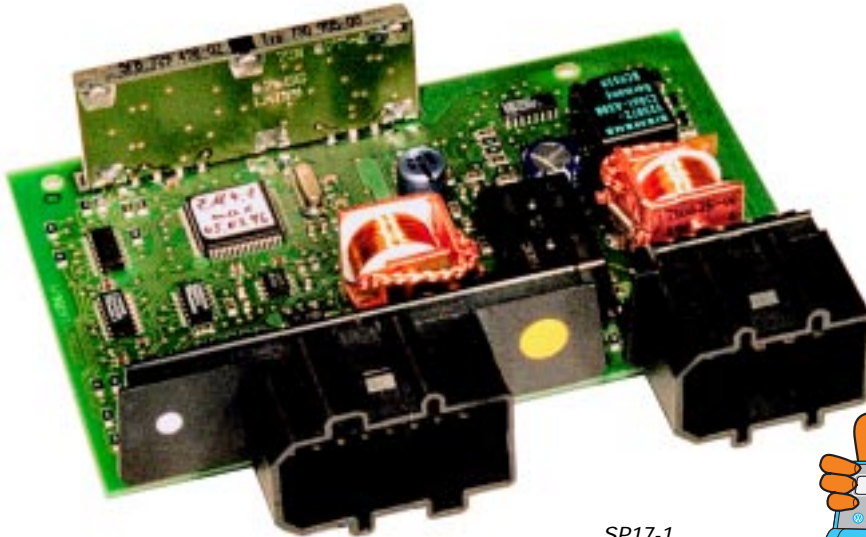
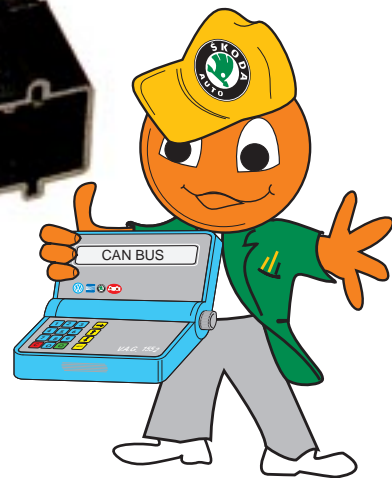


## The Decentralized Convenience Electronics System in the SKODA OCTAVIA



SP17-1



SP17-2

The SKODA OCTAVIA features a decentralized convenience electronics system, which comprises the following base functions:

- Electric central locking with superlock and interior light control
- Electric window lifters with roll-back function
- Electric mirror adjustment.

The following are also integrated optionally

- Radio remote control
- Anti-theft alarm including interior monitor.

These convenience functions are interlinked by a CAN bus system which enables all of the systems to transfer data.

Comprehensive self-diagnosis assists service work.

### **Important!**

Before carrying out any service work on the system, the first action is to start the self-diagnosis. Model changes may result in modifications to individual functions.

For this reason, always refer to the up-to-date workshop manual.

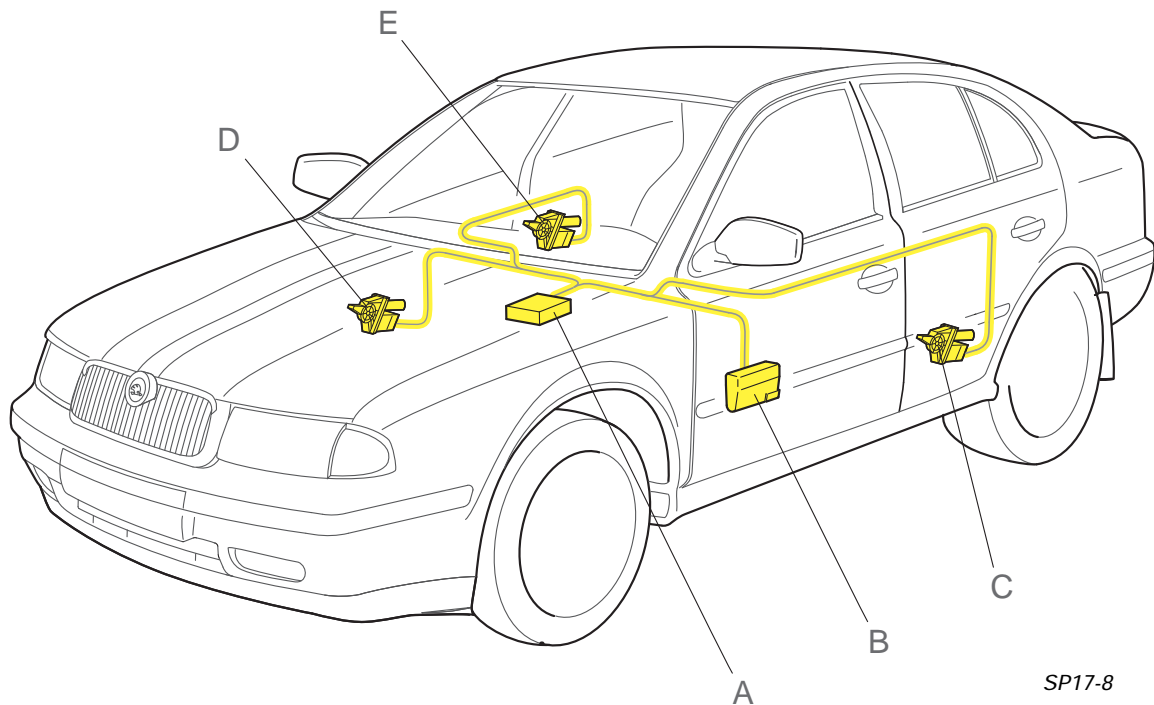
■	<b>Convenience Electronics</b>	4
	The Convenience Electronics System	4
	System Structure in the Vehicle	6
■	<b>Functions</b>	8
	The Driver's Door as an Example of the Operating Principle of the Convenience Electronics	8
	Central Locking	10
	The Driver's Door as an Example of the Function Diagram of Central Locking	11
	Electric Window Lifters	12
	Interior Light Control	14
	Radio Remote Control	16
	Mirror Adjustment, Mirror Heater	18
■	<b>Central Control Unit</b>	19
■	<b>Self-Diagnosis</b>	20
■	<b>Special Functions</b>	24
	Special Functions in the Event of a Crash	24
	Emergency Operation Functions	25
	System Behaviour in the Sleep Model	26
	Opening Versions of Central Locking	27
■	<b>Mechatronics</b>	28
	Door Lock Electronics	28
	Door Lock with Microswitch	29
	The Rotary Tumbler Switch	30
■	<b>CAN BUS Dictionary</b>	31
■	<b>Test Your Knowledge</b>	32

Refer to the Workshop Manual for notes on inspection and servicing, setting and repair instructions.



# Convenience Electronics

## The Convenience Electronics System



### The control units of the convenience electronics system

- A = Convenience electronics central control unit J393
- B = Driver's door control unit J386
- C = Rear left door control unit J388
- D = Passenger's door control unit J387
- E = Rear right door control unit J389

The decentralized convenience electronics system of the OCTAVIA comprises a central control unit and four door control units.

Each door control unit operates independently (decentralized). The central control unit does not have any master function.

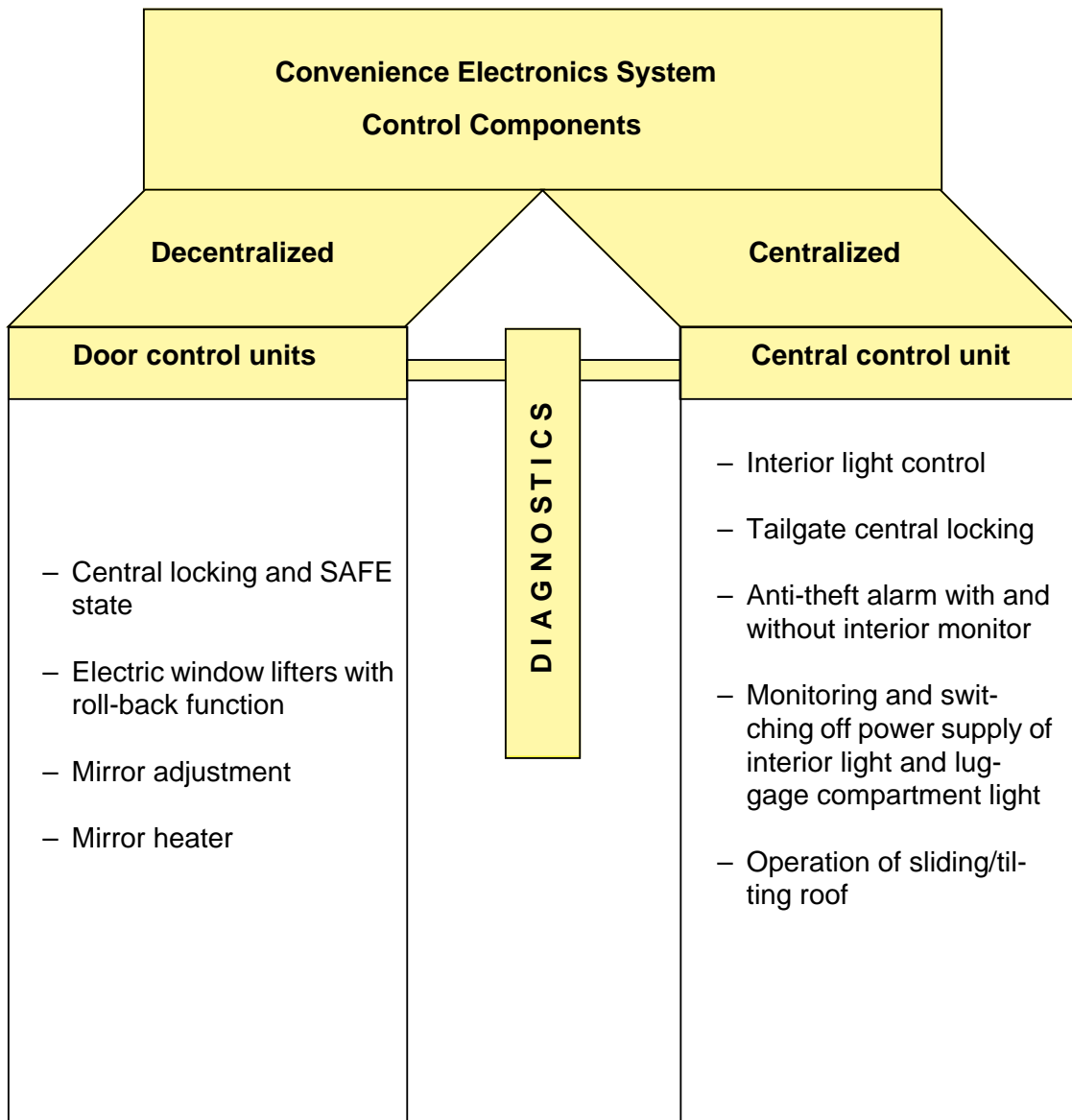
The control units of the 4 doors and the central control unit are interlinked by a 2-wire dataline (CAN = Controller Area Network).

The central control unit is at the same time the access point for the diagnostic interface of the vehicle.

Diagnostics is conducted using the K wire connection of the central control unit.

Information from the doors (switch signals, locking states) are signalled to the other users along the CAN datalines.

Information from the vehicle (e.g. ignition terminal 15, rear window heater, vehicle speed) is supplied by the central control unit as part of data transfer.



**Note:**

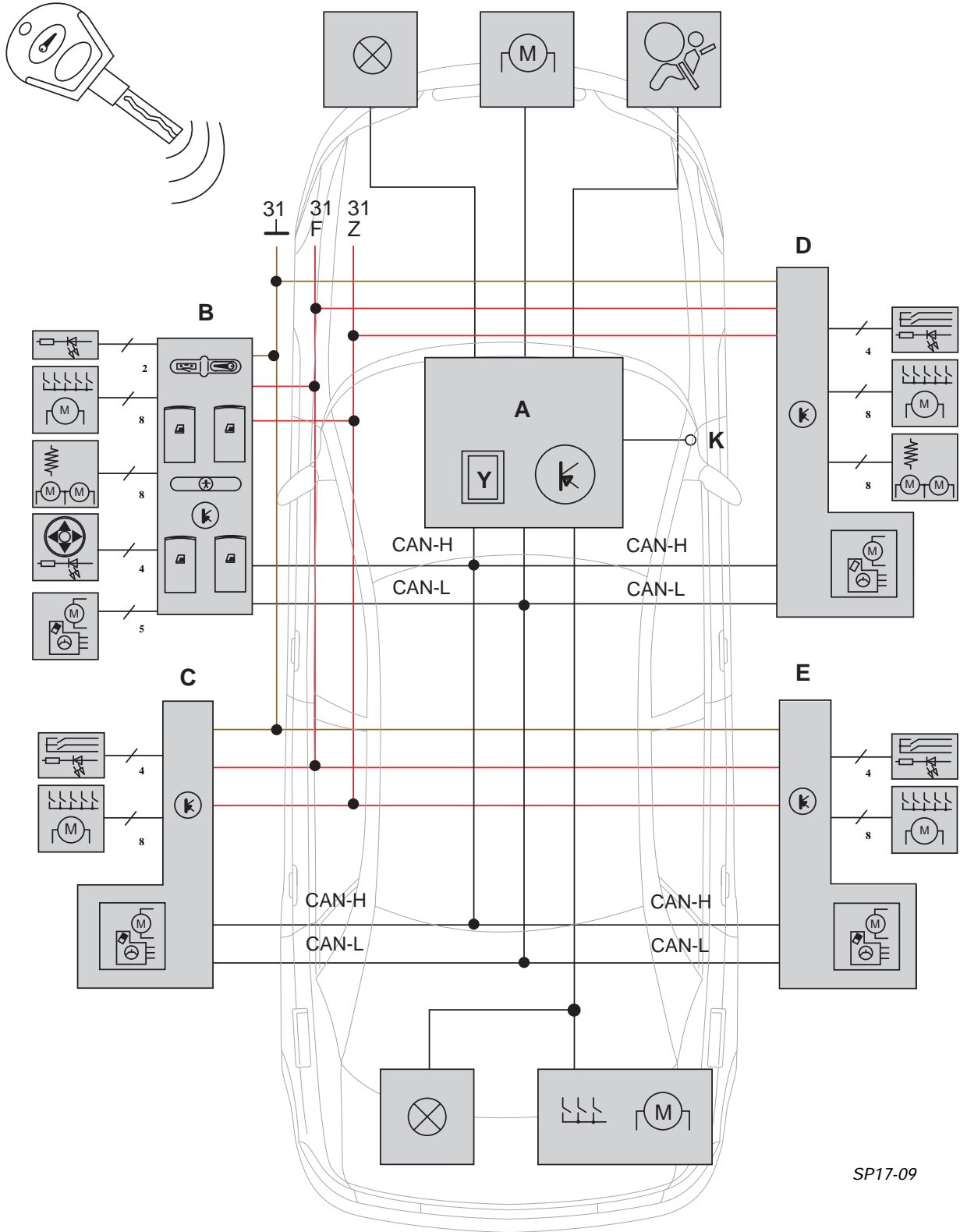
Vehicles equipped with the convenience electronics system on the one hand are not equivalent to vehicles fitted only with the central locking system on the other hand. The highest equipment level is offered by the convenience electronics system with central locking, electric window lifters and radio remote control.

Models with a lower level of equipment feature central locking with manually operated windows.

The description of the convenience electronics system in this booklet relates to the highest equipment level.

# Convenience Electronics

## System Structure in the Vehicle



SP17-09

The structure diagram clearly illustrates the benefits of the CAN bus system in the vehicle:

- Greatly simplified wiring.
- Short wiring runs between sensors, actuators and control unit in the door area.  
This wiring ( — ) is restricted to the door area.
- Only 5 wires have to be run through the separation point of the door to the vehicle. These are the CAN-H and CAN-L wires, the vehicle earth (31), the power supply for the window lifters (30F) and central locking (30Z).
- The CAN is linked by 4 connector stations.  
These are positioned at the left and right each at the A and B pillars.  
Each connector station has its own earth point.

The data transfer which takes place in the normal operating mode is structured in a very simple way. Each control unit sends a message every 20 ms. This message contains the status data and commands.

All the bus users are therefore informed regarding the current operating status of the system at this interval.




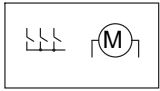






Failure of a system user is detected by a message not being sent.

Event-related data transfer takes place in those circumstances when special operating modes are activated.

Special operating modes are e.g. in the service sector: recoding, diagnostics, adaptations.

## Legend

- A = Convenience electronics central control system J393 with aerial
- B = Driver's door control unit J386
- C = Rear left door control unit J388
- D = Passenger's door control unit J387
- E = Rear right door control unit J389
- K = K wire diagnostic connection

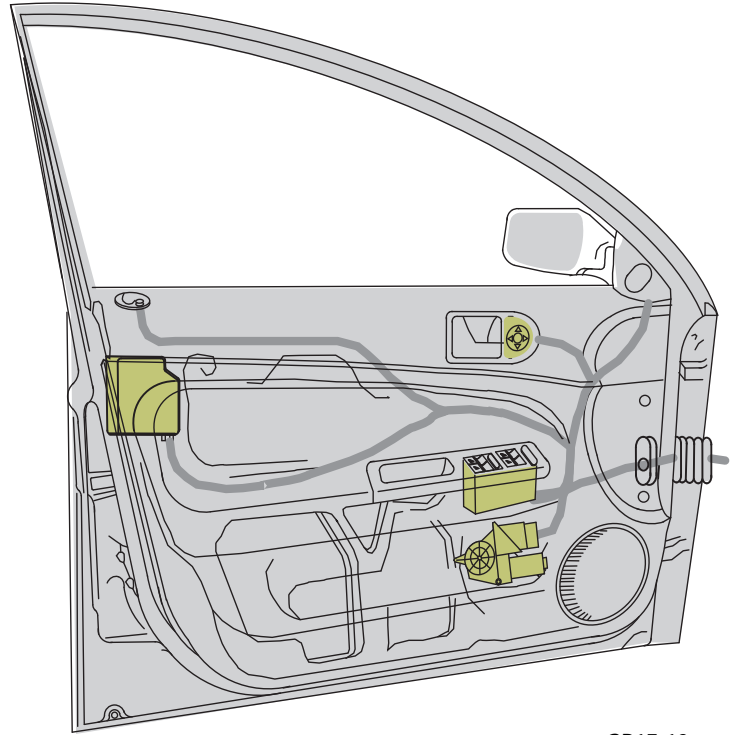
	Activation display		Window lifter pushbutton
	Door lock		Boot lock
	Mirror		Interior light/Luggage compartment light
	Mirror adjustment switch		Electric sliding roof
	Window lifter motor		Airbag control unit

# Functions

## The Driver's Door as an Example of the Operating Principle of the Convenience Electronics

The following components are integrated in the driver's door:

- Central locking system
- Electric window lifter
- Electrically adjustable exterior mirror with heater
- Mirror adjustment switch for left and right exterior mirror
- Switch console for all window lifters, safety switch (locking switch for operating rear window lifters), central locking switch



SP17-10

In a system with **conventional technology** the central locking control unit would be positioned behind the instrument panel. The window lifter motors and mirror adjustment motors in this case are operated directly by the relevant switches. Status messages are supplied along separate wiring through the door contact switches. Additional wiring is also required for operating the central locking motor.

What this would mean is:

**About 33 wires** would have to be run from the driver's door to the interior.

If door control units using the **CAN bus system** are used, the **number of wires** which have to be run through the door separation point, is reduced **to 5**.

The driver's door control unit forms a unit together with the switch console (the door control unit in the other doors is positioned at the window lifter motor).

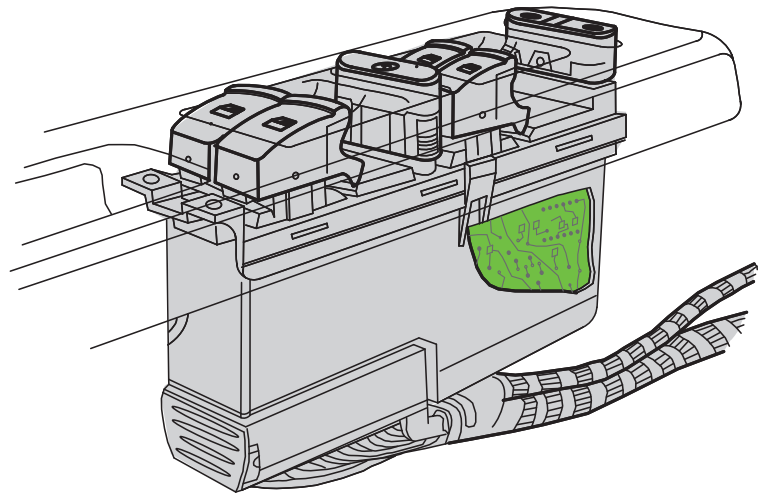
## Functions

### Controlling the central locking

- Detecting whether door is closed/open
- Detecting key position (lock/unlock)
- Controlling the central locking motor in the door lock

### Controlling the window lifter

- Detecting operation of pushbutton (with selection of which window is opened)
- Operating the motor in the driver's door
- Detecting the need to activate the roll-back function



SP17-11

### Controlling mirror adjustment and heater

- Detecting operation of adjustment switch and mirror selection
- Operating the motors and, as appropriate, the heater

### Transmitting information through the CAN bus to other doors

- Window lifters
- Closing central locking
- Right-hand exterior mirror
- Forwarding electric fault messages on request

### Receiving information from the central control unit

- Lock/unlock central locking system (with radio remote control)



#### Note:

Entire keypad of the switch console is deactivated if the car has been locked from the outside.



# Functions

## Central Locking

### Locking zones

All doors, tailgate

### Exterior operating points

Driver's door lock cylinder  
Front passenger's door lock cylinder  
Tailgate lock cylinder

Optionally remote control

### Interior operating points

Lock/Unlock button in driver's door

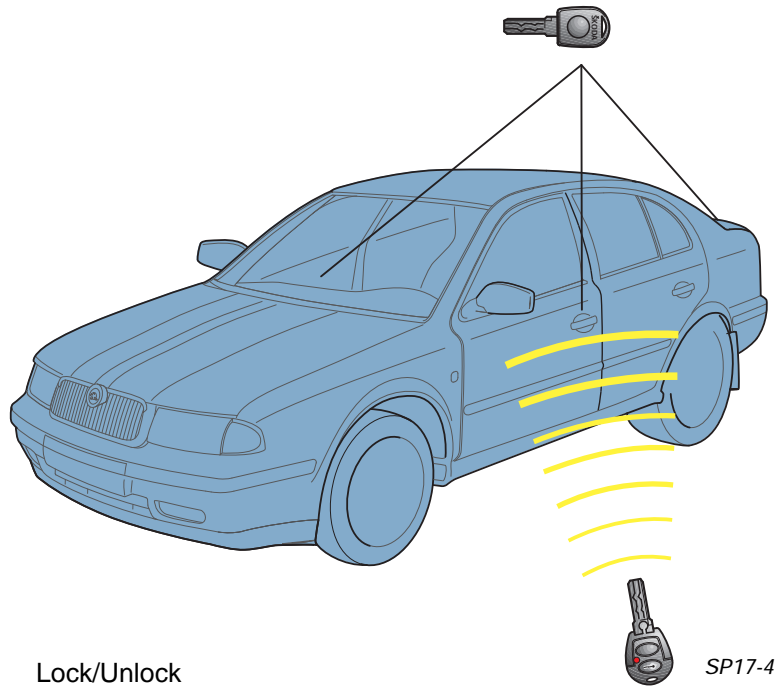
### Special features

When the doors are locked, they move into the theft-protected status (= SAFE). This is indicated visually by an LED next to the interior locking button in the driver's door flashing.

In the SAFE status, the interior locking button is disconnected mechanically, the door can only be opened from the inside using the door handle.

All 4 doors are locked simultaneously with the Lock/Unlock button.

If the interior locking button is operated, only the door of the relevant operating point is locked.



Lock/Unlock button driver's door



SP17-7

Initial situation	Safety status
A CLOSE command from outside and ignition off	All doors SAFE, SAFE LED comes on
Two CLOSE commands from outside within 5 seconds and from same operating point	All doors locked Luggage compartment locked
An OPEN command from an operating point	Vehicle is unlocked completely Luggage compartment unlocked if lock position "I" Luggage compartment locked if lock position "–"



### Note:

**CLOSE** commands are only carried out if the door of the operating point and the driver's door are closed.  
Refer also to page 30.

## Driver's Door as an Example of Function Diagram of Central Locking System

The central locking system operates on the electromotive principle.

Each door has a locking unit (F220 to F223) and a door control unit (J386 to J389).

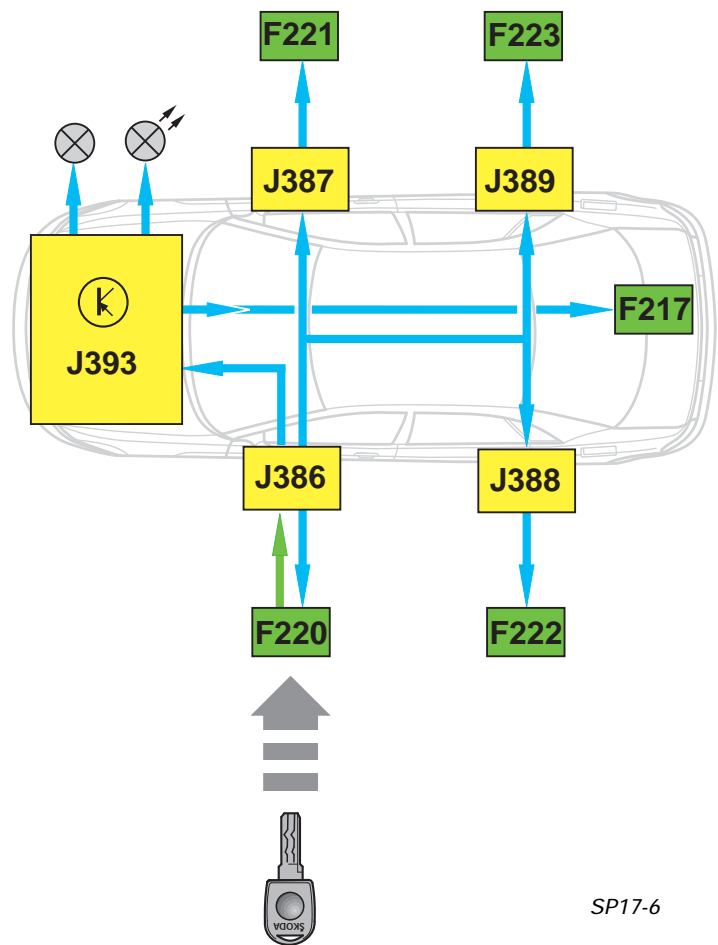
The tailgate has an actuator F217.

### The locking operation includes:

- Operation of all the users at the lock system,
- The "lock" function in the door locks,
- The information for initiating other convenience functions to the central control unit (e.g. locking tailgate, operating interior light, operating anti-theft alarm).

### Example of the sequence of a locking operation (block diagram)

- The driver's door control unit J386 is activated by the locking unit F220 as a result of the locking operation using the key.
- A data transfer check is carried out in J386 to determine whether locking can proceed, e.g. "is driver's door closed?"
- Information to own locking unit F220 "Lock driver's door".
- Signal over dataline (CAN) to central control unit J393 and to all door control units for locking operation.
- All door control units independently initiate the "lock" function.
- At the same time, the windows are closed and the locking buttons of the doors automatically blocked (SAFE status).
- The convenience electronics central control unit J393 activates the tailgate actuator F217, switches off the interior light and activates the anti-theft alarm.



SP17-6

The procedure can also be initiated using the radio remote control depending on the vehicle equipment (refer to page 16).

# Functions

## Electric Window Lifters

The OCTAVIA features power-operated window lifters at the front and rear side windows as optional equipment.

Each door is provided with a window lifter motor.

The window lifter motor operates a cable system to which the window is attached.

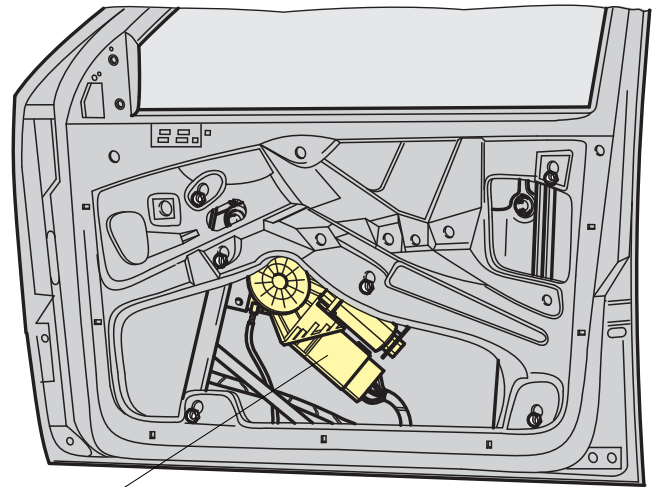
The window lifter motors are controlled decentralized through the relevant door control unit.

The window lifter drive features an electronic power limiter (roll-back function). A Hall sensor in each door monitors the operating speed of the window lifter motor.

If an obstacle slows down the movement of the window as it is closing - the speed is reduced as a result - this is detected immediately and the direction of operation of the motor is reversed.

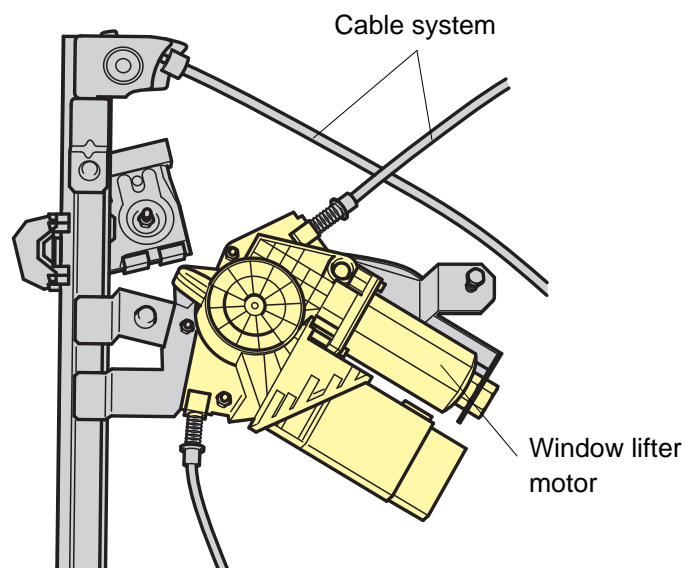
This reliably prevents any parts of the body being jammed in the window.

The roll-back function is active if the window lifters are operated from the inside. It is not active if the car is locked with the key.



Door control unit

SP17-31



Window lifter motor

SP17-32



### Note:

The window lifters have to be initialised each time the battery is disconnected (determining position of windows).

### Interior operating points

- Pull-push button in driver's door for each window
- Pushbutton in the other doors for the relevant door window
- Child safety lock in the driver's door

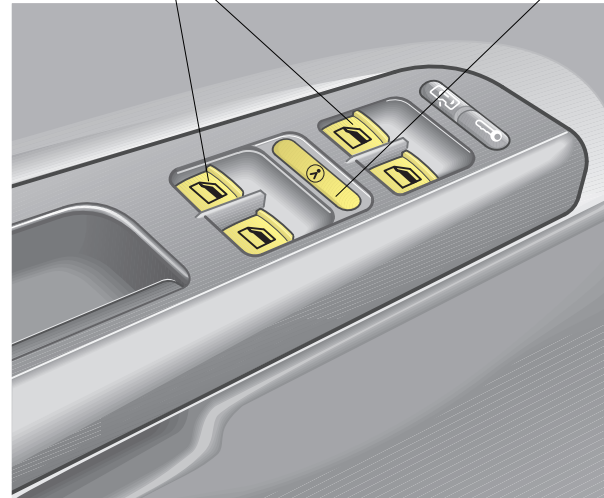
### Exterior operating points

- Lock cylinders in driver's door, front passenger's door, tailgate



**Note:**  
The window lifter buttons of the rear windows can be deactivated with the child safety lock.

Pull-push button for driver's door window lifter      Child safety lock



SP17-5

Window operation with ignition ON	
Automatic window opening	Press pushbutton briefly (less than 300 ms)
Manually controlled window opening	Press pushbutton and hold; window continues to open so long as pushbutton is pressed (more than 300 ms)
Automatic window closing (front windows only)	Briefly press pushbutton (less than 300 ms)
Manually controlled window closing (front and rear windows)	Press pushbutton (more than 300 ms) and hold; window closes for as long as pushbutton pressed
Interrupting automatic window operation	Press pushbutton for this window
Interrupting manually controlled window operation	Operate second pushbutton for the relevant window (in the case of windows which can be operated with 2 pushbuttons)

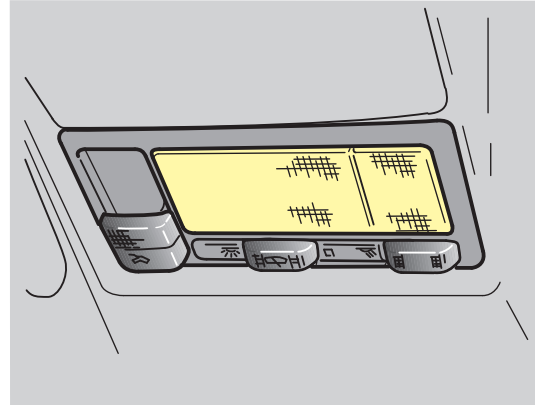
Window operation with ignition OFF	
No automatic window operations	
Function retained	Up to 10 minutes after ignition off
Retention of function interrupted	If a front door is opened
Closing	<ul style="list-style-type: none"> <li>– Pushbutton: raise until window is closed. No automatic operation</li> <li>– Lock cylinder "Central locking CLOSED" command for more than 1 sec.</li> </ul>
Opening	<ul style="list-style-type: none"> <li>– Pushbutton: press and hold briefly. Window opens fully (automatic opening)</li> <li>– Lock cylinder "Central locking OPEN" command for more than 2 sec.</li> </ul>

# Functions

## Interior Light Control

The convenience electronics central control unit J393 performs the controlled (and dimmed) switching on and off of the interior lights as well as limiting their operating period.

The operating period of the interior lights is limited to a maximum of 10 minutes if the doors are open and the ignition switched off.



SP17-30

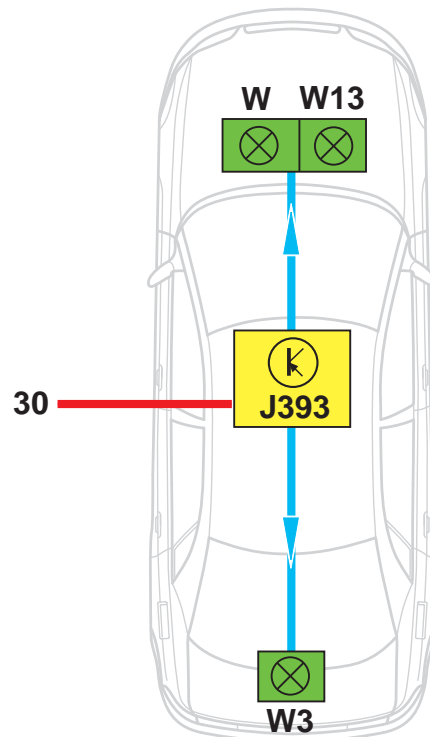
<b>Initial situation</b>	
Interior light set to door contact	
<b>Status</b>	<b>Interior light</b>
Car unlocked with key or remote control	Switched on until ignition on and doors closed, dimmed off (on for max. 30 seconds)
One door is opened from inside (all other doors closed)	Switched on. Dimmed off 30 seconds after door is closed
Ignition key is withdrawn when doors closed	Remains on for 30 seconds, dimmed off
<ul style="list-style-type: none"> <li>– Car is locked with door closed</li> <li>– Last door is closed with car locked</li> </ul>	Undimmed "OFF"
Crash sensor activated	Undimmed "ON" for 10 minutes

The power for the interior lights and reading light and also for the luggage compartment light is supplied through the central control unit.

If one or several lights have been switched on manually, the power is switched off after 1 hour through an internal relay in the central control unit if the ignition is off.

### Protection against battery being discharged!

The procedure is repeated after the relevant light has once again been switched off and on.



SP17-12

- W Front interior light
- W3 Luggage compartment light
- W13 Front passenger's reading light



### Note:

If several lights have been switched on, all the lights should then be switched off.

This also applies to the luggage compartment light and reading light.

# Functions

## Radio Remote Control

The radio remote control can be used to activate the locking and unlocking operations of the central locking system without operating the door lock mechanically.

The radio transmitter with batteries is housed in the handle of the car key (ignition key). The radio receiver is integrated in the convenience electronics central control unit.

### Locking zones

All doors, tailgate

### Operating points

Pushbuttons in ignition key

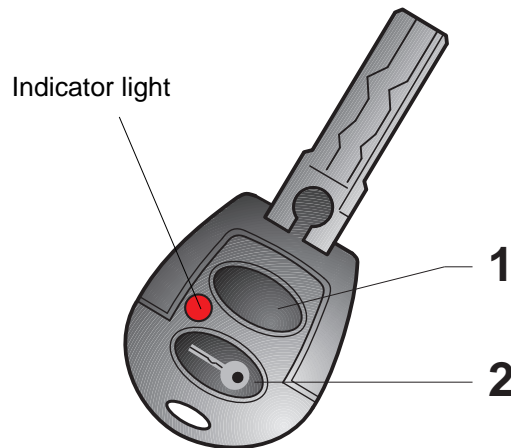
The ignition key features 2 pushbuttons which have to be pressed accordingly:

"Central locking OPEN" = Press key 1 briefly once

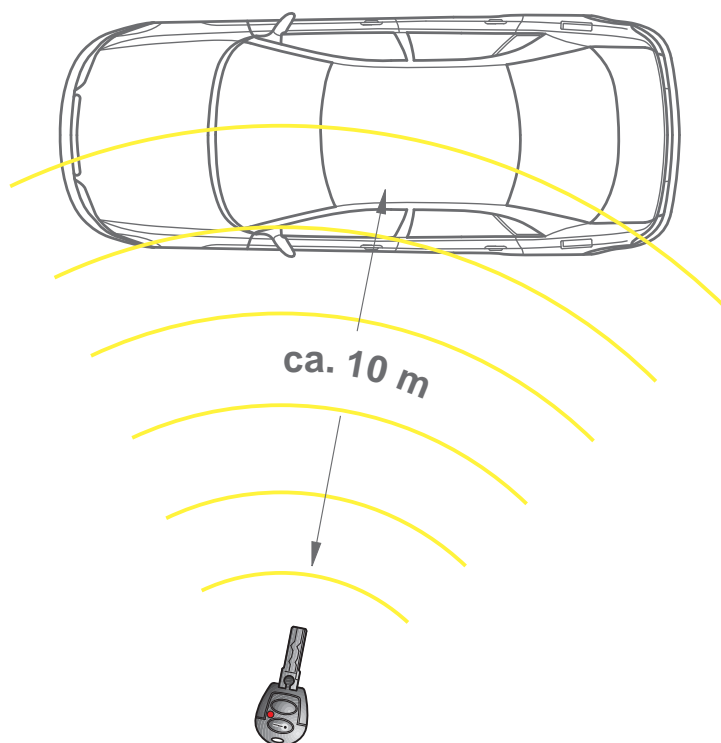
"Central locking CLOSED" = Press key 2 briefly once

### Special features/Operating range

- The radio remote control can be used to operate the central locking and anti-theft alarm from a distance of up to 10 metres. The range is reduced if the capacity of the batteries in the ignition key weakens.
- If no door or the tailgate has been opened within 30 seconds after transmitting an unlock command with the remote control, the previous status of the central locking and anti-theft alarm is automatically recreated.
- An indicator light in the key flashes for as long as the opening or closing button is pressed.



SP17-17



SP17-18

## Function

When one of the buttons in the ignition key is pressed, a coded signal is transmitted to the convenience electronics central control unit J393.

The aerial at the central control unit receives the signal, the control unit analyses it and passes the control pulse for locking/unlocking the 4 doors and the tailgate through the CAN to the door control units and directly to the central locking actuator of the tailgate.

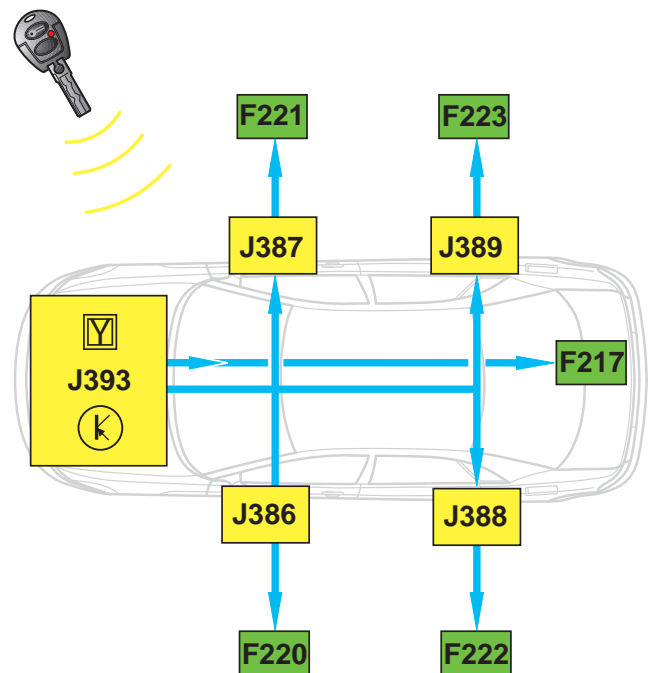
## Transmitter

Power for the transmitter is supplied by 2 batteries. The radio frequencies are matched to the relevant national frequencies.

## Coding

Transmitter and receiver are coded.

Coding ensures that the vehicle can be opened only with the key which is supplied with the vehicle.



SP17-19

It is necessary to adapt a radio transmitter key if:

- the system is commissioned (manufacturer)
- an additional key is added
- a transmitter key is operated more than 200 times outside of the reception range of the vehicle (e.g. playing with the buttons).

## Possibilities of initialising:

### Version 1

- Switch on ignition (with additional key)
- Lock car manually with key to be programmed (learned)
- Transmit a radio signal
- Interval > 1 second
- Transmit a second radio signal (completion of learning process).

### Version 2

- Switch on ignition and connect V.A.G tester
- Enter system with "46"
- Select "10" Adaptation
- Cancel all keys, select "00" or initialising mode "01"
- Enter number of keys
- Readout "Store adaptation?" + enter "Q"
- Operate a pushbutton of transmitter key within 15 seconds.

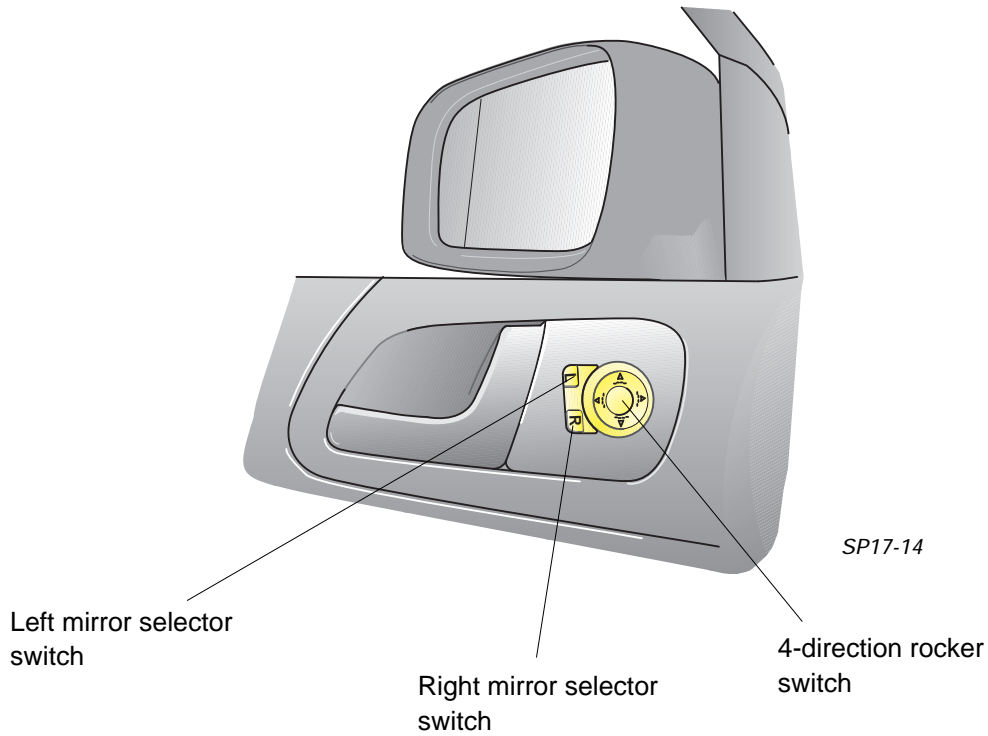


# Functions

## Mirror Adjustment, Mirror Heater

### Operating points

- Left mirror selector switch
- Right mirror selector switch
- Mirror adjustment 4-direction rocker switch



Mirror adjustment	
Requirement	operates
Ignition on	for as long as 4-direction rocker switch is operated

Mirror heater	
Requirement	operates
Ignition on	with rear window heater on

# Central Control Unit

## The Convenience Electronics Central Control Unit J393

The central control unit does not perform any central function (master function) for the convenience electronics system, but represents the interface of the 4 control units to the rest of the vehicle and to the diagnostic connection.

It is positioned in the interior of the vehicle behind the dash panel insert.

The central control unit combines the functions which flow centrally into the convenience system of the vehicle, but which it would technically not be reasonable to integrate in the decentralized door control units.



SP17-1

Central functions	
<ul style="list-style-type: none"><li>– Interior light control</li><li>– Tailgate central locking</li><li>– Anti-theft alarm with and without interior monitor</li><li>– Receivers for radio remote control</li></ul>	<ul style="list-style-type: none"><li>– Monitoring and switching off power supply for interior lights and luggage compartment light</li><li>– Operating sliding/tilting roof</li><li>– Diagnostics (fault memory and access to diagnostic connection)</li></ul>

If a central control unit is replaced, it is only necessary to adapt it to the vehicle if a radio remote control is integrated in the system.

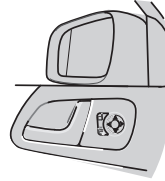
The vehicle equipment of central locking with manual window lifters features a different control unit. The installation point and housing are identical although the contacts differ. The other functions are identical with the exception of electric window lifters and mirror adjustment.

# Self-Diagnosis

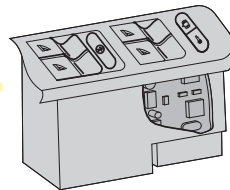
## Diagnostic function of door control units

- Monitoring the functions carried out in the relevant door
- Storing faults detected
- If a door control unit detects a total bus failure, it disconnects from the bus for a limited period and then once again attempts to transmit a message.

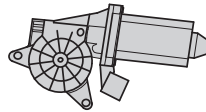
Electrically adjustable mirror with mirror heater and mirror adjustment switch



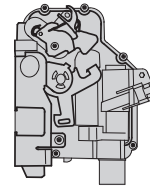
Driver's door control unit J386 with window lifter buttons, locking switch for central locking (Lock/Unlock button) and child safety lock for rear window lifter buttons



Driver's door window lifter motor



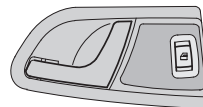
Driver's door lock



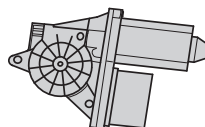
Driver's door anti-theft alarm LED



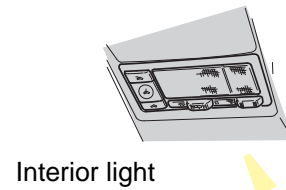
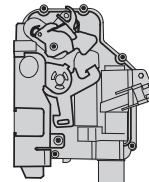
Rear left power window button



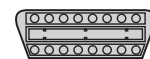
Rear left door control unit J388 with window lifter motor



Rear left door lock



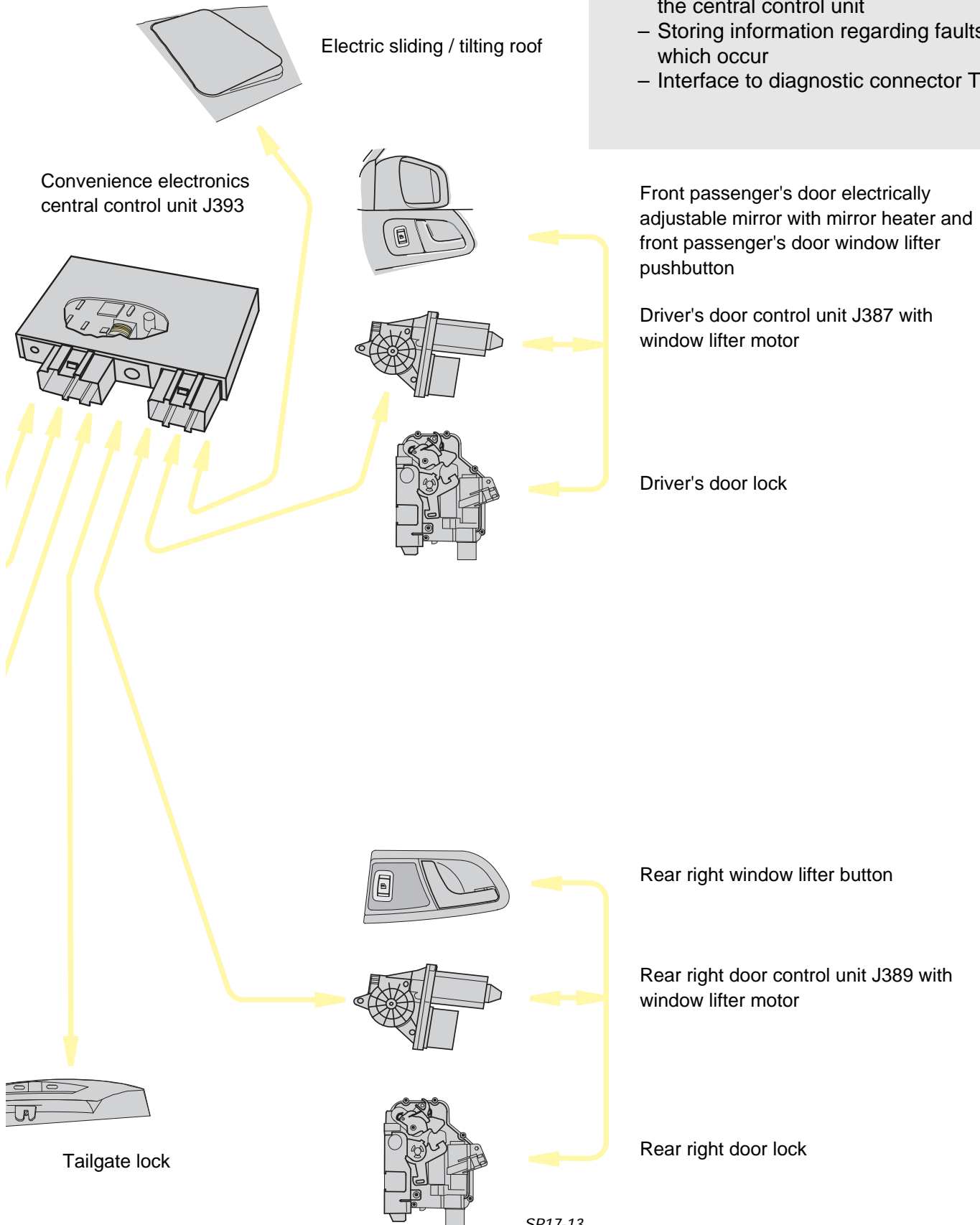
Interior light



Diagnostic connector T16

### Diagnostic function of central control unit

- Monitoring the functions carried out by the central control unit
- Storing information regarding faults which occur
- Interface to diagnostic connector T16



SP17-13

# Self-Diagnosis

The comprehensive self-diagnosis of the convenience electronics can be conducted with the vehicle system tester V.A.G 1552 or with the fault reader V.A.G 1551.

**Address word: "46 Zentral SG Komfort" (46 Central Convenience CU").**

## Available functions:

- |                                      |    |
|--------------------------------------|----|
| – Interrogating control unit version | 01 |
| – Interrogating fault memory         | 02 |
| – Final control diagnosis            | 03 |
| – Erasing fault memory               | 05 |
| – Ending output                      | 06 |
| – Coding control unit                | 07 |
| – Reading measured value block       | 08 |
| – Adaptation                         | 10 |



SP17-29

Please refer to the current workshop manual of the SKODA OCTAVIA for the individual fault codes.



## Note:

The convenience electronics system is characterized by four operating states, which also appear in the measured value blocks:

- SAFE
- Locked
- Unlocked
- Door OPEN

When carrying out fault finding, the first action is to start diagnosis.

Do not carry out any mechanical work until after completing diagnosis.

Switch on the ignition, enter the address word "46" to create the link to the system and then you can continue diagnosis with the ignition switched on or off.

All the systems which interchange signals and commands, should be regarded in the self-diagnosis and in fault finding as a total system.

After carrying out repairs, read the fault memories of all the control units in order to detect any faults which may be stored.

This principle applies both to the conventional wiring system as well as to the CAN - Controller Area Network.

## Self-diagnosis of the CAN

The self-diagnosis for the wiring of the CAN detects short circuits or open circuits on a CAN wire.

## Short circuits in the CAN

Short circuits are detected for both CAN wires. This also applies to a short circuit from the CAN-high wire to the CAN-low wire. If a short circuit occurs at one of these wires, the relevant wire is then inoperative.

Possible types of faults are:  
Short circuit to positive  
Short circuit to earth, and  
Short circuit to each other.

Self-diagnosis is not able to detect in which part of the CAN wire a short circuit exists.

The location of the short circuit can only be pinpointed by disconnecting one after the other the door wiring looms at the connector station in the A or B pillar and checking the readout of the measured value block (function 08, display group 12).

## Open circuits in the CAN

An open circuit in each control unit can be detected by comparing the two CAN wires. The fault status is analysed and signalled to the other control units. The central control unit gathers these fault messages and displays or stores them, respectively.

If self-diagnosis signals to the central control unit that a user is not attainable, the following information is output, e.g.:

*Driver's door control unit J386 no communication*

## 03 Final control diagnosis

The following actuators are displayed in the final control diagnosis function:

Readout in tester	Reaction
<ul style="list-style-type: none"><li>- Alarm horn -H12</li><li>- Operation of turn signal lights</li><li>- Interior lights -W</li><li>- Sliding roof close signal</li><li>- Lighting of switches and instruments</li><li>- CL SAFE indicator light</li></ul>	<ul style="list-style-type: none"><li>- Alarm horn supplies continuous signal</li><li>- Turn signal lights come on and remain on</li><li>- Interior and reading lights come on</li><li>- Sliding roof closes</li><li>- Instrument lighting becomes brighter</li><li>- Comes on</li></ul>



**Note:**  
The ignition key has to be withdrawn for the "Sliding roof close signal" activity.

# Special Functions

## Special Functions in the Event of a Crash

Locked doors represent an additional obstacle for occupants and rescuers in the event of a crash.

"See and be seen in an emergency situation" is an important help for other road users.

The electronic convenience system of the OCTAVIA features automatic circuits which help to minimise the emergency situation in the event of a crash.

### Operating requirements

- Ignition on
- Interior light in "door contact" switch position

### Activities in the event of a crash

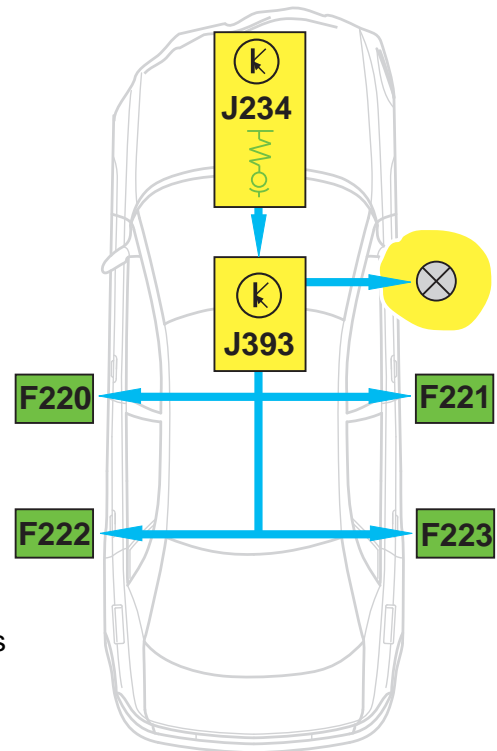
- The central locking is unlocked.
- The interior light is switched on for 10 minutes.

### Function

The crash sensor in the airbag control unit J234 is activated by the deceleration of the vehicle in the event of a crash.

The convenience electronics central control unit J393 receives the sensor signal.

The actuators for the central locking and interior light are operated.



SP17-3

- F220-223 = Locking units
- ⊗ = Interior light
- J234 = Airbag control unit
- J393 = Convenience electronics central control unit



### Note:

You should advise the customer to set the interior light to the "door contact" switch position when driving to enable the interior light circuit to operate properly in an emergency situation.

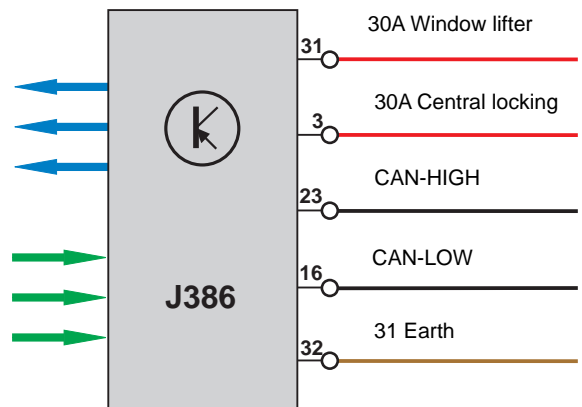
These special functions are activated when carrying out final control diagnosis of the airbag. After this, operation of the central locking system is not active again until after the ignition has been switched off and on.

## Emergency Operating Functions

As a result of the decentralized design and operating principle of the convenience electronics system, the effects of any partial defects are kept within very confined limits. For example, failure of a component in the front passenger's door has only minor effects on the functions in the other doors.

Special emergency operating functions are a feature of the system safety:

- Two voltage supplies  
Each unit features two voltage supplies. The circuits for the central locking and window lifters are separate. If one circuit fails, the major part of the functions is retained.
- 2-wire bus line  
The control units are linked by a 2-wire dataline (CAN-HIGH, CAN-LOW). If one line fails, the system switches over automatically to 1-wire operation. All the functions are retained. The fault is stored in the fault memory.



SP17-28

- Signals from faulty sensors  
Static signals supplied by faulty sensors/switches do not result in the function being blocked. Such signals are ignored in accordance with a defined strategy and only those part functions of the system which are required for safety reasons, are activated.

Examples of emergency operating functions	
<b>No data transfer</b>	- Door control unit The system is protected by setting to SAFE
	- Window lifter motor No further automatic operations



**Note:**

In order to detect whether bus data transfer still exists, press the Lock/Unlock button and observe whether the locking buttons of all the 4 doors open and close. After this, open a door and observe whether the interior light comes on. If this is not the case, there is an interruption in data transfer to one of the users.



# Special Functions

## System Behaviour in Sleep Status

The convenience electronics system is also operational when the ignition is switched off and the vehicle is closed (locked).

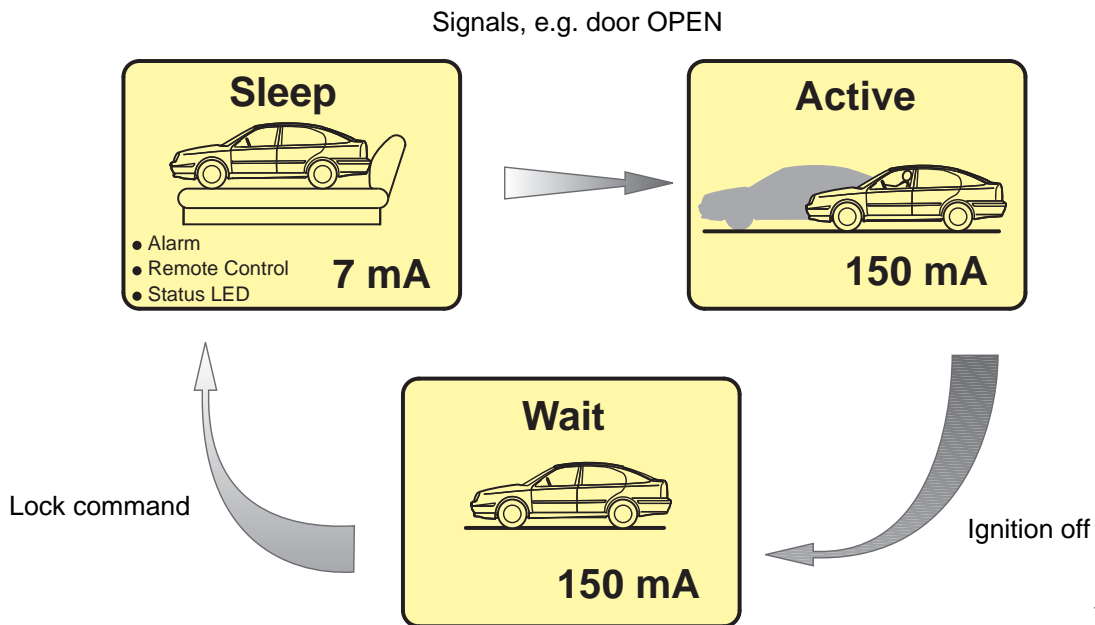
For this reason, particular significance is attached to the closed circuit current consumption.

Minimal functions when vehicle locked:

- Anti-theft alarm
- LED status display
- Radio remote control

No communication takes place within the network in this **sleep mode**.

The closed circuit current consumption (without SAFE LED) in the system is about 7 mA.



Operating states and relevant closed circuit currents of system

All the events which necessitate a reaction of the entire system (e.g. door OPEN signal), activate an open circuit in one of the control units and result in a wake-up command in the network.

The system is now in the **Active** status with a closed circuit current consumption of 150 mA. The response time until full operational readiness of all control units is less than 100 ms.

If the ignition is switched off all the control units move into the **Wait** status.

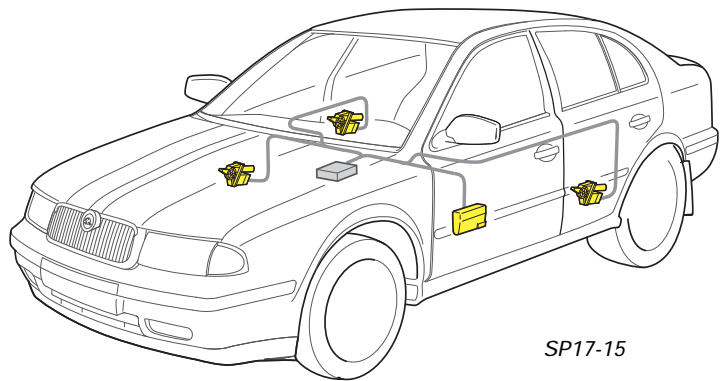
Full system function is retained in this operating state, each control unit still processes any pending tasks (e.g. window lifter function is retained for a certain time). After all the tasks have been processed or the superlock command received, each control unit sets the set sleep bit in its cyclical message.

As soon as all the bus users have set this bit and have recognized the set sleep bits of the other users, they cease data transfer and, after a short waiting time, move into the sleep mode.

## Opening Version of Central Locking Coding with V.A.G 1551 / 1552

The convenience electronics central control unit J393 is programmed (coded) by the vehicle manufacturer to match the vehicle equipment and the national version.

It is coded for 4 window lifters and "all doors" unlocking of the central locking system.



SP17-15

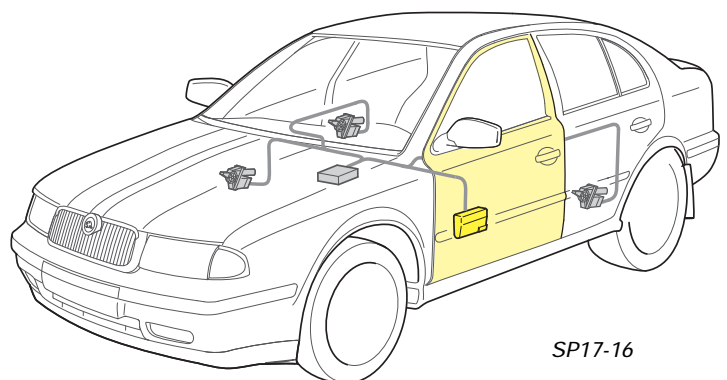
An existing or a new convenience electronics central control unit can be reprogrammed in the SKODA Service Centre to "single door opening".

If **single door opening** is programmed, **only the driver's door** is unlocked with an "OPEN" central locking command using the key or the remote control. The other doors and the tailgate are switched from "SAFE" to locked.

To unlock all the doors, it is then necessary to supply a second "OPEN" command with the key or the remote control within 5 seconds.

If need be, the front passenger's door/tailgate operating point can be unlocked individually with the key.

The car is automatically locked when the front passenger's door/tailgate is closed.



SP17-16

Please refer to the current workshop manual of the SKODA OCTAVIA for the procedure for reprogramming.



### Note:

The customer's attention can be drawn to this opening version when purchasing the car or during the SERVICE Inspection.

Please explain to the customer the new opening version.

## Door Lock Electronics

The door contact switches in the driver's and front passenger's doors for the interior light control are familiar from the SKODA FELICIA.

The interior light is controlled directly and with separate wiring through these door contact switches. The signal for the central locking is supplied by the microswitch from the central locking actuator to the central locking control unit, likewise using separate wiring.

In the OCTAVIA Convenience System the relevant signals are sent over the databus system as information to those points where it is needed.

The system interlinking is very considerably characterized by the interaction of mechanicals and electronics.

For the first time, microswitches and electrical connections are integrated directly in the door locks.

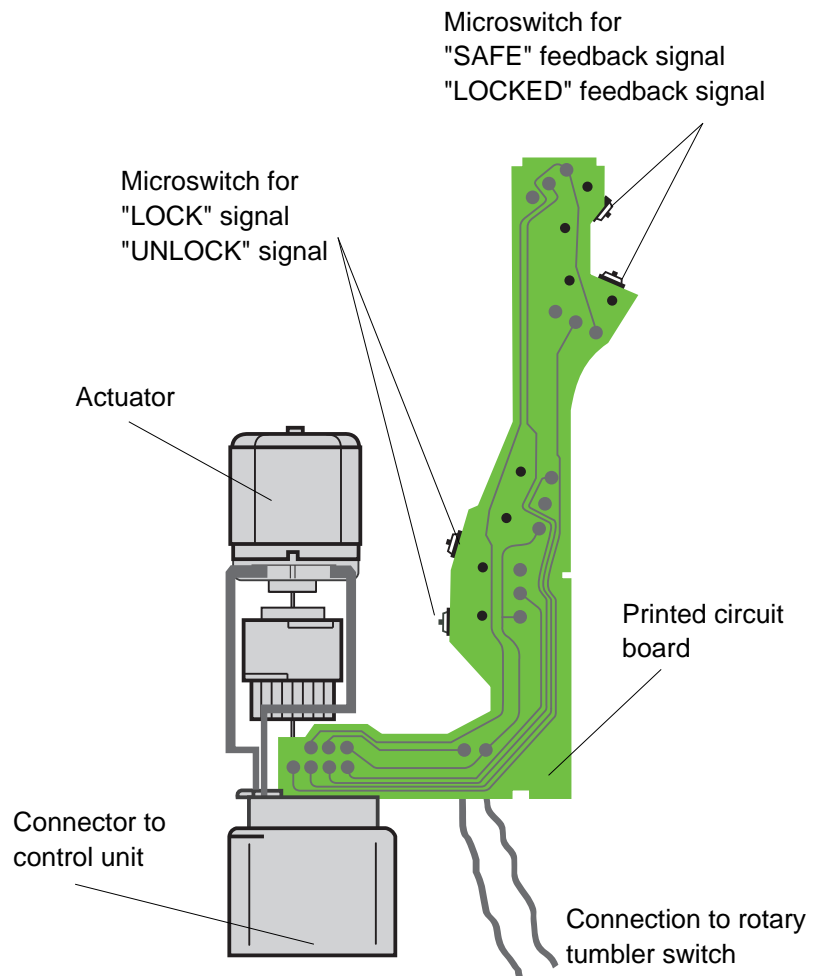
The microswitches signal the following

- "DOOR OPEN" signal
- "LOCK" signal
- "UNLOCK" signal
- "LOCKED" feedback signal
- "SAFE" feedback signal.

They supply within a very confined space the signals which are necessary for the process of information in the convenience system, without themselves operating directly.

The microswitches and electrical connections are accommodated on a printed circuit board and take up minimum space.

Only the rotary tumbler switch, which for operating reasons has to be positioned locally at a separate point, is linked by wiring.



SP17-26

Printed circuit board with actuator in door lock

## Door Lock with Microswitch

### "LOCK" signal "UNLOCK" signal

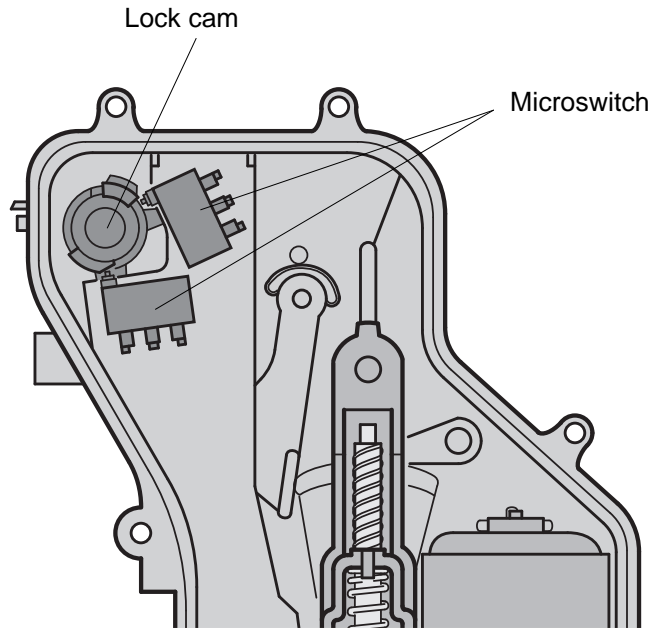
A lock cam is located in the door lock of the driver's and front passenger doors, and next to this 2 microswitches.

The lock cylinder projects from the outside into the lock cam and, on the inside in the lock, it is provided with cam tracks.

Depending on the locking operation with the car key - CLOSE or OPEN - the cam tracks move up against a microswitch.

The microswitch is closed as a result.

Its signal is the commencement of the locking operation "central locking" with all the subsequent functions of the convenience electronic system, e.g. holding lock position in order to close open windows.



SP17-24



### Note:

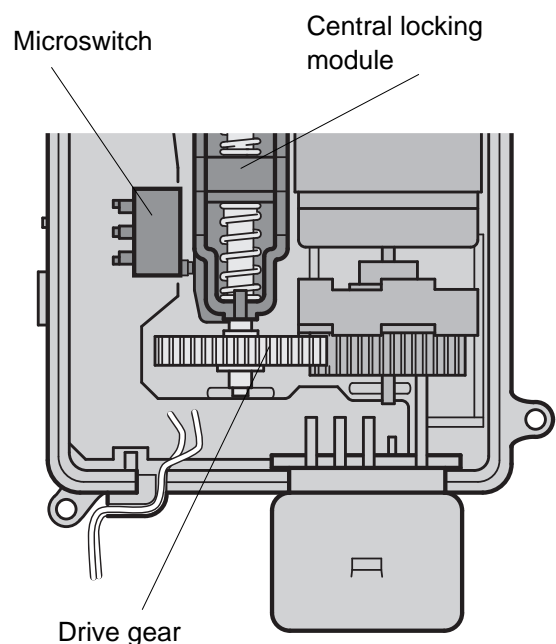
Manual locking/unlocking of the door lock is also performed by means of the lock cam in the event that the central locking system does not operate or if the car battery is not connected.

### "LOCKED" feedback signal

The "locked" feedback signal indicates the lock status to the door control unit. It is provided through a microswitch in the door lock of each door if the car is locked manually or electrically.

The central locking module is in the lowest position in the "unlocked" setting. Its leading edge presses the microswitch closed. If the car is locked, it moves up, the microswitch opens and supplies its "locked" signal.

This signal is important in terms of the control unit in order to avoid an electrical actuation being again carried out. Otherwise the system would switch to the SAFE position.



SP17-25

## The Rotary Tumbler Switch

The rotary tumbler switch is positioned directly below the rotary tumbler in the door lock. It is located in the lock of each door.

It is operated by the rotary tumbler, which is designed as a cam track.

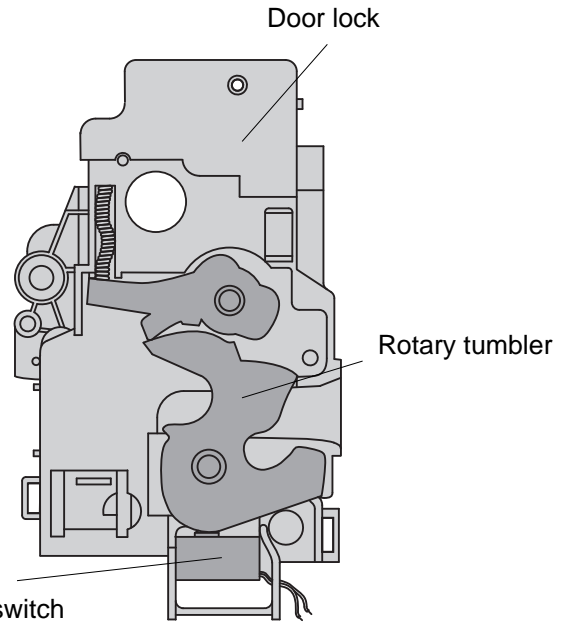
Its signal is analysed in the door control unit and in the convenience electronics central control unit J393.

Its purpose is to

- check whether the SAFE status has to be set
- control the interior light.

### "Door OPEN" signal

If the "door OPEN" signal is supplied, the cam track of the rotary tumbler is touching the switch. The switch is closed.



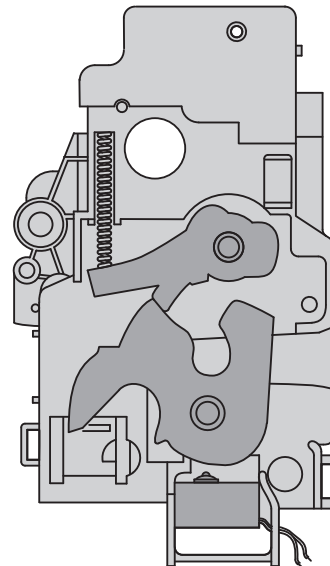
SP17-23



### Note:

**The entire central locking system is not active until the "door OPEN" signal no longer exists, i.e. the rotary tumbler switch is again open. This is the case if driver's door and operating point are closed. (Does not apply to driver's door and locking point if locking point is operated).**

Rotary tumbler switch "door OPEN" position



SP17-22

Rotary tumbler switch "door CLOSED" position

The tailgate lock also has a rotary tumbler switch at the rotary tumbler.

It supplies the "tailgate open" message and controls the luggage compartment light.

# CAN BUS Dictionary

A description of the SKODA OCTAVIA convenience electronics system very often involves the use of new technical expressions. A number of these are explained briefly below.

<b>Active</b>	–	Active state of convenience electronics system.
<b>BUS</b>	–	Bit serial universal interface
<b>Bus system</b>	–	The individual elements of the convenience electronics system. Databus
<b>CAN</b>	–	<b>C</b> ontroller <b>A</b> rea <b>N</b> etwork, A serial bus system designed specifically for use in vehicles.
<b>CAN BUS</b>	–	Several equal access control units are interlinked by a linear bus structure. Advantage: Even if one user fails, the bus structure continues to remain fully available for all the others.
<b>Decentralized convenience electronics system</b>	–	Four decentralized door control units - one in each door - and a central control unit in the dash panel area are interlinked by CAN data wires. The central control unit does not have any master function; each door control unit operates independently or as a multimaster system (see also CAN BUS).
<b>Dimming</b>	–	A method for switching off the lights in which they become gradually darker until they go out.
<b>Lock/Unlock button</b>	–	Lock/Unlock button in driver's door for all 4 doors and for the tailgate.
<b>Mechatronics</b>	–	Three-dimensional and functional integration of mechanicals and electronics.
<b>SAFE</b>	–	Anti-theft status of door locks in which the vehicle doors cannot be unlocked manually from the inside of the door handle. " <b>SAFE</b> " can only be overridden with the car key from the outside or by switching on the ignition.
<b>Serial</b>	–	Arranged one after the other in series.
<b>Sleep</b>	–	Off state
<b>Wait</b>	–	Wait state

# Test Your Knowledge

Which answers are correct?

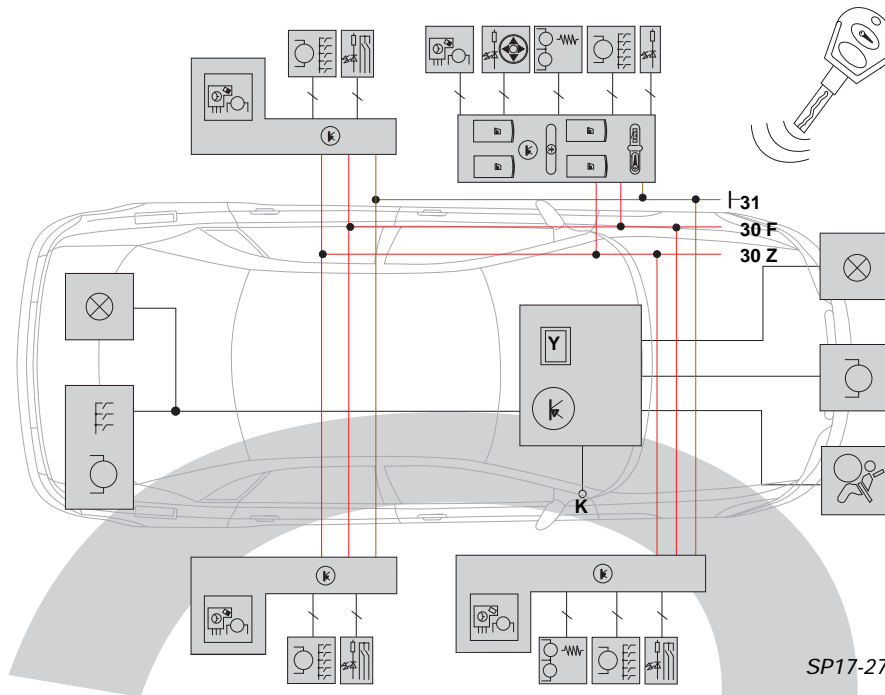
Sometimes only one.

Perhaps in some cases more than one - or all!

..... means you should complete the blanks



1. What are the advantages which the CAN bus system offers?
  - A. Several equal-access control units can be used.
  - B. It is possible to significantly reduce individual wiring.
  - C. It is no longer necessary to have a direct link of the actuators to the power source.
  
2. A special feature of the central locking system is locking of the car in the ..... state.  
..... state is displayed visually.
  
3. The entire central locking system is not active until the .....message no longer exists.  
This message comes from the .....
  
4. The car can be equipped optionally with
  - A. a radio remote control
  - B. an infrared remote controlfor the central locking.  
The maximum distance for using the remote control is ..... m.
  
5. Information regarding the door status e.g. door "OPEN" or door "CLOSED" or commands pass
  - A. from the microswitches to the door control unit
  - B. to the convenience electronics central control unit
  - C. to the other system users



6. Supplement the CAN network and provide the designations of the 5 control units.
  
7. The SKODA OCTAVIA convenience electronics system comprises a special "emergency situation" circuit in the event of a crash.  
 In a crash, the ..... is unlocked and the interior light switched on for ..... minutes.  
 The operating requirements for this are ..... on and interior light .....
  
8. Comprehensive self-diagnosis is possible by selecting the address word "46 Zentral-SG Komfort" (46 Central Convenience CU).
  - A. The system link can be established irrespective of the ignition being on or off.
  - B. The system link can only be established when the ignition is switched on.
  - C. Diagnostics relates only to the central locking system.
  
9. Each door lock and the tailgate lock feature a rotary tumbler switch.  
 The rotary tumbler switch is a microswitch; it is integrated into the system in place of the .....
  
10. The 4 door control units are a feature of the decentralized convenience electronics system.  
 They operate
  - A. the central locking
  - B. the SAFE status as soon as the ignition is switched on
  - C. the electric window lifters