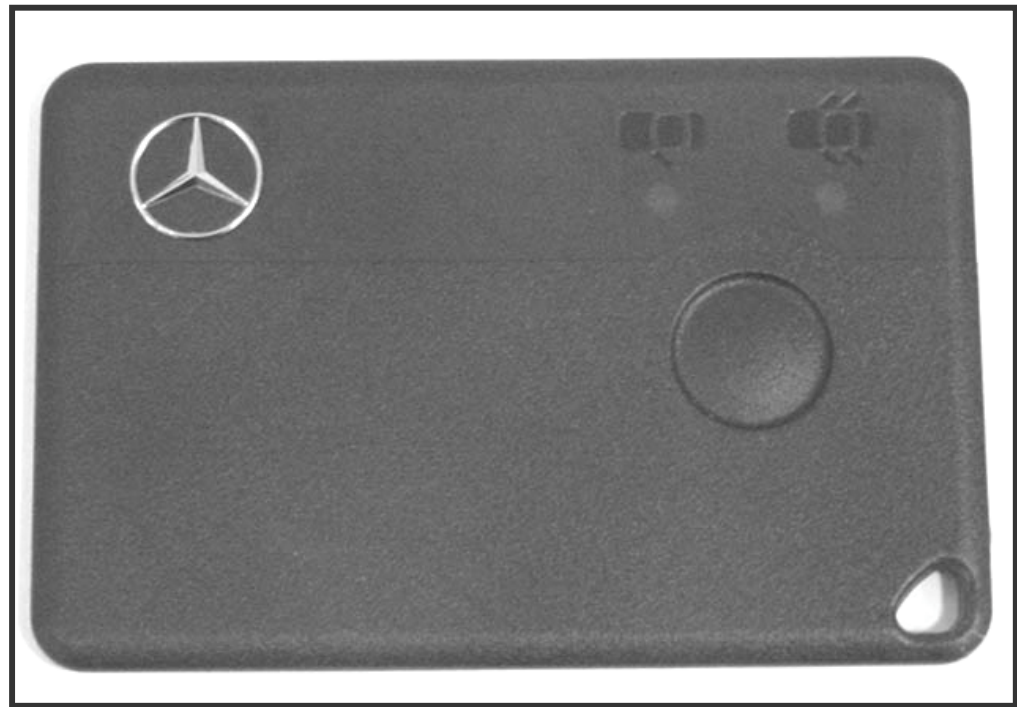




Mercedes-Benz

Keyless Go (KG)



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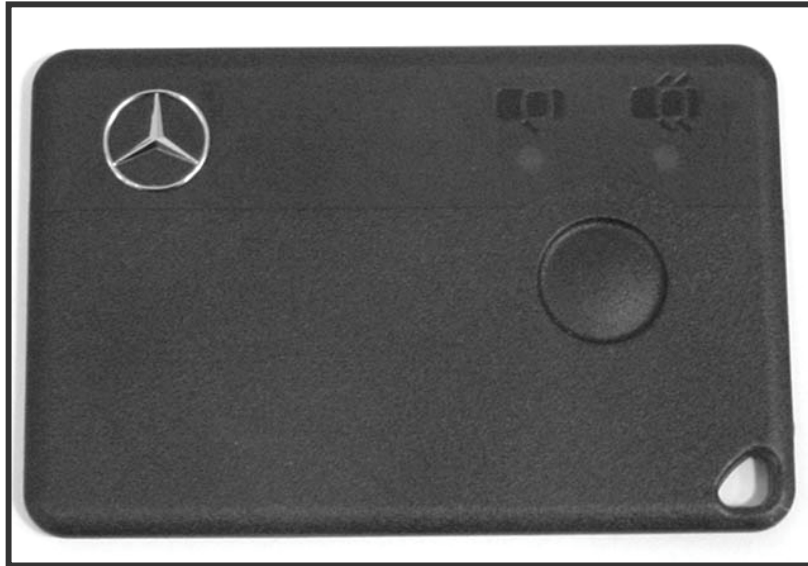
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Printed in U. S.A.

Objectives

- Understand that KG is a supplement to the SmartKey DAS system
- Explain basic concepts for:
 - Locking & unlocking vehicle
 - Starting & stopping engine
- Describe location of KG switches, control module and antennas
- Name the KG card-dependent features
- Order / program replacement or additional cards

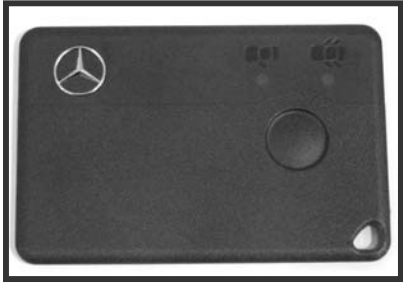
Advantages of Keyless Go (KG)



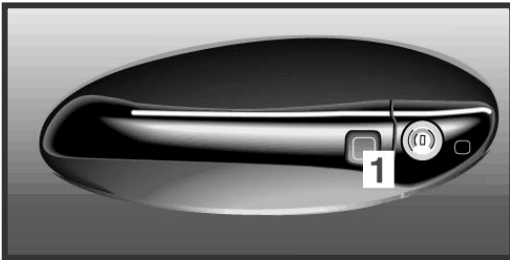
- Keyless operation of:
 - Locking and unlocking
 - Arming and disarming the alarm
 - Starting and stopping of the engine
 - Convenience feature
 - Accessory circuits
- Unlikely that owner will be locked out of vehicle with Keyless Go card left inside

Note: SmartKey still works as it did previously

Identifying Keyless Go Option



- 2 Keyless Go cards supplied with vehicle



- Both exterior door handles have push button for locking
 - Door handles still have infrared receivers

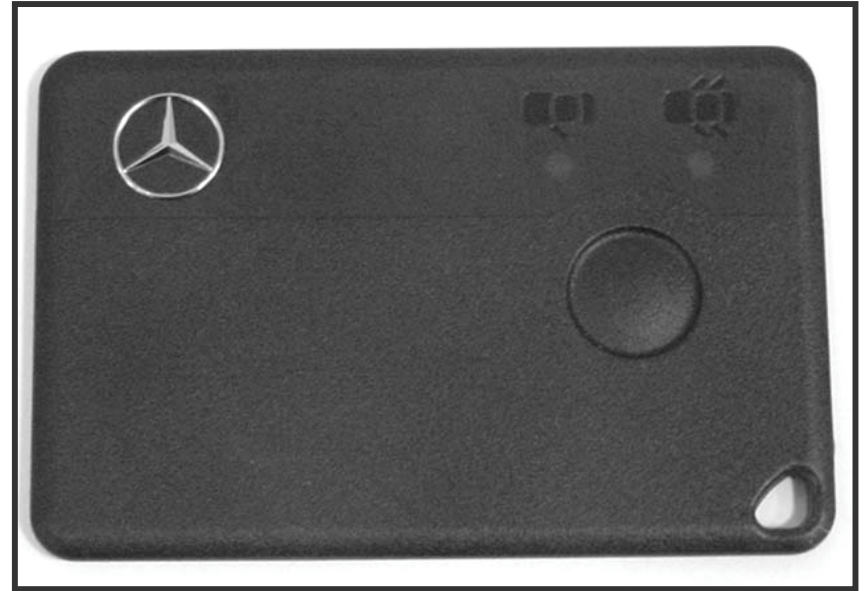


- Engine start/stop button on gear selector lever



- Lock button for trunk lid

Prerequisite for Keyless Go Option:



Begin with a DAS3 SmartKey system



Add the components for Keyless Go

Note: Always carry SmartKey in case there is a malfunction in the KEYLESS GO card.

The SmartKey always has first priority.

Keyless Go Card

- Press button on card briefly to check unlocking mode selected for card

Selective: LED (1) illuminates

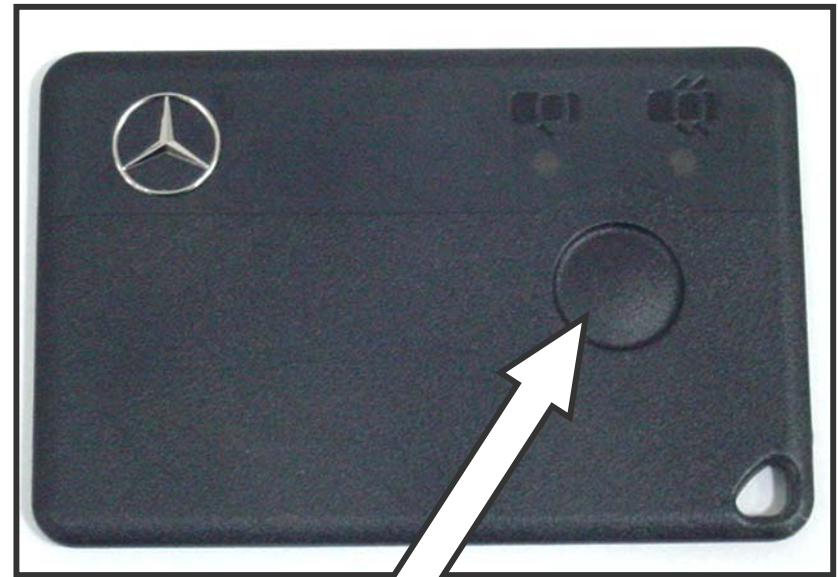
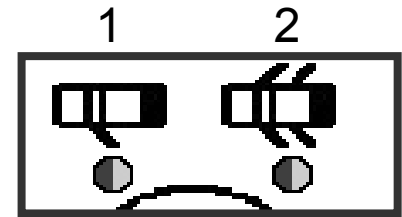
Global: LED (2) illuminates

- The LEDs will also indicate how card was last used for vehicle locks

Locking: either LED is red

Unlocking: either LED is green

- If LEDs do not light: replace batteries



Press the button for > 5 seconds to switch between **global** and **selective** KG unlocking




2 batteries used

Seat Operation with Keyless Go

- After unlocking with Keyless Go card:
 - With door open, seat can be adjusted
 - With door closed, engine off:
 - Tapping start button on gearshift twice, without actuating foot brake allows seat adjustment
 - Tapping start button once, with foot brake actuated starts engine and allows seat adjustment
- Keyless Go card-dependant memory
 - Shared settings for both cards
 - Both cards for one vehicle provide identical memory positions

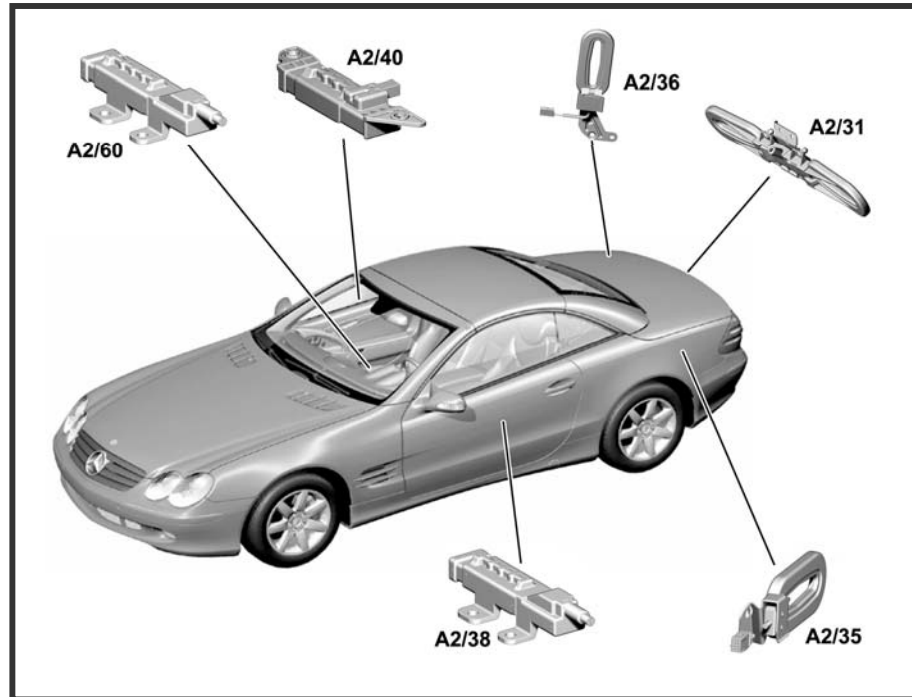
KG Start / Stop Button Duties

- A valid transmitter card must be inside the passenger compartment
- Gear selector lever must be in Park
- Engine may shut off if vehicle is started with card, card is removed and then vehicle is driven

 (S2/3)	<u>With foot brake actuated</u>	Without actuating foot brake (driver's door open)	Without actuating foot brake (driver's door remains closed)
1st actuation	Circuit 15 ON + engine start	Circuit 15R ON	Circuit 15R ON
2nd actuation	Ignition OFF	Circuit 15 ON	Circuit 15 ON
3rd actuation	Circuit 15 ON + engine start	Ignition OFF	Circuit 15c ON

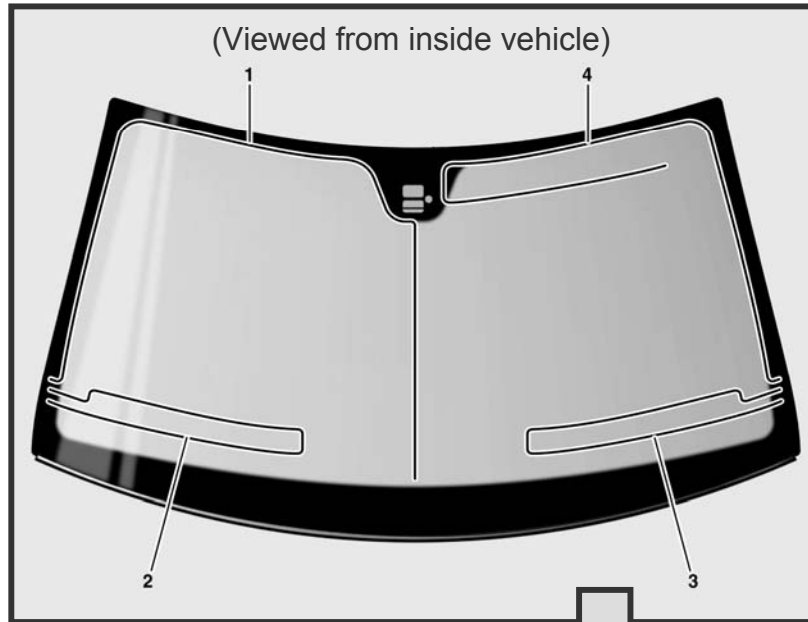
Keyless Go Antennas

- 1 for each door (A2/38 & A2/40)
- 3 in trunk area (A2/31, A2/35 & A2/36)
- 1 in center console (A2/60)



- The KG module is connected to the antennas through discrete wiring
- All antennas are activated during a lock or unlock request
- Only the two door antennas are activated when starting engine
- The KG module can only activate a transmitter card if card is within 1.5 meters (~ 5 feet) of vehicle's KG antennas (125kHz signal)

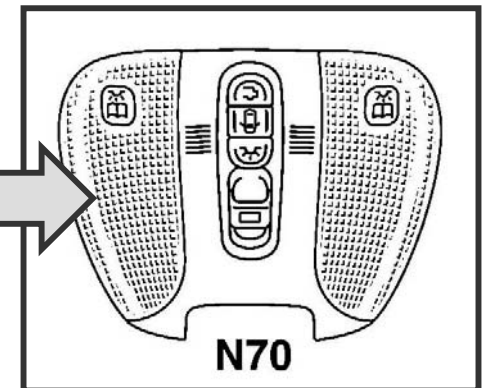
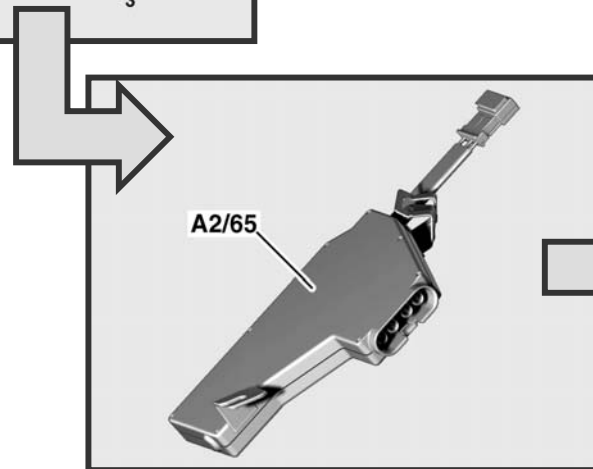
Receiving from Key Card



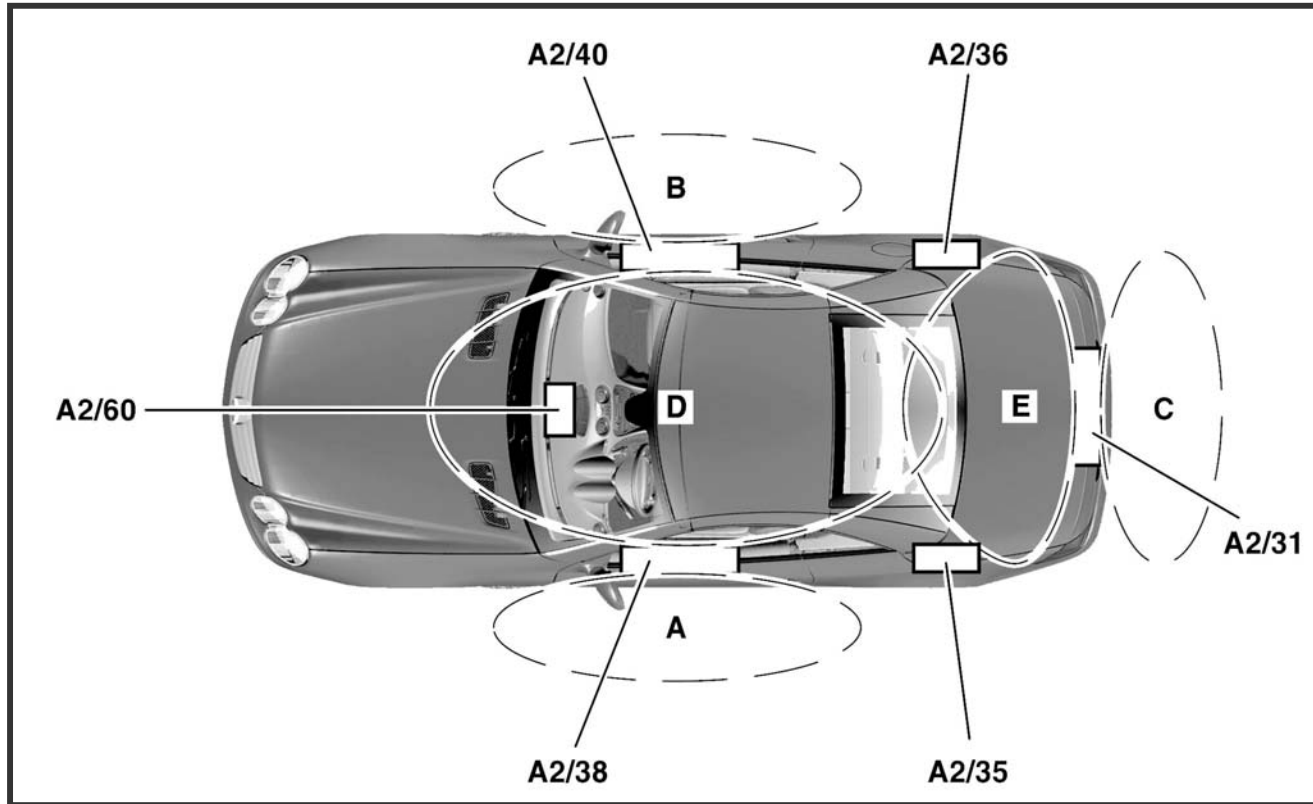
- Key card produces 315MHz signal
- Received by upper right windshield antenna (4)
- Antenna (4) is connected to right antenna amplifier module (A2/65)
- Signal sent to OCP to be converted to digital signal and placed on CAN-B

Antennas:

- 1 = FM1
- 2 = FM2
- 3 = FM3
- 4 = FM4 & Central Locking

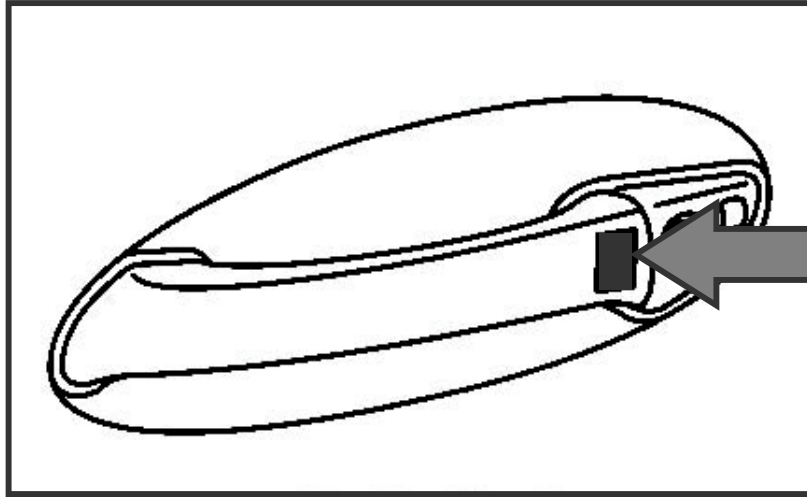


KG Antenna Zones



- Card in zones A, B or C = external KG locking & unlocking possible
- Card in zone D = KG starting is possible
- Card in zones D or E = external KG locking not possible without a 2nd key

KG Locking Components



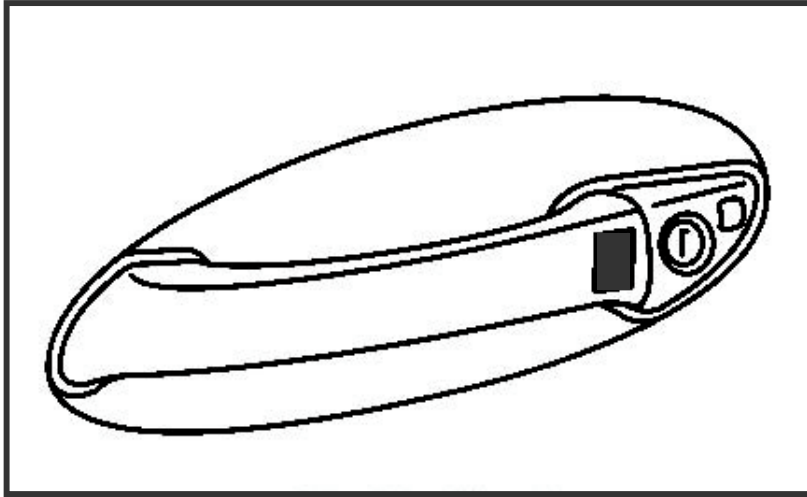
- S47s2(left) and S48s2(right)
 - Black button on door handle
 - Convenience closing of windows with these buttons only- movement stops when button is released



- S62/21
 - Trunk switch

These are all direct inputs to KG. This signal causes KG to activate antennas to request proper card signal plus checking for cards left inside vehicle.

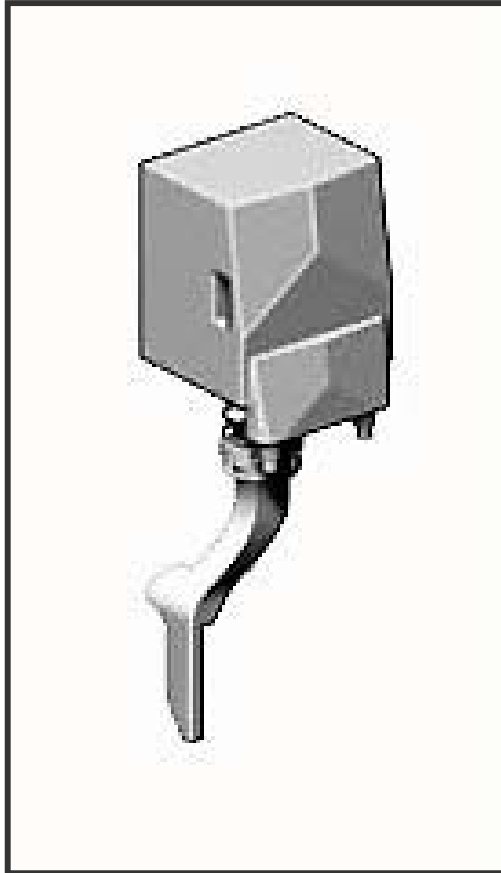
KG Unlocking Components



- S47b1(left) and S48b1(right)
 - Capacitive sensor discharges when handle is touched
 - Power to sensor is shut off:
 - after 72 hours without use
 - after 10 attempts without card (play protection)
- S47s1(left) and S48s1(right)
 - Door pull contact
 - Wakes up KG and unlocks door if power to capacitive sensor has been shut off
 - Used for emergency opening feature-movement stops when handle is released

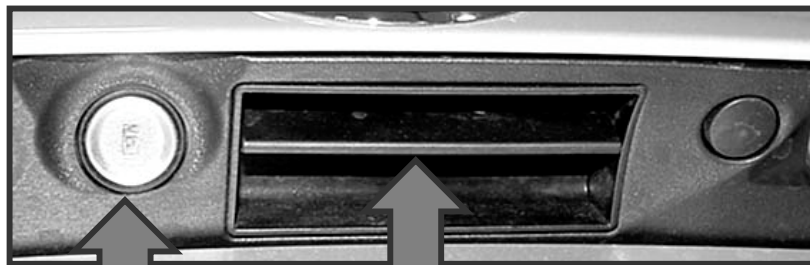
Note: If unlocked using Keyless Go, vehicle will re-lock after 30-40 seconds if no door is opened

KG Unlocking (Lift) Solenoid



- L12(left) and L12/2(right)
 - Solenoid at each door
 - Quickly unlocks the door where the request was made prior to pneumatic unlocking

KG Unlocking Components

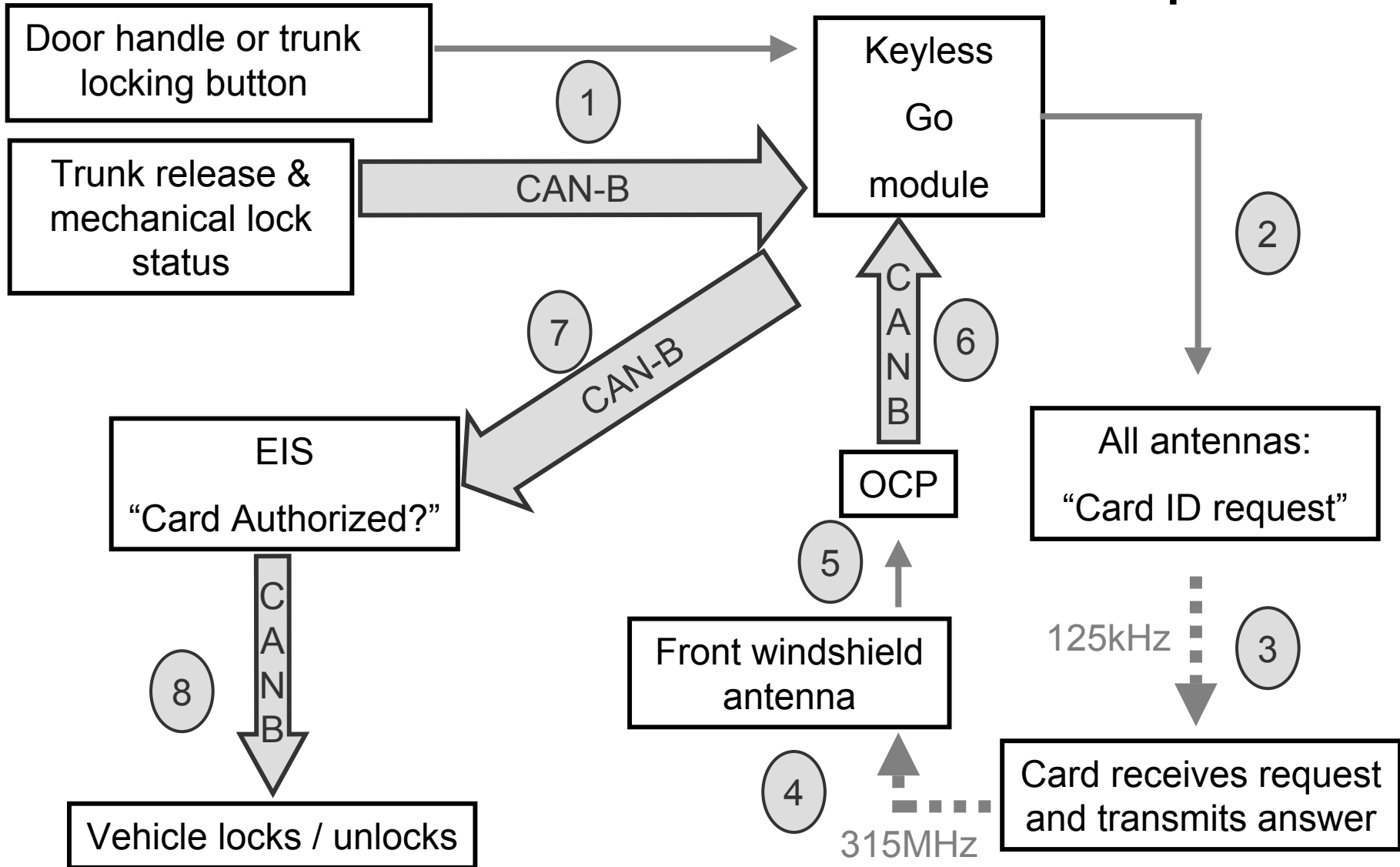


S134

S88/8

- S134
 - Mechanical lock switch
 - Signals PSE to ignore unlock request
 - PSE informs KG via CAN-B
- S88/8
 - Unlock handle
 - Informs PSE of an unlock request
 - PSE informs KG via CAN-B
 - Only trunk lid will unlock
 - Upon closing, the trunk locks again and alarm is reset
 - KG will not allow trunk to lock if a card is left inside

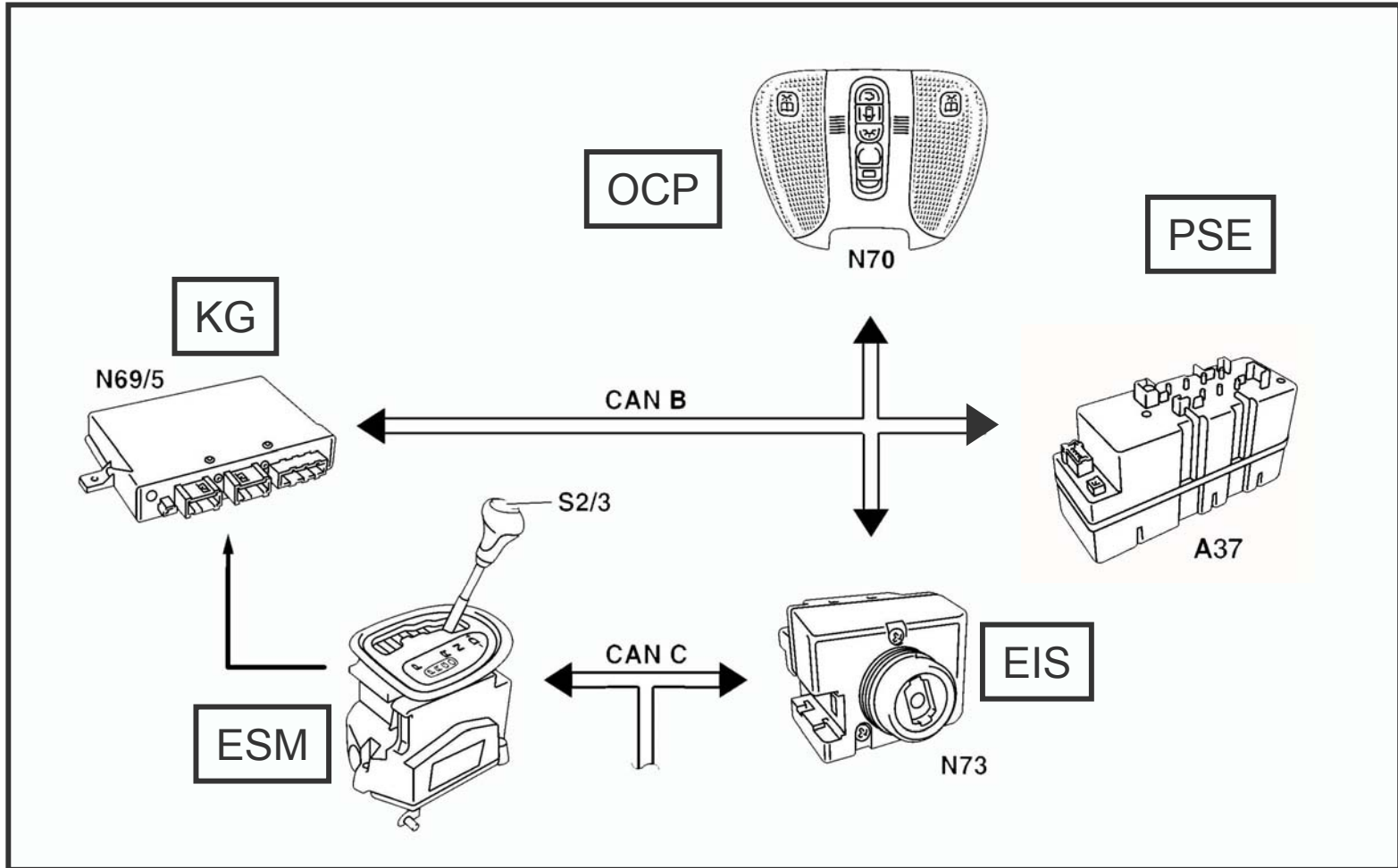
KG Lock / Unlock Basic Concept



KG Locking / Unlocking Notes

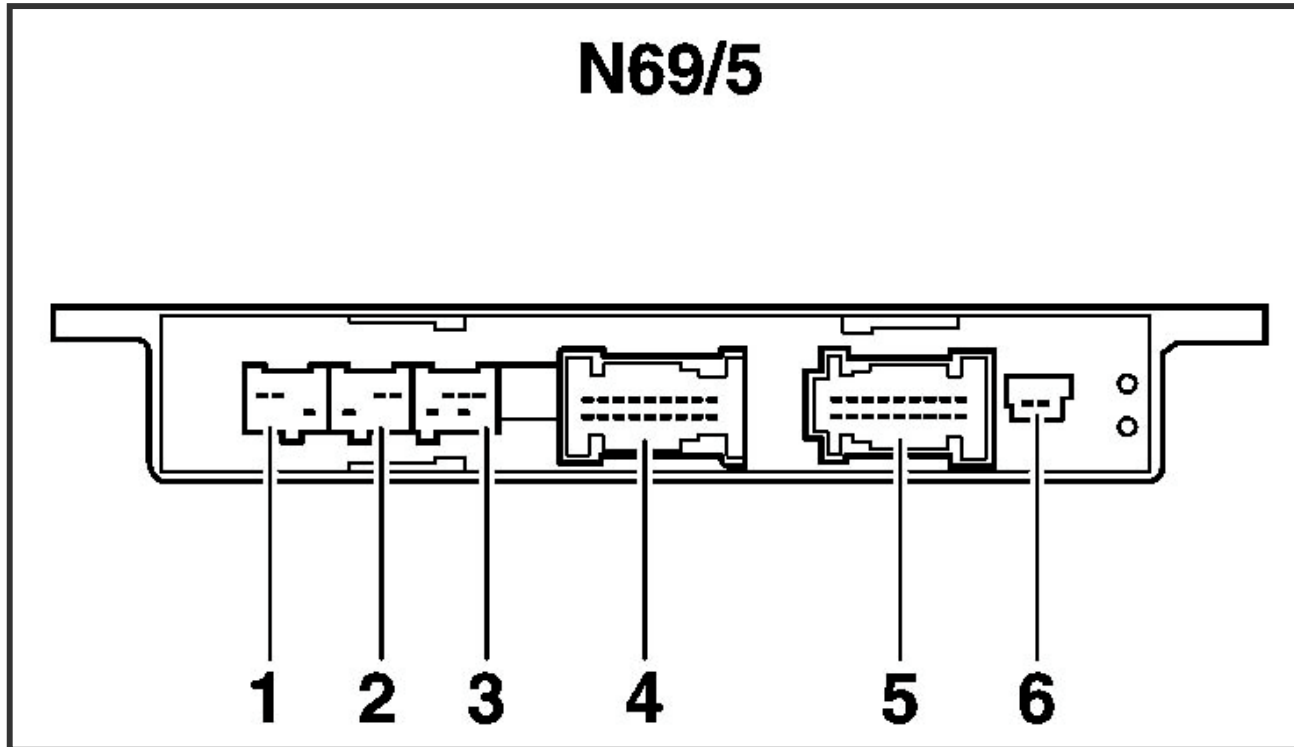
- If both cards are near each other when engine is started by means of Keyless Go, one card may no longer operate locks. Cure by starting with each card separately
- In Selective unlocking mode: If a passenger's door handle is grasped, the vehicle will unlock Globally

Control Modules Working with KG



OCP provides antenna signal, PSE provides trunk lock/unlock information, ESM provides start/stop button and Park position information, KG provides EIS with confirmation of key card status.

KG Module Connectors



- | | |
|------------------------|---|
| 1) Left trunk antenna | 4) Left door components, brake switch, 12V, ground |
| 2) Right trunk antenna | 5) Right door components, center console antenna, CAN-B, ESM (start/stop button & park position), |
| 3) Rear bumper antenna | 6) Trunk locking button |

KG Messages in Cluster Display

CHIP CARD



CHECK BATTERY

Press button on card

An LED will light if battery OK

CHIP CARD



NOT RECOGNIZED

If engine is running, locate card in order to lock, unlock or restart vehicle

Card may still be in trunk

Use Smartkey if necessary

CHIP CARD



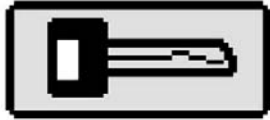
STILL IN VEHICLE

Displays when attempting to lock from outside while card is still in vehicle

Remember-Vehicle can be started if card is left inside

KG Messages in Cluster Display

CHIP CARD



DO NOT FORGET

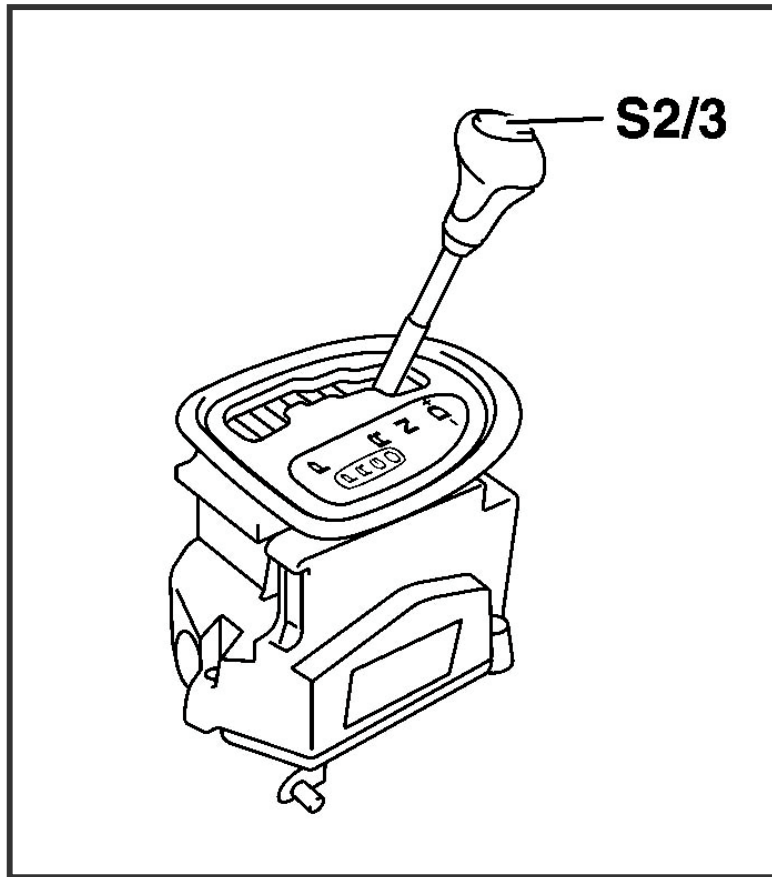
Upon opening driver's door

SELECTOR LEVER

TO P

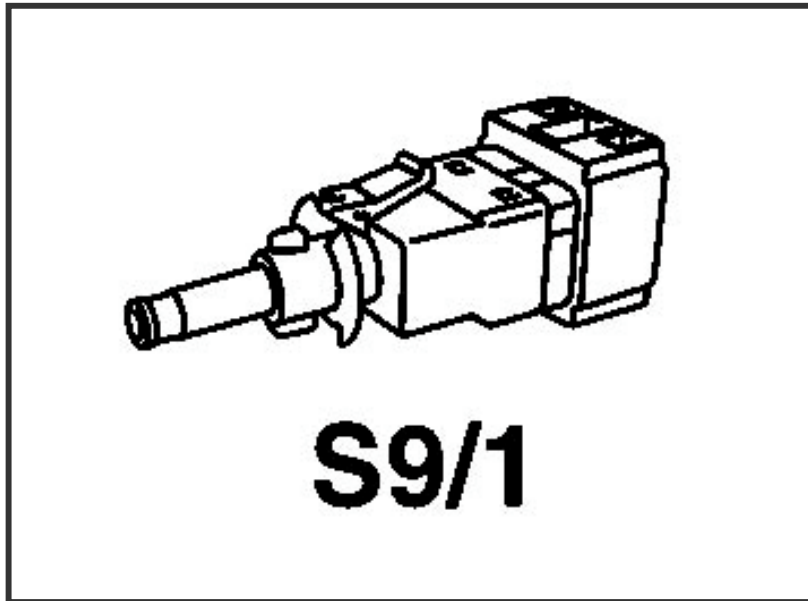
If gearshift button is touched or driver's door is opened with engine running and gear selector in any position except Park

KG Engine Start /Stop Components



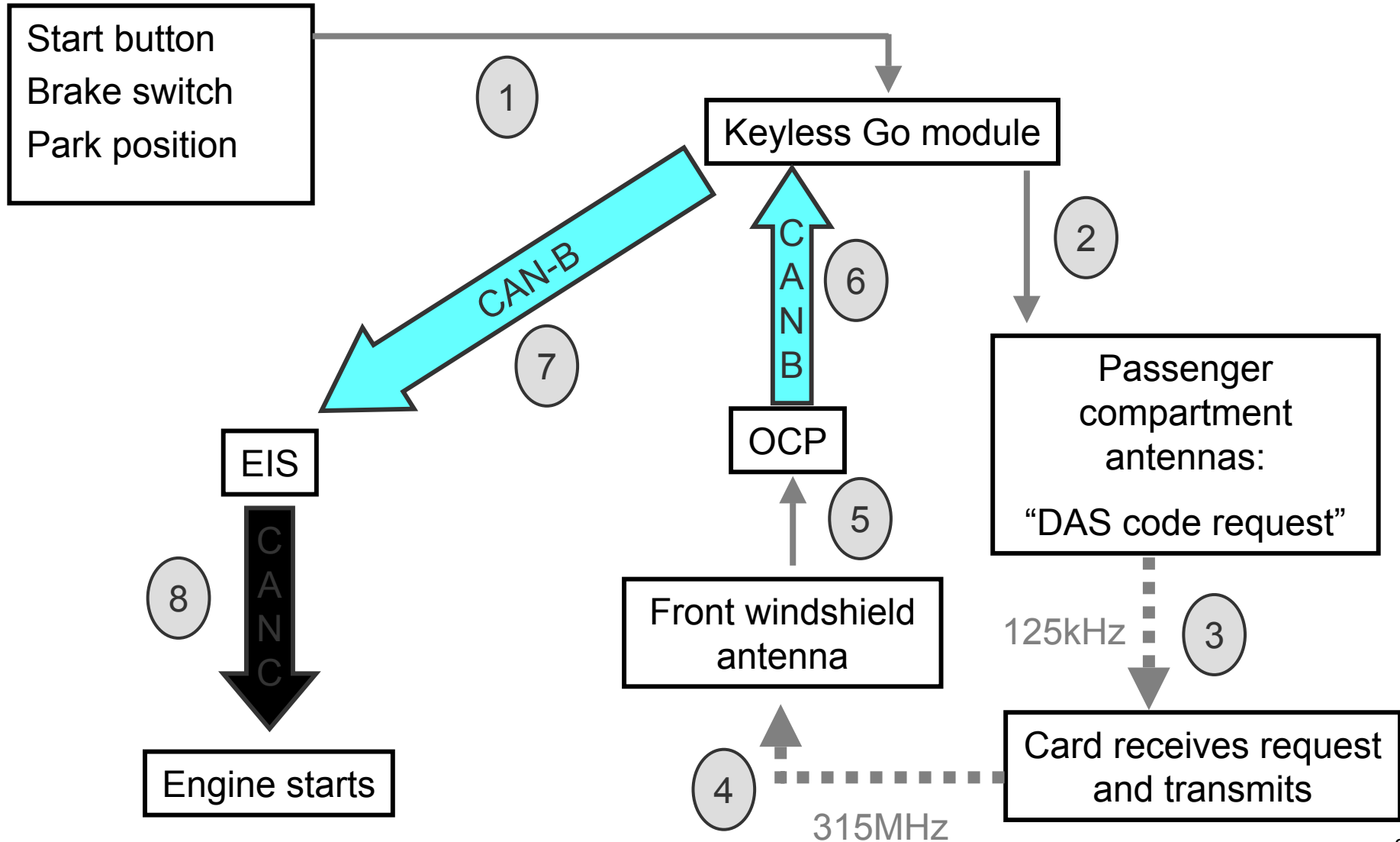
- S2/3
 - Start / stop signal provided to ESM
 - ESM provides signal to KG
- Park position of gearshift
 - ESM provides signal to KG
 - KG cannot initiate starting or stopping of engine if not in Park

KG Engine Start Component

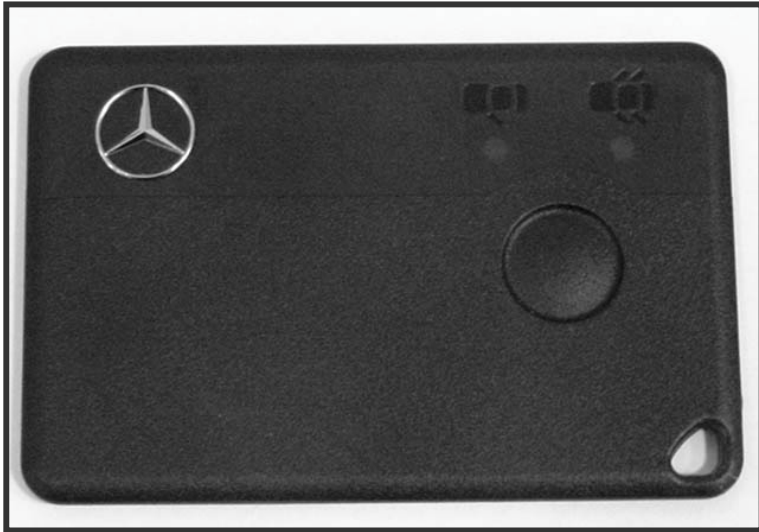


- S9/1
 - Brake light switch
 - Signal provided to KG through a discrete wire

KG Engine Start Basic Concept



KG Cards: “Replacement” and “Additional”



- A KG card can be assigned to any of the eight key rails in EIS
- *But*, KG module can only manage two cards
- Data exchange from card to EIS is done as for start authorization (*via OCP & CAN-B*)
- EIS authorizes locking, unlocking & DAS with card as it does for SmartKey
- New cards cannot be learned while SDS is connected - after erasing the old card in memory, disconnect SDS

“Programming transmitter card, function” is explained in WIS: GF80.61-P-4103R

KG Module Replacement



Trunk, Left side

- KG key cards and EIS key rails must be reassigned using a learn-in procedure
- Star diagnosis tool not required

The procedure for reassigning the cards to a replacement Keyless Go control module is explained in WIS: GF80.61-P-4103R

Keyless Go (KG)

In Diagnostic Assistance System, from Main groups menu, select:

- Functions covering all control modules > Drive authorization > Keyless Go
- Control units > Body > KG_Keyless Go

Group:	80.61	
Control unit designation:	N69/5	
U.S. Introduction:	MY2001 W220/C215	MY2003 R230
Major components:	Transmitter cards	
	KG control module	
	Pushbutton start/stop switch	
	Door antennas (1 each)	
	Trunk area antennas (3)	
	Door handle switches (3 each)	
	Unlocking (lift) solenoids (1 per door)	
	Trunk switch (1)	
MILs:	No	
Warning messages in IC?	Yes	
DTC capable?	Yes	
Control unit adaptation?	“Assign transmitter card to key track”	
Requires Control unit adaptation in:	EIS and ICM	

Acronym List

CAN-B	Controller Area Network B (body)
CAN-C	Controller Area Network C (engine)
DAS	Diagnostic Assistance System
DAS3	Drive Authorization System type 3
EIS	Electronic Ignition Switch
ESM	Electronic Shift Module
KG	Keyless Go
OCP	Overhead Control Panel
PSE	Pneumatic System Equipment

Appendix

Function of Keyless Go	<u>Introduction of the New SL-Class Model Series 230</u>	pp.62-63
	<u>Model Year 2002 USA Models 129,170,203,208,210,215,220</u>	pp.48-57
Key Chart and DAS identification	Info bulletin > Parts Distribution	#IB-600401
KG Component Location, Purpose, Design,Function	WIS: group 80.61	
KG antenna function	WIS: group 82.62	
Removing,installing door handle	WIS: AR72.10-P-2400N (215/220)	
Schematic (R230)	WIS: PE80.61-P-2101-99KA	