

Technical Description
Users Manual

Technical Data

HF-part

Basic Key

3317

Software status: V5.1
Hardware status: V1.3
Mechanical status: V3.2
with mechanical emergency key

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Revision status	
Version :	01

Functional description:

The basic design key is one of the components of a driver authorisation system and has the following functions:

- 1.) Remote control for vehicle access (*German abbreviation FZB*) via radio and infrared signals
- 2.) Driver authorisation (engine start-up) once the key has been inserted into the electronic¹ ignition and steering lock

For 1.) a message is sent to the vehicle by the key via an HF transmitter once a button has been pressed on the key.

For 2.) bi-directional communication² between the key and the ignition and steering lock takes place using infrared light. The electronic ignition and steering key produces an inductive field of 125 kHz for the key power supply.

General technical data:

Temperature range:

Working temperature: -20 ...+65 ° C

Data of the HF-part

Type of data transmission: uni-directional (transmit only)

Transmitter:

Transmitting frequency: 433.92 MHz (ECE)
 315.00 MHz (USA)
 315.00 MHz, backed-off (Japan)

Transmitting frequency tolerance: +/- 75 ppm
 (production, aging, temperature)

Transmitting capacity (EIRP): typical -18 dBm (< -15 dBm) @433.92 MHz
 typical -18 dBm (< -15 dBm) @315.00 MHz (USA)
 typical < -40dBm @315MHz (Japan)

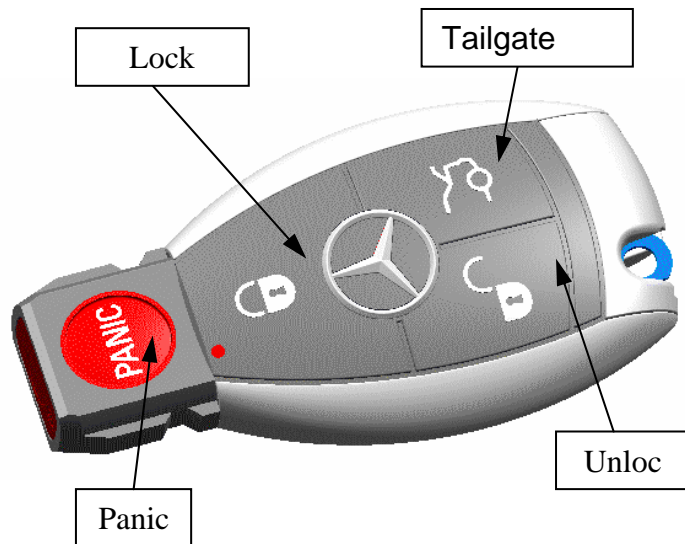
Modulation: Frequency shift keying (2-FSK)

Frequency shift: +/- 15 ...+/-17 kHz, nominal: +/- 16 KHz

Modulation content: digital data
 Data rate: 1 kBit/s (remote control)
 Coding: Manchester³

Data contents: Remote control (1 Kbit/s):
 55 zero bits (preamble + 1 start bit + 112 bit data)

Data burst rate: Remote control: max.10 000/a



Activating test modes on the Keyless Go⁴

- Button 1: Unlock
- Button 2: Tailgate/boot lid (not applicable for estate vehicles)
- Button 3: Lock
- Button 4: Panic (USA version)

Mechanical emergency key inside housing and latched in place

Key: (set permanently to HF diagnosis 1, see marking)

The operating mode is switched on and off alternately by briefly pressing the respective button (LED flashes!)

HF diagnosis 1:		
Button		Diagnosis operating mode
Unlocking button	(Button 1)	Transmit low transmission frequency (non-modulated)
Locking button	(Button 3)	Transmit upper transmission frequency (non-modulated)
Tailgate	(Button 2)	Transmit data telegram at 1kbBit

Technical Data

HF-part

Keyless Go

3317

Software status: V3.5
Hardware status: V2.3 [KW03/04]
Mechanical status: V3.2 [51/03]
with mechanical emergency key

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Version :	01

Functional description:

The design key is one of the components of a driver authorisation system and has the following functions:

- 2.) Remote control for vehicle access (*German abbreviation FZB*) via radio and infrared signals
- 3.) Keyless Go vehicle access
- 4.) Keyless Go driver authorisation (engine start-up, key search)

For 1.) a message is sent to the vehicle by the key via an HF transmitter once a button has been pressed on the key.

For 2.) and 3.) bi-directional data communication takes place between key and vehicle via an HF transceiver. The communication is started by the vehicle when one of the operating elements on the door or boot is triggered.

In case 3.), when the vehicle is moving and every time the vehicle is started up, data communication with the key takes place. This is started from the vehicle.

The key is fitted with a receiver for an inductive, low-frequency field (19.1 kHz). When a certain data pattern is being transmitted on this frequency by the vehicle, the key is prepared for the data communication state (wakes up from stand-by). As the functional process progresses, the key also evaluates the receiving strength of the above-mentioned inductive field for non-modulated transmission.

General technical data:

Temperature range:

Working temperature: -20 ...+65 ° C

Data of the HF-part

Type of data transmission: half duplex

Transmitter:Transmitting frequency: 433.92 MHz (ECE)
315.00 MHz (USA)Transmitting frequency tolerance: +/- 30 ppm
(production, aging, temperature)Transmitting capacity (EIRP): typical -18 dBm (< -15 dBm) @433.92 MHz
typical -18 dBm (< -15 dBm) @315.00 MHz
(USA)

Modulation: Frequency shift keying (2-FSK)

Frequency shift: +/- 15 ...+/-17 kHz, nominal: +/- 16 KHz

Modulation content: Digital data
Data rate: 1 kBit/s (remote control)
10 kBit/s (Keyless Go)
Coding: Manchester⁵Data contents: Remote control (1 Kbit/s):
55 zero bits (preamble + 1 start bit + 112 bit data)

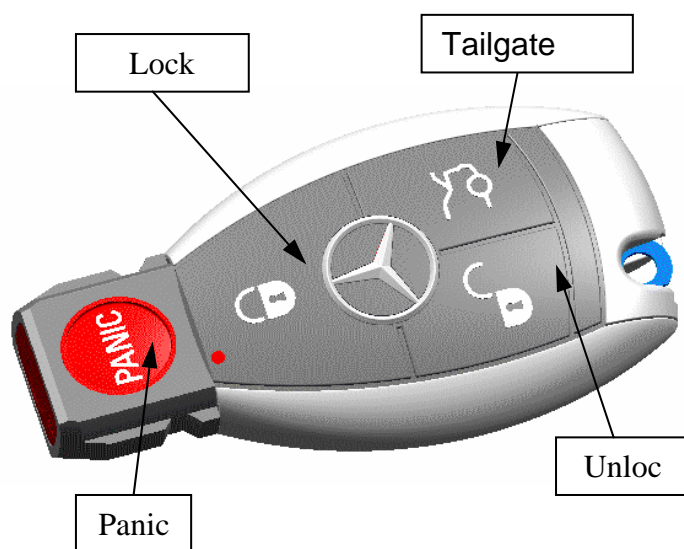
Keyless Go (10 kBit/s)
12 zero bits (preamble) + 1 start bit + max. 96 Bit
dataData burst rate: Remote control: max.10 000/a
Keyless Go: max. 100 000/a at
performance of 100 000 km/a

Receiver 1:

Receiving frequency:	433.92 MHz (ECE) 315.00 MHz (USA)
Average receiving frequency tolerance: (production, aging, temperature)	+/- 35 ppm
Receiving bandwidth:	270kHz
Receiving sensitivity:	≤ -76 dBm (with aerial)
Demodulator output:	FSK2 (-16 KHz Low, +16 KHz High)
Receiving data rate:	10 kBit/s
Coding:	Manchester ⁶

Receiver 2 (inductive):

Receiving frequency:	19.1 kHz +/-1kHz
Demodulator output:	ASK/OOK-Demodulation
Receiving data rate:	1.365 kBit/s
Data burst:	16 data bits



Activating test modes on the Keyless Go

Button 1: Unlock

Button 2: Tailgate/boot lid (not applicable for estate vehicles)

Button 3: Lock

Button 4: Panic (USA version)

Mechanical emergency key inside housing and latched in place

Key: (set permanently to HF diagnosis 1, see marking)

The operating mode is switched on and off alternately by briefly pressing the respective button

HF diagnosis 1:		
Button		Diagnosis operating mode
Unlocking button	(Button 1)	Transmit low transmission frequency (non-modulated)
Locking button	(Button 3)	Transmit at 1 kHz permanent modulation
Tailgate	(Button 2)	Transmit at 10 kHz permanent modulation

Key: (set permanently to HF diagnosis 2, see marking)

The operating mode is switched on and off alternately by briefly pressing the respective button

HF diagnosis 2:		
Button		Diagnosis operating mode
Unlocking button	(Button 1)	Permanent receiving mode
Locking button	(Button 3)	Transmit upper transmission frequency (non-modulated)
Tailgate	(Button 2)	Transmit data burst with 10 kBaud Manchester ^{7*}

- * 12 pre-impulses + 24 data bits (48h, 53h, AEh), break between the data burst 1ms,
in receiving mode during break in transmission.

The receiver for 19.1 kHz is in permanent receiving mode independent of any settings on the key.

Vehicle keys

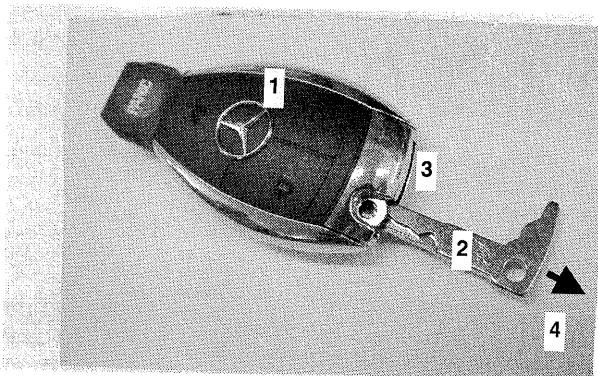
Included with your vehicle are 2 electronic main keys with integrated radio frequency and infrared remote controls plus removable mechanical key.

The locking tabs for the mechanical key portion of the two electronic main keys are a different color to help distinguish it.

Warning!

When leaving the vehicle always remove the electronic key from the starter switch, and lock your vehicle. Do not leave children unattended in the vehicle, or with access to an unlocked vehicle. Unsupervised use of vehicle equipment may cause serious personal injury.

Electronic main key



The electronic main key has an integrated radio frequency and infrared remote control, plus removable mechanical key.

The remote control (1) operates all locks on the vehicle. The mechanical key (2) works only in the driver's door, trunk, and storage compartment locks.

When using the mechanical key (2) for lock operations, it can be removed by sliding it out of the remote control. To do so, move locking tab (3) to the right and slide the mechanical key (2) in direction of arrow (4).

The remote control transmitter is located in the electronic main key.

The infrared receivers are located in the front door handles.

Note:

Remove the mechanical key from the electronic main key when using valet parking service. To prevent access to trunk or storage compartments lock them separately and retain the mechanical key.

See page 42 for separate locking of trunk and page 178 for locking of glove box.

Obtaining replacement keys

Your vehicle is equipped with a theft deterrent locking system requiring a special key manufacturing process. For security reasons, replacement keys can only be obtained from your authorized Mercedes-Benz Center.

Central locking system

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Start lock-out

Important!

Removing the electronic key from the starter switch activates the start lock-out. The engine cannot be started.

Inserting the electronic key in the starter switch deactivates the start lock-out.

Note:

In case the engine cannot be started (vehicle's battery is in order), the system is not operational. Contact an authorized Mercedes-Benz Center or call 1-800-FOR-MERCEdes (in the USA), or 1-800-387-0100 (in Canada).

General notes on the central locking system



- If the electronic key is inserted in the starter switch, the vehicle cannot be locked or unlocked with the remote control.

If the vehicle cannot be locked or unlocked:

- Aim transmitter eye at a receiver of either front door handle. Check the batteries of the electronic main key, see page 339, or synchronize the electronic main key, see page 341.
- Use the mechanical key to unlock the vehicle. To start engine, insert the electronic key in the starter switch. There could be a slight delay until the electronic key can be turned in the starter switch.

Important!

When unlocking the driver's door with the mechanical key, the exterior lamps will flash and the alarm will sound.

To cancel the alarm, insert the electronic key in the starter switch or press button  or  on the electronic main key.



Central locking system

Radio frequency and infrared remote control

The electronic main key has an integrated radio frequency and infrared remote control.

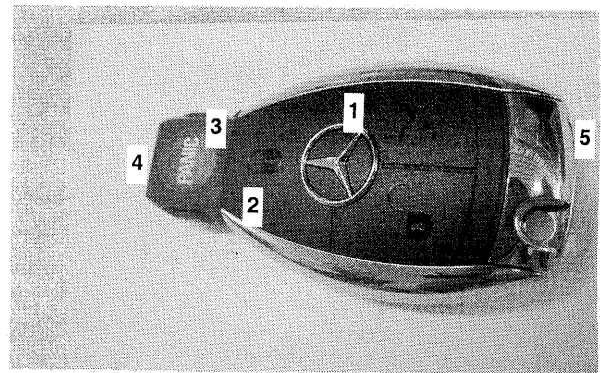
Due to the extended operational range of the remote control, it could be possible to unintentionally lock or unlock the vehicle by pressing the transmit button. If one of the transmit buttons is pressed, the battery check lamp lights up briefly – indicating that the batteries are in order. See page 339 for checking batteries.

The vehicle doors, trunk and fuel filler flap can be centrally locked and unlocked via remote control.

Opening and closing the windows and sliding/pop-up roof and switching on the driver's seat ventilation can only be done with the infrared portion of the remote control. Aim transmitter eye at a receiver (6 or 7), press and hold transmit button  or , see page 35.

With vehicle centrally locked, the trunk can also be opened by using the remote control.

If the electronic key is inserted in starter switch, the vehicle cannot be locked or unlocked, and the trunk lid cannot be opened with the remote control.



1 Transmit button

 Locking

 Unlocking

 Opening trunk (if not separately locked)

2 Lamp for battery check (see page 339 for changing batteries if it does not light up briefly)

3 PANIC button

4 Transmitter eye

5 Locking tab for mechanical key

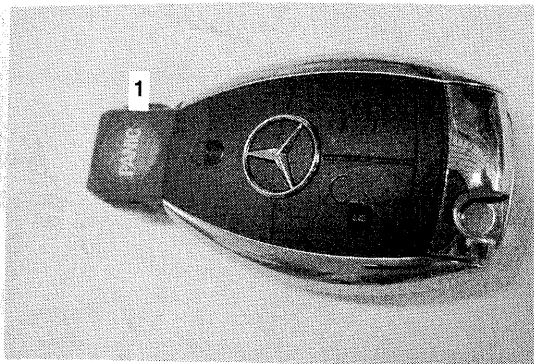
Central locking system

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Central locking system

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Panic button



To activate press and hold button (1) for at least one second. An audible alarm and blinking exterior lamps will operate for approximately 2½ minutes.

To deactivate press button (1) again, or insert electronic key in starter switch.

Note:

For operation in the USA only: This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Any unauthorized modification to this device could void the user's authority to operate the equipment.

Mechanical keys

The mechanical keys work only in driver's door, trunk, and storage compartment locks.

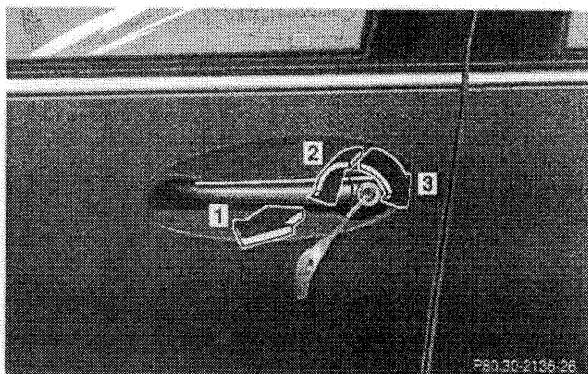
Notes:

The mechanical key does not operate the central locking system or anti-theft alarm system.

The fuel filler flap cannot be locked or unlocked with the mechanical key.

If the fuel filler flap cannot be opened, see page 342.

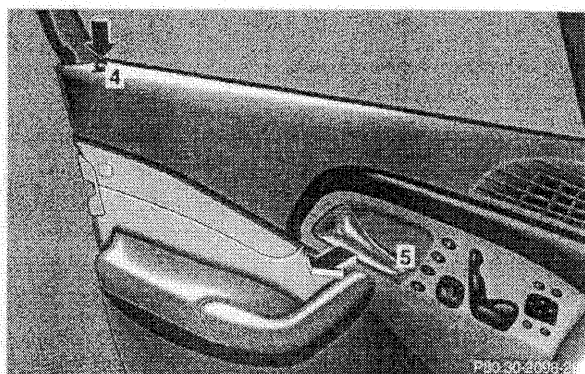
Doors



- 1 Opening - pull handle
- 2 Unlocking driver's door
- 3 Locking driver's door

Important!

The mechanical key does not operate the central locking system or anti-theft alarm system.



- 4 Individual door from inside:
Push lock button down to lock.
- 5 Front door from inside:
Pull handle to unlock.

When you lock the driver's door with the mechanical key, the door lock button should move down.

Each individual door must be locked with the respective door lock button - the driver's door can only be locked when it is closed.

Central locking system

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Central locking system

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If the vehicle has previously been locked from the outside, opening a door from the inside will trigger the alarm. When opening a front door while the central locking system is in the:

- selective unlocking mode, only that individual door is unlocked. The remaining doors, the trunk and fuel filler flap remain locked.
- global unlocking mode, all doors, the trunk and fuel filler flap are unlocked.

Notes:



In case of a malfunction in the central locking system the doors can be locked and unlocked individually.

To lock, push down lock buttons or turn mechanical key in driver's door lock to position 3. In addition lock the trunk.

To unlock, pull inside door handles or turn mechanical key in driver's door lock to position 2.

Rear doors can only be opened from inside by first pulling up the door lock button.

When unlocking the driver's door with the mechanical key, the exterior lamps will flash and the alarm will sound.

To cancel the alarm, insert the electronic key in the starter switch or press button  or  on the electronic main key.

Power closing assist for doors and trunk lid

The doors and the trunk lid close automatically if:

- the doors are positioned against the lock,
- the trunk lid is lowered against the lock.

It is not necessary to slam the door or trunk lid closed, a pneumatic power-assisted mechanism draw doors and trunk lid closed quietly and automatically once the lid or door has been latched. When the pneumatic power-assisted mechanism has stopped, doors and/or trunk can be reopened.

Warning!

To prevent possible personal injury, always keep hands and fingers away from the door or trunk opening when closing a door or the trunk lid. Be especially careful when small children are around.

The pneumatic power closing assist mechanism cannot be interrupted once it has been engaged.

To prevent personal injury, never actuate the closing assist mechanism by tampering with the door or trunk lid latch.

Central locking system

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