
General

On reversing, the parking aid system uses the echo-sounding principle to measure the distance between the back end of the vehicle and an obstacle.

For this purpose, the rear bumper is fitted with four ultrasonic sensors.

The sensors are actuated both in combined transmit/receive mode and in pure receive mode.

On the Audi A2, the parking aid control unit features CAN capability, i.e. both the self-diagnosis and the actual system only function when the CAN is active.

Function:

The parking aid consists of the following:

- ◆ Parking aid control unit -J446
- ◆ Rear left parking aid sender -G203
- ◆ Centre rear left parking aid sender -G204
- ◆ Centre rear right parking aid sender -G205
- ◆ Rear right parking aid sender -G206
- ◆ Rear parking aid warning buzzer -H15

A self-test lasting less than one second is performed after switching on the ignition.

The control unit is then permanently in operation, however the distance sensing function is only activated on engaging reverse gear.

A brief signal tone sounds to indicate that parking aid is ready for operation (time lag of one second on vehicles with automatic gearbox on account of P-D shift).

A high-pitched continuous tone of 5 seconds duration sounds if the control unit detects a fault in the system during the self-test and the parking aid does not function.

On reversing, the proximity warning provided by the two centre sensors and the outer sensors is first given on attaining a distance of roughly 1.60 m and roughly 0.60 m respectively from the obstacle. The warning is given in the form of acoustic pulses with a duration of 75 ms.

The intervals between the acoustic pulses become shorter as a function of the decreasing gap. When the gap is less than 25 cm the pulses become a continuous tone. (Adaption of volume and pitch (audio frequency) with V.A.G 1551 =>Page [01-237](#))

Special case: Travelling backwards alongside a wall

Note:

The following description relates exclusively to the fault reader V.A.G 1551.

Safety precautions

Pay attention to the following if testers and measuring instruments have to be used in the course of a test drive:

Attention:

- ◆ Proceed as follows during measurement and test drives so as to avoid the risk of accident:
- ◆ Exclusive use is to be made for measured value block readout of VAS 5051 or V.A.G 1551, which is to be attached to rear seat and operated from there by a second person.

Heed the following so as to avoid possible injury and/or the destruction of electrical and electronic components:

- ◆ Switch off ignition before disconnecting and connecting measuring instruments and testers.
- ◆ Certain tests may lead to a fault being detected by the control unit and stored. The fault memory is therefore to be interrogated and if necessary erased on completion of all tests and repair work.
- ◆ Switch off ignition before disconnecting and connecting battery so as not to damage control units.

Test requirements:

- ◆ Use current flow diagram to check that fuse is OK.
- ◆ Connect up vehicle diagnostic, testing and information system VAS 5051/fault reader V.A.G 1551 => Page [01-240](#).

Notes:

- ◆ If no display appears, use current flow diagram to check power supply for V.A.G 1551.

| Type 8Z | Type description Audi A2 | MY 2002 | Engine ID BAY | Gearbox EWQ | Kilometer reading |
|--|-----------------------------|--------------------|---|----------------|-------------------|
| <div>◆ Additional operating instructions can be called up by pressing the fault reader HELP key.</div> <div>◆ Next step in program sequence can be selected by pressing ⇒ key.</div> <div>◆ Incorrect entries can be terminated by pressing C-key.</div> <div>◆ Function 00 "Automatic test sequence" can be implemented in mode 1 "Rapid data transfer". This involves automatic interrogation of all vehicle control units.</div> <div>- Switch on ignition.</div> <div>- Switch on printer by pressing PRINT key (lamp in key lights).</div> <div>- Press key 1 for "Rapid data transfer" mode.</div> | | | | | |
| <div>Rapid data transfer Enter address word XX</div> | | HELP | ⇐ Indicated on display: | | |
| <div>Address word for parking aid: 76</div> <div>- Press keys 7 and 6.</div> | | | | | |
| <div>Rapid data transfer 76 - Parking aid</div> | | Q | ⇐ Indicated on display: | | |
| <div>- Confirm entry with Q key.</div> | | | | | |
| <div>8Z0919283 Parking sys. A2 RoW Code 00102</div> | | D02 ⇒ WSC 06812 | ⇐ Adjacent display appears after approx. 5 s: | | |
| <div>- 8Z0919283: Part number of parking aid control unit (refer also to Parts List)</div> <div>- Parking system A2: Component designation</div> <div>- D02: Software version of parking aid control unit</div> <div>- Code 00102: Code for parking aid control unit</div> <div>- WSC 06812: Workshop code</div> <div>Press ⇒ key.</div> | | | | | |
| <div>Rapid data transfer No control unit response</div> | | HELP | ⇐ If one of the adjacent messages appears on the display, perform fault-finding in line with fault-finding program for diagnostic wire. | | |
| => | | | | | |

| | |
|--|------|
| Rapid data transfer Fault in communication link | HELP |
|--|------|

| | |
|---|------|
| Rapid data transfer K-wire not switched to earth | HELP |
|---|------|

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

| | |
|--|------|
| Rapid data transfer K-wire not switched to positive | HELP |
|--|------|

| | |
|---|------|
| Rapid data transfer Select function XX | HELP |
|---|------|

⇒ Indicated on display:

- Pressing HELP key prints out a list of possible functions.
- Press ⇒ key to select next step in program sequence.

Self-diagnosis functions

Possible functions:

01 - Interrogating control unit version=> Page [01-214](#)

02 - Interrogating fault memory => Page [01-215](#)

05 - Erasing fault memory => Page [01-224](#)

06 - End of output => Page [01-226](#)

07 - Encoding control unit => Page [01-227](#)

08 - Reading measured value block => Page [01-231](#)

10 - Adaption=> Page [01-237](#)

Parking aid fault table

Notes:

- ◆ Listed in the following in ascending order of 5-digit fault codes are all the faults which can be detected by the parking aid and printed out on V.A.G 1551.
- ◆ The fault code only appears on the printout.
- ◆ Before replacing components found to be defective, use current flow diagram to check wiring and connectors to these components as well as earth connections.
- ◆ On completion of repair work and system functional test, always interrogate fault memory again with fault reader V.A.G 1551 and erase it.
- ◆ All static and sporadic faults are stored in the fault memory:
A fault is recognised as being static if it is present for at least 2 seconds. If fault is then no longer present, it is stored as being sporadic and "/SP" appears on the right of the display.
- ◆ After switching on ignition, all faults present are set to sporadic and only stored as being static if they are still present after checking.
- ◆ Sporadic faults are erased if they do not re-occur in the course of 50 driving cycles (ignition on for at least 5 minutes, vehicle speed > 30 km/h).
- ◆ When eliminating an open circuit in the event of a data bus fault, always remember to twist the two data wires of the corresponding bus system together to prevent electromagnetic interference.

Type
8Z

Type description
Audi A2

MY
2002

Engine ID
BAY

Gearbox
EWQ

Kilometer reading

| Output on printer of V.A.G 1551 | Possible cause of trouble | Fault remedy |
|---|---|---|
| 00532 Supply voltage ◆ Signal too low | ◆ Open circuit in wiring or short circuit in power supply | - Use current flow diagram to perform fault-finding |
| 00625 Speed signal ◆ Implausible signal | ◆ Fault is set if vehicle-speed signal is implausible (e.g. 500 km/h); occurs, for example, in the event of loose contact in wiring | - Use current flow diagram to perform fault-finding |

| Output on printer of V.A.G 1551 | Possible cause of trouble | Fault remedy |
|---|---|---|
| 01317 Control unit with display in dash panel insert -J285 ◆ No communication | ◆ Open circuit in wiring or short circuit ◆ Dash panel insert adaption not performed correctly | - Use current flow diagram to perform fault-finding Eliminate open circuit in wiring Select adaption channel 61 and enter correct adaption value => Page 01-121 |
| 01336 Group convenience data bus ◆ Defective | ◆ Short to positive/earth in both signal wires at one control unit in Group convenience data bus | - Use current flow diagram to perform fault-finding Eliminate short circuit |

Type
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Type description
Audi A2

MY
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Engine ID
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Gearbox
EWQ

Kilometer reading

| Output on printer of V.A.G 1551 | Possible cause of trouble | Fault remedy |
|---|---|--|
| 01543 Parking aid warning buzzer -H15 ◆ Short to positive ◆ Open circuit/short to earth | ◆ Open circuit in wiring or short circuit between -H15 and control unit ◆ Warning buzzer defective | - Use current flow diagram to perform fault-finding Replace -H15 |
| 01545 RL parking aid sender -G203 ◆ Short to positive ◆ Open circuit/short to earth ◆ Defective component ◆ Implausible signal | ◆ Open circuit in wiring or short circuit between -G203 and control unit ◆ -G203 defective | - Use current flow diagram to perform fault-finding Replace -G203 |

| Output on printer of V.A.G 1551 | Possible cause of trouble | Fault remedy |
|--|---|--|
| 01546 RL, ctr, parking aid sender -G204 ◆ Short to positive ◆ Open circuit/short to earth ◆ Implausible signal | ◆ Open circuit in wiring or short circuit between -G204 and control unit ◆ -G204 defective | - Use current flow diagram to perform fault-finding Replace -G204 |
| 01547 RR, ctr, parking aid sender -G205 ◆ Short to positive ◆ Open circuit/short to earth ◆ Implausible signal | ◆ Open circuit in wiring or short circuit between -G205 and control unit ◆ -G205 defective | - Use current flow diagram to perform fault-finding Replace -G205 |

Job number
900022

Chassis number

Registration number

User
M

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Type description
Audi A2

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Engine ID
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Gearbox
EWQ

Kilometer reading

| Output on printer of V.A.G 1551 | Possible cause of trouble | Fault remedy |
|--|---|--|
| 01548 RR parking aid sender -G206 ◆ Short to positive ◆ Open circuit/short to earth ◆ Implausible signal | ◆ Open circuit in wiring or short circuit between -G206 and control unit ◆ -G206 defective | - Use current flow diagram to perform fault-finding Replace -G206 |
| 01549 Voltage supply for parking aid sender ◆ Short to earth | ◆ Short to earth between parking aid sender and control unit | - Use current flow diagram to perform fault-finding |

| Output on printer of V.A.G 1551 | Possible cause of trouble | Fault remedy |
|--|---|--|
| 01550 Reverse gear signal ◆ Implausible signal | ◆ Short to earth between reversing light switch and parking aid control unit (reverse gear signal = 1 and vehicle speed > 100 km/h) | - Use current flow diagram to perform fault-finding Eliminate short circuit |
| 65535 Control unit defective | ◆ Parking aid control unit -J446 defective | - Replace control unit |

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Kilometer reading

Encoding control unit

This function can be used to encode parking aid control unit as follows:

- ◆ Gearbox version: Manual/automatic
- ◆ Signal tone for engaged reverse gear: With or without acknowledgement of function
- ◆ Body version: Saloon
- ◆ Vehicle model: e.g. Audi A2

Note:

The encoding adapts the universal parking aid control unit -J446 to the particular requirements of the vehicle concerned.

Implementing encoding function

Rapid data transfer
Select function XX

HELP

⇐ Indicated on display:

- Press keys 0 and 7 to select "Encoding control unit" function.

Rapid data transfer
07 - Encoding control unit

Q

⇐ Indicated on display:

- Confirm entry with Q key.

Encoding control unit
Enter code number XXXXX

(0-32000)

⇐ Indicated on display:

- Enter code number as per encoding table => Page [01-230](#).
Example: 00102

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Type
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Type description
Audi A2

MY
2002

Engine ID
BAY

Gearbox
EWQ

Kilometer reading

| | | | | | |
|---|---|---|---|---|----------------------------------|
| 0 | | | | | Not used at present |
| | 0 | | | | Manual gearbox |
| | | 1 | | | With acknowledgement of function |
| | | | 0 | | Saloon (standard) |
| | | | | 2 | Audi A2 |

Encoding control unit Q
Enter code number 00102 (0-32000)

⇔ Indicated on display:

- Confirm entry with Q key.

8Z0919283 Parking sys. A2 RoW D02 ⇒
Code 00102 WSC 06812

⇔ Indicated on display:

- Conclude encoding by pressing ⇒ key.

Rapid data transfer
Select function XX HELP

⇔ Indicated on display:

Encoding table

| | | |
|---|--|---|
| 0 | | Not used at present |
| 0 | | Manual gearbox |
| 1 | | Automatic gearbox |
| 0 | | No acknowledgement of function |
| 1 | | With acknowledgement of function (ex works) |
| 0 | | Saloon (standard) |
| 6 | | A6 |
| 4 | | A4 |
| 3 | | A3 |
| 2 | | A2 |

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Type
8Z

Type description
Audi A2

MY
2002

Engine ID
BAY

Gearbox
EWQ

Kilometer reading

Reading measured value block

Implementing "Reading measured value block" function

Rapid data transfer
Select function XX

HELP

⇔ Indicated on display:

- Press keys 0 and 8 to select "Reading measured value block" function.

Rapid data transfer
08 - Reading measured value block

Q

⇔ Indicated on display:

- Confirm entry with Q key.

Reading measured value block
Enter display group number XXX

HELP

⇔ Indicated on display:

- Enter display group number (from table => Page [01-232](#)) and confirm with Q key.

The measured value block selected is then displayed in standardised form.

List of display groups:

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8Z

Type description
Audi A2

MY
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Engine ID
BAY

Gearbox
EWQ

Kilometer reading

| Display group number | Indicated on display |
|----------------------|--|
| 001 | 1 = Distance from rl sensor in cm 2 = Distance from rlc sensor in cm 3 = Distance from rrc sensor in cm 4 = Distance from rr sensor in cm |
| 002 | 1 = Minimum distance in cm 2 = Vehicle speed km/h 3 = Warning buzzer |
| 003 | 1 = Supply voltage V 2 = Reverse gear 3 = Trailer |
| 004 | 1 = rl sensor settling time in ms 2 = rlc sensor settling time in ms 3 = rrc sensor settling time in ms 4 = rr sensor settling time in ms |

Measured value block 001

Reading measured value block 1

50 cm

110 cm

90 cm



50 cm

< Indicated on display

Distance from rear right sensor

● 0 ... 200 cm

Distance from rear right centre sensor

● 0 ... 200 cm

Distance from rear left centre sensor

● 0 ... 200 cm

Distance from rear left sensor

● 0 ... 200 cm

Measured value block 002

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Chassis number

Registration number

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| | | | | | |
|------|------------------|------|-----------|---------|-------------------|
| Type | Type description | MY | Engine ID | Gearbox | Kilometer reading |
| 8Z | Audi A2 | 2002 | BAY | EWQ | |

| | | |
|--------------------------------|---------|---|
| Reading measured value block 2 | ⇒ | < Indicated on display |
| 50 cm | 20 km/h | Tone off |
| | | Warning buzzer |
| | | <ul style="list-style-type: none"> ● Tone on ● Tone off |
| | | Vehicle speed |
| | | <ul style="list-style-type: none"> ● 0 ... 300 km/h |
| | | Minimum distance |
| | | <ul style="list-style-type: none"> ● Smallest value of the four measured distances |

Measured value block 003

| | | | | | |
|------------|----------------|---------------------|------|------------|-----------------|
| Job number | Chassis number | Registration number | User | Date | Workshop Manual |
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Type
8Z

Type description
Audi A2

MY
2002

Engine ID
BAY

Gearbox
EWQ

Kilometer reading

Reading measured value block 3

⇒

< Indicated on display

12.0 V

Reverse yes

Trailer no

Trailer display

- Trailer yes
- Trailer no

Reverse gear display

- Reverse yes
- Reverse no

Sensor supply voltage

- 0 ... 15 V

Measured value block 004

Reading measured value block 4

⇒

< Indicated on display

1.02 ms

1.00 ms

0.97 ms

1.02 ms

Rear right sensor settling time

Rear right centre sensor settling time

Rear left centre sensor settling time

Rear left sensor settling time

Note:

Values of greater than 4.00 ms with reverse gear engaged are an indication of a defective ultrasonic sensor or an open circuit in the wiring.

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Chassis number

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Adaption

The adaption function can be used to make and store the following changes:

- ◆ Volume of warning tone
- ◆ Pitch (audio frequency) of warning tone

Implementing function "10 - Adaption"

| | |
|---|------|
| Rapid data transfer Select function XX | HELP |
|---|------|

⇐ Indicated on display:

- Press keys 1 and 0 to select "Adaption" function.

| | |
|--------------------------------------|---|
| Rapid data transfer 10 - Adaption | Q |
|--------------------------------------|---|

⇐ Indicated on display:

- Confirm entry with Q key.

| | |
|-------------------------------------|---|
| Adaption Enter channel number XX | Q |
|-------------------------------------|---|

⇐ Indicated on display:

- Enter channel number in line with adaption table => Page [01-239](#). Example: 01
- Press keys 0 and 1.
- Confirm entry with Q key.

| | | | | |
|---------|---|----------|---|-----|
| Channel | 1 | Adaption | 6 | ⇒ |
| | | (- 1 | | 3-L |

⇐ Indicated on display:

- Adaption value can either be decremented with key 1 or incremented with key 3 or use can be made of ⇒ key.
- Press ⇒ key.

| Type 8Z | Type description Audi A2 | MY 2002 | Engine ID BAY | Gearbox EWQ | Kilometer reading |
|--|-----------------------------|------------|---|--|-------------------|
| Channel 1 Enter adaption value XXXXX | Adaption | 6 | ⇐ Indicated on display: - Now enter adaption value by hand (e.g. 00005). | | |
| Channel 1 Enter adaption value 00005 | Adaption | 6 | Q | ⇐ Indicated on display: - Confirm entry with Q key. | |
| Channel 1 (- 1 | Adaption | 5 | Q 3-L | ⇐ Indicated on display: - Confirm entry with Q key. | |
| Channel 1 Store altered value? | Adaption | 5 | Q | ⇐ Indicated on display: - Confirm entry with Q key. | |
| Channel 1 Altered value stored | Adaption | 5 | ⇒ | ⇐ Indicated on display: - Conclude sensitivity adaption by pressing ⇒key. | |
| Rapid data transfer Enter address word XX | HELP | | ⇐ Indicated on display: | | |

Adaption table

| Adaption channel | Adaption function |
|------------------|---|
| 01 | Volume adjustable in stages from 2 to 6 |
| 02 | Pitch (audio frequency), adjustable in stages from 0 to 4 (500 Hz to 2 kHz) |