Protection against rear-end collisions and collisions with crossing pedestrians

→ *Distance warning function and autonomous braking function*

→ *Situation-specific braking assistance*

→ *Cross-traffic function and congestion emergency braking function*

If the risk of collision with another road user is identified by the system's radar (or, depending on the scenario, also with the help of the multifunction camera), the system's first responds by issuing a visual and acoustic warning.

If the driver then applies the brake pedal, Active Brake Assist works to build up the optimum amount of brake pressure, even if the pressure applied by the driver was too weak – and does so in both cases up to a vehicle speed of approx. 250 km/h. If necessary, the system can boost the brake pressure applied to achieve maximum full-stop braking.

If the driver fails to respond, the system initiates autonomous braking up to speeds of approx. 250 km/h. At speeds up to approx. 100 km/h, Active Brake Assist will also respond to stationary vehicles located in the danger zone and autonomously brake the vehicle. In this way it can prevent accidents that occur at typical city driving speeds or help to lessen their impact. In the case of crossing vehicles and pedestrians, the system can perform autonomous braking at speeds up to approx. 70 km/h. Other speed thresholds can be found in the operator's manual.

Addition to Driving Assistance Package 4.5 (MY 18/1): The system also brakes for cyclists traveling in or crossing the direction of vehicle travel.

Active Brake Assist (with code 23P or P20)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

Properties

Active Brake Assist consists of:

- Distance warning function (assistance up to approx. 250 km/h for preceding vehicles, up to approx. 100 km/h for stationary vehicles and up to approx. 70 km/h for crossing vehicles)
- Autonomous braking (intervention from approx. 7 km/h to approx. 250 km/h for preceding vehicles, up to approx. 100 km/h for stationary vehicles and up to approx. 70 km/h for stationary/crossing pedestrians and crossing vehicles)
- Situation-specific braking assistance (limits as for the distance warning function from approx. 7 km/h)
- Evasive Steering Assist (responds from approx. 20 km/h to approx. 70 km/h)

Distance warning function issues warning from:

- approx. 30 km/h, if vehicle, given the speed of travel, is too close to preceding vehicle for a period of several seconds
 - ➔ Distance warning lamp in the instrument cluster lights up
- approx. 7 km/h, if the vehicle comes critically close to a vehicle or pedestrian
 - ➔ Intermittent tone and distance warning lamp in the instrument cluster lights up
- The driver can terminate the intervention by the brake system at any time by fully applying the accelerator pedal

Active Brake Assist (with code 23P or P20)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

System limits

The system may become impaired or nonfunctional in the following situations:

- In case of snow, rain, fog, heavy spray, direct sunlight or changing light conditions
- If the sensors are soiled, fogged, damaged or obscured
- If the sensors are disrupted by other radar sources, for example strong radar reflection in multi-level car parks
- If tire pressure loss or a defective tire is detected and indicated

The system may not respond correctly under certain circumstances:

- Complex traffic situations in which objects cannot always be clearly identified
- Pedestrians or vehicles moving quickly into the detection range of the sensors
- Pedestrians obscured by other objects

- If the typical contour of a pedestrian does not stand out against the background

- If a pedestrian cannot be identified as such, for example due to special clothing or other objects
- In tight bends

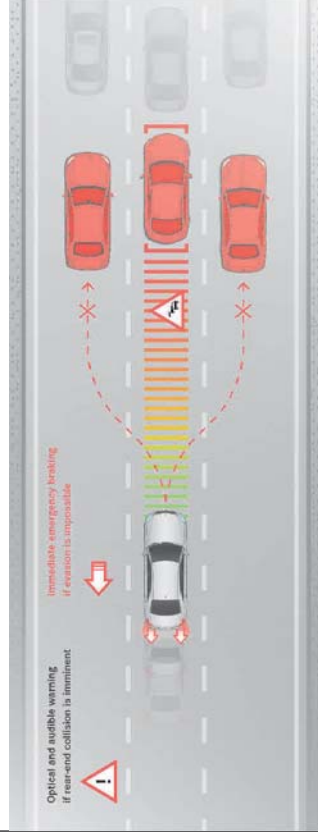
Active Brake Assist (with code 23P or P20)

Congestion tail scenarios with no room for evasion

The congestion emergency braking function in detail

The Active Brake Assist system in the Driving Assistance Package uses the radar sensors and stereo multipurpose camera installed in the vehicle. They allow it to detect whether a vehicle being approached from behind is slowing down, stopping or standing still. If the system identifies a risk of a collision and the driver, despite the collision warning, responds too late or not at all, the system will automatically initiate autonomous braking.

Besides this basic function, an additional cross-traffic function and the pedestrian recognition function, the system also offers a congestion emergency braking function up to speeds of 130 km/h. In cases where the tail end of congested traffic is detected and there is no room for evasion, Active Brake Assist promptly initiates automatic emergency braking that can reduce the vehicle speed by up to approx. 100 km/h. All in all, this system makes a significant contribution to accident prevention and mitigation.



Active Brake Assist (with code 23P or P20)

Autonomous braking for crossing traffic

The cross-traffic function in detail

The Active Brake Assist system in the Driving Assistance Package uses the radar sensors and stereo multipurpose camera installed in the vehicle. They allow it to detect whether a vehicle being approached from behind is slowing down, stopping or standing still. If the system identifies a risk of a collision and the driver, despite the collision warning, responds too late or not at all, the system will automatically initiate autonomous braking.

Besides this basic function, a congestion emergency braking function and the pedestrian recognition function, the system also offers a cross-traffic function. It can detect a pending collision with crossing traffic at speeds up to approx. 70 km/h and can, if allowed by the situation, evade the collision or help to reduce its severity.



Active Steering Assist (Code 266)

Support through moderate steering interventions

- Active Lane Change Assist (code K32) and
- Active Emergency Stop Assist

When Distronic is activated, the Active Steering Assist system supports the driver by applying a limited amount of steering torque to enhance the lateral guidance of the vehicle. On straight roads and on slight bends, it generates a steering torque that helps keep the vehicle in the center of the lane. To do this system uses a stereo camera to orientate the vehicle to clearly visible lane markings. Depending on the current speed of the vehicle, Active Steering Assist also orientates itself to preceding vehicles. If the system can identify neither lane markings nor preceding vehicles, Active Steering Assist will go into passive mode. The system will then provide no steering assistance.

The Active Steering Assist system is only an aid. The driver continues to be responsible for maintaining a safe following distance and speed, for prompt braking and for keeping in his or her lane. Before changing lanes, the driver must ensure that the adjacent lane is clear (shoulder check).



Active Steering Assist switches on but is not ready for steering intervention (passive, icon gray)



Active Steering Assist is switched on and active (icon green)

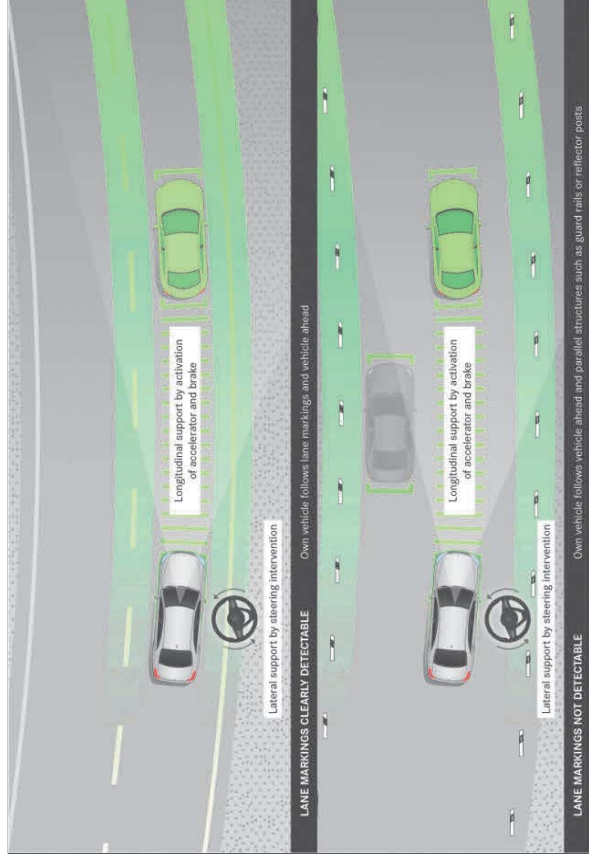


Flashing yellow steering wheel: transition from active to passive mode (system limit detected or request to driver for active feedback).
In model series 213 and 238 as of modification year 17/1

Active Steering Assist (code 266)

Support through moderate steering interventions

- Active Lane Change Assist (code K32) and
- Active Emergency Stop Assist



Up to speeds of approx. 130 km/h Active Steering Assist does not necessarily rely on clearly visible lane markings, but can continue to guide the vehicle, as in a swarm, on stretches where the lines on the road are either unclear (such as in construction areas) or completely non-existent. In this way, the system relieves and supports the driver, especially in bumper-to-bumper or congested traffic situations.

Active Steering Assist (code 266)

Model series

177, 213, 217 Facelift, 222 Facelift, 238 (as of MY 17 / 1), 257

Properties

- Support provided up to a speed of 210 km/h
- Driver must have hands on steering wheel at all times to allow the system to intervene at any time to correct the course of the vehicle and keep it in lane
- Status of Active Steering Assist is shown in the status area of the multifunction display
- Situation-specific visual warning when a system limit is reached or if the driver does not move the steering wheel for a longer period or removes hands from wheel
- If the driver's hands remain off of the steering wheel, the visual warning message will be supplemented by a warning tone until Active Emergency Stop Assist intervenes

System limits

- Steering torque for lateral guidance is limited, meaning that under certain circumstances the steering intervention will not be sufficient to keep the vehicle in the lane or to negotiate exits
- The system cannot, for example, assist the driver in steering through traffic circles, (T-)intersections, toll stations or turns

Active Steering Assist (with code 23P/P20)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

The Active Lane Keeping Assist system (code 243) in detail

The system is impaired/nonfunctional in the following situations:

- In case of snow, rain, fog, heavy spray, glare, direct sunlight/strongly changing light conditions, reflections/intense shadows cast on roadway, insufficient roadway illumination
- If the part of the windshield near the camera is soiled, fogged, damaged/obscured
- If there are no clear lane boundary markings or if several ambiguous markings are present for one lane, or if the markings change rapidly
- If the distance to the preceding vehicle is so small that the system cannot identify the lane boundary markings
- On narrow and winding roadways
- In case of obstacles standing on/projecting into the lane

No support is provided in the following situations:

- In sharp bends, traffic circles and when turning
- When towing a trailer
- If you actively change lanes without switching on the turn signal indicator

Active Steering Assist (code 266)

Model series

177, 217 Facelift, 222 Facelift, 257

The Active Lane Change Assist system in detail

Active Lane Change Assist supports the driver when changing lanes.

When the driver activates a turn signal, Active Lane Change Assist helps to steer the vehicle into the adjacent lane. The lane change is only supported if the sensors detect no vehicles in the relevant safety zone. Long-range radar and a stereo camera scan the area in front of the vehicle, while two multi-mode radars continuously monitor the areas behind and alongside the vehicle.

The Generation 4.5 driving assistance system also permits the lane change request to be activated using the "one-touch" turn signal. If all of the conditions for changing lanes are fulfilled, the vehicle flashes its turn signals and takes control of the maneuver. The lane change request is stored for up to ten seconds.

Lane Change Assist (code K32)

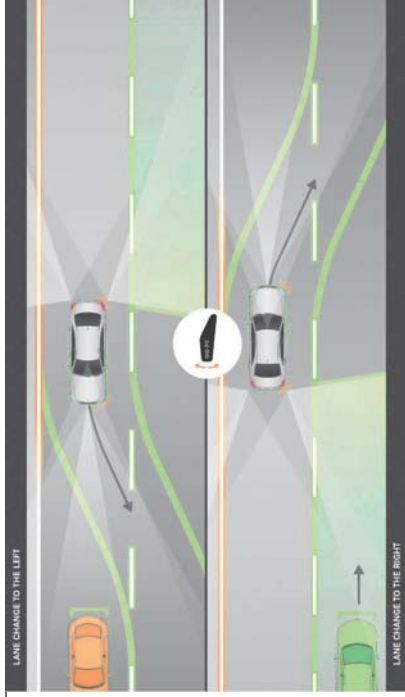
Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

The Active Lane Change Assist system in detail

Criteria for activating Active Lane Change Assist:

- Active Steering Assist is activated
- DISTRONIC is in operation
- Lane change request can be activated by simple one-touch turn signaling (starting with Generation 4.5 driving assistance system)
- Free space detection permits lane change within approx. ten seconds
- Driving on a road with structurally divided one-way lanes as recognized by the navigation module integrated in COMAND Online
- The adjacent lane is separated from the driver's lane by a broken lane marking
- Speed between approx. 80 km/h and 180 km/h



Active Steering Assist (with code 23P)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

The Active Lane Change Assist system in detail

Properties

- The availability of this function depends on the country
 - Supports driver by applying steering torque during lane changes
- Lane change assistance is provided if all of the following conditions are met:
- The driver is traveling on a freeway or other road with multiple lanes in the same direction of travel (This information is taken from the navigation map)
 - The adjacent lane is separated by a broken boundary marking
 - No vehicle is detected on the adjacent lane
 - The vehicle is traveling at between 80 km/h and 180 km/h
 - Active Lane Change Assist was activated by the driver operating the turn signal indicator and is switched on in the multimedia system
 - Active Steering Assist is switched on and activated

- If no vehicle is detected on the adjacent lane and a lane change is permitted, the steering wheel symbol and the arrow will be shown in green (e.g. with the message: "Lane change to left")



* "Spurwechsel nach links" means "Lane change to left"

- If Active Lane Change Assist is activated but a lane change is not possible right away → Steering wheel icon green, arrow appears gray
- If the maneuver is aborted, the message "Lane change aborted" will appear in the multifunction display and a warning tone will sound
- The same system limits that apply to Active Steering Assist also to the Lane Change Assist system

Active Steering Assist (with code 23P)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

The Active Emergency Stop Assist system in detail

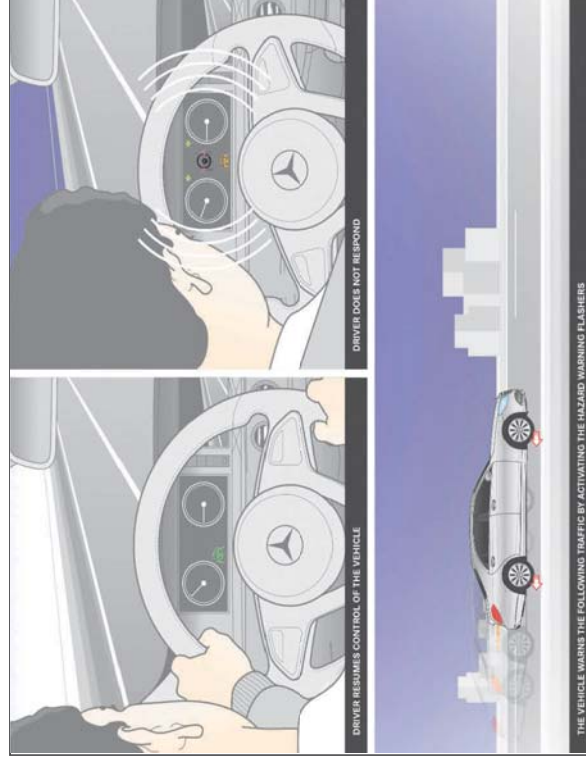
Active Emergency Stop Assist brings the vehicle to a stop in its own lane if it detects that the driver is no longer taking an active part in driving the vehicle while it is in motion with Active Steering Assist switched on. If no activity is detected on the steering wheel for a pre-defined period, the system visually and acoustically prompts the driver to place his or her hands on the wheel and to steer the vehicle manually.

Active Steering Assist (with code 23P)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

The Active Emergency Stop Assist system in detail



If following multiple visual and acoustic prompts the driver fails to respond by steering, accelerating, braking or operating the touch control buttons on the steering wheel, the system will brake the vehicle in the identified lane and decelerate it in stages until it comes to a stop.

At speeds below approx. 60 km/h, the hazard warning flashers will be activated to warn drivers to the rear. Once the vehicle comes to a standstill, the parking brake will be automatically engaged. In vehicles with Generation 4.5 assistance systems, the Mercedes-Benz Emergency Call System will also be activated and the vehicle unlocked to allow first responders to access the interior. The sequence will be aborted as soon as the driver retakes control of the vehicle.

Evasive Steering Assist (with code 23P)

Avoiding pedestrian accidents

Another one of intelligent functions in the Mercedes-Benz Driving Assistance Package is known as Evasive Steering Assist.

It augments the pedestrian detection function of Active Brake Assist to support the driver in a hazard situation when a spontaneous or instinctive decision has to be made in order to evade a pedestrian that the Assist system has detected by means of radar and the stereo multifunction camera.

If the driver moves the steering wheel to initiate an evasive maneuver, the system assists by adding precisely calculated steering torque to support the movement of the steering wheel. This torque helps the driver to avoid the pedestrian in a controlled manner and then makes it easier to straighten the vehicle up again so that it can drive past safely.

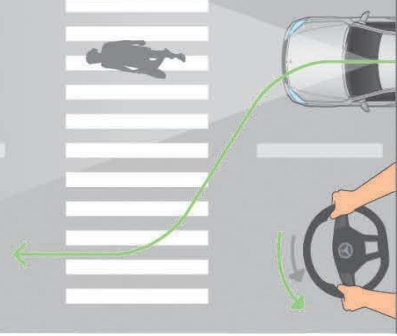
While the philosophy behind Evasive Steering Assist is to provide the driver with significant assistance, the initiative to take evasive action must come from the driver. The system will only support the driver's intended evasive maneuver if it detects that the evasion area is clear of any objects.

Evasive Steering Assist (with code 23P)

Function requirements:

- Successful completion of soiling and function test for stereo multifunction camera and short/long range radar sensor:
 - Each time the engine is started, the stereo multifunction camera and the short/long range radar sensor perform a soiling and function test in order to ensure that they are functioning correctly
 - Requirement: Object in detection range for use as reference value
 - In case of malfunction or if no object is in the detection range
→ Evasive Steering Assist cannot be activated
- Electronic Stability Program (ESP®) not switched to passive mode
- No active ESP® intervention detected (vehicle not skidding)
- Drive range "D" engaged (vehicle not moving backward)
- Vehicle speed between approx. 20 km/h and approx. 70 km/h
- Driving straight ahead
- Pedestrian detected

Evasive Steering Assist supports the evasion and the straightening of the vehicle



Active Lane Keeping Assist (with code 23P)

Protects against accidents caused by hazard in adjacent lane

Active Lane Keeping Assist detects when the vehicle crosses lane markings and issues a haptic warning to the driver in certain situations by initiating vibrations on the steering wheel. In model series 177, this warning comes in the form of steering wheel vibrations perceptible only to the driver. Crossing over lane markings is optically identified and processed by the stereo multifunction camera. The system also takes the driver's behavior into consideration and uses this information to decide when to issue a warning. Depending on the situation, the Mercedes-Benz Intelligent Drive control unit can also initiate targeted braking applications in order to guide the vehicle back to its lane.



Active Steering Assist (with code 23P/P20)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

The Active Lane Keeping Assist system (code 243) in detail

Properties

- Issues warning by vibrating the steering wheel (can be switched on/off via head unit, for example) if:
 - The system detects a lane boundary marking
 - One front wheel crosses the lane boundary marking
- Lane-correcting brake application:
 - Active Lane Keeping Assist detects lane markings on both edges of the lane
 - One front wheel drives onto a solid lane marking
 - Where the lane boundary markings are broken, brake application will only take place if the vehicle is identified as being on the adjacent lane (e.g. oncoming traffic, passing vehicles, parallel traffic)
- Brake system intervention available between approx. 60 km/h and approx. 200 km/h

System limits

No lane-correcting brake application:

- If the system detects that the driver is actively steering, braking, accelerating
- If the turn signal indicator is on
- If a driving safety system (e.g. ESP®) is intervening
- At high cornering speeds/rapid acceleration
- If ESP® is inactive
- When driving with a trailer and the electrical connection to the trailer is correctly established
- If tire pressure loss or a defective tire is detected or indicated

Active Steering Assist (with code 23P/P20)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

The Active Lane Keeping Assist system (code 243) in detail

The system is impaired or nonfunctional in the following situations:

- In case of snow, rain, fog, heavy spray, glare (e.g. from oncoming traffic), direct sunlight/strongly changing light conditions, reflections, poor visibility (e.g. insufficient roadway illumination)
 - If the part of the windshield near the camera is soiled, fogged, damaged/obscured
 - If there are no clear lane boundary markings or if several ambiguous markings are present for one lane, or if the markings change rapidly
 - If the distance to the preceding vehicle is so small that the system cannot identify the lane boundary markings
 - If the lane boundary markings are worn down, dark/obscured
 - If the distance to the preceding vehicle is too small
 - If lane boundary markings alternate rapidly, for example where lanes branch off, cross or merge
- On very narrow and winding roadways
 - In case of obstacles standing on/projecting into the lane

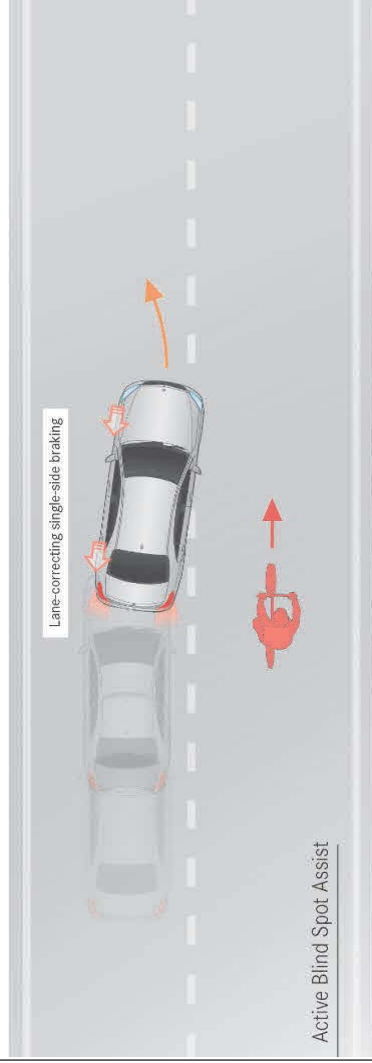
Active Blind Spot Assist

Protects against accidents caused by hazard in adjacent lane

Also includes exit warning in model series 177 (cf. page 35)

Active Blind Spot Assist provides a visual warning of a potential side collision at speeds from approx. 12 km/h to approx. 200 km/h. If the turn signal is operated an acoustic warning will sound as well. The system now also covers typical urban traffic situations and is also able to detect cyclists, for example. If at speeds above approx. 30 km/h the driver ignores the warnings and starts to change lanes, the system can intervene at the last minute and brake one side of the vehicle to bring it back into its lane.

The Blind Spot Assist and the Active Blind Spot Assist are only aids. They may fail to detect some vehicles and are no substitute for attentive driving. Always be sure to maintain sufficient side clearance to other road users and to obstacles.



Active Blind Spot Assist (code 237)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

Properties

- Radar-based system for monitoring the area up to approx. 40 m behind and approx. 3 m directly next to the vehicle
- System is inactive at speeds up to approx. 12 km/h
- If Active Blind Spot Assist identifies a side collision hazard, course-corrective braking will be performed (at speeds between approx. 30 km/h and approx. 200 km/h)
- When course-corrective braking occurs:
 - The red warning lamp in the outside mirror will flash red and a warning tone will sound
 - In addition, a side collision hazard indicator will appear in the multifunction display

Active Blind Spot Assist (code 237)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

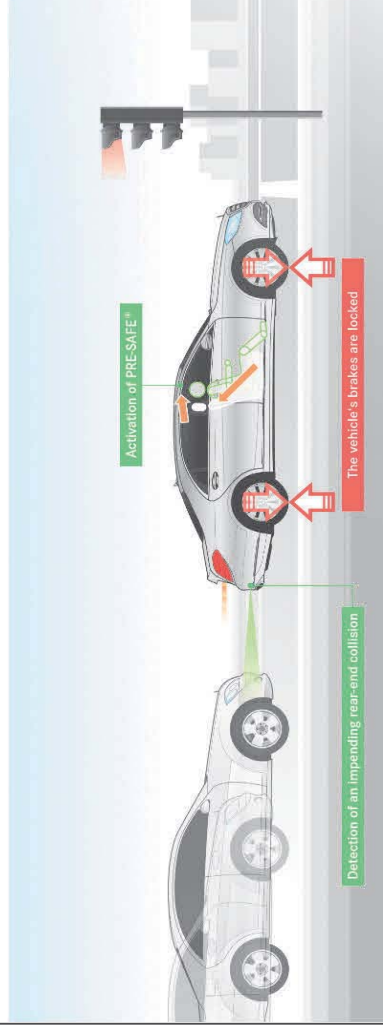
System limits

- In the following situations no course-corrective braking will take place or it will be adapted to suit the driving situation:
 - Vehicles/obstacles (such as guardrails) located on both sides of the vehicle
 - There is an oncoming vehicle with little side clearance
 - Sharp braking/accelerating
 - A driving safety system intervenes, e.g. ESP®
 - ESP® is switched off
 - The driver is pulling a trailer and the electrical connection to the trailer hitch is properly established
 - Sporty driving style with high cornering speeds
- Active Blind Spot Assist will **not** respond in the following situations:
 - To vehicles that approach and pass at a much higher speed

PRE-SAFE® PLUS

Occupant protection in case of imminent rear impact

PRE-SAFE® PLUS can provide effective protection from dangers approaching from the rear. It can detect certain crash scenarios, in particular an imminent rear-end collision, and initiate precautionary measures to protect the vehicle's occupants. The system relies on radar sensors mounted in the rear bumper that monitor following vehicles in order to register any threat of a rear-end collision.



PRE-SAFE® PLUS

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

Properties

Measures that PRE-SAFE® PLUS can initiate independently of one another:

- Pre-tension driver and front passenger seat belts
- In vehicles with multicontour seat: Increase air pressure in the side bolsters of the seat backrest
- In vehicles with memory function: Adjust driver and front passenger seats to safer position
- Close side windows
- In vehicles with sliding sunroof: Close sliding sunroof
- Adjust outboard rear seats to safer position
- Pre-tension seat belts of outboard rear seats
- Activate rear hazard warning lights with increased flash frequency

- Increase brake pressure in case of stationary vehicle. This brake intervention is automatically ended when the vehicle starts off again

- If no accident occurs, the initiated precautionary measures will be reversed

System limits

- The system will not initiate any measures in the following situations:
 - When reversing
 - When pulling a trailer and a rear impact threatens
- The system will not initiate any braking in the following situations:
 - While driving
 - When using Active Parking Assist to enter or exit a parking space

PRE-SAFE® Impulse Side

Included in Driving Assistance Plus Package (code P20)

Model series
213 and 257

When an imminent side impact is detected, PRE-SAFE® Impulse Side can take precautionary action by moving the upper body of the front occupant towards the center of the vehicle. To do this, the system rapidly inflates an air chamber in the side bolsters of the outboard seat backrests on the side of the impact. This increases the distance between the door and the vehicle occupant.

Mercedes-Benz Intelligent Drive Next Level Overview: Modular Parking and Maneuvering Systems

Parking Packages

Parking Package with Reversing Camera (code P44):
Active Parking Assist (code 235)
with Reversing Camera (code 218)

Parking Package with 360° Camera (code P47)
Active Parking Assist (code 235)
with 360° Camera (code 501)

Remote Parking Package (code PBH):
Parking Package with 360° Camera and
Remote Parking Assist (code 503)
(Name of app: Remote Parking) and
KEYLESS-GO (code 889) plus automatic transmission



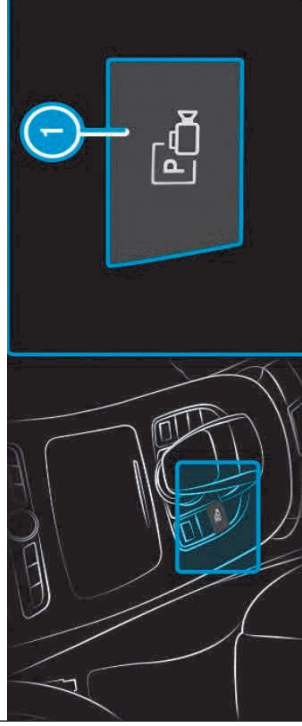
Parking and Maneuvering

System name	Code	Page
Parking Package with Reversing Camera (code P44): Active Parking Assist (code 235) with Reversing Camera (code 218)	P44	80-86
Parking Package with 360° Camera (code P47) Active Parking Assist with 360° Camera (code 501)	P47	87-88
Remote Parking Package (code PBH): Parking Package with 360° Camera and Remote Parking Assist (Name of app: Remote Parking) and KEYLESS-GO Package (code P17) plus automatic transmission	PBH and 889	89-92
Rear Cross Traffic Alert: Included in code 235 in combination with (234 or 23P or P20)		93-94
Drive Away Assist: Included in code 235		95-96

Active Parking Assist (code 235)

Assisted parallel and perpendicular parking and unparking

Active Parking Assist with PARKTRONIC is an electronic, ultrasound-based parking assistance system that helps drivers seek and select a parking spot **1** and then get in and out of parallel and perpendicular parking spaces as well as garages. It helps the driver to guide the vehicle into a parking space and can steer and brake to avoid hitting any obstacles it detects. Further support is provided by visual and acoustic warnings if objects are registered to the front, rear or side of the vehicle. The Active Parking Assist system is only an aid. It is no substitute for the attentiveness of the driver to his or her immediate surroundings. The driver is always responsible for safely maneuvering, parking and unparking.





*Depending on which special equipment is installed, the activate button may be located in the driving assistance bar.

Active Parking Assist (code 235)

Model series


177, 213, 217 Facelift, 222 Facelift, 238, 257

Properties

- The system operates up to a speed of approx. 35 km/h
- If Active Parking Assist is switched on, pressing  will cause detected parking spaces to be shown in the multimedia system and the  symbol will appear in the multifunction display of the instrument cluster (arrows point to the side of the road where parking spaces were found)
- You can then choose the parking space and, where you have an option, the direction of parking
- The Active Parking Assist system calculates an appropriate path and supports both parking and unparking
- In automatic transmission vehicles, Active Parking Assist helps in accelerating, braking, steering and changing gears
- In manual transmission vehicles, Active Parking Assist provides steering assistance to the driver

- The system can also operate the turn signals in accordance with the selected parking maneuver

Actions that will cause Active Parking Assist to abort include the following:

- Switching off Parking Assist PARKTRONIC
- Switching off Active Parking Assist
- The driver takes over steering
- The driver engages the parking brake
- Setting automatic transmission to 
- ESP® intervenes
- Opening the trunk lid


Active Parking Assist (code 235)

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

System limits

- When measuring a parking space, Active Parking Assist does not register objects located above and below its detection range → These objects will not be considered when calculating the parking path (for example, projecting load, overhang/truck loading ramps, parking space borders) → Active Parking Assist could therefore steer too early into the parking space
- Snowfall or heavy rain may lead to imprecise parking space measurement
- Parking spaces in front of parked trailers whose drawbars project into the parking space may not be recognized as parking spaces or may not be correctly measured
- The passive sideguard function warns of objects detected alongside of the vehicle. In order to register objects to the side, these must be detected when driving past => Moving objects (such as pedestrians) may be indicated as being present to the side of the vehicle even if they are no longer in the direct vicinity

- Only use Active Parking Assist on level surfaces that provide good grip
- In the default setting, the system issues an intermittent tone when the vehicle comes within approx. 0.3 m of an obstacle and then a continuous tone when the gap is approx. 0.2 m
- If the entire system drops out, the internal segments of the warning display will be shown in red
→ The indicator lamp on the Parking Assist PARKTRONIC button lights up and the  symbol appears in the multifunction display
- If the rear part of the system fails, the rear segments will appear red when the vehicle is put in reverse and faded out when traveling forward
- When Active Parking Assist is active, the image from the reversing camera or 360° camera shows the vehicle path in green
- When Parking Assist PARKTRONIC is shut off, the warning is faded out 

Active Parking Assist (code 235)


Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

System limits

- **Do NOT use Active Parking Assist and other support systems in the following situations:**
 - Under extreme weather conditions (e.g. ice, slippery packed snow, heavy rain)
 - When transporting a load that projects beyond the vehicle
 - If the parking space is located on a very steep road
 - When snow chains are mounted
- The system may indicate parking spaces that are not suited for parking (e.g. where parking is not permitted, parking space on an unsuitable surface)
- Situations where the system will not support parallel/perpendicular parking include:
 - Two parking spaces directly adjacent to one another
 - Parking space directly next to a low border (e.g. next to a curb)
 - Parking space on a curb
 - Parking space bordered by an obstacle (e.g. tree, post, trailer)

Setting Warning Tones for the Parking Assist PARKTRONIC

Multimedia system → Vehicle  → Assistance
→ Camera & Parking → Set warning tones
(as of model series 177: Acoustic warning in rear cannot be changed by driver/customer)

- **Set volume of warning tones:**

- Select warning tone volume
- Set a value

- **Set pitch of warning tones:**

- Select warning tone pitch
- Set a value

- **Select warning tone trigger time:**

The driver can choose to have the warning tones of the Parking Assist PARKTRONIC triggered at a greater distance to an obstacle.

- Select Early warning
- Switch function on or off
- Switch audio reduction on or off:

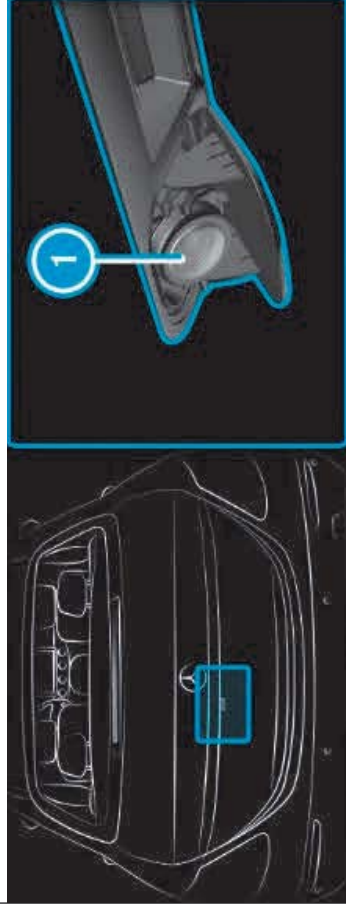
- The driver can choose to reduce the volume of a multimedia source in the multimedia system when an acoustic warning is emitted by Parking Assist PARKTRONIC.

- Select audio reduction during warning tones
- Switch function on or off

Reversing Camera (Code 218)

With dynamic guide lines in the display and dirt deflection

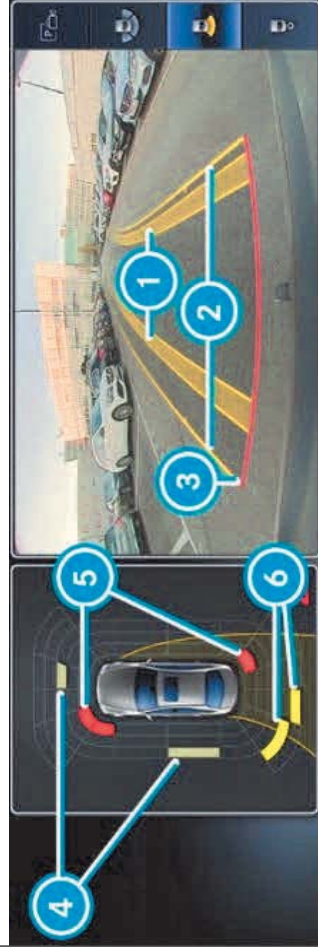
When this function is activated in the multimedia system, engaging reverse gear will cause the image from the reversing camera **1** to be displayed in the multimedia system. Dynamic guide lines show the vehicle path based on the current steering wheel angle. This provides orientation to the driver when reversing and helps in avoiding obstacles. The driver can select between normal view, wide-angle view and trailer view. The area behind the vehicle is displayed mirror-inverted, just as it is in the inside rearview mirror.



Function of the Reversing Camera (code 218)

Camera views in the multimedia system: Normal view

- 1) Yellow path of tires based on current steering wheel angle (dynamic)
- 2) Yellow guide lines indicating vehicle width (space driven over) based on current steering wheel angle (dynamic)
- 3) Red guide line about 0.3 m from rear area
- 4) Orange warning from Parking Assist PARKTRONIC: Obstacles at medium distance (between approx. 0.3 m and 0.6 m)
- 5) Red warning from Parking Assist PARKTRONIC: Obstacles at very small distance (approx. 0.3 m or less)
- 6) Yellow warning from Parking Assist PARKTRONIC: Obstacles at distance between approx. 0.6 m and 1.0 m

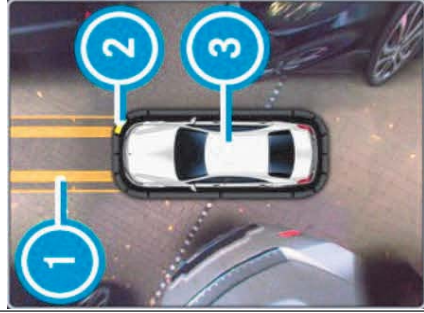


Parking Package

Parking Package with 360° Camera (code P47)

Stressless Parking and Unparking in Parallel and Perpendicular Spaces

The Parking Package with 360° camera and Active Parking Assist with PARKTRONIC helps drivers seek and select parking spots and then get in and out of parallel and perpendicular parking spaces as well as garages. The four cameras allow the system to send a 360° bird's eye view to the display of the multimedia system. In the right-hand display the driver can use the rotary pushbutton to the select different views indicated in the red-bordered area (such as the image provided by the front camera).



1. Vehicle path based on current steering wheel angle
2. Yellow PARKTRONIC warning
3. Own vehicle (top view)

Function of the Reversing Camera / 360° Camera

Camera views in the multimedia system

System limits

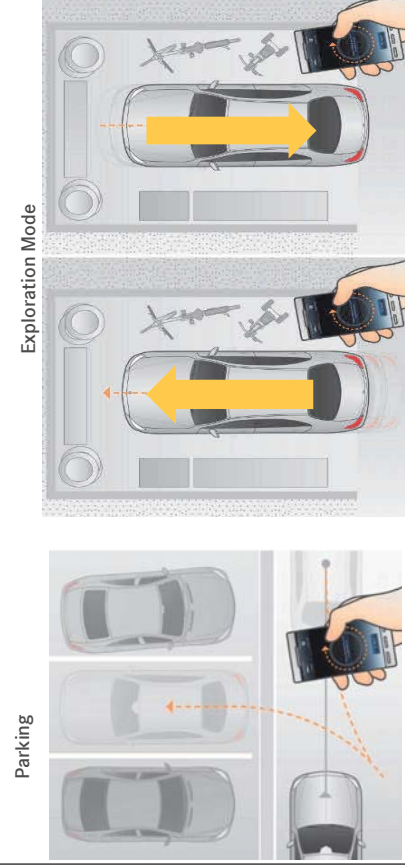
Situations in which the reversing camera is impaired or nonfunctional include the following:

- Trunk lid open
- Raining heavily, snowing or foggy
- Poor light conditions, e.g. at night
- Camera lens obscured, soiled or fogged
- Damage to camera or rear end of vehicle
- Additional vehicle attachments in rear (e.g. license plate bracket or bicycle rack) can impair the field of view and other functions of the reversing camera
- Sunlight or other light sources may briefly reduce the contrast of images shown in the display, such as when driving out of a garage

Remote Parking Assist (code 503)

Guiding the vehicle with your smartphone

You can use your smartphone to guide your vehicle into tight parking spaces/garages. Control is done from outside the vehicle using the Remote Parking Assist app. It's just as easy to guide vehicles out of tight garages and parking spaces using the Exploration Mode. You can download the Remote Parking Assist app from your app store for free and then activate the service in the Mercedes me Portal (may be subject to a charge).



Parking Package

Remote Parking Assist (code 503)

Model series

213, 217 Facelift, 222 Facelift, 238, 257

Properties

Remote parking:

- The remote parking procedure can be done either forwards or reverse for perpendicular parking. For parallel parking spaces, the function is limited to reverse parking
- Remote Parking Assist controls acceleration, braking, steering, gear changes
- Notification is sent to the mobile phone if the parking procedure is aborted/ended
- Remote Parking Assist is aborted/ended when:
 - Active Parking Assist is switched off
 - The end button in the Remote Park app or on the key is pressed
 - ESP® intervenes

- If the connection between the vehicle and the mobile phone is broken during the parking procedure, the procedure can be continued if the connection is re-established within a short period
- The system can also operate the turn signals in accordance with the selected parking maneuver

Exploration Mode:


- After unlocking the vehicle using the vehicle key, a connection for the RPA can be established for the registered mobile phone from outside before entering the vehicle.
- Exploration Mode allows the vehicle to be maneuvered straight ahead in either the forward or reverse direction
- Only slight evasive steering motions are carried out by the vehicle

Remote Parking Assist (code 503)

Model series

213, 217 Facelift, 222 Facelift, 238, 257

Function sequence for parking

- Activate parking space search using the  button in the center console
- The system uses ultrasound sensors to identify parking spaces and displays these in the multimedia system
- Stop vehicle and set the drive range to P
- Use the COMAND rotary pushbutton to confirm the parking space you want and, if you have a choice, select forward or reverse parking
- Open the Remote Parking Assist app and exit the vehicle when prompted by the app, taking the key with you → The ignition will be switched off and the vehicle secured
- The maneuver (e.g. reverse parking into a perpendicular space) will be depicted in the app and you have to confirm it again
- Trace the authorization gesture (three quarter revolution) with your finger → The engine will be restarted
- You move the vehicle by performing a continuous circular gesture in the app on your smartphone

- If the ultrasound sensors detect an obstacle, the vehicle's motion will be interrupted

- When the desired park position is reached, confirm this by pressing the "End" button in the app
- The vehicle will be automatically locked and secured against rolling.

Function sequence for Exploration Mode

- Start the Remote Parking app and use the vehicle key to unlock the vehicle, which can then be selected in the app
- Select the direction of travel (forward or reverse)
- Trace the authorization gesture (three quarter revolution) with your finger → The engine will be restarted
- You move the vehicle by performing a continuous circular gesture in the app on your smartphone
- When the desired park position is reached, confirm this by pressing the "End" button in the app

Remote Parking Assist (code 503)

Model series

213, 217 Facelift, 222 Facelift, 238, 257

System limits

- The user must be more than approx. 3 m from the vehicle
- In Exploration Mode the vehicle cannot be moved more than approx. 15 m
- If there is a disturbance or if a system limit is detected (e.g. incline greater than permitted), the vehicle will be secured against rolling
- Snowfall or heavy rain may cause parking space measurement to be imprecise or lead to connection problems with the mobile phone
- Parking spaces in front of parked trailers whose drawbars project into the parking space may not be recognized as parking spaces or may not be correctly measured
- The parking space must be at least 0.60 m wider than the vehicle, not including outside mirrors (different for folded side mirrors)
- A corresponding remote unparking function is not available

System requirements

- Equipment code 503
- Active Mercedes me user account and the Remote Park app is installed on a compatible mobile phone (supported operating systems: Android™ and Apple® iOS)
- Purchase by customer of "Remote Parking Assist" function in the Mercedes me connect Store (note country restrictions) → Activation in vehicle only after journey with mobile phone reception
- One-time coupling of mobile phone with vehicle prior to first use

Rear Cross Traffic Alert

With Active Parking Assist (code 235) and (Blind Spot Assist (code 234) or Driving Assistance Package (code 23P) or Driving Assistance Plus Package (code P20))

This system can warn the driver of crossing traffic when he or she is backing out of a parking space. If a critical situation is detected, a red warning triangle appears on either the left or right-hand side of the camera image in the multimedia system. If the warning fails to induce a response from the driver, the vehicle can then be braked automatically. Detection is done by the radar sensors mounted in the rear bumper. Monitoring is always done of the area adjacent to the vehicle.

If the radar sensors are obscured by vehicles or other objects, then no detection will take place.

Rear Cross Traffic Alert

Included in Active Parking Assist (code 235) in combination with (Blind Spot Assist (code 234) or Driving Assistance Package (code 23P) or Driving Assistance Plus Package (code P20))

Model series

177, 213, 217 Facelift, 222 Facelift, 238, 257

The Rear Cross Traffic Alert function is active under the following conditions:

- Blind Spot Assist is switched on
- The vehicle is reversing at a walking pace or is stationary with reverse gear engaged (if stationary: visual warning)
- The maneuvering assistant function is activated in the multimedia system
- The Rear Cross Traffic Alert function is not available on inclines or when pulling a trailer



*Illustration: The red warning triangles and the LIM symbol cannot be displayed together

Red warning triangle for hazard detected on the left

Red warning triangle for hazard detected on the right