

Audi A8 1994 >

Body Self-diagnosis

Edition 05.1998



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List of Workshop Manual Repair GroupsList of Workshop Manual
Repair GroupsList of Workshop Manual Repair Groups
Audi A8 1994 ➤

Body Self-diagnosis

Repair Group

01 - Self-diagnosis

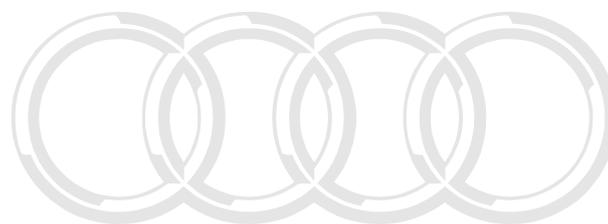
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Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.

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01 - Self-diagnosis

1 - Connecting fault reader V.A.G 1551

1.1 - Connecting fault reader V.A.G 1551

Note:

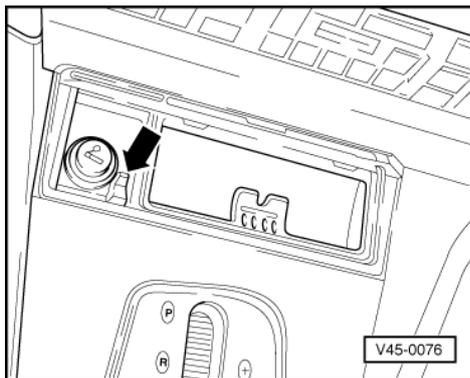
The vehicle system tester V.A.G 1552 can be used instead of the fault reader V.A.G 1551, however a print out is not possible.

Test requirements:

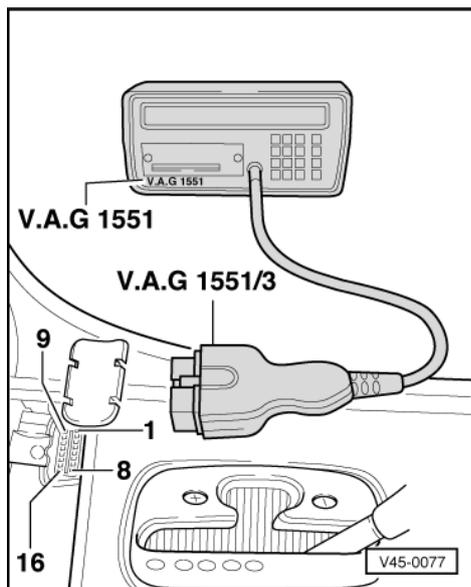
- Supply voltage of vehicle electrical system OK
- Fuses OK.

=> "Current Flow Diagrams, Electrical Fault-finding and Fitting Locations" binder

- Earth connections on engine and gearbox OK.



- -> Release ashtray in centre console by pressing small lever -arrow-.
- Remove ashtray from centre console and remove cover for diagnostic connector.



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- -> Connect fault reader V.A.G 1551 or vehicle system tester V.A.G 1552 with cable V.A.G 1551/3.

-> Indicated on display:

```
V.A.G SELF DIAGNOSIS      HELP
1 - Rapid data transfer 1)
2 - Flash code output 1)
```

- 1) appears alternately

Note:

If the display remains blank:

=> Fault reader operating instructions

- Switch on the fault reader printer with the print key. The indicator lamp in the key must illuminate.
- Enter "1" to select "Rapid data transfer".

-> Indicated on display:

```
Rapid data transfer      HELP
Enter address word XX
```

Notes:

- ◆ Address word 00 implements the automatic test sequence, i.e. the interrogation of the fault memory via rapid data transfer for all vehicle systems with a self-diagnosis capability.

```
Rapid data transfer      HELP
No reply from control unit
```

-> Indicated on display

- Print out possible cause of trouble by pressing HELP key.

```
Rapid data transfer      HELP
Communication problem
```

Perform fault finding in line with fault-finding instructions for diagnostic cable.

=> Current flow diagrams, Electrical Fault-finding and Fitting Locations binder.

```
Rapid data transfer      HELP
K wire not switching to earth
```

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```
Rapid data transfer      HELP
K wire not switched to positive
```

```
Rapid data transfer
No signal from control unit
```

2 - Self-diagnosis of airbag system

2.1 - Self-diagnosis of airbag system

2.2 - General notes

Airbag III - CTU-Airbag-System ä approx. 11.94

(Central Triggering Unit)

The airbag system comprises:
Driver's airbag, passenger's airbag, two front belt tensioners.

The self-diagnosis features the following functions:

- ◆ 01 - Interrogating control unit version
- ◆ 02 - Interrogate fault memory
- ◆ 03 - Erase fault memory
- ◆ 06 - End of output
- ◆ 07 - Coding control unit

Airbag V - BTU-Airbag-System approx. 11.94 ä 06.96 (Basic Triggering Unit)

The airbag system comprises:
Driver's airbag, passenger's airbag, two front belt tensioners.

Additional self-diagnosis features:

- ◆ 02 - Interrogate fault memory Further fault codes
- ◆ 08 - Read measured value block, Measured value block 001

Airbag 7 - BTU-Airbag-System approx. 07.96 ä

(Basic Triggering Unit)

The airbag system comprises:
Driver's airbag, passenger's airbag, two front side airbags, two front belt tensioners, two rear side airbags, two rear belt tensioners, seat-occupied sensor passenger seat and rear bench seat as well as front belt fastened detector.

Additional self-diagnosis features:

- ◆ 02 - Interrogate fault memory: Further fault codes
- ◆ 03 - Perform final control diagnosis: Final control diagnosis enables checking of function of "crash signal"=> Page 22 .
- ◆ 07 - Coding control unit: Self-diagnosis can be used to deactivate/activate the passenger airbag => Page 24 .
- ◆ 08 - Read measured value block: Additional measured value blocks 002 ... 006
- ◆ 10 - Adaption Self-diagnosis can be used to deactivate/activate the passenger airbag => Page 34 .

Airbag 8 - BTU-Airbag-System (Basic Triggering Unit) introduced from 10.98.

The airbag system comprises:
Driver's airbag, passenger's airbag, two front side airbags, two front belt tensioners, two rear side airbags, two rear belt tensioners and three rear belt tensioners respectively, head airbag, key switch deactivation passenger airbag, seat-occupied sensor passenger seat and rear bench seat as well as front belt fastened detector.



In addition to using the airbag key switch it is also possible to block or activate the passenger airbag via the function "adaption" => Page 34 .

Additional self-diagnosis features:

- ◆ 02 - Interrogate fault memory: Further fault codes
- ◆ 08 - Read measured value block: Additional measured value blocks, 007, 008

In a crash situation the airbag control unit sends a "Crash signal" to the central locking control unit. This function is a passive safety feature. When the airbag and/or the belt tensioner is triggered it uses the central locking to release the door locks and blocks the interior switch. The "Crash-Signal" must be checked using final control diagnosis => Page 22 .

After the ignition is switched on, the airbag warning lamp -K75 comes on for about 4 seconds and then goes out again. If it then flashes for a further 12 seconds this indicates that the passenger airbag is blocked.

All airbag systems

Driver's airbag, passenger's airbag, front belt tensioners and, where applicable, rear side airbags and belt tensioners are triggered centrally by the control unit for airbag -J234 in a crash situation when the preset triggering criteria are exceeded.

The control unit detects faults in the airbag system and stores them in a permanent memory.

If an airbag and/or belt tensioner is triggered, the control unit will record the fault "Crash data stored".

In such cases the control unit for the airbag (J234) must be renewed after

- ◆ the 1st triggering of driver's or passenger's airbag,
- ◆ the 3rd triggering of the front belt tensioners and/or side airbags.

After the 3rd triggering it is not possible to erase the crash signal with the fault reader V.A.G 1551 up to ä10.98 in vehicles with airbag 8.

- ◆ If the warning lamp -K75 does not go out after approx. 4 seconds this indicates a problem with the supply voltage for the airbag control unit -J234. Interrogate fault memory => Page 6 .
- ◆ If the warning lamp -K75 goes out and comes on again, this indicates either that the control unit has not been encoded, that the wrong control unit has been fitted, or that a fault has occurred. Interrogate fault memory => Page 6 .

When commissioning a new control unit it must be encoded => Page 24 .

Important:

- ◆ **Wiring must only be checked by visual inspection!**
- ◆ **Never use electrical tests to check or measure continuity in the igniter circuits!**
- ◆ **Always switch off ignition before inspecting wiring!**

Available functions

Fault reader V.A.G 1551 or vehicle system tester V.A.G 1552		Ignition on, engine stopped	Page
Address words			
00	Automatic test sequence	yes	2
15	Airbag	yes	5
Functions			
01	Interrogating control unit version	yes	39
02	Interrogating fault memory	yes	6
03	Final control diagnosis	yes	22
05	Erase fault memory	yes	7

06	End of output	yes	7
07	Encoding control unit	yes	24
08	Reading measured value block	yes	27
10	Adaption	yes	34

2.3 - Starting airbag system self-diagnosis

Preconditions:

- Fault reader V.A.G 1551 connected
=>Page 1 .
 - Ignition on.
 - Always check coding of airbag control unit
- Enter "15" for address word "Airbag" and confirm entry with Q key.

-> Indicated on display

Rapid data transfer
Tester sends address word 15

- Wait until the next display appears.

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

4D0959655C Airbag 7 AUDI
D00 □
Code 00224 WSC 12345

Note:

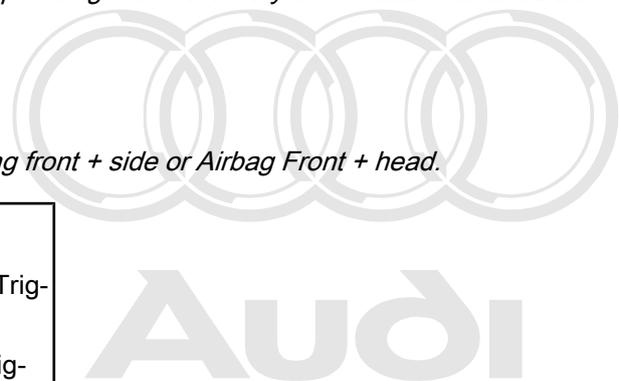
You may print out the control unit identification by pressing the PRINT key on the fault reader V.A.G 1551.

Control unit identification (example)

Note:

For vehicles with airbag 8 the display shows Airbag front + side or Airbag Front + head.

- 4D0 959.655	Part-No.; assignment => Parts List
- Airbag III	CTU-Airbag (Central Triggering Unit) à approx. 11.94
- Airbag V	
- Airbag 7	
- Airbag Front+side or Front +Head	BTU-Airbag (Basic Triggering Unit) approx. 11.94 à 06.96
	BTU-Airbag (Basic Triggering Unit) with side airbag 07.96 à
	BTU Airbag (Basic Triggering Unit) with side airbag/and head airbag introduced as of 10.98.
- AUDI D00	Control unit data status (software type)
- Code 00127:	Control unit code



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- WSC 12345	Workshop Code of V.A.G 1551 with which encoding was last performed
-------------	--------------------------------------------------------------------------

- Press =>key.

-> Display function selection:

Rapid data transfer	HELP
Select function XX	

Notes:

- ♦ The control unit identification can be displayed again by entering function "01" for "Interrogating control unit version" and confirming with the Q key.

♦ Rapid data transfer	HELP
No reply from control unit	

-> Indicated on display

- Print out possible cause of trouble by pressing HELP key.

Rapid data transfer	HELP
K wire not switched to positive	

Perform fault finding in line with fault-finding instructions for diagnostic cable.

=> "Current Flow Diagrams, Electrical Fault-finding and Fitting Locations" binder

Rapid data transfer	HELP
K wire not switching to earth	

Rapid data transfer	
No signal from control unit	

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2.4 - Interrogating fault memory

Notes:

- ♦ Faults which occur only for a short time are indicated as "sporadic faults" with "/SP" on the right of the display.
- ♦ In order to eliminate such sporadically occurring faults the fault memory must be erased before repair.

- Starting airbag system self-diagnosis => Page 5 .

-> Indicated on display

Rapid data transfer	HELP
Select function XX	

- Enter "02" for the function "Interrogate fault memory" and confirm entry with Q key.

-> Indicated on display

No fault recognised!

- Press =>key.

or

-> Indicated on display

X fault(s) detected

The stored faults are displayed and printed in sequence when the printer is switched on.

Note:

If the printer is switched off, press the => key to display the next fault.

- Press => after the last fault is displayed and printed.

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Rectify printed faults according to fault table => Page 7, then erase fault memory and interrogate the fault memory again as a check.

2.5 - Erase fault memory

Prerequisite:

- Fault memory interrogated => Page 6.

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "05" for the function "Erase fault memory" and confirm entry with Q key.

-> Indicated on display

```
Rapid data transfer
Fault memory is erased
```

- Press =>key.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

End of output

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "06" for "End output" function and confirm entry with Q key.

-> Indicated on display

```
Rapid data transfer      HELP
Enter address word XX
```

- Switch off ignition and detach diagnostic connector.

2.6 - Fault table

Notes:

- ◆ The following table lists all the faults, with the corresponding 5 digit code numbers, that can be detected by the airbag control unit -J234 and printed out by the V.A.G 1551. Fault codes appear only on print-out.
- ◆ The fault memory records all static and sporadic faults.



When a fault occurs it is immediately identified as a static fault. If fault does not occur again it is registered as a sporadic fault. /SP" appears on the right of the display.

- ◆ If a fault is continually present the fault lamp for the airbag system lights up until the fault is rectified and the fault memory is erased.
- ◆ Before replacing a component shown as faulty, check wiring and connections to component as well as earth connections according to current flow diagram.

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00532 Voltage supply too low	- Battery discharged/defective - Short-circuit in vehicle electrical system	- Airbag system does not trigger - Airbag warning lamp lights up and goes out again when the supply voltage is OK again.	- Charge/replace battery - Rectify short-circuit in vehicle electrical system - Erase fault memory

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00588 Airbag igniter, driver's side - N95 Resistance value too high	- Open circuit	- Igniter for driver's airbag not triggered	- Rectify open circuit in wiring
	- Self-cancelling ring with coil connector and slip ring defective		- Check self-cancelling ring with coil connector and slip ring => General Body Assembly, Interior; Repair group 69; Servicing airbag III and V; Removing and installing self-cancelling ring with coil connector and slip ring Servicing airbag III and V; Removing and installing self-cancelling ring with coil connector and slip ring
	- Driver's airbag unit defective		- Replace driver's airbag unit
	- Airbag control unit defective Continued ▼		- Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00588 Airbag igniter, driver's side - N95 Resistance value too low	(Fault 00588 continued) - Line cross	- Igniter for driver's airbag not triggered.	- Eliminate end of wiring

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
	- Self-cancelling ring with coil connector and slip ring defective		- Check self-cancelling ring with coil connector and slip ring => General Body Assembly, Interior; Repair group 69; Servicing airbag III and V; Removing and installing self-cancelling ring with coil connector and slip ring Servicing airbag III and V; Removing and installing self-cancelling ring with coil connector and slip ring
	- Driver's airbag unit defective		- Replace driver's airbag unit
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00588 Airbag igniter, driver's side -N95 Short to positive	(Fault 00588 continued) - Wiring damaged	▪ Igniter for driver's airbag not triggered	- Rectify wiring damage
Short to earth	- Airbag control unit defective - Wiring damaged	▪ Igniter for driver's airbag not triggered	- Replace airbag control unit. - Rectify wiring damage
	- Driver's airbag unit defective		- Replace driver's airbag unit
	- Airbag control unit defective		- Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00589 Airbag Igniter 1 for passenger's side -N131 Resistance value too high	- Open circuit	▪ Igniter 1 for passenger's airbag not triggered	- Rectify open circuit in wiring
	- Passenger's airbag unit defective		- Replace passenger's airbag unit
	- Airbag control unit defective		- Replace airbag control unit
Resistance value too low	- Line cross		- Eliminate end of wiring
	- Passenger's airbag unit defective		- Replace passenger's airbag unit
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00589	(Fault 00589 continued)		



V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy	
Airbag igniter, passenger's side - N131	Short to positive	- Wiring damaged	▪ Igniter for passenger's airbag not triggered	- Rectify wiring damage
	Short to earth	- Airbag control unit defective	▪ Igniter for passenger's airbag not triggered	- Replace airbag control unit
		- Wiring damaged		- Rectify wiring damage
		- Passenger's airbag unit defective		- Replace passenger's airbag unit
- Airbag control unit defective	- Replace airbag control unit			

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy	
00591 Driver's side belt switch -E24	Short to positive Short to earth Resistance value too high	- Lines damaged	▪ Driver's airbag may already be triggered at low speed	- Rectify wiring damage
	Implausible switch setting	- Driver's belt buckle switch defective		- Replace driver's belt buckle switch
00592 Passenger's side belt buckle switch -E25	Short to positive Short to earth Resistance value too high	- Lines damaged	▪ Driver's airbag may already be triggered at low speed	- Rectify wiring damage
	Implausible switch setting	- Passenger's belt buckle switch defective		- Replace passenger's belt buckle switch

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy	
00594				
Airbag igniter circuit Driver's airbag	Short to positive	- Lines damaged	▪ Igniter for driver's airbag not triggered.	- Rectify wiring damage
				- Airbag control unit defective
Short to earth	- Wiring damaged			- Rectify wiring damage
	- Self-cancelling ring with coil connector and slip ring defective			- Check self-cancelling ring with coil connector and slip ring => General Body Assembly, Interior; Repair group 69; Servicing airbag III and V; Removing and installing self-cancelling ring with coil connector and slip ring Servicing airbag III and V; Removing and installing self-cancelling ring with coil connector and slip ring

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
	- Driver's airbag unit defective		- Replace driver's airbag unit
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00594 Passenger's airbag Short to positive	(Fault 00594 continued) - Lines damaged	▪ Igniter for passenger's airbag not triggered	- Rectify wiring damage
	- Airbag control unit defective		- Replace airbag control unit
Short to earth	- Wiring damaged.		- Rectify wiring damage
	- Passenger's airbag unit defective		- Replace passenger's airbag unit
	- Airbag control unit defective		- Replace airbag control unit
00595 Crash data stored	- Airbag triggering	▪ Airbag system already triggered	- Replace control unit, airbag units, belt tensioners and any damaged components

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00654 Belt tensioner igniter, driver's side -N153 Resistance value too high	- Open circuit	▪ No driver's belt tensioner function	- Rectify open circuit in wiring
	- Open connection in wiring to driver belt tensioner		- Close connection
	- Igniter for driver's belt tensioner defective		- Replace driver's belt tensioner
	- Driver's belt tensioner triggered		
	- Airbag control unit defective.		- Replace airbag control unit
Resistance value too low	- Line cross		- Eliminate end of wiring.
	- Igniter for driver's belt tensioner defective		- Replace driver's belt tensioner
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00654 Belt tensioner igniter, driver's side -N153 Short to earth	(Fault 00654 continued) - Wiring damaged	▪ No driver's belt tensioner function	- Rectify wiring damage
	- Igniter for driver's belt tensioner defective		- Replace driver's belt tensioner
	- Airbag control unit defective		- Replace airbag control unit
Short to positive	- Wiring damaged		- Rectify wiring damage



V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
	- Airbag control unit defective		- Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00655 Belt tensioner igniter, passenger's side -N154 Resistance value too high	- Open circuit	▪ No passenger's belt tensioner function	- Rectify open circuit in wiring
	- Open connection in wiring to passenger's belt tensioner		- Close connection.
	- Igniter for passenger's belt tensioner defective		- Replace passenger's belt tensioner
	- Passenger's belt tensioner triggered		
	- Airbag control unit defective		- Replace airbag control unit
Resistance value too low	- Line cross		- Eliminate end of wiring.
	- Igniter for passenger's belt tensioner defective		- Replace passenger's belt tensioner
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00655 Igniter for passenger's belt tensioner -N154	(Fault 00655 continued)	▪ No passenger's belt tensioner function	
Short to earth	- Wiring damaged		- Rectify wiring damage
	- Igniter for passenger's belt tensioner defective		- Replace passenger's belt tensioner
	- Airbag control unit defective		- Replace airbag control unit
Short to positive	- Wiring damaged		- Rectify wiring damage
	- Airbag control unit defective		- Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
00656 Seat-occupied sensor, passenger's side -G128		▪ No seat-occupied sensor function	
Short to positive	- Wiring damaged		- Rectify wiring damage
	- Airbag control unit defective		- Replace airbag control unit.
Short to earth Resistance value too high	- Wiring damaged		- Rectify wiring damage

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
Resistance value too low	- Seat-occupied sensor passenger's side defective		- Replace passenger's seat-occupied sensor
	- Airbag control unit defective		- Replace airbag control unit
Connected to reverse polarity Incorrectly connected	- Wiring connected with reverse polarity		- Make proper connection
	- Diode connected with reverse polarity		- Replace passenger's seat-occupied sensor

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01025			
Fault lamp actuation defective ä 07.96			
Open circuit to earth	- Open circuit	▪ Warning lamp for airbag does not light	- Rectify open circuit in wiring
Short to earth Short to positive	- Wiring damaged		- Rectify wiring damage
	- Warning lamp defective		- Replace warning lamp
	- Dash panel insert defective		- Repair dash panel insert
	- Airbag control unit defective		- Replace airbag control unit
01044 Control unit incorrectly encoded	- Control unit not coded according to vehicle configuration	▪ Fault is stored in fault memory	- Check encoding =>Page 24

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01211 Rear belt tensioner igniter, driver's side -N196			
Resistance value too high Resistance value too low	- Wiring damaged	▪ No rear driver's side belt tensioner function	- Rectify wiring damage
Short to earth Open circuit	- Igniter for rear driver's side belt tensioner defective		- Replace rear driver's side belt tensioner
	- Rear driver's side belt tensioner triggered		
	- Airbag control unit defective		- Replace airbag control unit
Short to positive	- Wiring damaged	- Rectify wiring damage	
	- Airbag control unit defective	- Replace airbag control unit	

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01212 Rear belt tensioner igniter, passenger's side -N197			



V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
Resistance value too high Resistance value too low Short to earth Open circuit	- Wiring damaged	▪ No rear passenger's side belt tensioner function	- Rectify wiring damage
	- Igniter for rear passenger's side belt tensioner defective - Rear passenger's side belt tensioner triggered		- Replace rear passenger's side belt tensioner
	- Airbag control unit defective		- Replace airbag control unit
Short to positive	- Wiring damaged		- Rectify wiring damage
	- Airbag control unit defective		- Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01215 Rear seat-occupied sensor, driver's side -G177 Short to positive	- Wiring damaged	▪ No rear driver's side seat-occupied sensor function	- Rectify wiring damage
	- Airbag control unit defective		- Replace airbag control unit
Short to earth Resistance value too high Resistance value too low	- Wiring damaged		- Rectify wiring damage
	- Rear driver's side seat-occupied sensor defective - Airbag control unit defective		- Replace rear driver's side seat-occupied sensor - Replace airbag control unit
Incorrectly connected (reverse polarity)	- Wiring connected with reverse polarity		- Make proper connection
	- Diode connected with reverse polarity		- Replace rear driver's side seat-occupied sensor

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01216 Rear seat-occupied sensor, passenger's side -G178 Short to positive	- Wiring damaged	▪ No rear passenger's side seat-occupied sensor function	- Rectify wiring damage
	- Airbag control unit defective		- Replace airbag control unit
Short to earth Resistance value too high Resistance value too low	- Wiring damaged		- Rectify wiring damage
	- Rear passenger's side seat-occupied sensor defective - Airbag control unit defective		- Replace rear passenger's side seat-occupied sensor - Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
Incorrectly connected (reverse polarity)	- Wiring connected with reverse polarity		- Make proper connection
	- Diode connected with reverse polarity		- Replace rear passenger's side seat-occupied sensor

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01217 Igniter for front side airbag, driver's side -N199			
Resistance value too high	- Open circuit	▪ Igniter for front side airbag (driver's side) not triggered	- Rectify open circuit in wiring
	- Front side airbag unit (driver's side) defective		- Replace front side airbag unit (driver's side)
	- Airbag control unit defective		- Replace airbag control unit
Resistance value too low	- Line cross		- Eliminate end of wiring.
	- Front side airbag unit (driver's side) defective		- Replace front side airbag unit (driver's side)
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01217 Igniter for front side airbag, driver's side -N199	(Fault 01217 continued)		
Short to positive	- Wiring damaged	▪ Igniter for front side airbag (driver's side) not triggered	- Rectify wiring damage
	- Airbag control unit defective		- Replace airbag control unit
Short to earth	- Wiring damaged		- Rectify wiring damage
	- Front side airbag unit (driver's side) defective		- Replace front side airbag unit (driver's side)
	- Airbag control unit defective	- Replace airbag control unit	

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01218 Igniter for front side airbag, passenger's side -N200			
Resistance value too high	- Open circuit	▪ Igniter for front side airbag (passenger's side) not triggered	- Rectify open circuit in wiring



V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
Resistance value too low	- Front side airbag unit (passenger's side) defective		- Replace front side airbag unit (passenger's side)
	- Airbag control unit defective		- Replace airbag control unit
	- Line cross		- Eliminate end of wiring
	- Front side airbag unit (passenger's side) defective		- Replace front side airbag unit (passenger's side)
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy	
01218 Igniter for front side airbag, passenger's side -N200	(Fault 01218 continued)	▪ Igniter for front side airbag (driver's side) not triggered		
Short to positive	- Wiring damaged			- Rectify wiring damage
	- Airbag control unit defective			- Replace airbag control unit
Short to earth	- Wiring damaged			- Rectify wiring damage
	- Front side airbag unit (passenger's side) defective			- Replace front side airbag unit (passenger's side)
	- Airbag control unit defective	- Replace airbag control unit		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01219 Igniter for rear side airbag, driver's side -N201	- Open circuit	▪ Igniter for rear side airbag (driver's side) not triggered	- Rectify open circuit in wiring
Resistance value too high			- Rear side airbag unit defective (driver's side)
	- Airbag control unit defective		- Replace airbag control unit
Resistance value too low	- Line cross		- Eliminate end of wiring
	- Rear side airbag unit defective (driver's side)		- Replace rear side airbag unit (driver's side)
	- Airbag control unit defective	- Replace airbag control unit	
	Continued ▼		

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V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy	
01219 Igniter for rear side airbag, driver's side -N201	(Fault 01219 continued)	▪ Igniter for rear side airbag (driver's side) not triggered		
Short to positive	- Wiring damaged			- Rectify wiring damage
	- Airbag control unit defective			- Replace airbag control unit
Short to earth	- Wiring damaged			- Rectify wiring damage
	- Rear side airbag unit (driver's side) defective	- Replace rear side airbag unit (driver's side)		
	- Airbag control unit defective	- Replace airbag control unit		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy	
01220 Igniter for rear side airbag, passenger's side -N202		▪ Igniter for passenger's rear side airbag not triggered		
Resistance value too high	- Open circuit			- Rectify open circuit in wiring
	- Rear side airbag unit (passenger's side) defective			- Replace rear side airbag unit (passenger's side)
	- Airbag control unit defective			- Replace airbag control unit
Resistance value too low	- Line cross			- Eliminate end of wiring
	- Rear side airbag unit (passenger's side) defective			- Replace rear side airbag unit (passenger's side)
	- Airbag control unit defective	- Replace airbag control unit		
	Continued ▼			

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy	
01220 Igniter for rear side airbag, passenger's side -N202	(Fault 01220 continued)	▪ Igniter for rear side airbag (passenger's side) not triggered		
Short to positive	- Wiring damaged			- Rectify wiring damage
	- Airbag control unit defective			- Replace airbag control unit
Short to earth	- Wiring damaged			- Rectify wiring damage
	- Rear side airbag unit (passenger's side) defective	- Replace rear side airbag unit (passenger's side)		



V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
	- Airbag control unit defective		- Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01221 Side airbag crash sensor, driver's side - G179			
Open circuit	- Open circuit	▪ No side airbag (driver's side) function	- Rectify open circuit in wiring
	- Open connector in wiring to driver's crash sensor		- Close connection
	- Driver's crash sensor defective		- Replace driver's crash sensor
	- Airbag control unit defective		- Replace airbag control unit
Short circuit	- Short in wiring to positive or earth		- Eliminate end of wiring.
	- Driver's crash sensor defective		- Replace driver's crash sensor
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01221 Side airbag crash sensor, driver's side -G179	(Fault 01221 continued)		
Not authorised	- Crash sensor and airbag control unit are not matched	▪ No driver's side airbag function	- Replace airbag control unit. Allocation => Parts List Replace driver's crash sensor Allocation => Parts List
Defective	- Crash sensor defective		- Replace driver's crash sensor

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01222 Side airbag crash sensor, passenger's side -G180			
Open circuit	- Open circuit	▪ No side airbag (passenger's side) function	- Rectify open circuit in wiring
	- Open connector in wiring to passenger's crash sensor		- Close connection
	- Passenger's crash sensor defective		- Replace passenger's crash sensor
	- Airbag control unit defective		- Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
Short circuit	- Short in wiring to positive or earth		- Eliminate end of wiring.
	- Passenger's crash sensor defective		- Replace passenger's crash sensor
	- Airbag control unit defective Continued ▼		- Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01222 Side airbag crash sensor, passenger's side -G180	(Fault 01222 continued)	▪ No side airbag (passenger's side) function	- Replace airbag control unit. Allocation => Parts List Replace passenger's crash sensor Allocation => Parts List
Not authorised	- Crash sensor and airbag control unit are not matched		
Defective	- Crash sensor defective.		

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01223 Signal: Open central locking system	- Control unit for Airbag -J234 defective	▪ Central locking does not unlock after crash signal	- Replace airbag control unit Allocation => Parts List
01228 Key sw. Switch off airbag, passenger's side - E224 Open circuit / short to positive	- Open circuit	▪ Igniter for passenger's airbag not triggered	- Rectify open circuit in wiring
	- Key switch - E224 defective		- Replace key switch - E224
	- Control unit for Airbag -J234 defective		- Replace airbag control unit. Allocation => Parts List
Open circuit, short to earth	- Open circuit		- Rectify open circuit in wiring

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V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
	- Key switch - E224 defective		- Replace key switch - E224
	- Control unit for Airbag - J234 defective		- Replace airbag control unit. Allocation => Parts List

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01280 Passenger's airbag deactivated 1)	- Passenger's airbag has been deactivated via adaption	▪ No passenger's airbag function	- Adapt airbag control unit accordingly => Page 34
01578			
Warning lamp for passenger's airbag -K145 Short to positive	- Wiring damaged - Control unit for Airbag - J234 defective	▪ Warning lamp for airbag does not light	- Rectify wiring damage - Replace airbag control unit.
Open circuit/short circuit to earth	- Open circuit		- Rectify open circuit in wiring
	Warning lamp for passenger's airbag -K145 defective		Replace warning lamp for passenger's airbag - K145
	- Control unit for Airbag - J234 defective		- Replace airbag control unit

1) Only airbag 7 (07.96 ä) and airbag 8. Fault message is only stored with appropriate adaption "passenger's airbag blocked".

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01588 Igniter for head airbag, driver's side -N251 Resistance value too high	- Open circuit - Head airbag (driver's side) defective - Airbag control unit defective Continued ▼	▪ Igniter for driver's head airbag not triggered	- Rectify open circuit in wiring - Replace head airbag unit (driver's side) - Replace airbag control unit

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01588 Igniter for head airbag, driver's side -N251 Resistance value too low	(Fault 01588 continued) - Line cross	▪ Igniter for driver's head airbag not triggered	- Eliminate end of wiring

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
Short to positive	- Head airbag (driver's side) defective	▪ Igniter for passenger's rear side airbag not triggered	- Replace head airbag unit (driver's side)
	- Airbag control unit defective		- Replace airbag control unit
	- Wiring damaged		- Rectify wiring damage
Short to earth	- Airbag control unit defective		- Replace airbag control unit
	- Wiring damaged		- Rectify wiring damage
	- Head airbag (driver's side) defective		- Replace head airbag unit (driver's side)
	- Airbag control unit defective	- Replace airbag control unit	

V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01589 Igniter for head airbag, passenger's side -N252			
Resistance value too high	- Open circuit	▪ Igniter for passenger's head airbag not triggered	- Rectify open circuit in wiring
	- Head airbag unit (passenger's side) defective		- Replace head airbag unit (passenger's side)
	- Airbag control unit defective		- Replace airbag control unit
Resistance value too low	- Line cross		- Eliminate end of wiring
	- Head airbag unit (passenger's side) defective		- Replace head airbag unit (passenger's side)
	- Airbag control unit defective		- Replace airbag control unit
	Continued ▼		

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V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
01589 Igniter for head airbag, passenger's side -N252	(Fault 01589 continued)		
Short to positive	- Wiring damaged	▪ Igniter for passenger's head airbag not triggered	- Rectify wiring damage
	- Airbag control unit defective		- Replace airbag control unit
Short to earth	- Wiring damaged		- Rectify wiring damage
	- Head airbag unit (passenger's side) defective		- Replace head airbag unit (passenger's side)
	- Airbag control unit defective	- Replace airbag control unit	



V.A.G 1551 printout	Possible causes of fault	Possible effects	Fault remedy
65535 1) Control unit defective	- Airbag control unit defective	▪ Airbag system does not function	- Replace airbag control unit
Control unit incorrectly coded 2)	- Coding wrong	▪ Airbag system does not function	- Check encoding =>Page 24

- 1) Fault message appears even when control unit has been triggered three times.
- 2) Display with fault code only with Airbag V (approx. 11.94 ä 06.96).

Note:

Fault 65535 - "Control unit defective" cannot be erased using the V.A.G 1551 fault reader.

2.7 - Final control diagnosis up to CW 18.99

The final control diagnosis checks the function of the crash output. When the airbag is activated the central locking is switched to "Open" at the same time.

Notes:

- ♦ Before carrying out the final control diagnosis the central locking must be switched to "locked" (use internal switch).
 - ♦ Switch interior light switch to position "door contact".
 - ♦ After the Final Control Diagnosis has been completed, the central locking controls are not active until fault memory of CL control unit has been erased.
- Starting airbag system self-diagnosis => Page 5 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Press keys 0 and 3 for the function "Final control diagnosis" and confirm entry with Q key.

-> Indicated on display

```
Final control diagnosis
Signal: Open central locking system
```

Central locking must switch to "open".

The hazard warning lights and interior lights come on.

- Press the internal switch. The central locking system must not switch back to "lock".

Notes:

After this step has been performed, fault code 01366 will be stored in the CL control unit.

After completing the final control diagnosis the fault memory of the CL control unit must be read and this fault must be erased => Page 39 .

-> Indicated on display

```
Final control diagnosis
End
```

- Press =>key.

-> Indicated on display

Rapid data transfer HELP
 Select function XX

2.8 - Final control diagnosis as of week 18.99

The final control diagnosis checks the function of the crash output. When the airbags are triggered, the central locking system switches immediately to UNLOCK, the internal central locking switch is disabled, and the fuel supply is interrupted. The hazard warning lights and the interior lights are switched on.

Notes:

- ◆ Before carrying out the final control diagnosis, the central locking system must be switched to "close" (press the internal switch) and the motor started.
- ◆ Switch interior light switch to position "door contact".
- ◆ After the Final Control Diagnosis, the central locking controls are not active until the fault memory of CL control unit has been erased.

Performing function "03 - final control diagnosis"

-> Indicated on display:

Rapid data transfer HELP
 Select function XX

- Press keys -0- and -3-.

-> Indicated on display:

Rapid data transfer Q
 03 - Final control diagnosis

- Confirm input with Q key.

-> Indicated on display:

Final control diagnosis
 Signal: Open central locking system

The engine must switch off.

Central locking must switch to "open".

The hazard warning lights and interior lights come on.

- Press the internal switch. The central locking system must not switch back to "lock".

Notes:

After this step has been performed, fault code 01366 will be stored in the CL control unit.

After completing the final control diagnosis the fault memory of the CL control unit must be read and this fault must be erased => Page 39.

After this step has been performed, several faults will be stored in the fault memory of the engine control unit.

After completing the final control diagnosis the fault memory of the engine control unit must be read and this fault must be erased. Refer to ignition and injection in the Workshop Manual in Repair group: 01 Self-diagnosis; erasing and interrogating fault memory.



According to engine type, the fuel supply shuts off as of week 18.99 onwards.

If the engine does not start, check whether the fuel supply shut off in the engine has been activated.

=> Current flow diagrams binder

If the engine does not start and the fuel supply shut off in the engine has been activated, check wiring to the engine.

=> Current flow diagrams binder

-> Indicated on display:

```
Final control diagnosis
End
```

- Press =>key.

-> Indicated on display:

```
Rapid data transfer      HELP
Select function XX
```

2.9 - Encoding control unit

Notes:

- ♦ Control unit is not factory-coded.
- ♦ The airbag fault light always lights up when the control unit is not encoded.

- Starting airbag system self-diagnosis => Page 5 .

If the appropriate encoding is not displayed at the V.A.G 1551 or the control unit has been replaced the encoding of the control unit is carried out as follows:

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

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- Enter "07" for the function "Encode control unit" and confirm entry with Q key.

-> Indicated on display

```
Code control unit      Q
Enter code number XXXXX (0-32000)
```

- Enter valid 5-digit control unit code in line with encoding table => Page 24 .

Encoding table up to Model Year 2000

Airbag system	Code number
Airbag III (ä approx. 11.94)	00127
Airbag V (approx. 11.94 ä 06.96)	01022
Airbag 7 (07.96 ä 06.97)	00224
Airbag 7 (07.97 ä 09.98)	00225
Airbag 8 (introduced as of 10.98) two rear belt tensioners	00225
Airbag 8 (introduced as of 10.98) three rear belt tensioners	00227
Airbag 8 (introduced as of 10.98) two rear belt tensioners key switch, switch off Airbag BTU	01225

Airbag system	Code number
Airbag 8 (introduced as of 10.98) three rear belt tensioners, key switch, switch off Airbag BTU	01227
Airbag 8 (introduced as of 10.98) head airbag, two rear belt tensioners,	00425
Airbag 8 (introduced as of 10.98) head airbag, three rear belt tensioners,	00427
Airbag 8 (introduced as of 10.98) head airbag, two rear belt tensioners, key switch, switch off Airbag BTU	01425
Airbag 8 (introduced as of 10.98) head airbag, three rear belt tensioners, key switch switch off Airbag BTU	01427

Encoding table as of Model Year 2001

Airbag system	Code number
Airbag 8 two rear belt tensioners	00215
Airbag 8 three rear belt tensioners	00217
Airbag 8 two rear belt tensioners, key switch switch off Airbag BTU	01215
Airbag 8 three rear belt tensioners, key switch switch off Airbag BTU	01217
Airbag 8 head airbag, two rear belt tensioners	00415
Airbag 8 head airbag, three rear belt tensioners	00417
Airbag 8 head airbag, two rear belt tensioners, key switch switch off Airbag BTU	01415
Airbag 8 head airbag, three rear belt tensioners, key switch switch off Airbag BTU	01417

-> If adjacent display appears (example):

```
Code control unit      Q
Enter code number 00224      (0-32000)
```

- Confirm entry with Q key.

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

```
4D0959655C      Airbag 7      AUDI
D00      □
Code 00224      WSC 12345
```

Note:

For vehicles with airbag 8 the display shows Airbag Front + side or Airbag Front + head instead of Airbag III, Airbag V, Airbag 7.

- Press =>key.

-> Display function selection:

```
Rapid data transfer      HELP
Select function XX
```

Encoding control unit after deactivating rear side airbags

Control unit has to be re-encoded after deactivating rear side airbags:

=> General Body Assembly, Interior; Repair group 69; Rear side airbags - deactivation Rear side airbags - deactivation

- Starting airbag system self-diagnosis => Page 5 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```



- Enter "07" for the function "Encode control unit" and confirm entry with Q key.

-> Indicated on display

```
Code control unit      Q
Enter code number XXXXX      (0-32000)
```

Airbag 7 (ã 10.98)

- Enter 5-digit control unit code in with table.

Airbag system	Rear side airbags	Code number
Airbag 7 (07.96 ä 06.97)	deactivated	00124
Airbag 7 (07.97 ä)	deactivated	00125

-> If adjacent display appears (example):

```
Code control unit      Q
Enter code number 00124      (0 - 32000)
```

Airbag 8 (introduced as of 10.98)

- With Airbag 8 (introduced as of 10.98) the coding changes from 2 to 1 and from 4 to 3 see coding table => Page 24
- Changing coding from 01425 to 01325 or 01225 to 01125 (examples).

-> If adjacent display appears (example):

```
Code control unit      Q
Enter code number 01325      (0 - 32000)
```

All

- Confirm entry with Q key.

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

```
4D0959655C      Airbag 7      AUDI
D00      □
Code 00124      WSC 12345
```

- Press =>key.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

Encoding control unit after activating rear side airbags

Control unit has to be re-encoded after activating rear side airbags:

=> General Body Assembly, Interior; Repair group 69; Rear side airbags - deactivation Rear side airbags - deactivation

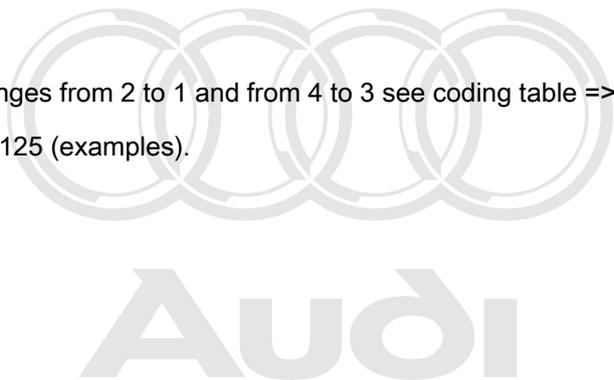
- Starting airbag system self-diagnosis => Page 5 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "07" for the function "Encode control unit" and confirm entry with Q key.

-> Indicated on display



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```
Code control unit      Q
Enter code number XXXXX (0-32000)
```

Airbag 7 (ä 10.98)

- Enter 5-digit control unit code in with table.

Airbag system	Rear side airbags	Code number
Airbag 7 (07.96 ä 06.97)	activated	00224
Airbag 7 (07.97 ä)	activated	00225

-> If adjacent display appears (example):

```
Code control unit      Q
Enter code number 00224 (0-32000)
```

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Airbag 8 (introduced as of 10.98)

- With Airbag 8 (introduced as of 10.98) the coding changes from 1 to 2 and from 3 to 4 see coding table => Page 24
- Changing coding from 01325 to 01425 or 01225 to 01125 (examples).

-> If adjacent display appears (example):

```
Code control unit      Q
Enter code number 01425 (0 - 32000)
```

All

- Confirm entry with Q key.

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

```
4D0959655C   Airbag 7   AUDI
D00          □
Code 00224   WSC 12345
```

- Press =>key.

-> Display function (selection):

```
Rapid data transfer   HELP
Select function XX
```

2.10 - Reading measured value block > 10.98

The current airbag system status can be ascertained using the "Read measured value block" function.

- Starting airbag system self-diagnosis => Page 5 .

-> Indicated on display

```
Rapid data transfer   HELP
Select function XX
```

- Enter "08" to select the function "Reading measured value block" and confirm entry with Q key.

-> Indicated on display

```
Reading measured value block   Q
Enter display group number XXX
```



- Enter desired display group number and confirm input with Q key.
 - Airbag V (approx. 11.94 ä 06.96): 001 =>Page 28 .
 - Airbag 7 (07.96 ä): 001 ... 006 => Page 28 onwards

-> Display for display group 001 (example):

Read measured value block	1
1	2 3 4

- If specified values are attained in all display zones, press =>key.

Note:

Possible causes of fault and fault remedy => from page 7.

-> Display function (selection):

Rapid data transfer	HELP
Select function XX	

Display group 001

Airbag V (approx. 11.94 ä 06.96)			
Read measured value block 1	=>	1111	◀ Display (example)
1111	1111	1111	1111
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Passenger's belt tensioner: Possible displays => Test table			
Driver's belt tensioner: Possible displays => Test table			
Passenger's airbag: Possible displays => Test table			
Driver's airbag: Possible displays => Test table			
Airbag 7 (07.96 ä)			
Read measured value block 1	=>	correct	◀ Display (example)
correct	correct	correct	correct
Passenger's belt tensioner: Possible displays => Test table			
Driver's belt tensioner: Possible displays => Test table			
Passenger's airbag: Possible displays => Test table			
Driver's airbag: Possible displays => Test table			

Test table, display group 001

Airbag V (approx. 11.94 ä 06.96)	Airbag 7 (07.96 ä):
1111 = Resistance OK	correct = Resistance OK
0111 = Resistance too high	too high = Resistance too high
1011 = Resistance too low	too low = Resistance too low
1101 = Short to earth	to earth = Short to earth
1110 = Short to positive	to positive = Short to positive

Display group 002

Read measured value block 2			⇒	◀ Display (example)
correct	correct	correct	-	
				Display zone not used.
				Rear belt tensioner, centre: Possible displays => Test table
				Rear belt tensioner, passenger's side: Possible displays => Test table
				Rear belt tensioner, driver's side: Possible displays => Test table

Test table, display group 002

correct	= Resistance OK
too high 1)	= Resistance too high
too low	= Resistance too low
to earth	= Short to earth
to positive	= Short to positive

1) Display also possible if no belt tensioner is present.

Display group 003

Read measured value block 3			⇒	◀ Display (example)
correct	used	Belt: yes	Belt: yes	
				Belt buckle switch, passenger's side: Possible displays => Test table
				Belt buckle switch, driver's side: Possible displays => Test table
				Seat-occupied sensor, passenger's side: Possible displays => Test table
				Power supply: Possible displays => Test table

Test table, display group 003

Display zone 1	Display zone 2	Display zones 3 and 4
correct	used	Belt: yes
too low	not used	Belt: no
	connected to reverse polarity	not defined
	too high	too high = Resistance too high
	too low	too low = Resistance too low
	to earth	to earth = Short to earth
	to positive	to positive = Short to positive

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Display group 004

Read measured value block 4			⇒	◀ Display (example)
Belt: yes	Belt: yes	Belt: yes	-	
				Display zone not used



		Rear seat belt query centre: ▪ Belt: yes ▪ Belt: no
		Rear seat belt query passenger's side: ▪ Belt: yes ▪ Belt: no
		Rear seat belt query, driver's side: ▪ Belt: yes ▪ Belt: no

Display group 005

Read measured value block 5				⇒	◀ Display (example)
correct	correct	correct	correct		
<small>Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee the accuracy of the information in this document. Copyright © AUDI AG.</small>					Igniter for front side airbag, passenger's side: Possible displays => Test table
					Igniter for rear side airbag, driver's side: Possible displays => Test table
					Igniter for front side airbag, passenger's side: Possible displays => Test table
					Igniter for front side airbag, driver's side: Possible displays => Test table

Test table, display group 005

correct	= Resistance OK
too high	= Resistance too high
too low	= Resistance too low
to earth	= Short to earth
to positive	= Short to positive

Display group 006

Read measured value block 6				⇒	◀ Display (example)
used	used	-	-		
<small>Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee the accuracy of the information in this document. Copyright © AUDI AG.</small>					Display zone not used.
					Display zone not used
					Rear seat-occupied sensor, passenger's side: Possible displays => Test table
	Rear seat-occupied sensor, driver's side: Possible displays => Test table				

Test table, display group 006

used	
not used	
connected to reverse polarity	
too high	= Resistance too high
too low	= Resistance too low

to earth	= Short to earth
to positive	= Short to positive

2.11 - Read measured value block, Airbag 8 (merging from 10.98)

The current airbag system status can be ascertained using the "Read measured value block" function.

- Starting airbag system self-diagnosis => Page 5 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "08" to select the function "Reading measured value block" and confirm entry with Q key.

-> Indicated on display

```
Reading measured value block    Q
Enter display group number XXX
```

- Enter desired display group number and confirm input with Q key.
 - Airbag 8 (introduced as of 10.98):
001 ... 008 =>from Page 31

-> Display for display group 001 (example):

```
Read measured value block    1
1      2      3      4
```

- If specified values are attained in all display zones, press =>key.

Note:

Possible causes of fault and fault remedy => from Page 7.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

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2.12 - Airbag 8 (introduced as of 10.98)

Display group 001

Read measured value block 1	⇒	◀ Display (example)
correct	correct	correct
		Passenger's belt tensioner: Possible displays => Test table
		Driver's belt tensioner: Possible displays => Test table
		Passenger's airbag: Possible displays => Test table
		Driver's airbag: Possible displays => Test table



Test table, display group 001

correct	= Resistance OK
too high	= Resistance too high
too low	= Resistance too low
to earth	= Short to earth
to positive	= Short to positive

Display group 002

Read measured value block 2			⇒	Display (example)
correct	correct	correct	too high	
				Disregard display zone
				Rear belt tensioner, centre: Possible displays => Test table
				Rear belt tensioner, passenger's side: Possible displays => Test table
				Rear belt tensioner, driver's side: Possible displays => Test table

Test table, display group 002

correct	= Resistance OK
too high 1)	= Resistance too high
too low	= Resistance too low
to earth	= Short to earth
to positive	= Short to positive

1) Display also possible if no belt tensioner is present.

Display group 003

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Read measured value block 3			⇒	Display (example)
correct	used	Belt: yes	Belt: yes	
				Belt buckle switch, passenger's side: Possible displays => Test table
				Belt buckle switch, driver's side: Possible displays => Test table
				Seat-occupied sensor, passenger's side: Possible displays => Test table
				Power supply: Possible displays => Test table

Test table, display group 003

Display zone 1	Display zone 2	Display zones 3 and 4
correct	used	Belt: yes
too low	not used	Belt: no
	connected to reverse polarity	not defined
	too high	too high = Resistance too high
	too low	too low = Resistance too low
	to earth	to earth = Short to earth

Display zone 1	Display zone 2 to positive	= Short to positive	Display zones 3 and 4 to positive = Short to positive
----------------	-------------------------------	---------------------	----------------------------------------------------------

Display group 004

Read measured value block 4		⇒	◀ Display (example)
Belt: yes	Belt: yes	Belt: yes	-
			Display zone not used
			Rear seat belt query centre: ▪ Belt: yes ▪ Belt: no
			Rear seat belt query passenger's side: ▪ Belt: yes ▪ Belt: no
			Rear seat belt query, driver's side: ▪ Belt: yes ▪ Belt: no

Test table, display group 004

correct	= Resistance OK
too high	= Resistance too high
too low	= Resistance too low
to earth	= Short to earth
to positive	= Short to positive

Display group 006

Read measured value block 6		⇒	◀ Display (example)
correct	correct	correct	correct
			Igniter for front side airbag, passenger's side: Possible displays => Test table
			Igniter for rear side airbag, driver's side: Possible displays => Test table
			Igniter for front side airbag, passenger's side: Possible displays => Test table
			Igniter for front side airbag, driver's side: Possible displays => Test table

Test table, display group 006

correct	= Resistance OK
too high	= Resistance too high
too low	= Resistance too low
to earth	= Short to earth
to positive	= Short to positive

Display group 007

Read measured value block 7			⇒	◀ Display (example)
used	used	-	-	
				Display zone not used
				Display zone not used
				Rear seat-occupied sensor, passenger's side: Possible displays => Test table
				Rear seat-occupied sensor, driver's side: Possible displays => Test table

Test table, display group 007

used	
Not used	
Connected to reverse polarity	
too high	= Resistance too high
too low	= Resistance too low
to earth	= Short to earth
to positive	= Short to positive

Display group 008

Read measured value block 8			⇒	◀ Display (example)
correct	correct	correct	correct	
				Igniter for head airbag, passenger's side Possible displays => Test table
				Igniter for head airbag, driver's side: Possible displays => Test table
				Igniter for airbag, second stage, passenger's side: Possible displays => Test table
				Igniter airbag, second stage, driver's side: Possible displays => Test table

Test table, display group 008

correct	= Resistance OK
too high 1)	= Resistance too high
too low	= Resistance too low
to earth	= Short to earth
to positive	= Short to positive

1) This display is also possible if no second stage or head airbag is present.

2.13 - Adaption: Activate and deactivate passenger's airbag unit (vehicles 1997 only >)

With the function adaption the passenger's airbag may be disabled and reactivated from Airbag 7 onwards.

- Starting airbag system self-diagnosis => Page 5 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "10" to select the "Adaption" function and confirm with the Q key.

-> Indicated on display

```
Adaption      Q
Feed in channel No.
```

- Enter "01" to select "adaptation channel 01" and confirm entry with Q key.

-> Indicated on display:

The display shows the current status of the passenger's airbag (e.g deactivated)

```
Channel 1      Adaption 1
```

- 0 - Passenger airbag active
- 1 - Passenger airbag deactivated

- Press =>key.

Deactivating passenger's airbag

Order a label with the registration card according to the individual components catalogue.

-> Indicated on display:

```
Channel 0      Adaption 1
Enter adaption value XXXXX
```

- Enter adaption value 00001.

-> Indicated on display:

```
Channel 1      Adaption 0      Q
Enter adaption value 00001
```

- Confirm input with Q key.

-> Indicated on display:

```
Channel 1      Adaption 1      Q
Pass.-airbag disabled      WSC 06812
```

- Confirm input with Q key.
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-> Indicated on display:

```
Channel 1      Adaption 1      Q
Store changed value?
```

- Confirm input with Q key.

-> Indicated on display:

```
Channel 1      Adaption 1
Changed value is stored
```

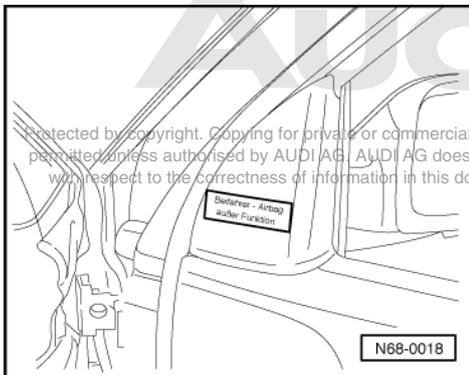
- Press the => key to terminate the adaption procedure.

-> Indicated on display:

```
Rapid data transfer      HELP
Select function XX
```



- Switch ignition off.
- Unplug connectors for fault reader V.A.G 1551.
- Switch the ignition on.
- ◆ The airbag warning lamp -K75 initially lights up for approx. 4 seconds and then flashes for a further approx. 15 seconds. This indicates that the passenger airbag has been disabled. Customers are to be informed of this modification to the warning lamp actuation.
- ◆ The fault "01280" "Passenger's airbag deactivated" is stored when the passenger's airbag is deactivated.



- -> Attach sticker (passenger's airbag deactivated) to mirror trim on passenger door.

The registration card enclosed with the sticker must be completed after deactivating the passenger side airbag unit and sent to the relevant sales centre or importer for registration. Disabling of the passenger airbag is to be confirmed by the workshop in the service schedule.

The second registration card must be carefully retained by the customer until the front passenger's module is reactivated (Vehicle wallet).

Activating passenger's airbag

-> Indicated on display:

```
Channel 1      Adaption 1
Enter adaption value XXXXX
```

- Press key -0- five times.

-> Indicated on display:

```
Channel 1      Adaption 1      Q
Enter adaption value 00000
```

- Confirm input with Q key.

-> Indicated on display:

```
Channel 1      Adaption 0      Q
Pass. airbag activated      WSC 06812
```

- Confirm input with Q key.

-> Indicated on display:

```
Channel 1      Adaption 0      Q
Store changed value?
```

- Confirm input with Q key.

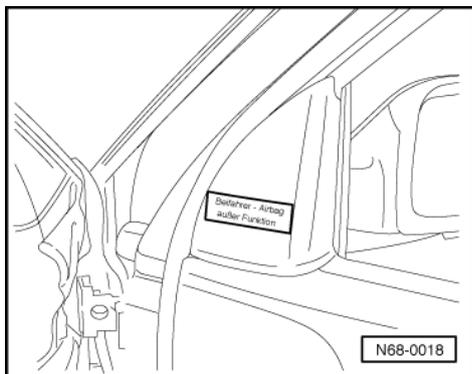
-> Indicated on display:

```
Channel 1      Adaption 0
Changed value is stored
```

- Press the => key to terminate the adaption procedure.

-> Indicated on display:

Rapid data transfer	HELP
Select function XX	



- -> Remove the "passenger's airbag deactivated" sticker from the mirror trim on the passenger door.

The registration card supplied to the customer must be completed after activating the passenger side airbag unit and sent to the relevant sales centre or importer for registration. Activation of the passenger airbag unit by the workshop must be confirmed in the service schedule.

3 - Central locking system self-diagnosis 07.96 ä

3.1 - Central locking system self-diagnosis 07.96 ä

General notes

- ◆ The central locking system with radio remote control (07.96 ▶) features self-diagnosis capabilities. Using the fault memory, the final control diagnosis and the measured value blocks simplifies fault finding.
- ◆ The central locking has two pneumatic circuits. Driver's door and filler neck compartment lid are connected to the first circuit. The remaining locking positions are connected to the second circuit.
- ◆ With the high-security central locking system with customer encoding option, once-only unlocking unlocks the driver's door and the filler neck compartment lid by way of the first pneumatic circuit. If a further unlock command is given immediately, the second pneumatic control circuit is also actuated and the entire vehicle opened.
- ◆ If the tailgate lock cylinder is actuated only once, all doors remain locked. The tailgate/boot lid re-lock automatically after approx. 5 seconds.
- ◆ The interior lighting is dimmed on or off within approx. 1.5 seconds.
- ◆ The luggage compartment lighting is controlled by the central locking system pump by way of the tailgate/boot lid contact switch. If the tailgate/boot is unlocked, the lighting is switched off after exceeding a speed threshold of approx. 5 km/h or after 10 minutes.
- ◆ The remote control system 07.96 ▶ takes the form of a radio remote control system. The receiver is an integral part of the central locking system pump, the aerial an integral part of the wiring harness.
- ◆ The central locking system re-locks automatically if the doors or tailgate/ boot lid are not opened within 60 seconds of opening the central locking.
- ◆ The central locking cannot be opened using the interior switch if the anti-theft alarm system is armed.
- ◆ Vehicles with anti-theft alarm systems are always equipped with an ultrasonic interior monitoring system.
 - ▶ 06.97 with self-diagnosis by means of flash code output via LED in switch for rear fog light;
 - 07.97 ▶ with self-diagnosis by means of fault reader V.A.G 1551.
- ◆ If requested by customers, certain central locking system functions can be activated/deactivated by way of encoding:
 - Vehicles ▶ 06.97 => Page 49 .



3.2 - Initiating self-diagnosis of the central locking system

Test requirements:

- ◆ Voltage supply and fuses for the relevant systems OK.
- => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder
- ◆ Fault reader V.A.G 1551 connected
=>Page 1 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "35" for address word "Central locking" and confirm entry with Q key.

-> Indicated on display

```
Rapid data transfer
Tester sends address word 35
```

- Wait until the next display appears.

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

```
8L0862257      CL-Pump, anti-theft alarm,
remote        Dxx
Code 10184     WSC 12345
```

Note:

You may print out the control unit identification by pressing the PRINT key on the fault reader V.A.G 1551.

Control unit identification (example)

- 8L0 862.257	Part-No.; assignment => Parts List
- CL Pump, ATW, Radio	Component designation
- Dxx	Control unit data status (software type)
- Code 10184:	Control unit code Codes: e.g..vehicles ä 06.97 =>Page 47 .
- WSC 12345	Workshop Code of V.A.G 1551 with which encoding was last performed

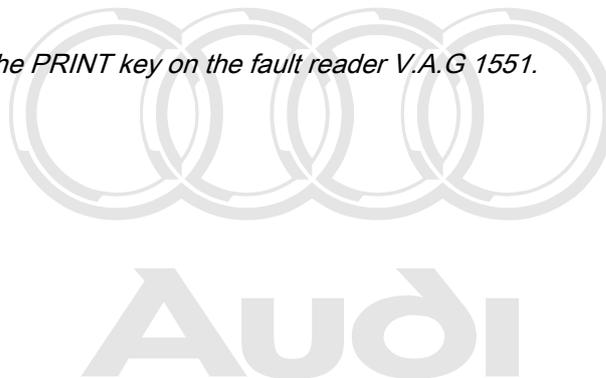
- Press =>key.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

Note:

The control unit identification can be displayed again by entering function "01" for "Interrogating control unit version" and confirming with the Q key.



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Available functions

Fault reader V.A.G 1551 and vehicle system tester V.A.G 1552, Address words	Page
00 Automatic test sequence	2
35 Central locking	38
Functions	
01 Interrogating control unit version	39
02 Interrogating fault memory	39
03 Final control diagnosis	45
05 Erase fault memory	40
06 End of output	40
07 Encoding control unit	47
08 Reading measured value block	50

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3.3 - Interrogating fault memory

Note:

The displayed fault information is not constantly updated but only when initiating self-diagnosis or with function 05 "Erase fault memory".

- Starting central locking system self-diagnosis => Page 38 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "02" for the function "Interrogate fault memory" and confirm entry with Q key.

-> Indicated on display

```
No fault recognised!
```

- Press =>key.

or

-> Indicated on display

```
X fault(s) detected
```

The stored faults are displayed and printed in sequence when the printer is switched on.

Note:

If the printer is switched off, press the => key to display the next fault.

- Press =>after the last fault is displayed and printed.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

- Rectify printed faults according to fault table => Page 41 , then erase fault memory and interrogate the fault memory again as a check.



3.4 - Erase fault memory

Prerequisite:

- Fault memory interrogated => Page 39 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "05" for the function "Erase fault memory" and confirm entry with Q key.

-> Indicated on display

```
Rapid data transfer
Fault memory is erased
```

- Press => key.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

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Notes:

-> Indicated on display

```
Important:
Fault memory has not been interrogated
```

or

->

```
Rapid data transfer
Fault memory has not been interrogated
```

Procedure has not been correctly followed.

Observe test sequence exactly: First interrogate fault memory, if necessary rectify faults, then erase.

Erase according to fault memory; exit output with 0; deactivate and reactivate ignition; interrogate fault memory again.

End of output

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "06" for "End output" function and confirm entry with Q key.

-> Indicated on display

```
Rapid data transfer      HELP
Enter address word XX
```

- Detach diagnostic connectors.

3.5 - Fault table

Notes:

- ◆ The following table lists all the faults, with the corresponding 5-digit code numbers, that can be recognised by the central locking control unit and printed out by the V.A.G 1551. Fault codes appear only on print-out.
- ◆ The fault memory records all static and sporadic faults.
When a fault occurs it is immediately identified as a static fault. If fault does not occur again it is registered as a sporadic fault. "/SP" appears on the right of the display.
- ◆ When the ignition is switched on, all existing faults are automatically reclassified as sporadic faults and will only register as static faults if they still occur after testing.
- ◆ Sporadic faults which no longer occur after 50 opening cycles are erased automatically.
- ◆ If faults relating to switches or actuator elements are saved, always extend the fault finding procedure by monitoring the measured value blocks => Page 50 .
- ◆ Before replacing a component shown as faulty, check wiring and connections to component as well as earth connections according to current flow diagram.
- ◆ Once repairs have been completed, the fault memory is always to be interrogated again with fault reader V.A.G 1551 and erased. The vehicle is then to be relocked (with key or remote) and the fault memory is re-interrogated.

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
00955 Key 1 Adaption limit exceeded	- Key not matched - Key operated more than 200 times while out of range	- Re-match key =>Page 54 .
00956 Key 2 Adaption limit exceeded	- Key not matched - Key operated more than 200 times while out of range	- Re-match key =>Page 54 .
00957 Key 3 Adaption limit exceeded	- Key not matched - Key operated more than 200 times while out of range	- Re-match key =>Page 54 .

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Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
00958 Key 4 Adaption limit exceeded	- Key not matched - Key operated more than 200 times while out of range	- Re-match key =>Page 54 .
00991 Interior lighting Short to positive	- Short in wiring or in connections	- Fault finding according to current flow diagram => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01360 Open switch for ATW Short to earth 1)	- Short to earth in the wiring.	- Fault finding according to current flow diagram => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder



	- Door contact switch -F2 defective	- Check switches and repl., if necess. => General Body Assembly, Exterior; Repair group 57; Front door; Removing and installing front door lock with operating elements Front door; Removing and installing front door lock with operating elements
01361 Close switch for ATW Short to earth 1)	- Short to earth in the wiring.	- Fault finding according to current flow diagram => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder
	- Door contact switch -F3 defective	- Check switches and repl., if necess. => General Body Assembly, Exterior; Repair group 57; Front door; Removing and installing front door lock with operating elements Front door; Removing and installing front door lock with operating elements

1) The fault is stored, if earth is applied for more than 1 min., e. g. result. from incorr. operat. of the central locking. Only perform the fault remedy proced. if there are malfunct. otherw. simply erase the fault mem. => Page 45 .

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01362 Close tailgate switch -F124 Short to earth 1)	- Short to earth in the wiring.	- Fault finding according to current flow diagram => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder
	- Switch -F124 defective	- Check switches and repl., if necess.
01363 Switch for CL, driver door -F59 Implausible signal	- This display can appear depending on the system. There is no defect on switch -F59.	- Ignore fault display and erase the fault memory => Page 45
01364 Switch for CL, front passenger door -F114 Implausible signal	- This display can appear depending on the system. There is no defect on switch -F114	- Ignore fault display and erase the fault memory => Page 45

1) The fault is stored, if earth is applied for more than 1 minute, e. g. resulting from incorrect operation of the central locking. Only perform the fault remedy procedure if there are malfunctions otherwise simply erase the fault memory => Page 45 .

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01365 Lock/unlock internal switch/lock switch Short to earth 1)	- Short to earth in the wiring.	- Fault finding according to current flow diagram => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

	- Switch -F150 defective	- Check switches and repl., if neces. => Electrical System; Repair group 96; Repairing switch; Removing and instal- ling switch for high security central lock- ing. Repairing switch; Removing and installing switch for high security central locking.
Short to positive	- Short in the wiring	- Fault finding according to current flow diagram => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations bind- er
	- Switch -F150 defective	- Check switches and repl., if neces. => Electrical System; Repair group 96; Repairing switch; Removing and instal- ling switch for high security central lock- ing. Repairing switch; Removing and installing switch for high security central locking.

1) The fault is stored, if earth is applied for more than 1 min., e. g. result. from incorr. operat. of the central locking. Only perform the fault remedy proced. if there are malfunct. otherw. simply erase the fault mem. => Page 45 .

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01366 Opening via crash signal Short to earth Open circuit/short to positive	- Final control diagnosis on airbag control unit -J234 or on control unit for central locking - J429 has been performed - Airbag control unit -J234 triggered - Short or open circuit in wiring between airbag control unit and central locking control unit	- Read fault memory of airbag control unit -J234 Delete fault memory => Page 45 Check wiring and connections between airbag control unit and central locking control unit according to current flow diagram and repair if necessary => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder
01367 Switching off central locking pump	- Insufficient pressure in the pneumatic lines.	- Check pneumatic lines for leaks Check all control elements of central locking and replace, if necessary => General Body Assembly, Exterior; Repair group 57; Central locking Central locking
	- Central locking pump defective	- Replace CL- Pump => General Body Assembly, Exterior; Repair group 57; Central locking Central locking

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01368 Alarm from boot switch	- ATW has triggered as a result of un- authorised opening of the tailgate.	- Delete fault memory => Page 45
	- Contact switch in boot lid - -F123 defective	- Replace switch => Electrical System; Repair group 96; Repairing switch; Removing and instal- ling tailgate contact switch Repairing switch; Removing and installing tailgate contact switch
01369		

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Alarm from bonnet switch	- ATW has triggered as a result of unauthorised opening of the bonnet	- Delete fault memory => Page 45
	- Contact switch bonnet lid -F120 defective.	- Replace switch => Electrical System; Repair group 96; Repairing switch; Removing and installing bonnet contact switch Repairing switch; Removing and installing bonnet contact switch

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01370 Alarm from interior monitor Short to earth	- ATW has triggered as a result of interior monitor - Final control diagnosis on central locking control unit or functional test on interior monitor has been performed. - Short circuit in wiring connection between control unit for ultrasonic sensors and CL control unit. - False alarm. - Control unit for ultrasonic sensors - -J347 defective	- Delete fault memory => Page 62 . Check wiring and connections between ultrasonic sensors control unit and central locking control unit according to current flow diagram and repair if necessary => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder
01371 Alarm triggered by driver's door contact switch	- ATW has triggered as a result of unauthorised opening of driver's door. - Door contact switch -F2 defective	- Delete fault memory => Page 45 - Check switches and replace, if necessary => General Body Assembly, Exterior; Repair group 57; Front door; Removing and installing front door lock with operating elements Front door; Removing and installing front door lock with operating elements

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01372 Alarm triggered by rear door contact switch/ front passenger door.	- ATW has triggered as a result of unauthorised opening of rear doors and/or passenger door.	- Delete fault memory => Page 45
	- Door contact switches -F3, -F10, -F11 defective.	- Check switches and replace, if necessary => General Body Assembly, Exterior; Repair group 57; Front door Rear door
01373 Alarm triggered by earth contact Radio	- ATW has triggered as a result of unauthorised removal of radio.	- Delete fault memory => Page 45
	- Earth connection for ATW is interrupted	- Establish earth connection.

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01374 Alarm from terminal 15	- ATW has triggered as a result of unauthorised starting (short-circuiting)	- Delete fault memory => Page 45
	- Short-circuit between terminals 30 and 15.	- Fault finding according to current flow diagram => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder
01389 Open switch for tailgate -F124 Short to earth	- Short to earth in the wiring.	- Fault finding according to current flow diagram => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder
	- Switch -F124 defective	- Check switches and replace, if necessary => General Body Assembly, Exterior; Repair group 55; Boot lid Boot lid
65535 Control unit defective	- Central locking control unit -J429 defective	- Repl. central lock. control unit -J429 => General Body Assembly, Exterior; Repair group 57; Central locking Central locking

3.6 - Final control diagnosis

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Notes:

- ◆ The final control diagnosis may only be performed with the vehicle stationary and the engine not running!
- ◆ Any faults identified by the final control diagnosis must be traced and rectified!

The final control diagnosis activates the following elements in sequence:

- ◆ Generates alarm trigger (the alarm is triggered in turn via the alarm horn and the hazard warning lights)
- ◆ Activates interior monitor (will also be activated if interior monitor not fitted)
- ◆ Simulates a crash signal (activation of hazard warning lights for checking crash signal).

Performing function "03 - final control diagnosis"

- Press keys -0- and -3-.

-> Indicated on display:

```
Rapid data transfer      Q
03 - Final control diagnosis
```

- Confirm input with Q key.

-> Indicated on display:

```
Final control diagnosis
Cause alarm to trigger
```

The alarm is triggered in turn via the alarm horn and the hazard warning lights.



Note:

If no ATW is fitted, the hazard warning lights only are actuated.

- Press =>key.

-> Indicated on display:

Final control diagnosis initiate next final control: press

- Press =>key.

-> Indicated on display:

Final control diagnosis Activate interior monitor

The central locking control unit transmits a signal to activate the interior monitor.

- The ATW horn is activated briefly for confirmation.
- Warning lamp in rear fog light switch is actuated

Notes:

- ◆ The system requires a waiting time of 30 sec after activation of interior monitor.
- ◆ On activation of alarm an entry is made in the fault memory of the central locking control unit "1370; Alarm from interior monitor" and in the ultrasonic sensors control unit "Alarm from sensor for ATW; front left, front right, rear left, rear right".
- ◆ The faults in the fault memory of the relevant control unit must be read out and erased.

- Press =>key.

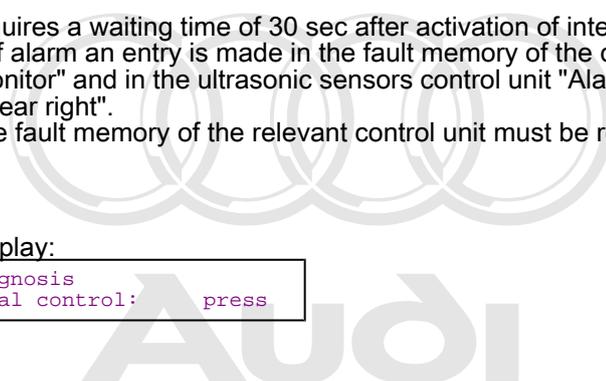
-> Indicated on display:

Final control diagnosis initiate next final control: press

- Press =>key.

-> Indicated on display:

Final control diagnosis Simulate crash signal



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Switching on the hazard warning lights.

Notes:

- ◆ The fault "1366, Opened via crash signal" is stored in the fault memory for the central locking control unit.
- ◆ Final control diagnosis is to be repeated with airbag control unit. When final control diagnosis of airbag control unit has been carried out, the fault "01366 Opening via crash signal" is also stored in the central locking control unit.
- ◆ The fault must be called up in the fault memory for the central locking control system => Page 40 .

- Press =>key.

-> Indicated on display:

Final control diagnosis End

- Press =>key.

This returns testing unit to basic function mode.

-> Indicated on display:

Rapid data transfer HELP
 Select function XX

3.7 - Encoding control unit

A standard code for which the control unit is encoded at the factory is provided for the basic function of the central locking system and anti-theft alarm.

- ◆ Standard coding for vehicles ä 06.97
 =>Page 47 .
- ◆ Standard coding for vehicles 07.97 ä
 =>Page 47 .
- ◆ Standard coding for vehicles 18.00 ä
 =>Page 48 .

If requested by customers, certain central locking system functions can be activated/deactivated by way of encoding:

- ◆ Encoding options for vehicles ä 06.97
 =>Page 48 .
- ◆ Encoding options for vehicles 07.97 ä
 =>Page 49 .
- ◆ Encoding options for vehicles 18.00 ä
 =>Page 49 .

3.8 - Standard coding for vehicles > 06.97

Standard code = 10184

The standard code is the sum total of the following:	
- Radio remote control is activated	+ 8192
- Horn sounds on activation of anti-theft alarm	+ 1024
- Hazard warning lights flash on closing/locking via radio remote control	+ 512
- Tailgate/boot lid logic (ATW)	+ 256
- Dynamic actuation of interior scanning system	+ 128
- Comfort closing/locking via radio remote control	+ 64
- Anti-theft alarm (ATW) is activated	+ 8
Total (Code):	= 10184

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3.9 - Standard coding for vehicles 07.97 ä

Standard code = 13130

The standard code is the sum total of the following:	
- Radio remote control is activated	+ 8192
- Hazard warning lights flash on opening/unlocking via radio remote control	+ 4096



The standard code is the sum total of the following:	
- Hazard warning lights flash on closing/locking via radio remote control	+ 512
- Tailgate/boot lid logic (ATW)	+ 256
- Comfort closing/locking via radio remote control	+ 64
- Anti-theft alarm (ATW) is activated	+ 8
- Hazard warning lights flash on activating anti-theft alarm	+ 2
Total (Code):	= 13130

3.10 - Standard coding for vehicles 18.00 ä

Standard code = 15178

The standard code is the sum total of the following:	
- Radio remote control is activated	+ 8192
- Hazard warning lights flash on opening/unlocking via radio remote control	+ 4096
- Hazard warning lights flash on closing/locking via radio remote control	+ 512
- Window lifter logic, USA	+ 2048
- Tailgate/boot lid logic (ATW)	+ 256
- Comfort closing/locking via radio remote control	+ 64
- Anti-theft alarm (ATW) is activated	+ 8
- Hazard warning lights flash on activating anti-theft alarm	+ 2
Total (Code):	= 15178

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Note:

The coding for vehicles as of CW 18/00 also contains modified door or window lifter logic. As soon as the driver's door is opened when "terminal 15 off", no window lifters can be actuated.

Coding options for vehicles ä 06.97

High security central locking	Coding
- Individual door unlocking and tailgate/boot lid relocking with radio remote control (SCL) (Standard code + 4)	10188

Automatic locking	Coding
- Automatic locking as of approx. 15 km/h (Standard code +32)	10216

High security central locking and automatic locking	Coding
- Individual door unlocking and tailgate/boot lid relocking with radio remote control (SCL)	
- Automatic locking as of approx. 15 km/h	

(Standard code +4+32)	10220
No sounding of horn	Coding
- No sounding of horn on anti-theft alarm activation (Standard code -1024)	9160

Coding options for vehicles 07.97 ä

High security central locking	Coding
- Individual door unlocking and tailgate/boot lid relocking with radio remote control (SCL) (Standard code + 4)	13134

Automatic locking	Coding
- Automatic locking as of approx. 15 km/h (Standard code +32)	13162

High security central locking and automatic locking	Coding
- Individual door unlocking and tailgate/boot lid relocking with radio remote control (SCL) - Automatic locking as of approx. 15 km/h (Standard code +4+32)	13166

Coding options for vehicles 18.00 ä

High security central locking	Coding
- Individual door unlocking and tailgate/boot lid relocking with radio remote control (SCL) (Standard code + 4)	15182

Automatic locking	Coding
- Automatic locking as of approx. 15 km/h (Standard code +32)	15210

High security central locking and automatic locking	Coding
- Individual door unlocking and tailgate/boot lid relocking with radio remote control (SCL) - Automatic locking as of approx. 15 km/h (Standard code +4+32)	15214

- Starting central locking system self-diagnosis => Page 38 .

-> Indicated on display

Rapid data transfer HELP Select function XX

- Enter "07" for the function "Encode control unit" and confirm entry with Q key.

-> Indicated on display

Code control unit Q Enter code number XXXXX (0 - 32000)

- Enter 5-digit control unit code in with table. Fill empty spaces with 0 (Example: 13166).
 - Standard coding or coding options; Coding control unit => Page 47 .

-> If adjacent display appears (example):



```
Code control unit      Q
Enter code number 13166 (0 - 32000)
```

- Confirm entry with Q key.

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

```
8L0862257E      CL-Pump      D04
Code 13166      WSC 12345
```

- Press =>key.

-> Display function selection:

```
Rapid data transfer      HELP
Select function XX
```

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3.11 - Reading measured value block

The current central locking system status can be ascertained using the "Read measured value block" function.

- Starting central locking system self-diagnosis => Page 38 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "08" to select the function "Reading measured value block" and confirm entry with Q key.

-> Indicated on display

```
Reading measured value block      Q
Enter display group number XXX
```

- Enter desired display group number and confirm input with Q key.

-> Display for display group 001 (example):

```
Read measured value block      1
1      2      3      4
```

- If specified values are attained in all display zones, press =>key.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

3.12 - Measured value block overview

Display group 001

Read measured value block 1	_____ =>	◀ Display (example)
0 1 0 0 1 0 0 0 0 0 0 0 0 0 0		

			X X X X	Boot lid: 1 = opened, 0 = closed Boot light: 1 = Light on, 0 = Light out Tailgate/boot lid unlocking switch: ▪ 1 = actuated, 0 = not actuated Tailgate/boot lid unlocking motor: ▪ 1 = Engine running, 0 = Engine not running
		X X X X		Switch for actuator element or interior switch on front passenger door: ▪ 00 = Not actuated, 01 = Lock, 10 = Unlock, 11 = Not permitted Switch for actuator element or interior switch on driver door: ▪ 00 = Not actuated, 01 = Lock, 10 = Unlock, 11 = Not permitted
	X X X	Front passenger door and rear doors: 1 = open, 0 = closed (USA: only rear doors) Driver door: 1 = open, 0 = closed (USA: Driver and front passenger door) Bonnet: 1 = open, 0 = closed		
X X X X	Key position in the lock cylinders ▪ Unlock driver/ passenger door: 1 = key actuated, 0 = key in centre position ▪ Lock driver/ passenger door: 1 = key actuated, 0 = key in centre position ▪ Unlock tailgate/boot lid: 1 = key actuated, 0 = key in centre position ▪ Lock tailgate/boot lid: 1 = key actuated, 0 = key in centre position			

Display group 002

Read measured value block 2			_____ =>	◀ Display (example)
0 1 0 0	0 0 0 0	0 0 1		
		X X X		Terminal 15: 1 = Ignition on, 0 = Ignition off S-contact 1: 1 = S -contact on, 0 = S- contact off Earth signal from radio: 1 = Radio installed, 0 = Radio removed
	X X X X	"Open" radio remote control switch: 1 = actuated, 0 = not actuated Radio remote control switch "Close": 1 = actuated, 0 = not actuated Radio remote control button "unlock tailgate/boot lid": 1 = actuated, 0 = not actuated Radio remote control switch for "Panic" (only USA): 1 = actuated, 0 = not actuated		
X X X X	Interior light control: 1 = Interior light on, 0 = Interior light off Control line for window lifter/sunroof: ▪ 1 = Terminal 87 (maintaining the supply voltage), 0 = Earth "Comfort close" function: 1 = Comfort close actuated, 0 = not actuated "Comfort open" function: 1 = Comfort open actuated, 0 = not actuated			



Display group 003

Read measured value block 3										⇒	◀ Display (example)		
0	0	0	1	1		0		0	0	0	0		
								X	X	X	X		Radio remote control button "open/unlock" 2): ▪ 1 = actuated, 0 = not actuated Radio remote control button "close/lock" 2): ▪ 1 = actuated, 0 = not actuated Radio remote control button "unlock tailgate/boot lid" 2): ▪ 1 = actuated, 0 = not actuated Radio remote control button "Panic" (USA only) 2): ▪ 1 = actuated, 0 = not actuated
						X							Disregard measured value
	X	X	X	X									Radio remote control key memory location 4 1): 1 = Address occupied, 0 = not occupied Radio remote control key memory location 3 1): 1 = Address occupied, 0 = not occupied Radio remote control key memory location 2 1): 1 = Address occupied, 0 = not occupied Radio remote control key memory location 1 1): 1 = Address occupied, 0 = not occupied
X													Disregard measured value

1) The corresponding key memory address for the radio remote control flashes if the radio remote control is actuated.

2) In addition, this measured value block does not display matched radio remote control key, e.g., relating to the function check of the radio remote control key.

Display group 004 (vehicles up to software version D04)

Read measured value block 4										⇒	◀ Display (example)			
1	0	1		0	1	0	1		1	0	0	0		

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			X X X X Anti-theft alarm system activated: 1 = Yes, 0 = No Security CL activated: 1 = Yes, 0 = No Ignore measured value (display always 0) Vehicle with Swiss registration: 1 = Yes, 0 = No
		X X X X Anti-theft alarm system activated: 1 = Yes, 0 = No Interior monitor is equipped with self-diagnosis features : 1 = No, 0 = Yes Ignore measured value (display always 0) Vehicle is a Convertible: 1 = Yes, 0 = No	
	X X X X USA-door logic 1) activated: 1 = Yes, 0 = No Confirming the anti-theft alarm system using hazard warning system: 1 = Yes, 0 = No Confirming the anti-theft alarm using the ATW horn 2): 1 = Yes, 0 = No Confirming the radio remote control using the hazard warning system: 1 = Yes, 0 = No		
X X X Radio remote control activated: 1 = Yes, 0 = No For high security central locking, select central locking function if operating via remote, otherwise select high security central locking function: 1 = Yes, 0 = No Comfort closing also using the radio remote control: 1 = Yes, 0 = No			

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- 1) All window lifters are thereby disabled when the ignition is off and the driver door is simultaneously open.
- 2) No longer permissible under German law.

Display group 004 (vehicles as of software version D05)

Read measured value block 4	⇒	◀ Display (example)
1 0 1 1 1 0 1 0 0 0 0 0 0 0 0		



			X X X X	Anti-theft alarm system activated: 1 = Yes, 0 = No Security CL activated: 1 = Yes, 0 = No Confirming the anti-theft alarm system using hazard warning system: ▪ 1 = Yes, 0 = No Ignore measured value (display always 0)
		X X X X		Anti-theft alarm system activated: 1 = Yes, 0 = No Interior monitor is equipped with self-diagnosis features: 1 = No, 0 = Yes Locking the vehicle using speed: 1 = Yes, 0 = No Vehicle is a Convertible: 1 = Yes, 0 = No
	X X X X	USA-door logic 1) activated: 1 = Yes, 0 = No Confirming the radio remote control key "unlock" using the hazard warning system: ▪ 1 = Yes, 0 = No Confirming the anti-theft alarm using the ATW horn 2): 1 = Yes, 0 = No Confirming the radio remote control button "Close/lock" using the hazard warning system: ▪ 1 = Yes, 0 = No		
X X X		Radio remote control activated: 1 = Yes, 0 = No For high security central locking, select central locking function if operating via remote, otherwise select high security central locking function: 1 = Yes, 0 = No Comfort closing also using the radio remote control: 1 = Yes, 0 = No		

- 1) All window lifters are thereby disabled when the ignition is off and the driver door is simultaneously open.
- 2) No longer permissible under German law.

3.13 - Matching or deleting vehicle key for radio remote control

The vehicle is supplied with two remote keys.

You must match radio remote control ignition keys which are new or have not yet been matched using the central locking control unit -J429.

The vehicle keys must also be adapted to immobiliser control electronics.

=> Electrical System; Repair group 01; Immobiliser Self-diagnosis -Fixed code Immobiliser Self-diagnosis - Fixed code

If a fault from 00955 to 00958 is displayed, the remote keys must be rematched.

Matching procedure for new remote keys

- Switch on the ignition (using additional key).
- Check how many keys have already been matched in measured value block 003 => Page 52 .

-> Indicated on display:

```
Read measured value block      3
  0      0001      0      0000
```

Display zone 2 shows how many remote keys have been matched and in which memory positions (1x in position 1 in example shown).

- Lock vehicle from outside with the key to be adapted by way of the driver's lock door.
- Within 5 seconds press "unlock" key of remote key until next memory position is reached (2x in example).

Each time the button is pressed the hazard lights will flash to confirm.

- Wait 5 seconds.
- Now press the "unlock" key again to confirm the matching process.

This vehicle key is now saved and the central locking must unlock.

- Switch off ignition and remove ignition key.
- Check function of new remote key.
- Check display zone 2 measured value block 003. It must now contain an additional "1" (in example: 0011).

-> Display zone 2 shows how many radio remote control keys have been matched and in which memory positions (2x in positions 2 and 1 in example shown).

```
Read measured value block      3
  0      0011      0      0000
```

Notes:

- ◆ Repeat adaption process for any further keys. Ignition must always be switched off following storage.
- ◆ Make sure new keys are always matched to vacant memory positions. If use is made of occupied memory positions (can be seen from "1") the radio key already matched for this memory position will no longer function.

Re-matching procedure for existing remote keys

Note:

This procedure must be performed after changing the batteries in remote keys, or if the fault reader displays fault codes 00955 to 00958.

- Press key on remote key.

If vehicle is neither locked nor unlocked:

- Lock and unlock vehicle within 30 seconds by way of driver's door lock.
- Then check function of re-matched remote key.

If vehicle is still not locked or unlocked, key must be re-matched. Match remote key =>Page 54 .

Procedure for erasing memory positions

Note:

It is possible to erase all of the memory addresses, e. g., if the customer has misplaced a radio remote control key. Please proceed as follows:



- Switch on the ignition using a key.
- Then mechanically lock the central locking from outside using a key.
- Press "open/unlock" button on radio remote control key five times at 1 second intervals.

Each time the button is pressed the hazard lights will flash to confirm.

- Then press the "Open" remote control switch after 6 seconds to confirm this erasing procedure once again.

The central locking is now not permitted to unlock the vehicle via the radio remote control.

- Switch off ignition and remove ignition key.
- Memory positions are erased; it must not be possible to unlock central locking system by pressing "remote opening" button.

You can now match up to four keys.

4 - Servicing ultrasonic interior scanning system > 06.97

4.1 - Servicing ultrasonic interior scanning system > 06.97

General notes

- ◆ The ultrasonic interior scanning system supplements the anti-theft alarm and detects unauthorised entry into the vehicle by way of the side windows and causes the anti-theft alarm to be triggered.
- ◆ The vehicle doors are still scanned by way of door contact switches.
- ◆ The interior scanning system control unit has a fault memory, but it is not possible to perform self-diagnosis with the fault reader V.A.G 1551.
- ◆ If required the interior scanning system 07.95 > can be deactivated by way of a momentary contact switch => Owner's manual. Deactivation is cancelled automatically on next locking operation.

Function

The ultrasonic interior scanning system consists of:

- ◆ Control unit for ultrasonic sensors -J347
- ◆ Ultrasonic sensor left for ATW -G170
- ◆ Ultrasonic sensor right for ATW -G171
- ◆ Switch for interior monitor -E183

The ultrasonic sensors in the upper part of the left and right B-pillar trim scanning the side windows and transmit scanning signals to the ultrasonic sensors control unit.

If the scanning signal changes, the ultrasonic sensors control unit triggers the alarm via the central locking control unit.

The interior scanning system control unit actuates the warning lamp in the rear fog light switch. This warning lamp can be used for diagnosing the interior monitor => Page 57 .

4.2 - Functional test of interior monitor

- Open side window approx. 10 cm.
- Switch off ignition and remove ignition key.
- Close all doors.
- Lock vehicle thus activating anti-theft alarm and interior monitor.
- Wait 30 seconds until warning lamp in rear fog light switch starts to flash slowly every 2 seconds (f = 0.5 Hz).
- Move your hand through the open window and near to the sensor.
- Alarm is triggered if interior scanning system is functioning properly. An entry is made in the fault memory of the central locking control unit "1370; Alarm from interior monitor" and in the ultrasonic sensors control unit "Alarm from sensor for ATW: front left, front right, rear left, rear right".
- Unlock vehicle and thus deactivate alarm.

- The faults in the fault memory of the relevant control unit must be read out and erased.

4.3 - Interior scanning system diagnosis

Notes:

- ◆ The system performs a self-test and passenger compartment adaption during the first 30 seconds after locking and closing all doors and bonnet/tailgate/boot lid.
 - ◆ The warning lamp in the rear fog light switch lights for approx. 3 seconds after deactivating the interior scanning system 07.95 ▶ with the momentary contact switch in the B-pillar trim.
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- Close all vehicle doors and tailgate/boot.
 - Lock vehicle thus activating anti-theft alarm and interior monitor.
 - Check indication given by warning lamp at rear fog light switch.
 - Evaluating indication given by warning lamp on the basis of the diagnosis table => Page 57 .

4.4 - Diagnosis table

Warning lamp indication	Effect/diagnosis	Possible causes of fault	Fault remedy
- Warning lamp flashes quickly for approx. 2 seconds (f = 3.33 Hz) - Warning lamp flashes quickly for approx. 28 seconds (f = 2.0 Hz) - Warning lamp then starts to flash slowly (f = 0.5 Hz)	▪ Self-test OK		
- Warning lamp lights up for approx. 3 seconds	▪ Confirmation of deactivation with momentary contact switch		
- Warning lamp flashes quickly for approx. 2 seconds (f = 3.33 Hz) - Warning lamp lights up for approx. 28 seconds - Warning lamp then starts to flash slowly (f = 0.5 Hz)	▪ Self-test not OK	▪ Sensors defective ▪ Control unit defective	- Replace sensor => Page 59

Warning lamp indication	Effect/diagnosis	Possible causes of fault	Fault remedy
- Warning lamp lights up for approx. 2 seconds - Warning lamp flashes quickly for approx. 28 seconds (f = 2.0 Hz) - Warning lamp then starts to flash slowly (f = 0.5 Hz)	▪ All faults rectified		
- Warning lamp lights up for approx. 30 seconds - Warning lamp then starts to flash slowly (f = 0.5 Hz)	▪ Fault already displayed but not yet rectified	▪ Sensors defective ▪ Control unit defective	- Replace sensor => Page 59



Warning lamp indication	Effect/diagnosis	Possible causes of fault	Fault remedy
- Warning lamp flashes quickly for approx. 2 seconds (f = 3.33 Hz) - Warning lamp then starts to flash slowly - (f = 0.5 Hz)	▪ Control unit not activated	▪ Control unit defective	- Replace control unit => Page 59

Warning lamp indication	Effect/diagnosis	Possible causes of fault	Fault remedy
- Warning lamp flashes quickly for approx. 2 seconds (f = 3.33 Hz) - Warning lamp then starts to flash slowly - (f = 0.5 Hz) - Warning lamp flashes quickly for approx. 28 seconds (f = 2.0 Hz) - Warning lamp then starts to flash slowly - (f = 0.5 Hz)	▪ Delayed control unit activation ▪ System fully functional	▪ Door or bonnet/tailgate not closed until after locking	- Close all doors or bonnet/tailgate/boot lid before locking.
- Warning lamp flashes quickly for approx. 2 seconds (f = 3.33 Hz) - Warning lamp does not flash/light up - Warning lamp then starts to flash slowly - (f = 0.5 Hz)	▪ Interior scanning system deactivated	▪ Once-only system deactivation	- Lock vehicle again.

4.5 - Fault remedy

Note:

07.95 *: Deactivation with the momentary contact switch is not an integral part of the self-test. In the event of deactivation problems/errors, check momentary contact switch and wiring => Page 61 .

- Perform servicing work in the stated sequence if faults occur in the ultrasonic interior scanning system:

Sensor check

- Removing sensors => Page 59 .
- Check sensors for visible defects (e.g. connections).
- Try replacing sensors with new ones, but do not fit B-pillar trim.
- Carry out diagnosis => Page 56 .

Diagnosis and functional test OK:

- Check sensors removed.
 - Re-install first old sensor.
 - Carry out diagnosis => Page 56 .
 - Re-install second old sensor.
 - Carry out diagnosis => Page 56 .
- Replace defective sensor(s) as indicated by checks.
- Removing and installing lower B-pillar trim

Diagnosis and functional test not OK:

Replace control unit

- Replace control unit => Page 59 .

- Carry out diagnosis => Page 56 .

Diagnosis and functional test not OK:

Checking wiring

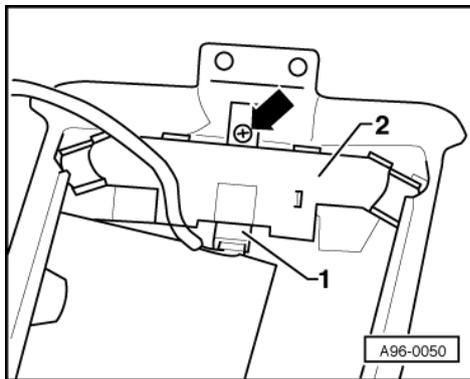
- Check the wiring connections.

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

- Assignment of connector at control unit => Page 60 .
 - Assignment of connector at sensor => Page 60 .
- Rectify any open/short circuit as necessary.
 Carry out diagnosis => Page 56 .

4.6 - Removing and installing ultrasonic sensors for interior scanning system

Removing



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-> The two sensor units are located at the top of the left and right B pillar trim.

- Removing B-pillar trim.

=> General Body Assembly, Interior; Repair group 70; Trim Panels; Removing and installing B-pillar trim Trim Panels Removing and installing B-pillar trim

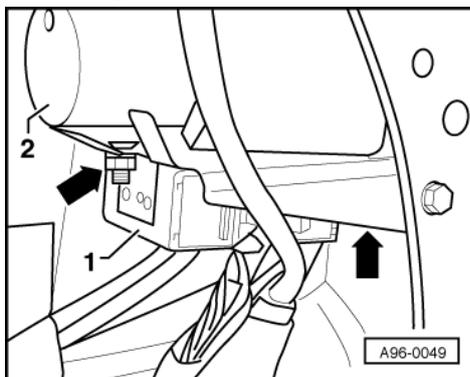
- Screw out bolt -arrow-.
- Detach connector -1- at sensor unit -2-.

Installing

Install in reverse order.

4.7 - Removing and installing control unit for interior scanning system

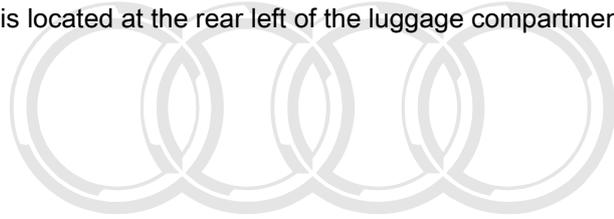
Removing





-> The control unit for the interior scanning system -1- is located at the rear left of the luggage compartment beneath the pump for the central locking system -2-.

- Remove rear left luggage compartment trim.
- Screw out the 2 nuts -arrows-.
- Detach connector at control unit.



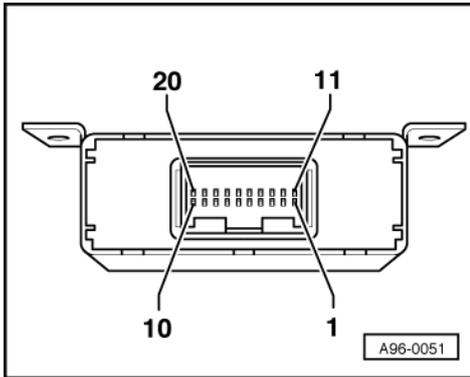
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Installing

Install in reverse order.

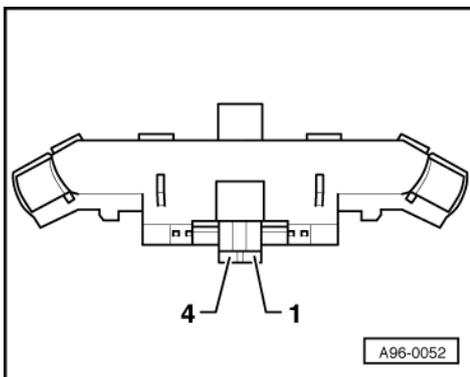
Assignment of connector at control unit



- Control unit removed

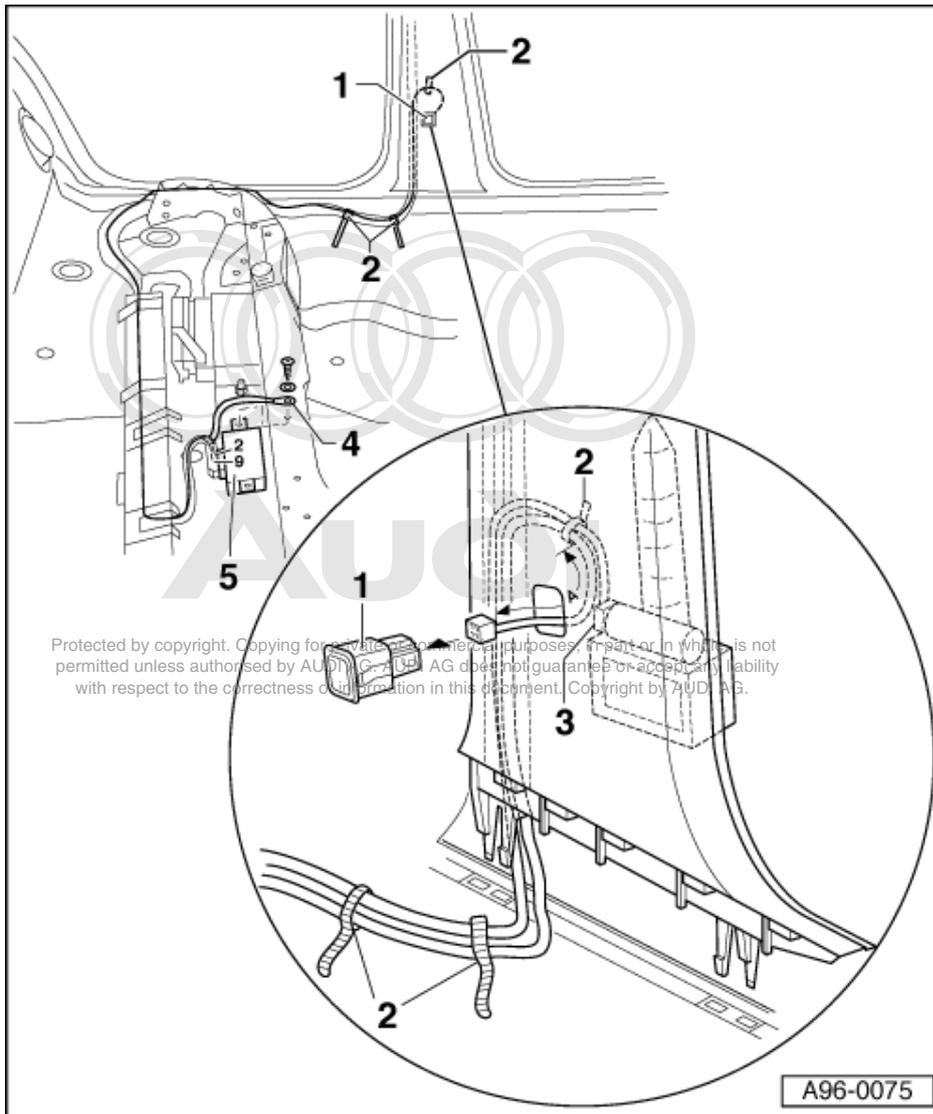
- 1 - -> Power supply, terminal 30
- 2 - ä 06.95: Vacant
- 07.95 ä: Earth terminal 31
- 3 - Activation/Deactivation of CL pump
- 4 - Fan low
- 5 - Power supply left sensor
- 6 - Earth left sensor
- 7 - Analogue signal, left sensor
- 8 - 40 kHz-Clock pulse, left sensor
- 9 - ä 06.95: Vacant
- 07.95 ä: Deactivation switch
- 10 - Warning lamp output
- 11 - Earth, terminal 31
- 12 - not used
- 13 - Input, door contacts
- 14 - Fan high
- 15 - Power supply right sensor
- 16 - Earth right sensor
- 17 - Analogue signal, right sensor
- 18 - 40 kHz-Clock pulse, right sensor
- 19 - not used
- 20 - Alarm output to CL pump

Assignment of connector at sensor



- Sensor unit removed
 - 1 - -> 40 kHz-clock pulse
 - 2 - Supply voltage
 - 3 - Earth
 - 4 - Analogue signal

4.8 - Checking momentary contact deactivation switch



- Removing driver's B-pillar trim

=> General Body Assembly, Interior; Repair group 70; Trim Panels; Removing and installing B-pillar Trim Panels Removing and installing B-pillar trim

- Press momentary contact switch -1- out of B-pillar trim and check in line with current flow diagram.

=> Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder

- Check wiring to control unit -5-.

- 2 - Cable tie
- 3 - Connector
- 4 - Earth wire



5 - Ultrasonic interior scanning system self-diagnosis 07.97 ä

5.1 - Ultrasonic interior scanning system self-diagnosis 07.97 ä

General notes

- ◆ The ultrasonic interior scanning system supplements the anti-theft alarm and detects unauthorised entry into the vehicle by way of the side windows and causes the anti-theft alarm to be triggered.
- ◆ If required, the interior scanning system can be deactivated by way of a momentary contact switch => Owner's manual. Deactivation is cancelled automatically on next locking operation.
- ◆ Fault remedy and work on components of interior scanning system => from Page 58

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function

The ultrasonic interior scanning system consists of:

- ◆ Control unit for ultrasonic sensors -J347
- ◆ Ultrasonic sensor left for ATW -G170
- ◆ Ultrasonic sensor right for ATW -G171
- ◆ Switch for interior monitor -E183

The ultrasonic sensors in the upper part of the left and right B-pillar trim scanning the side windows and transmit scanning signals to the ultrasonic sensors control unit.

If the scanning signal changes, the ultrasonic sensors control unit triggers the alarm via the anti-theft alarm control unit.

The interior scanning system control unit actuates the warning lamp in the rear fog light switch.

The ultrasonic interior scanning system features a comprehensive self-diagnosis. If malfunctions occur in system components, fault codes are stored in fault memory of control unit. These can then be identified using fault reader V.A.G 1551 or vehicle systems tester V.A.G 1552.

5.2 - Initiating self-diagnosis of the interior monitor

Preconditions:

- Fault reader V.A.G 1551 connected
=>Page 1 .
- Anti-theft alarm not activated.

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "45" for address word "Interior scanning system" and confirm entry with Q key.

-> Indicated on display

```
Rapid data transfer
Tester sends address word 45
```

- Wait until the next display appears.

Option without head airbag system

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

8L0951173 Interior monitor Dxx Code 00101 WSC 12345

Option with head airbag system

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

4D0951177B Interior monitoring Dxx □ Code 00001: WSC 12345

Note:

You may print out the control unit identification by pressing the PRINT key on the fault reader V.A.G 1551.

Control unit identification (example)

- 8L0 951 173 Part-No.; assignment
- 4D0 951 177B => Parts List
- Interior- Component designation - monitoring.
- Dxx Control unit data status (software type)
- Code 00101 Control unit code
- Code 00001 Coding => Page 71
- WSC 12345 Workshop Code of V.A.G 1551 with which encoding was last performed

- Press =>key.

-> Display function selection:

Rapid data transfer HELP Select function XX

Note:

The control unit identification can be displayed again by entering function "01" for "Interrogating control unit version" and confirming with the Q key.

Available functions

Fault reader V.A.G 1551 and vehicle system tester V.A.G 1552	Page
Address words	
00 Automatic test sequence	2
45 Interior monitor	62
Functions	
01 Interrogating control unit version	63
02 Interrogating fault memory	64
03 Final control diagnosis	68
05 Erase fault memory	64
06 End of output	65
07 Encoding control unit	71
08 Reading measured value block	72
10 Adaption	73

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5.3 - Interrogating fault memory

Note:

The displayed fault information is not constantly updated but only when initiating self-diagnosis or with function 05 "Erase fault memory".

- Starting interior scanning system self-diagnosis => Page 62 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "02" for the function "Interrogate fault memory" and confirm entry with Q key.

-> Indicated on display

```
No fault recognised!
```

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- Press =>key.

or

-> Indicated on display

```
X fault(s) detected
```

The stored faults are displayed and printed in sequence when the printer is switched on.

Note:

If the printer is switched off, press the =>-key to display the next fault.

- Press =>after the last fault is displayed and printed.

-> Display function selection):

```
Rapid data transfer      HELP
Select function XX
```

- Rectify printed faults according to fault table => Page 65 , then erase fault memory and interrogate the fault memory again as a check.

5.4 - Erase fault memory

Prerequisite:

- Fault memory interrogated => Page 39 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "05" for the function "Erase fault memory" and confirm entry with Q key.

-> Indicated on display

```
Rapid data transfer
Fault memory is erased
```

- Press =>key.

-> Display function selection):

```
Rapid data transfer      HELP
Select function XX
```

Notes:

-> Indicated on display

```
Important:
Fault memory has not been interrogated
```

or

->

```
Rapid data transfer
Fault memory has not been interrogated
```

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Procedure has not been correctly followed.

- Interrogate fault memory.
- Rectify fault, if necessary, then interrogate fault memory.

End of output

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "06" for "End output" function and confirm entry with Q key.

-> Indicated on display

```
Rapid data transfer      HELP
Enter address word XX
```

- Detach diagnostic connectors.

5.5 - Fault table

Notes:

- ◆ The following table lists all the faults, with the corresponding 5 digit code numbers, that can be recognised by the immobilizer control unit -J347- and printed out by the V.A.G 1551. Fault codes appear only on print-out.
- ◆ The fault memory records all static and sporadic faults. When a fault occurs it is immediately identified as a static fault. If fault does not occur again it is registered as a sporadic fault. /SP" appears on the right of the display.
- ◆ All faults present are set to sporadic after activation and are only stored as being static if they are still present on completion of checking.
- ◆ Sporadic faults which no longer occur after 50 activation cycles are erased automatically.
- ◆ Before replacing a component shown as faulty, check wiring and connections to component as well as earth connections according to current flow diagram.
- ◆ After carrying out repairs activate and deactivate system once. Then interrogate fault memory again with fault reader V.A.G 1551 and erase memory.

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01349		



Alarm triggered by sensor for anti-theft alarm front 1)	- Alarm triggered following attempted forced entry, via the front windows, into the interior of the vehicle or following a functional test. - False alarm.	- Erase fault memory Performing functional test =>Page 73 .
01350 Alarm triggered by sensor for ATW rear 1)	- Alarm triggered following attempted forced entry, via the rear windows, into the interior of the vehicle or following a functional test. - False alarm.	- Erase fault memory Performing functional test =>Page 73 .

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1) Only with head air bag system option.

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01377 Ultrasonic sensor 1 for ATW -G170 Short to positive Open circuit/short circuit to earth Implausible signal	- Short circuit in wiring or in connections between ultrasonic sensor 1 for ATW -G170 and the ultrasonic sensors control unit - J347 - Ultrasonic sensor 1 for ATW - G170 defective - Open circuit in wiring between ultrasonic sensor 1 for ATW -G170 and the ultrasonic sensors control unit -J347 - Ultrasonic sensor 1 for ATW - G170 defective - Faults on activation of ultrasonic interior scanning system.	- Check and, if necessary, repair wiring and connections according to the current flow diagram. => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Check and if necessary replace ultrasonic sensor 1 for ATW -G170 => General Body Assembly, Interior; Repair group 70; Trim Panels; Removing and installing B-pillar trim Trim Panels; Removing and installing B-pillar trim - Check and, if necessary, repair wiring and connections according to the current flow diagram. => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Check and if necessary replace ultrasonic sensor 1 for ATW -G170 - Performing functional test =>Page 56 .

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01378 Ultrasonic sensor right for ATW -G171 Short to positive	- Short circuit in wiring or in connections between ultrasonic sensor right for ATW -G171 and the ultrasonic sensors control unit - J347 - Ultrasonic sensor right for ATW -G171 defective	- Check and, if necessary, repair wiring and connections according to the current flow diagram. => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Check and if necessary replace ultrasonic sensor right for ATW - G171 => General Body Assembly, Interior; Repair group 70; Trim Panels; Removing and installing B-pillar trim Trim Panels; Removing and installing B-pillar trim

Open circuit/short circuit to earth	- Open circuit in wiring between ultrasonic sensor right for ATW - G171 and the ultrasonic sensors control unit -J347 - Ultrasonic sensor right for ATW -G171 defective	- Check and, if necessary, repair wiring and connections according to the current flow diagram. => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder Check and if necessary replace ultrasonic sensor right for ATW - G171 => General Body Assembly, Interior; Repair group 70; Trim Panels; Removing and installing B-pillar trim Trim Panels; Removing and installing B-pillar trim
Implausible signal	- Faults on activation of ultrasonic interior scanning system.	- Performing functional test =>Page 56 .

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01379 Switch for interior monitor -E183 Short to earth 1)	- Wiring defect between switch for interior monitor -E183 and the ultrasonic sensors control unit -J347 - Switch for interior monitor - E183 defective	- Check and, if necessary, repair wiring and connections according to the current flow diagram. => Current Flow Diagrams, Electrical Fault-finding and Fitting Locations binder - Replace switch for interior monitor -E183 => Electrical System; Repair group 96; Servicing switch Servicing switch
01380 Alarm triggered by sensor for ATW rear left	- Alarm triggered by attempted forced entry at rear left window or following a functional test - False alarm.	- Erase fault memory Performing functional test =>Page 73 .
01381 Alarm triggered by sensor for ATW rear right	- Alarm triggered by attempted forced entry at rear right window or following a functional test - False alarm.	- Erase fault memory Performing functional test =>Page 73 .

1) Fault is set if earth is applied for more than 1 minute.

Output on printer V.A.G 1551	Possible causes of fault	Fault remedy
01382 Alarm triggered by sensor for ATW front left	- Alarm triggered by attempted forced entry at front left window or following a functional test - False alarm.	- Erase fault memory Performing functional test =>Page 73 .
01383 Alarm triggered by sensor for ATW front right	- Alarm triggered by attempted forced entry at front right window or following a functional test - False alarm.	- Erase fault memory Performing functional test =>Page 73 .
65535		



Control unit defective	- Control unit for ultrasonic sensors -J347 defective	- Replace control unit for ultrasonic sensors -J347
------------------------	-------------------------------------------------------	-----------------------------------------------------

5.6 - Final control diagnosis (vehicles without head airbag)

Notes:

- ♦ The final control diagnosis may only be performed with the vehicle stationary and the engine not running!
- ♦ Any faults identified by the final control diagnosis must be traced and rectified.

The final control diagnosis activates the following components in the stated sequence:

Actuation sequence
1 Warning lamp in rear fog light switch
2 Cause alarm to trigger (no function)
3 Power supply lead to ultrasonic sensors
3 Clock signal lead to ultrasonic sensors

Note:

An "ATW alarm" cannot be triggered through this final control diagnosis. To trigger an "anti-theft alarm", use the central locking control unit => Page 56 to carry out the final control diagnosis.

- Starting interior scanning system self-diagnosis => Page 62 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Press keys 0 and 3 for the function "Final control diagnosis" and confirm entry with Q key.

-> Indicated on display

```
Final control diagnosis
Warning lamp for alarm system -K95
```

Warning lamp in rear fog light switch is actuated

- Press =>key.

-> Indicated on display

```
Final control diagnosis
Cause alarm to trigger
```

The control unit transmits an alarm signal to anti-theft alarm control unit (no function)

- Press =>key.

-> Indicated on display

```
Final control diagnosis
Power supply lead
```

Control units transmits constant voltage of 8 V; checking wiring =>Page 69 .

- Press =>key.

-> Indicated on display

Final control diagnosis
Clock signal lead

Control units transmits constant voltage of 5 V; checking wiring =>Page 70 .

- Press =>key.

-> Indicated on display

Final control diagnosis
End

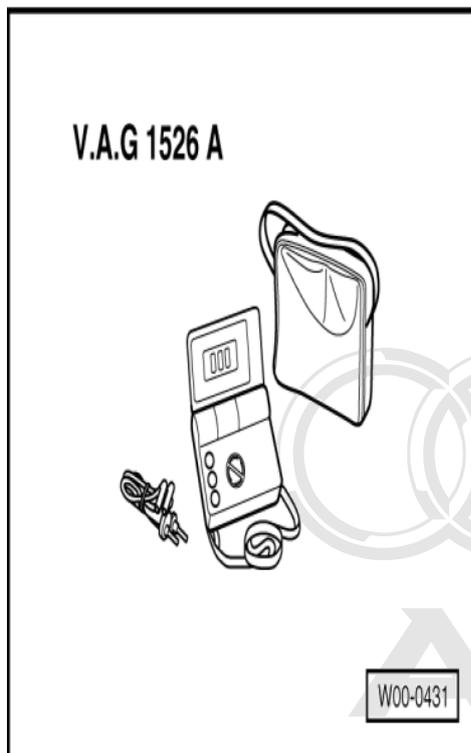
- Press =>key.

-> Display function (selection):

Rapid data transfer HELP
Select function XX

Checking power supply lead

Special tools, testers and auxiliary equipment required



- ◆ V.A.G 1526 A

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Test sequence

- Remove the two ultrasonic sensors => Page 59 .
- Detach connectors.
- Perform final control diagnosis => Page 68 and select control element test "Power supply lead".

-> Indicated on display:

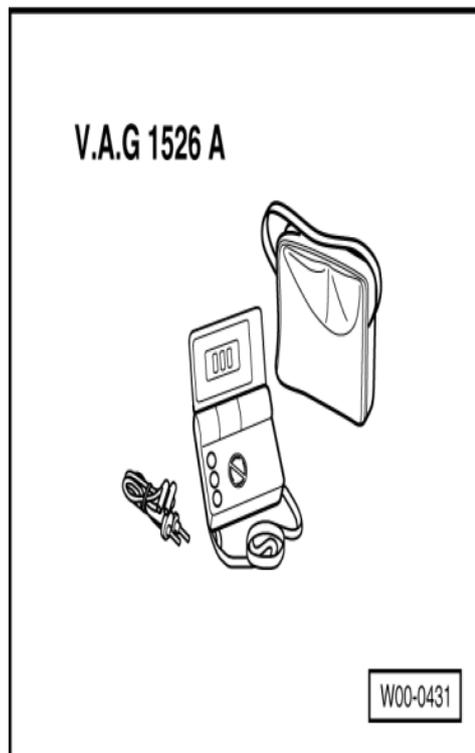
Final control diagnosis
Power supply lead



- Connect multimeter for voltage measurement between contacts 2 (positive) and 3 (earth).
 - Specified value: 8 V
- Terminate final control diagnosis.
- Re-install ultrasonic sensors.

Checking clock signal lead

Special tools, testers and auxiliary equipment required



- ◆ V.A.G 1526 A



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Test sequence

- Remove the two ultrasonic sensors => Page 59 .
- Detach connectors.
- Perform final control diagnosis => Page 68 and select control element test "clock signal lead".

-> Indicated on display:

Final control diagnosis
Clock signal lead

- Connect multimeter for voltage measurement between contacts 1 (positive) and 3 (earth).
 - Specified value: 5 V
- Terminate final control diagnosis, interrogate fault memory => Page 64 .
- Re-install ultrasonic sensors.

5.7 - Final control diagnosis (vehicles with head airbag)

The final control diagnosis activates the following elements in sequence:

- ◆ Triggering of anti-theft alarm (no function)

Note:

An "anti-theft alarm" cannot be triggered through this final control diagnosis. To trigger a "anti-theft alarm", use the central locking control unit => Page 56 to carry out the final control diagnosis.

5.8 - Encoding the control unit (vehicles without head airbag)

The coding sets the universal control unit for ultrasonic sensors -J347 according to the requirements of the particular model version and anti-theft alarm system.

- Starting interior scanning system self-diagnosis => Page 62 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "07" for the function "Encode control unit" and confirm entry with Q key.

-> Indicated on display

```
Code control unit      Q
Enter code number XXXXX (0-32000)
```

- Enter 5-digit control unit code in with table.

Code	Meaning
00	Filling characters, no assignment
1	Audi A8
0	Static activation mode
1	Saloon

-> Indicated on display

```
Code control unit      Q
Enter code number 00101 (0-32000)
```

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- Confirm entry with Q key.

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

```
8L0951173 Interior monitor      D00
Code 00101:      WSC 12345
```

- Press =>key.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

5.9 - Encoding the control unit (vehicles with head airbag)

The coding sets the universal control unit for ultrasonic sensors -J347 according to the requirements of the particular model version and anti-theft alarm system.

- Starting interior scanning system self-diagnosis => Page 62 .

-> Indicated on display



```
Rapid data transfer      HELP
Select function XX
```

- Enter "07" for the function "Encode control unit" and confirm entry with Q key.

-> Indicated on display

```
Code control unit      Q
Enter code number XXXXX (0-32000)
```

- Enter 5-digit control unit code in with table.

Code	Meaning
00	Filling characters, no assignment
0	Audi A8
0	Static activation mode
1	Saloon

-> Indicated on display

```
Code control unit      Q
Enter code number 00101 (0 - 32000)
```

- Confirm entry with Q key.

-> The display on the fault reader V.A.G 1551 will show the control unit identification code (example).

```
4D0951177B Interior monitoring 500
□
Code 00001 WSC 12345
```

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- Press =>key.

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```

5.10 - Reading measured value block

- Starting interior scanning system self-diagnosis => Page 62 .

-> Indicated on display

```
Rapid data transfer      HELP
Select function XX
```

- Enter "08" to select the function "Reading measured value block" and confirm entry with Q key.

-> Indicated on display

```
Reading measured value block Q
Enter display group number XXX
```

- Enter "001" for "display group number 001" and confirm entry with Q key.

-> Display for display group 001:

```
Read measured value block 1
1 2 3 4
```

- If specified values are attained in all display zones, press =>key.

-> Display function (selection):

Rapid data transfer HELP
 Select function XX

5.11 - Measured value block overview

Display group 001 (Option without head airbag system)

Read measured value block 1		⇒	Display (example)
0 1 0 1	100 %	-	-
		Display zone not used.	
		Display zone not used.	
		Sensitivity of sensors: 50 ... 100 % =>"Adaption", Page 73	
X X X X	Switch settings		
	<ul style="list-style-type: none"> ▪ Interior scanning switch: 1 = pressed, 0 = not pressed ▪ Driver's door contact switch: 1 = Driver's door open; 0 = driver's door closed ▪ Anti-theft alarm 1 = activated; 0 = not activated ▪ Shattered glass sensors: Display is always 1 1) 		

1) Contact for shattered glass sensors is connected to earth on Audi A8, as no shattered glass sensors are fitted.

Display group 001 (Option with head airbag system)

Read measured value block 1		⇒	Display (example)
0 0 0 1	100 %	-	-
		Display zone not used.	
		Display zone not used.	
		Sensitivity of sensors: 50 ... 100 % =>"Adaption", Page 73	
X X X X	Switch settings		
	<ul style="list-style-type: none"> ▪ 1. Position: not used ▪ 2. Position: not used ▪ 3. Position: not used ▪ 4. Position: Communication wire status (1 = wire OK, 0 = wire not OK) 		

5.12 - Adaption

The adaption function makes it possible to implement and store the following modification:

- ◆ Setting of ultrasonic sensors can be adjusted such that they react less sensitively.
- Starting interior scanning system self-diagnosis => Page **62** .

→ Indicated on display
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Rapid data transfer HELP
 Select function XX



- Enter "10" to select the "Adaption" function and confirm with the Q key.

-> Indicated on display

```
Adaption      Q
Feed in channel No.
```

- Enter "01" to select "adaptation channel 01" and confirm entry with Q key.

-> Indicated on display:

The sensitivity level of the sensors is displayed: e.g. 100 %

```
Channel 1      Adaption 100
Sensitivity in %
```

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The maximum ultrasonic sensor setting made at the factory is 100% and can be reduced to 50%.

- Press =>key.

-> Indicated on display

```
Channel 1      Adaption 100      Q
Enter adaption value XXXXX
```

- Enter desired 5-digit adaption value
e.g. 75 % = 00075

-> Indicated on display

```
Channel 1      Adaption 100      Q
Enter adaption value 00075
```

- Confirm entry with Q key.

-> Indicated on display

```
Channel 1      Adaption 75      Q
Sensitivity in %
```

- Confirm entry with Q key.

-> Indicated on display

```
Channel 1      Adaption 75      Q
Store changed value?
```

- Confirm entry with Q key.

-> Indicated on display

```
Channel 1      Adaption 75
Changed value is stored
```

- Terminate passenger's airbag activation in "Adaption channel 01" by pressing => .

-> Display function (selection):

```
Rapid data transfer      HELP
Select function XX
```