Lane change assistant control unit -J769, calibration

Audi A8 2003>

The lane change assistant (audi side assist) must always be calibrated when

- the lane change assistant control unit -J769 or the lane change assistant control unit 2 -J770 has been replaced.
- the rear bumper has been damaged, e.g. by a parking bump.
- the rear bumper is removed from and refitted to the vehicle.
- the fault entry 2849 - Lane change assistant control unit -J769, no or incorrect basic setting/adaption - is stored in the fault memory.

Ithe fault entry 2850 - Lane change assistant control unit 2 -J770, no or incorrect basic setting/adaption - is stored in the fault memory.
The calibration is performed in the following sequence:

1. The calibrator must be set up according to the Workshop Manual, Audi A8 2003 > Electrical System.
2. When the calibrator has been set up and aligned, run test program J769 - Calibration, (Rep.Gr. 96).
3. First the lane change assistant control unit -J769 located in the bumper on the *left* as seen in the direction of travel is calibrated.
4. When the lane change assistant control unit -J769 has been successfully calibrated the calibrator must be converted according to the Workshop Manual.
5. When the calibrator has been converted, the lane change assistant control unit 2 -J770 located in the bumper on the *right* as seen in the direction of travel is calibrated.
6. When the lane change assistant control unit 2 -J770 has been successfully calibrated, the angle variation in the two control units is checked.
7. If the angle variations are within the limits of -4.99 ° to 4.99 °, the calibration was completed successfully.
If the test program is aborted due to a fault during calibration, check the following points:
J Is the lane change assistant calibrator VAS 6350/4 connected and switched on?
J Is the calibrator set up according to the Workshop Manual?
J Are the lane change assistant control units correctly mounted in the rear bumper?
J Is the rear bumper dirty in the area of the lane change assistant control units?

Lane change assistant control unit -J769, coding
Audi A8 2003>
Structure of the coding value (7 positions): 7654321
Position 1 and 2 (xxxxxXX):
I xxxxx07 = Audi A8 (standard body)
I xxxxx08 = Audi A8 (stretched body)
I xxxxx09 = Audi S8

Position 3 (xxxxXxx):
Country version
I xxxx0xx = Country variant 1:
B26 A Taiwan
B34 A USA
B35 A Canada
B39 A Mexico
B40 A Special requirements South America, **not** Argentina, Brazil and Chile
B41 A Brazil
B63 A Special requirements Caribbean independent states (Jamaica, Haiti, Cuba,Trinidad, Dominican Rep.)
B65 A N1xx = Country variant 2:
B00 A No type test country
B01 A Germany
B02 A Belgium
B03 A Denmark
B05 A Sweden
B08 A France
B09 A GB/Northern Ireland
B10 A Republic of Ireland
B11 A Iceland
B12 A Austria
B14 A Italy (San Marino, Vatican City)
B15 A Spain (Andorra, Balearics, Canary Islands)
B16 A Portugal
B17 A Poland
B18 A Hungary
B19 A Greece
B20 A Turkey
B21 A Special requirement, Cyprus
B22 A Israel
B23 A AGCC states (Bahrain, Qatar, Kuwait, Oman, Saudi Arabia, United Arab Emirates)
B24 A New Zealand
B29 A Japan
B30 A Australia
B31 A Netherlands
B32 A Luxembourg
B33 A French overseas territories (Dominions,French Guyana,Guadeloupe, Martinique,Reunion)
B36 A China
B42 A Special requirements, Bulgaria
B44 A Croatia
B45 A Slovenia
B46 A Chile
B49 A Special requirements, Middle East (Iraq, Afghanistan)
B51 A Special requirements, Malta
B53 A South Africa
B59 A Slovakia
B60 A Special requirements, Brunei
B62 A Special requirements, rest of Asia
B67 A Type test country Indonesia
B68 A Type test country Argentina
B70 A Type test country Estonia
B71 A Type test country Latvia
B72 A Type test country Lithuania
B74 A Special requirements, Philippines
B75 A Type test country Ukraine
B76 A Type test country Belarus
B79 A Type test country India
B83 A Type test country Bahrain
B84 A Type test country Kuwait
B85 A Type test country Oman
B86 A Type test country Qatar
B87 A Type test country Saudi Arabia

I xxxx2xx = Country variant 3:
B29 A Japan

Position 4 (xxxXxxx):
Steering wheel position

I xxx0xxx = Left-hand drive (PR number: L0L)
I xxx1xxx = Right-hand drive (PR number: L0R)

Position 5 (xxXxxxx):
Trailer function
I xx**0**xxxx = No trailer function (no trailer control unit) (PR number: 1D0, 1D8)
I xx1xxxx = With trailer function (trailer control unit fitted) (PR numbers: 1D2, 1D4, 1D6, 1D9)

Position 6 and 7 (XXxxxxx):
I For the Audi A8 positions 6 and 7 are always coded **00** (**00**xxxxx).

Lane change assistant control unit -J769, reading measured value block
Audi A8 2003>

The following measured value blocks can be displayed:

Display group 1: Data, lane change assistant control unit -J769

Display zone 1: Term.15 supply voltage, lane change assistant control unit -J769
Specification: 9 Volts ...16 Volts

Display zone 2: Status lane change assistant
Specification:
I off
(lane change assistant not activated)
I on
(lane change assistant activated)
I deactivated
(e.g. in case of a fault entry)

Display zone 3: Communication local data bus (between lane change assistant control unit -J769 and lane change assistant control unit 2 -J770)
Specification:
I OK
(Communication local data bus OK)
I n.OK
(Communication local data bus not OK)

Display zone 4:Temperature in lane change assistant control unit -J769
Display range: -40 °C ... 90 °C

Display group 2: Data, lane change assistant control unit 2 -J770

Display zone 1: Term.15 supply voltage, lane keeping assistant control unit 2 -J770
Specification: 9 Volts ... 16 Volts

Display zone 2:Temperature in lane change assistant control unit 2 -J770
Display range: -40 °C ... 90 °C

Display zone 3: Status lane change assistant
Specification:
I off
(The lane change assistant is not switched on)
I deactivated
(The lane change assistant is on and the vehicle speed is below 60 km/h)
Or
(The lane change assistant is on, the vehicle speed is above 60 km/h and the value of the cornering radius (display group 8/display zone 1) is below 170 m)
I activated
(The lane change assistant is on, the vehicle speed is above 60 km/h and the value of the cornering radius (display group 8/display zone 1) is above 170 m)
I disabled
(warning suppressed: owing to special circumstances no warning is to be signalled to the driver)

Display zone 4: Vacant

Display group 3: Vehicle data

Display zone 1: Reversing lights
Specification:
I off
I on

Display zone 2: Vehicle speed
Display range: 0 km/h ... xxx km/h

Display zone 3: Left turn signal
Specification:
I off
I on

Display zone 4: Right turn signal
Specification:
I off
I on

Display group 4: Vehicle data

Display zone 1: Trailer
Specification:
I n. defined
(trailer function fitted in vehicle but not coded in lane change assistant control unit -J769)
I Trailer yes
(trailer connected to vehicle)
I Trailer no
(trailer not connected to vehicle)

Display zone 2: Yaw rate
Display range: -128 °/s ... 127 °/s

Display zone 3: Travel pulses from brake electronics
Display range: 0 ... 2047

Display zone 4: Dimming signal term.58d from dash panel insert with which lane change assistant warning lamp -K232 is activated
Display range: 0 % ... 100 %

Display group 5: Information from sensors and Actuators 1

Display zone 1: Status lane change assistant button -E530
Specification:
I unpressed
I pressed

Display zone 2: Status lane change assistant warning lamp -K232
Specification:
I off
(lane change assistant warning lamp -K232 unlit)
I active
(lane change assistant warning lamp -K232 lit)
I n.OK
(with static fault entry 2852 - Lane change assistant warning lamp -K232, short to earth or open circuit/short to positive)

Display zone 3: Data from rain and light sensor
Display range: 0 ... 1023

Display zone 4: Data from rain and light sensor
Display range: 0 ... 255

YZ**Note on display zones 3 and 4**
If the vehicle is positioned in conditions approximating to daylight, display zones 3 and 4 in display group 5 show a value greater than 0.

Display group 6: Information from sensors and Actuators 2

Display zone 1: Dimming signal lane change assistant warning lamp, driver side -K233
Display range: 0 % ... 100 %
Specification:
I 5 %
(This value is outputted if communication is taking place with the lane change assistant control unit -J769, for example reading measured value block)
I 60 %
(This value is outputted if a control element test is being performed on the lane change assistant control unit -J769)
I 0 % ... 100 %
(During driving, values between 0 and 100 % are displayed, depending on the brightness setting on the MMI CAR/Systems/Audi side assist/Display brightness menu. On vehicles without 34 - Adaptive suspension on the MMI CAR/Audi side assist/Display brightness) and the received signals of the rain and light sensor)

Display zone 2: Status lane change assistant warning lamp, driver side -K233
Specification:
I off
(lane change assistant warning lamp, driver side -K233 unlit)
I on
(lane change assistant warning lamp, driver side -K233 lit)
I n.OK
(with static fault entry 2853 - Lane change assistant warning lamp, driver side -K233, short to earth or open circuit/short to positive)

Display zone 3: Dimming signal lane change assistant warning lamp, passenger side -K234
Display range: 0 % ... 100 %
Specification:
I 5 %
(This value is outputted if communication is taking place with the lane change assistant control unit -J769, for example reading measured value block)
I 60 %
(This value is outputted if a control element test is being performed on the lane change assistant control unit -J769)
I 0 % ... 100 %
(During driving, values between 0 and 100 % are displayed, depending on the brightness setting on the MMI CAR/Systems/Audi side assist/Display brightness menu. On vehicles without 34 - Adaptive suspension on the MMI CAR/Audi side assist/Display brightness) and the received signals of the rain and light sensor)

Display zone 4: Status lane change assistant warning lamp, passenger side -K234
Specification:
I off
(lane change assistant warning lamp, passenger side -K234 unlit)
I on
(lane change assistant warning lamp, passenger side -K234 lit)
I n.OK
(with static fault entry 2854 - Lane change assistant warning lamp, passenger side -K234, short to earth or open circuit/short to positive)

Display group 7: User profiles

Display zone 1: Assignment of display brightnesses to vehicle keys
Specification:
I *X X X X
(The X stands for the vehicle keys. The asterisk (*) before the X indicates the vehicle key currently detected by the entry and start authorisation system. Up to 4 vehicle keys can be displayed A value from 1 to 5 is displayed in place of the X. The values from 1 to 5 indicate the preset brightness assigned to the vehicle key concerned and at which the warning lamps in the exterior mirrors light. The brightness is adjusted on the MMI (on vehicles with 34 - Adaptive suspension on the MMI CAR/Systems/Audi side assist/Display brightness menu. On vehicles without 34 - Adaptive suspension on the MMI CAR/Audi side assist/Display brightness menu.)

Display zone 2: Vacant

Display zone 3: Vacant

Display zone 4: Vacant

Display group 8: Driving dynamics

Display zone 1: Amount of cornering radius
Display range: 0 m ... 32767,5 m

Display zone 2: Vacant

Display zone 3: Vacant

Display zone 4: Vacant

Display group 10: Object data 1

Display zone 1: Detected object a, left-hand lane, distance X
(This measured value indicates the distance between the vehicle with the lane change assistant and the detected vehicle on the left-hand side.)
Display range:-63 m ... 0 m

Display zone 2: Detected object b, same lane behind vehicle with lane change assistant, distance X
(This measured value indicates the distance between the vehicle with the lane change assistant and the vehicle travelling behind it in the same lane.)
Display range:-63 m ... 0 m

Display zone 3: Detected object c, right-hand lane, distance X
(This measured value indicates the distance between the vehicle with the lane change assistant and the detected vehicle on the right-hand side.)
Display range:-63 m ... 0 m

Display zone 4: Vacant

YZ**Note**
The block diagram in test program J769 - Read measured value block (Rep.Gr. 96) provides a graphical representation of the object data.

Display group 11: Object data 2

Display zone 1: Detected object a, left-hand lane, distance Y
(This measured value indicates the lateral distance between the vehicle with the lane change assistant and the detected vehicle on the left-hand side.)
Display range: 4,5 m ... 1,6 m

Display zone 2: Detected object b, same lane behind vehicle with lane change assistant, distance Y
(This measured value indicates the lateral offset between the vehicle with the lane change assistant and the vehicle travelling behind it in the same lane.)
Display range:1,5 m ... -1,5 m

Display zone 3: Detected object c, right-hand lane, distance Y
(This measured value indicates the lateral distance between the vehicle with the lane change assistant and the detected vehicle on the right-hand side.)
Display range: -1,6 m ... -4,5 m

Display zone 4: Vacant

Note
The block diagram in test program J769 - Read measured value block (Rep.Gr. 96) provides a graphical representation of the object data.
Display group 12: Object data 3

Display zone 1: Detected object a, left-hand lane, speed difference
(This measured value indicates the difference in speed between the vehicle with the lane change assistant and the detected vehicle on the left-hand side.)
Display range: -128 km/h ... 127 km/h

Display zone 2: Detected object b, same lane behind vehicle with lane change assistant, speed difference
(This measured value indicates the difference in speed between the vehicle with the lane change assistant and the vehicle travelling behind it in the same lane.)
Display range: -128 km/h ... 127 km/h

Display zone 3: Detected object c, right-hand lane, speed difference
(This measured value indicates the difference in speed between the vehicle with the lane change assistant and the detected vehicle on the right-hand side.)
Display range: -128 km/h ... 127 km/h

Display zone 4: Vacant

Note
The block diagram in test program J769 - Read measured value block (Rep.Gr. 96) provides a graphical representation of the object data.
Display group 20: Measured angles, output of Doppler generators

Note
Display zones 1 to 4 of display group 20 are only needed for calibration.

Display zone 1: Measured horizontal angle deviation in lane change assistant control unit -J769
Display range: -12,8 ° ... 12,8 °

Display zone 2: Output of Doppler generator 1
Specification: Above 80 %
Display range: 0 % ... 200 %
(The measured value is necessary when calibrating the lane change assistant. The radar beam of the lane change assistant control unit -J769 is reflected by the lane change assistant calibrator VAS 6350/4 during calibration and measured by the control unit -J769)

Display zone 3: Measured horizontal angle deviation in lane change assistant control unit 2 -J770
Display range: -12,8 ° ... 12,8 °

Display zone 4: Output of Doppler generator 2
Specification: Above 80 %
Display range: 0 % ... 200 %
(The measured value is necessary when calibrating the lane change assistant. The radar beam of the lane change assistant control unit 2 -J770 is reflected by the lane change assistant calibrator VAS 6350/4 during calibration and measured by the control unit -J770)
Display group 21: Angle deviation
Note
Display zones 1 and 2 of display group 21 are only needed for calibration.

Display zone 1: Static angle deviation in lane change assistant control unit -J769
Specification: -4.99 ° to 4.99 °
Display range: -6,35 ° ... 6,35 °

Display zone 2: Static angle deviation in lane change assistant control unit 2 -J770
Specification: -4.99 ° to 4.99 °
Display range: -6,35 ° ... 6,35 °

Display zone 3: Vacant

Display zone 4: Vacant

Display group 22: Autocalibration

Display zone 1: Autocalibration
Specification:
I n.OK
(In the event of a fault entry in the lane change assistant control unit -J769)
I running
(If the lane change assistant is active, it is calibrated automatically while driving, provided crash barriers are detected alongside the road for a certain period of time. If crash barriers are detected and calibration is in progress, the -running- readout appears.)
I off
(If no crash barriers are detected alongside the road, or if the lane change assistant is not active, the 'off' readout appears.)

Display zone 2: Dynamic angle deviation in control unit 1
Display range: -6,35 ° ... 6,35 °

Display zone 3: Dynamic angle deviation in control unit 2
Display range: -6,35 ° ... 6,35 °

Display zone 4: Distance covered
Display range: 0 km ... 65353 km
(The measured value indicates how many kilometres the autocalibration was active for in total.)

Display group 125: Communication data bus 1

Display zone 1: Communication brake electronics
Specification:
I ABS 0
(No communication with brake electronics)

(No communication with dash panel insert)
I Combi 1
(Communication with dash panel insert OK)

Display zone 3: Communication data bus diagnostic interface
Specification:
I Gateway 0
(No communication with data bus diagnostic interface)
I Gateway 1
(Communication with data bus diagnostic interface OK)

Display zone 4: Communication electronic central electrics
Specification:
I Elec. CE 0
(No communication with electronic central electrics)
I Elec. CE 1
(Communication with electronic central electrics OK)

Display group 126: Communication data bus 2

Display zone 1: Convenience system central module communication
Specification:
I Central 0
(No communication with convenience system central module)
I Central 1
(Communication with convenience system central module OK)

Display zone 2: Communication entry and start authorisation
Specification:
I El.ign.lock 0
(No communication with entry and start authorisation system)
I El.ign.lock 1
(Communication with entry and start authorisation system OK)

Display zone 3: Communication trailer function
Specification:
I Trailer 0
(No communication with trailer function)
I Trailer 1
(Communication with trailer function OK)
I no readout
(If the trailer function is not coded in the lane change assistant control unit -J769, no readout appears.)