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## Quiescent current in seat control unit

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Topic number	LI91.10-P-049799
Version	2
Design group	91.10 Front seats
Date	07-10-2014
Validity	Model series 203, 209, 210, 211
Reason for change	WIS reference added
Reason for block	

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### 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  $\mu$ A

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.

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

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

<b>Parts</b>							
Part number	ES1	ES2	Designation	Quantity	Note	EPC	Other make part
A2118704626			Control unit	1	Left seat control unit	X	
A2118704726			Control unit	1	Right seat control unit	X	

<b>Work units</b>				
Op. no.	Operation text	Time	Damage code	Note
			82475 54	Seat adjustment control unit

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

Validity		
Vehicle	Engine	Transmission
203.004	*	*
203.006	*	*
203.007	*	*
203.008	*	*
203.016	*	*
203.018	*	*
203.020	*	*
203.035	*	*
203.040	*	*
203.042	*	*
203.043	*	*
203.045	*	*
203.046	*	*
203.052	*	*
203.054	*	*
203.056	*	*
203.061	*	*
203.064	*	*
203.065	*	*
203.076	*	*
203.081	*	*
203.084	*	*
203.087	*	*
203.092	*	*
203.204	*	*
203.206	*	*
203.207	*	*
203.208	*	*
203.216	*	*
203.218	*	*
203.220	*	*
203.235	*	*
203.240	*	*
203.242	*	*
203.243	*	*
203.245	*	*
203.246	*	*
203.252	*	*
203.254	*	*
203.256	*	*

203.261	*	*
203.264	*	*
203.265	*	*
203.276	*	*
203.281	*	*
203.284	*	*
203.287	*	*
203.292	*	*
203.706	*	*
203.707	*	*
203.708	*	*
203.718	*	*
203.735	*	*
203.740	*	*
203.741	*	*
203.742	*	*
203.743	*	*
203.745	*	*
203.746	*	*
203.747	*	*
203.752	*	*
203.756	*	*
203.764	*	*
CLK (209)	*	*
E (210)	*	*
E (211)	*	*

Full model designation breakdown		
Vehicle	Engine	Transmission
203.004	611.962	716.601
203.004	611.962	716.603
203.004	611.962	716.604
203.004	611.962	722.619
203.004	611.962	722.699
203.006	611.962	716.640
203.006	611.962	716.647
203.006	611.962	716.651
203.006	611.962	722.699
203.007	646.962	716.604
203.007	646.962	716.606
203.007	646.962	722.699
203.007	646.963	716.604

203.007	646.963	716.606
203.007	646.963	722.699
203.008	646.963	716.649
203.008	646.963	716.654
203.008	646.963	722.699
203.016	612.962	716.641
203.016	612.962	716.648
203.016	612.962	716.649
203.016	612.962	716.654
203.016	612.962	722.634
203.016	612.962	722.640
203.018	612.990	722.642
203.020	642.910	716.653
203.020	642.910	722.902
203.035	111.951	716.620
203.035	111.951	716.633
203.035	111.951	722.602
203.035	111.951	722.615
203.040	271.948	716.628
203.040	271.948	716.631
203.040	271.948	722.695
203.042	271.940	716.605
203.042	271.940	716.628
203.042	271.940	716.631
203.042	271.940	722.695
203.043	271.942	716.628
203.043	271.942	716.631
203.043	271.942	722.695
203.045	111.955	716.622
203.045	111.955	716.630
203.045	111.955	722.616
203.046	271.946	716.605
203.046	271.946	716.628
203.046	271.946	716.631
203.046	271.946	722.695
203.052	272.920	716.638
203.052	272.920	722.998
203.054	272.940	716.669
203.054	272.940	722.999
203.056	272.960	716.664
203.056	272.960	722.906
203.061	112.912	716.623
203.061	112.912	716.634

203.061	112.912	716.638
203.061	112.912	722.696
203.064	112.946	716.667
203.064	112.946	716.669
203.064	112.946	722.618
203.065	112.961	722.633
203.065	112.961	722.641
203.076	113.988	722.636
203.081	112.916	722.667
203.084	112.953	722.668
203.087	272.970	722.676
203.092	272.941	722.690
203.204	611.962	716.601
203.204	611.962	716.603
203.204	611.962	716.604
203.204	611.962	722.619
203.204	611.962	722.699
203.206	611.962	716.640
203.206	611.962	716.647
203.206	611.962	716.651
203.206	611.962	722.699
203.207	646.962	716.604
203.207	646.962	716.606
203.207	646.962	722.699
203.207	646.963	716.604
203.207	646.963	716.606
203.207	646.963	722.699
203.208	646.963	716.649
203.208	646.963	716.654
203.208	646.963	722.699
203.216	612.962	716.641
203.216	612.962	716.648
203.216	612.962	716.649
203.216	612.962	716.654
203.216	612.962	722.634
203.216	612.962	722.640
203.218	612.990	722.642
203.220	642.910	716.653
203.220	642.910	722.902
203.235	111.951	716.620
203.235	111.951	716.633
203.235	111.951	722.602
203.235	111.951	722.615

203.240	271.948	716.628
203.240	271.948	716.631
203.240	271.948	722.695
203.242	271.940	716.605
203.242	271.940	716.628
203.242	271.940	716.631
203.242	271.940	722.695
203.243	271.942	716.628
203.243	271.942	716.631
203.243	271.942	722.695
203.245	111.955	716.620
203.245	111.955	716.622
203.245	111.955	716.627
203.245	111.955	716.630
203.245	111.955	722.602
203.245	111.955	722.616
203.246	271.946	716.605
203.246	271.946	716.628
203.246	271.946	716.631
203.246	271.946	722.695
203.252	272.920	716.638
203.252	272.920	722.998
203.254	272.940	716.669
203.254	272.940	722.999
203.256	272.960	716.664
203.256	272.960	722.906
203.261	112.912	716.623
203.261	112.912	716.634
203.261	112.912	722.696
203.261	112.912	722.698
203.264	112.946	722.618
203.264	112.946	722.633
203.265	112.961	722.633
203.265	112.961	722.641
203.276	113.988	722.636
203.281	112.916	722.667
203.284	112.953	722.668
203.287	272.970	722.676
203.292	272.941	722.690
203.706	611.962	716.640
203.706	611.962	716.647
203.706	611.962	716.651
203.706	611.962	722.699

203.707	646.962	711.655
203.707	646.962	716.604
203.707	646.962	716.606
203.707	646.962	722.699
203.707	646.963	711.655
203.707	646.963	716.604
203.707	646.963	716.606
203.707	646.963	722.699
203.708	646.963	711.653
203.708	646.963	716.649
203.708	646.963	716.654
203.708	646.963	722.699
203.718	612.990	722.642
203.735	111.951	716.620
203.735	111.951	716.633
203.735	111.951	722.602
203.735	111.951	722.615
203.740	271.948	716.605
203.740	271.948	716.628
203.740	271.948	716.631
203.740	271.948	722.695
203.741	271.957	711.656
203.741	271.957	716.605
203.741	271.957	716.631
203.741	271.957	722.695
203.742	271.940	716.605
203.742	271.940	716.628
203.742	271.940	716.631
203.742	271.940	722.695
203.743	271.942	716.628
203.743	271.942	722.695
203.745	111.955	716.622
203.745	111.955	716.627
203.745	111.955	716.630
203.745	111.955	722.616
203.746	271.946	711.656
203.746	271.946	716.605
203.746	271.946	716.628
203.746	271.946	716.631
203.746	271.946	722.695
203.747	111.981	716.632
203.747	111.981	716.662
203.747	111.981	716.663



203.747	111.981	716.668
203.747	111.981	722.616
203.752	272.920	711.656
203.752	272.920	716.638
203.752	272.920	722.998
203.756	272.960	711.654
203.756	272.960	716.664
203.756	272.960	722.906
203.764	112.946	716.667
203.764	112.946	716.669
203.764	112.946	722.618
209.308	646.966	716.654
209.308	646.966	722.699
209.316	612.962	716.649
209.316	612.962	716.654
209.316	612.962	722.634
209.316	612.962	722.640
209.316	612.967	716.649
209.316	612.967	716.654
209.316	612.967	722.634
209.316	612.967	722.640
209.320	642.910	716.653
209.320	642.910	722.902
209.341	271.955	716.631
209.341	271.955	722.695
209.342	113.994	716.628
209.342	113.994	716.631
209.342	113.994	722.649
209.342	113.994	722.695
209.342	271.940	716.628
209.342	271.940	716.631
209.342	271.940	722.649
209.342	271.940	722.695
209.343	271.942	716.424
209.343	271.942	716.628
209.343	271.942	722.695
209.354	272.940	716.669
209.354	272.940	722.999
209.356	272.960	716.664
209.356	272.960	722.906
209.361	112.912	716.623
209.361	112.912	716.634
209.361	112.912	716.638

209.361	112.912	722.696
209.365	112.955	722.618
209.372	273.967	722.904
209.375	113.968	722.633
209.375	113.968	722.901
209.376	113.987	722.636
209.376	113.987	722.907
209.376	113.988	722.636
209.376	113.988	722.907
209.377	156.982	722.907
209.420	642.910	716.653
209.420	642.910	722.902
209.441	271.955	716.631
209.441	271.955	722.695
209.442	113.994	716.424
209.442	113.994	716.628
209.442	113.994	716.631
209.442	113.994	722.649
209.442	113.994	722.695
209.442	271.940	716.424
209.442	271.940	716.628
209.442	271.940	716.631
209.442	271.940	722.649
209.442	271.940	722.695
209.454	272.940	716.669
209.454	272.940	722.999
209.456	272.960	716.664
209.456	272.960	722.906
209.461	112.912	716.424
209.461	112.912	716.623
209.461	112.912	716.634
209.461	112.912	716.638
209.461	112.912	722.696
209.465	112.955	722.618
209.472	273.967	722.904
209.475	113.968	722.633
209.475	113.968	722.901
209.476	113.987	722.636
209.476	113.987	722.907
209.476	113.988	722.636
209.476	113.988	722.907
209.477	156.982	722.907
210.003	604.917	717.416

210.003	604.917	717.418
210.003	604.917	722.602
210.003	604.917	722.603
210.004	604.912	717.416
210.004	604.912	717.418
210.004	604.912	722.441
210.004	604.912	722.602
210.004	604.912	722.603
210.006	611.961	716.640
210.006	611.961	716.647
210.006	611.961	716.649
210.006	611.961	716.651
210.006	611.961	717.466
210.006	611.961	722.614
210.006	611.961	722.699
210.007	611.961	716.601
210.007	611.961	716.603
210.007	611.961	716.604
210.007	611.961	717.466
210.007	611.961	722.614
210.007	611.961	722.699
210.010	605.912	717.417
210.010	605.912	722.442
210.010	605.912	722.601
210.010	605.912	722.602
210.015	605.962	717.460
210.015	605.962	717.466
210.016	612.961	716.641
210.016	612.961	716.648
210.016	612.961	716.649
210.016	612.961	722.608
210.016	612.961	722.634
210.017	602.982	717.460
210.017	602.982	717.466
210.017	602.982	722.605
210.017	602.982	722.613
210.020	606.912	717.446
210.020	606.912	722.438
210.020	606.912	722.600
210.025	606.962	722.608
210.026	613.961	722.626
210.035	111.942	716.620
210.035	111.942	717.417

210.035	111.942	717.418
210.035	111.942	722.443
210.035	111.942	722.602
210.035	111.942	722.615
210.037	111.970	717.417
210.037	111.970	722.440
210.037	111.970	722.600
210.045	111.947	716.622
210.045	111.947	717.460
210.045	111.947	722.605
210.045	111.947	722.616
210.045	111.974	716.622
210.045	111.974	717.460
210.045	111.974	722.605
210.045	111.974	722.616
210.048	111.957	716.622
210.048	111.957	716.630
210.048	111.957	722.616
210.053	104.945	717.441
210.053	104.945	717.460
210.053	104.945	722.424
210.053	104.945	722.510
210.053	104.945	722.604
210.055	104.990	722.328
210.055	104.990	722.329
210.055	104.990	722.509
210.055	104.990	722.605
210.055	104.990	722.629
210.055	104.995	722.328
210.055	104.995	722.329
210.055	104.995	722.509
210.055	104.995	722.605
210.055	104.995	722.629
210.061	112.911	716.621
210.061	112.911	717.463
210.061	112.911	722.609
210.061	112.911	722.698
210.062	112.914	716.623
210.062	112.914	716.634
210.062	112.914	722.696
210.062	112.914	722.698
210.063	112.921	716.623
210.063	112.921	716.634

210.063	112.921	717.462
210.063	112.921	722.606
210.063	112.921	722.617
210.065	112.941	722.607
210.065	112.941	722.618
210.070	113.940	722.623
210.070	113.940	722.632
210.072	119.980	722.625
210.072	119.980	722.627
210.072	119.985	722.625
210.072	119.985	722.627
210.074	113.980	722.624
210.074	113.980	722.636
210.081	112.921	722.665
210.082	112.941	722.664
210.082	112.941	722.665
210.083	113.940	722.669
210.083	113.940	722.670
210.206	611.961	716.640
210.206	611.961	716.647
210.206	611.961	716.651
210.206	611.961	717.466
210.206	611.961	722.614
210.206	611.961	722.699
210.210	605.912	717.417
210.210	605.912	722.601
210.215	605.962	717.460
210.215	605.962	717.466
210.216	612.961	716.641
210.216	612.961	716.648
210.216	612.961	716.649
210.216	612.961	722.608
210.216	612.961	722.634
210.217	602.982	717.460
210.217	602.982	717.466
210.217	602.982	722.605
210.217	602.982	722.613
210.225	606.962	722.608
210.226	613.961	722.626
210.235	111.942	716.620
210.235	111.942	717.417
210.235	111.942	717.418
210.235	111.942	722.602

210.235	111.942	722.615
210.237	111.970	717.417
210.237	111.970	722.600
210.245	111.947	716.622
210.245	111.947	717.460
210.245	111.947	722.605
210.245	111.947	722.616
210.248	111.957	716.622
210.248	111.957	716.630
210.248	111.957	722.616
210.261	112.911	716.621
210.261	112.911	717.463
210.261	112.911	722.609
210.261	112.911	722.698
210.262	112.914	716.623
210.262	112.914	716.634
210.262	112.914	722.696
210.262	112.914	722.698
210.263	112.921	716.623
210.263	112.921	716.634
210.263	112.921	722.617
210.265	112.941	722.607
210.265	112.941	722.618
210.270	113.940	722.623
210.270	113.940	722.632
210.272	119.985	722.622
210.272	119.985	722.625
210.274	113.980	722.624
210.274	113.980	722.636
210.281	112.921	722.665
210.282	112.941	722.664
210.282	112.941	722.665
210.283	113.940	722.669
210.283	113.940	722.670
210.283	113.980	722.669
210.283	113.980	722.670
210.606	605.912	717.466
210.606	605.912	722.614
210.606	605.912	722.699
210.606	611.961	717.466
210.606	611.961	722.614
210.606	611.961	722.699
210.610	605.912	717.417

210.610	605.912	722.601
210.610	605.912	722.605
210.616	612.961	722.634
210.617	602.982	717.460
210.617	602.982	717.466
210.617	602.982	722.605
210.617	602.982	722.613
210.663	112.921	716.623
210.663	112.921	717.462
210.663	112.921	722.606
210.663	112.921	722.617
211.004	646.951	716.604
211.004	646.951	716.606
211.004	646.951	722.699
211.006	646.961	716.649
211.006	646.961	722.699
211.007	646.820	716.654
211.007	646.820	722.699
211.007	646.821	716.654
211.007	646.821	722.699
211.008	646.821	716.654
211.008	646.821	722.640
211.016	647.961	716.649
211.016	647.961	716.654
211.016	647.961	722.640
211.020	642.920	716.646
211.020	642.920	716.653
211.020	642.920	722.902
211.022	642.920	722.902
211.023	648.961	722.640
211.024	642.920	722.902
211.026	648.961	722.626
211.028	628.961	722.639
211.029	629.910	722.903
211.041	271.956	716.628
211.041	271.956	716.631
211.041	271.956	722.695
211.042	271.941	716.628
211.042	271.941	716.631
211.042	271.941	722.695
211.052	272.922	716.634
211.052	272.922	716.638
211.052	272.922	722.998

211.054	272.943	716.667
211.054	272.943	716.669
211.054	272.943	722.999
211.056	272.964	716.665
211.056	272.964	716.666
211.056	272.964	722.906
211.057	272.985	716.665
211.057	272.985	716.666
211.057	272.985	722.906
211.061	112.913	716.623
211.061	112.913	716.634
211.061	112.913	722.696
211.065	112.949	722.618
211.070	113.967	722.633
211.070	113.967	722.901
211.072	273.960	722.904
211.076	113.990	722.643
211.077	156.983	722.907
211.080	112.917	722.667
211.082	112.954	722.668
211.083	113.969	722.672
211.084	642.921	722.689
211.087	272.972	716.665
211.087	272.972	716.666
211.087	272.972	722.676
211.089	642.921	722.689
211.090	273.962	722.677
211.092	272.944	716.665
211.092	272.944	716.666
211.092	272.944	722.690
211.206	646.961	716.649
211.206	646.961	722.699
211.207	646.821	716.654
211.207	646.821	722.640
211.207	646.821	722.699
211.208	646.821	716.654
211.208	646.821	722.640
211.216	647.961	716.649
211.216	647.961	716.654
211.216	647.961	722.640
211.220	642.920	716.646
211.220	642.920	716.653
211.220	642.920	722.902



211.222	642.920	722.902
211.223	648.961	722.640
211.226	648.961	722.626
211.241	271.956	716.628
211.241	271.956	716.631
211.241	271.956	722.695
211.242	271.941	716.628
211.242	271.941	716.631
211.242	271.941	722.695
211.252	272.922	716.634
211.252	272.922	722.998
211.254	272.943	716.667
211.254	272.943	716.669
211.254	272.943	722.999
211.256	272.964	716.665
211.256	272.964	716.666
211.256	272.964	722.906
211.257	272.985	716.665
211.257	272.985	716.666
211.257	272.985	722.906
211.261	112.913	716.623
211.261	112.913	716.634
211.261	112.913	722.696
211.265	112.949	722.618
211.270	113.967	722.633
211.270	113.967	722.901
211.272	273.960	722.904
211.276	113.990	722.643
211.277	156.983	722.907
211.280	112.917	722.667
211.282	112.954	722.668
211.283	113.969	722.672
211.284	642.921	722.689
211.287	272.972	716.665
211.287	272.972	716.666
211.287	272.972	722.676
211.289	642.921	722.689
211.290	273.962	722.677
211.292	272.944	716.665
211.292	272.944	716.666
211.292	272.944	722.690
211.606	646.961	722.699
211.608	646.821	722.640

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211.616	647.961	722.640
211.620	642.920	722.902