



Volkswagen

2019

National After Sales Meeting

WHAT'S NEXT STARTS NOW

Taking the Mystery Out of Driver Assist Systems

All information in this handout was obtained from the following resources which are available to you:

Owner's Manual

Know your VW

VW.com

Websource/ Technology explained

VW Cup

PR codes

Warning Light Guide (Websource)

Monroney Label

Training from the VW Academy

Front Assist Questionnaire

Customer Care

TSB 00-18-09 Additional Safety Related Inquiry and Reporting



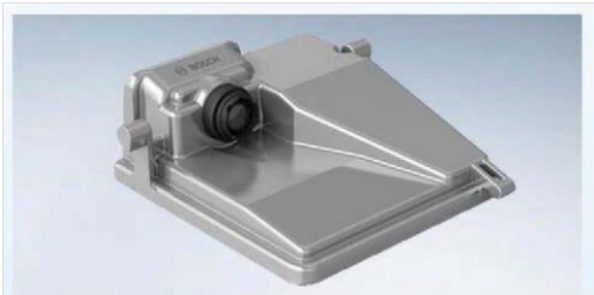
Lane Assist



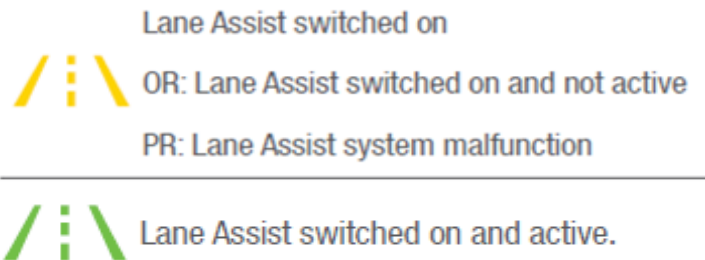
Lane Assist helps the vehicle to maintain its lane in many different traffic situations. Lane Assist detects if the car inadvertently leaves its lane, and it supports the driver by a corrective steering intervention at the steering wheel. Whenever the camera recognizes that the vehicle threatens to leave the predicted lane without turn signals on, a corrective steering movement will occur.

With the help of a camera, Lane Assist can recognize possible side markings of the current drive lane. Should the vehicle leave this area unintentionally, for example when leaving the current drive lane without activating a turn signal, the system will warn the driver with a corrective steering intervention. The driver can override the corrective steering intervention at any time. Lane Assist will not warn the driver of a lane change if he or she activates the turn signal, because the system will assume that the lane change is happening intentionally.

Component in System - R242 Camera



System Icons and Warnings



Calibration is Required When:

- "No or incorrect basic setting/adaptation" is stored in the event memory.
- The Driver Assistance Systems Front Camera -R242- was replaced.
- The windshield was replaced or removed.
- The rear axle toe was adjusted.
- Work was performed on the chassis which influences the body height.
- The level control system sensor was readapted on vehicles with damping regulation.

System Limitations:

- Speed falls below 40 mph (60 km/h).
- Distance to the next lane marking is too large.
- No lane markings can be detected.
- The radius of a lane marking bend is too small.
- Driver overrides the corrective steering moment using steering wheel force.
- Driver uses the turn indicator.
- System cannot identify a clear, active driver steering movement for a long period of time.
- Driving style is highly dynamic or aggressive.





Adaptive Cruise Control



Adaptive Cruise Control (ACC) controls the speed set by the driver, based on the speed of vehicles ahead. If a vehicle is detected in front of the Volkswagen, ACC keeps a constant set distance from the other vehicle. ACC accelerates on its own to the set maximum speed, and it automatically brakes when a detected vehicle in front slows down. When the path in front is clear, the system will accelerate and maintain the set speed.

A sensor constantly monitors the area in front of the vehicle. The driver can use the accelerator to interrupt the ACC control and accelerate faster. Use of the brake pedal immediately deactivates the ACC function. All system messages appear in the central multifunction display.

ACC Basic: ACC Basic helps maintain an individually stored constant speed between about 18 mph and 95 mph and a previously set distance in time intervals between your vehicle and those in front of you. ACC Basic will follow the vehicle in front of it until the car slows to 18mph or lower. The system will then request the driver take over using a visual and audible warning in the instrument cluster display.

ACC with Follow to Stop: ACC with Follow to Stop will follow the vehicle in front to a complete stop. Using the Resume function or pressing the accelerator will resume ACC, and accelerate based on the vehicle in front.

ACC with Stop and Go: After stopping, the vehicle automatically resumes driving within a defined time or when the vehicle in front accelerates from a stop, or if the driver chooses to do so.

System Component Radar Sensor J428



System Warnings and Icons



Brake! Depress brake pedal. ACC driver intervention warning.



Brake! Depress brake pedal. ACC driver intervention warning.



Adaptive Cruise Control (ACC) and Front Assist switched on and active.



Cruise control malfunction

OR: Adaptive Cruise Control (ACC) or Front Assist System malfunction.



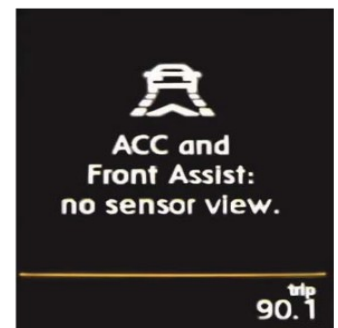
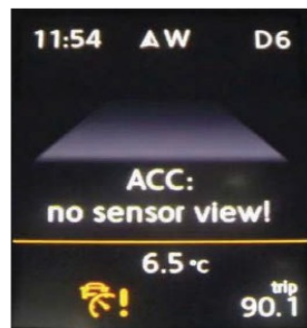
Adaptive cruise control (ACC) currently not available.

Calibration Requirements for Forward Radar Sensors:

- Rear axle toe setting has been adjusted (thrust angle.)
- The Distance Regulation Control Module J428 has been removed and reinstalled.
- The front bumper support has become loose or has been moved or removed and installed.
- The misalignment angle is greater than -0.8° to $+0.8^{\circ}$.
- The vehicle has been brought into the service position.

System Limitations

A limited sensor view due to a dirty sensor or inclement weather conditions (for example, heavy rain, snowfall, iced over sensor etc.) causes the ACC/Front Assist functions to be temporarily unavailable. This is indicated by the following message in the Instrument Cluster.





Front Assist



Forward Collision Warning and Autonomous Emergency Braking (Front Assist)

A radar sensor to help prevent rear-end collisions with a vehicle on the road ahead, moving in the same direction within physical and technical limits of the system. When the risk of a collision is identified, Forward Collision Warning and Autonomous Emergency Braking (Front Assist) can help minimize the effects of a collision.

- Step 1 (Advance Warning): Optical and acoustic warning with additional “preparation” for emergency braking (brake pads are brought closer to disc and hydraulic brake assist sensitivity is increased). No warning prior to braking below 18 mph.
- Step 2 (Immediate Warning): A warning jolt from the brakes is given.
- Step 3 (Automatic Braking): If the driver does not brake after the second step, automatic braking is initiated.
- Step 4: If the driver reacts by braking too lightly, the vehicle will automatically generate the brake pressure required for the situation.

Pedestrian Monitoring (Included in Front Assist)

- When system anticipates that a pedestrian is about to cross the roadway or is already on the road and a collision is possible:
- For speeds between 18-40 mph, the driver is warned optically and acoustically about 1.2 seconds before a potential collision.
- For speeds below 18 mph or if the driver does not react to the optical and acoustical warning signal, the brakes will be applied automatically and the speed of the vehicle will be reduced. If necessary to avoid an accident and possible within the system’s boundaries, the car will be stopped completely.





System Components

J428 (ACC sensor)

R242 (lane assist camera)



System Icons and Warnings

-  Front scan system switched on, active.
-  Front Assist switched off
OR: Pedestrian Monitoring Switched Off.
-  Front scan system malfunction.
-  Brake or take action to avoid the vehicle ahead! Front Assist Forward Collision Warning (if equipped)
OR: Pedestrian Monitoring system warning.

Calibration is Required When

See ACC and Lane Assist for Details.

System Limitations:

- Will not detect vehicles moving towards you in your lane. Will not prevent head on collisions.
- May not detect narrow vehicles (bicycles, motorcycles)
- Will only detect moving objects.
- Heavy rain and snow will impede sensor view.
- Will not detect stopped traffic.
- Because the radar system cannot predict the intent of either driver, unwanted warnings may occur.
- These can happen when vehicle turns off of the road or when overtaking another vehicle.
- The Pedestrian Monitoring System does not react to animals.



Active Blind Spot Monitor

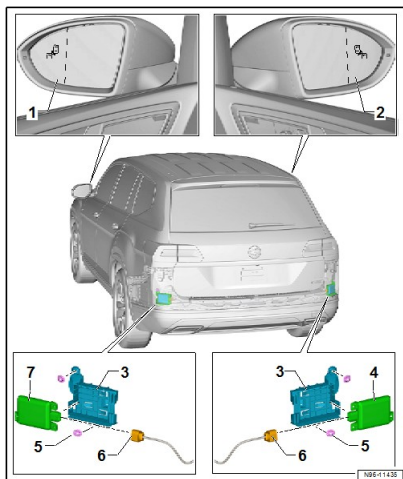


The system supports the driver in assessing and avoiding dangerous situations while changing lanes. The Blind Spot Monitor uses two radar sensors to monitor the blind spot detection area and the area behind your vehicle and alerts you to vehicles in your blind spot via indicator lights in the outside mirrors. The system measures the distance to other vehicles and the difference in speed between your vehicle and other vehicles.

If the vehicle is also equipped with Lane Keeping System (Lane Assist), the “active” portion can step in. If the car is about to divert from the lane when a vehicle is in your blind spot, the system will gently counter. If the driver continues to change the lane, the system will warn the driver with additional steering wheel vibrations.

The Blind Spot Monitor automatically deactivates when driving through tight curves in the road. In this situation, the deactivation occurs without a driver information message. After driving through the curve, the Blind Spot Monitor automatically reactivates and the system is available again.

Components in system – J1086(4), J1087(7), K303(1), K304(2)



System Icons and Warnings

-  Side Assist switched on and active. AKA Blind Spot Monitoring
-  Side Assist system malfunction. AKA Blind Spot Monitoring
-  Blind Spot Monitor malfunction.
-  Side Assist switched on but not active. AKA Blind Spot Monitoring

Calibration is Required When:

- One of the radar sensors are replaced.
- Calibration fault stored in the module.

System Limitations:

- The mirror will not illuminate a “vehicle detected warning” when your vehicle speed differential is greater than 6mph from the vehicle in your blind spot.
- The system may react to high or offset guard rails and give false detection.
- Uneven road surfaces may cause false detection.
- Snow, Ice, bumper stickers or dirty rear bumper covers may impede the radar signal.
- Rear bumper cover repairs or loose objects inside the bumper may give false detection.

Vehicle detected in blind spot.





Rear Traffic Alert



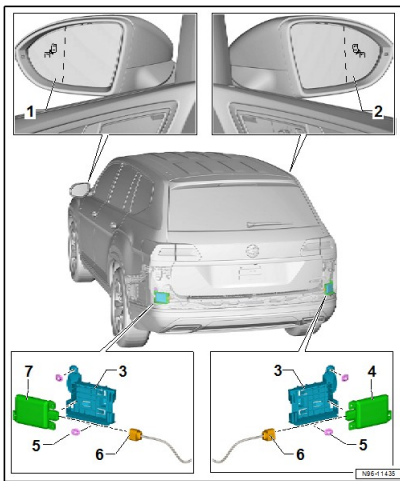
The Rear Traffic Alert system uses the radar sensors in the rear bumper to monitor the traffic crossing behind the vehicle when the driver is backing out of a parking space or maneuvering, for example, in traffic situations with poor visibility. The radar sensors measure the distance and the speed difference between your vehicle and an approaching object and use this to calculate the time until a possible collision.

If the Rear Traffic Alert detects an approaching vehicle, the system will alert the driver acoustically and visually in the Park Pilot screen on the radio/navigation display.

If the driver does not press the brake pedal, the system can intervene with automatic braking. The Rear

Traffic Alert assists the driver with strong automatic braking that could help prevent or reduce damage that may result from a collision. Once the system detects that the vehicle is stationary, it keeps the vehicle from moving for up to 2 seconds.

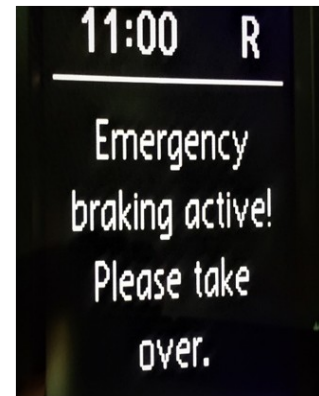
Components in System J1086(4), J1087(7)



System Icons and Warnings



Object Approaching
Rear of Vehicle.



Autonomous Braking
Activated.

Calibration is Required When:

- One of the radar sensors are replaced.
- Calibration fault stored in the module.

System Limitations:

- Snow, Ice, bumper stickers or dirty rear bumper covers may impede the radar signal.
- Rear bumper cover repairs or loose objects inside the bumper may give false detection.
- May not detect people, animals, and things that are moving slowly or not at all.
- Non-authorized paint may impede sensor function.





Park Distance Control



The system supports the driver when he or she is parking the vehicle. Audible signals let the driver know how much space there is behind the vehicle and, on some models, how much space there is at the front too. The frequency of the signal tones increases as the vehicle draws closer to the obstacle. Once the distance drops below 11.8 inches (30 cm), a continuous tone sounds.

Depending on the model of radio or radio/navigation system, the distance to any obstacle is indicated visually in the display too (OPS – Optical Parking System). In situations that are not clear, the system makes work easier for the driver and prevents unpleasant petty damage.

Maneuver Braking (Included in Park Distance Control)

The parking aid system has been expanded to include the Maneuver Braking function. This function works independently of the Park Assist steering and uses only the Park Distance Control sensors. Maneuver braking applies brakes automatically when a static obstacle is detected. It should reduce collisions with static obstacles while you maneuver the vehicle and, in ideal cases, prevent them. The parking aid ultrasound sensors are used for this function. The system is active when reverse gear is selected, the Park Distance Control function (visual/acoustic warning) is enabled, and maneuver braking has been activated.

Parking Steering Assistant (Park Assist)

The Park Assist system can assist the driver when:

- Finding a suitable parking space.
- Parking in a suitable parallel parking space.
- Parking in a suitable perpendicular parking space forward and backward.
- Pulling out of a parallel parking space.



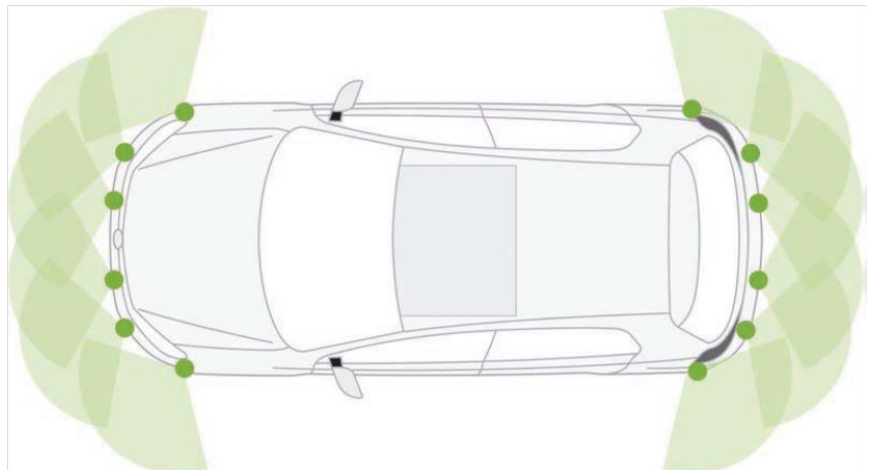
The driver activates the Parking Steering Assistant by the “Park Assist” button in the center console. Park Assist scans both the left-hand and right-hand sides of the road for any parking spaces as it drives past. By activating the indicator, the driver stipulates on which side of the road he or she wishes to park. When the Parking Steering Assistant detects a parking space, the message “Parking Space Found” appears on the multi-function display. The driver is then directed into the correct starting position and requested to engage reverse gear. When reverse gear is engaged, the Parking Steering Assistant is enabled and the automatic steering is activated. With careful use of both the accelerator and brake, the car steers into the parking space. The driver is invited by means of further images on the display to drive forward and, if necessary, backward again. The number of parking moves depends on the length of the parking space. The shorter the parking space, the more parking moves will be necessary. Park Assist can be overridden by the driver at any time.

System Components

Parking Aid Sensors
G252-G255, G203-G206

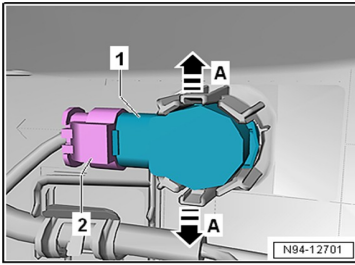
Parallel Parking Sensors
G568, G569, G717, G716

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Park Distance Control



System Components

Ultrasonic Park Sensors are located in front and rear bumper covers.

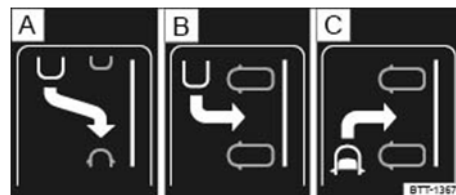
System Icons and Warnings



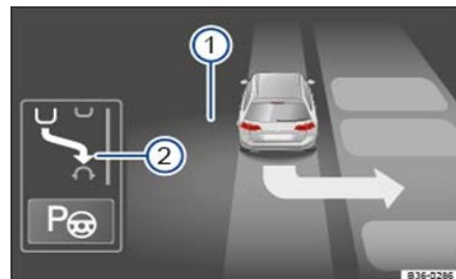
“Park Assist” Button



“Area View” Button



“Park Assist” Modes



“Park Assist” Display

System Does Not Require Calibration

System Limitations:

- If there is a tight curve in the road, the Park Assist system cannot help you park the vehicle or pull out of a parking space.
- Automatic braking assistance ends after about 1.5 seconds
- Certain types of clothing and the surfaces of certain objects do not reflect the ultrasonic waves that the sensors send and receive. Such objects and persons wearing such clothing will not be detected by PDC or will not be detected accurately
- Noise in the area can interfere with the signals of the Park Distance Control sensors. Under certain circumstances, the system will not detect people and objects for this reason
- Aftermarket components such as bicycle racks can impair the function of the Park Distance Control system
- Repainting the sensors in the bumpers can impair the function of the PDC system
- Dirt, snow, ice, and bumper stickers can impair the sensors

Warning Lights

Lights can have different meanings in different carlines.
Please check owner's manual for more information.

	Lights up: Tire pressure too low. Flashes: Tire Pressure Monitoring System (TPMS) malfunction.		Adaptive Front Lighting System (AFS) malfunction.		Flashes, alternating with the selector level indicator: Automatic transmission malfunction.
	At least one vehicle door is ajar or not closed properly.		Headlight range adjustment malfunction.		Lights up: Brake pedal not depressed.
	Stop! Engine hood is open or not closed properly.		Light Assist high beam control switched on (if equipped).		Flashes: The release button in the selector lever is not engaged.
	Stop! Trunk lid is open or not closed properly.		Instrument cluster malfunction.	PARK 	Stop! Electronic parking brake engaged.
	Stop! At least one vehicle door is ajar or not closed properly.		Central caution light: Read and follow the text messages in the instrument cluster display.		Stop! Brake fluid level too low OR: Brake system malfunction OR: Together with the ABS indicator light or ABS failure
	Rear lid open.		Central warning light: Read and follow the text message in the instrument cluster display.	BRAKE 	Hill Start Assist (Hill Hold) malfunction.
	Ignition with malfunction or immobilizer activated.		Steering wheel heating.	ABS 	ABS malfunction.
	Ignition switch or starter button (Keyless Access) malfunction.		Lights up: Problem with the steering.	BRAKE WEAR 	Brake pads worn. Immediately contact an authorized Volkswagen dealer or authorized Volkswagen Service Facility to have the brake pads checked and, if necessary, replaced.
	Battery in remote control vehicle key is dead.		Flashes: Steering column not locked/unlocked.		Mobile phone is connected via Bluetooth to the factory-installed mobile phone package. (booklet Mobile Phone Package)
	No authorized remote control vehicle key found (Keyless Access).		Lights up or flashes: Problem with the steering.		Charge level of the mobile phone battery. Applies only to models with a factory-installed mobile phone package. (booklet Infotainment System)
	Engine cannot be started with starter button (Keyless Access).		Lights up: Steering system malfunction.		Outside temperature colder than +39 F (+4 C) (pg. 17)
	Electronic immobilizer.		Flashes: Electronic steering column lock malfunction.		Fuel-efficient vehicle status.
SAFE	Electronic immobilizer active.		Stop! Lights up: Steering system malfunction. Stop! Flashes: Electronic steering column lock malfunction.		Refer to the Owner's Manual.
	High beams switched on or headlight flashers in use.		Driver and/or passenger safety belts not buckled.		Service reminder display.
	Front fog lights switched on.		Airbag and safety belt pretensioner system malfunction. OR: Roll-over protection system malfunction.		Lights up: Engine control malfunction. Flashes: Misfire
	Fog lights switched on (indicator light on the headlight switch).		Passenger front airbag turned off (PASSENGER AIR BAG OFF light)	EPC	Engine control malfunction.
	Parking lights switched on.		Windsheild wiper malfunction.		Lights up: Engine oil level too low.
	Parking lights activated.		Not enough windshield washer fluid.		OR: Oil level too high (diesel engines only) Flashes: Engine oil system malfunction.
	Daytime running lights on.		Rain sensor malfunction.		Lights up: Engine oil level too low. Flashes: Engine oil system malfunction.
DRL			Transmission malfunction.		Fuel filler cap not properly closed.
	Turn signals, left or right. Emergency flashers switched on.		DSG transmission too hot.		One or more brake lights burned out.
	Left or right turn signal for the trailer		Fuel Tank almost empty.		
	Lights up: One or more driving lights burned out. Flashes: Driving light system malfunction. Or, when flashing: Cornering light malfunction.				

Warning Lights

Lights can have different meanings in different carlines.
Please check owner's manual for more information.

	Engine oil pressure too low. OR Engine speed (rpm) limited (if equipped, to help prevent overheating).		Brake! Depress brake pedal. ACC driver intervention warning.		Malfunction in brake servo functions.
	Stop! Engine coolant level too low, engine coolant temperature too high, or engine coolant system malfunction.		Brake! Depress brake pedal. ACC driver intervention warning.		Lights on: CSC roof is being opened or closed. Flashing: CSC roof malfunction.
	Stop! Engine oil pressure too low.		Adaptive cruise control (ACC) currently not available.		No engine restart possible! Not enough AdBlue or AdBlue system malfunction.
	Alternator malfunction.		Front scan system switched on, active.		Add more AdBlue
	Deactivation of electrical consumers.		Front scan system malfunction.		Refill AdBlue tank or AdBlue system malfunction
	Start-stop available. Automatic stop active.		Front Assist switched off OR: Pedestrian Monitoring Switched Off.		Water in the diesel fuel (diesel engines only).
	Start-stop not available. OR: Start-stop has automatically restarted the engine.		Brake or take action to avoid the vehicle ahead! Front Assist Forward Collision Warning (if equipped)		Lights on: Glow plug preheating before diesel engine start-up. Flashes: Engine control malfunction.
	Lights up: ESC malfunction or ESC switched off by the system. OR: Together with ABS malfunction. OR: The vehicle battery has been reconnected.		OR: Pedestrian Monitoring system warning.		Diesel particulate filter clogged.
	Flashes: ESC or ASR is active		Blind Spot Monitor malfunction.		Stop! Error in the electric drive system.
	ASR manually deactivated. OR: ESC Sport mode manually activated		Side Assist switched on but not active. AKA Blind Spot Monitoring		Vehicle drives with limited power in absolute reserve mode.
	OR: Together with ESC OFF: ESC manually switched off (only possible in off-road or Custom off-road mode)		Side Assist switched on and active. AKA Blind Spot Monitoring		Lights up: Charge the high-voltage battery as soon as possible. Flashes: High-voltage battery is being charged.
	Cruise control is regulating the vehicle speed. OR: Adaptive Cruise Control (ACC) switched on.		Side Assist system malfunction. AKA Blind Spot Monitoring		Lights up: Electronic engine sound (e-sound) not working.
	Adaptive Cruise Control (ACC) and Front Assist switched on and active.		Gray: "Side Assist" switched on but not active. Green: "Side Assist" switched on but not active.		Stop! Error in the electric drive system.
	Cruise control is switched on, but not active.		Lane Assist switched on OR: Lane Assist switched on and not active		Error in the electric drive system.
	Cruise control malfunction OR: Adaptive Cruise Control (ACC) or Front Assist System malfunction.		PR: Lane Assist system malfunction		Charging connector is connected to the vehicle charge port
	Cruise control malfunctioning.		Lane Assist switched on but not active.		READY Hybrid vehicles: Electric drive is ready.
	ACC is active. No vehicle has been detected ahead. The system is regulating vehicle speed.		Lane Assist switched on and active.		E-MODE Hybrid vehicles: Extended electro-mode drive active
	When displayed in white: ACC is active. Vehicle detected ahead. ACC regulates the speed and the distance from the vehicle ahead.		When displayed in white: Hill Descent Control active.		E-MODE E-MODE currently not available.
	When displayed in grey: ACC not active. System switched on, does not regulate.		When displayed in gray: Hill Descent Control not active. System is turned on, but not regulating.		Please pay attention to the message in the instrument cluster display relaying hybrid system information.
	Adaptive Cruise Control (ACC) and Front Assist switched on but not active. Vehicle detected ahead.		Lights up: Hill Descent Assist switched on. Flashes: Hill Descent Assist is operating.		Error in the hybrid system: stop vehicle at a safe location!
			The Off-road driving mode is active (if equipped) 4MOTION Active Control.		Fault in the hybrid system: Workshop!
			Differential lock engaged.		Hybrid battery is charging, leave engine running.
			Differential lock malfunction.		
			One or more license plate lights burned out.		