Quiescent current in seat control unit

Topic number	LI91.10-P-049799
Version	3
Design group	91.10 Front seats
Date	01-10-2017
Validity	Model series 203, 209, 210, 211
Reason for change	Damage code deleted
Reason for block	

Complaint:

Quiescent current in seat control unit

Cause:

The presence of a quiescent current can have several causes.

These are not always recognized and lead to an increased number of OK components being removed.

Possible Hall sensor faults or normalization faults can exist which can be eliminated without replacing the control unit.

Remedy:

Work through the following test procedure:

1. Power consumption:

Power consumption must be tested using a multimeter.

Quiescent current (CAN not active, the following voltages must be measured (10 V UBatt 15 V):

No-load current (CAN not active, backrest not folded, no seat adjustment): 300 µA

No-load current (CAN not active, backrest folded, no seat adjustment): 20 mA

Operating current (CAN active, no seat adjustment): 200 mA

Should the currents be outside the values described above, the following connectors should be removed in sequence.

Connector 11 (violet): Dynamic seat (FDS) if installed

Connector 8 (transparent): Height release switch (HES)

Connector 7 (pink): Backrest release switch (LES)

Connector 6 (orange): Backrest/head restraint motor (L/K)

Connector 5 (brown): Inclination adjustment (height at front) (HV)

Connector 4 (black): Fore/aft adjustment (LV)

Connector 3 (green): Height adjustment (height at rear) (HH)

Connector 1 (black): CAN and steering column (CAN, LS)

If after disconnecting all the above listed connectors the current is outside the defined values, the seat control unit must be replaced.

2. Normalization faults

If a normalization fault is stored without the corresponding Hall sensor fault, an adjustment for this adjustment shaft must be performed in both directions. This ensures that after an inadvertent erasure of the Hall sensor fault this is set again.

If the Hall sensor fault is not stored following adjustment in both directions, it is sufficient to carry out a new normalization.

If a Hall sensor fault is stored, see chapter "Hall sensor faults“.

3. Hall sensor faults

If Hall sensor faults are stored, the current status of the seat control unit is recorded first. The following information is read out for this purpose:

Normalizing position of all shafts (except steering column, is not normalized)

Actual position of all shafts

Fault

Read the switch status for the release switch (note: seat adjustment is not possible if the backrest has been released)

The following test must be carried for all shafts with Hall sensor faults:

Read status (see "Read status“)

Erase fault

Move adjustment shaft for > 2 sec

Read status (see "Read status“)

Move adjustment shaft for > 2 sec in opposite direction

Read status (see "Read status“)

If Hall sensor faults are present after the test sequence, for these adjustment shafts the contacting must be checked for loose contact and the lines for short circuits.

Hall sensor signal line: check for short circuit to UBatt and ground

Hall sensor ground line: check for short circuit to UBatt

Motor lines: check for short circuit to UBatt

All resistance measurements must be > 1 Mohm

If the wiring harnesses and connections were found to be OK, the seat control unit must be replaced.

Symptoms
Body / Seat / Seat adjustment / Function error
Overall vehicle / Power supply / Battery/On-board electrical system / Battery function / Battery discharges

Control unit/fault code		
Control unit	Fault code	Fault text
ESA passenger-Electric seat adjustment front passenger (with memory) (ESVB1) (E (211),CLK (209),C (203))	-	-

Parts						
Part number	ES1	ES2	Designation	Quantity	Note	EPC
A2118704626			Control unit	1	Left seat control unit	X
A2118704726			Control unit	1	Right seat control unit	X

WIS-References			
Document number	Title	Note	Allocation
ar54.10-p-1030-03p	Check no-load current		Remedy