15.1 Model 129
Power Seats with Memory

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Diagnosis - Complaint Related Diagnostic Chart (left seat)

Complaint/Problem	Possible cause	Test step/Remedy [1]
Entire seat adjustment does not function.	Left front power seat control module (N32/1) Left front power seat switch group (S91)	27 ⇒ 1.0 27 ⇒ 18.0, 23.0
Forward/back seat adjustment does not function.	Fore/aft switch (S91s1) Fore/aft motor (M27m1)	27 ⇒ 2.0 27 ⇒ 3.0, 4.0
Front seat height adjustment does not function.	Front raise/lower switch (S91s3) Front raise/lower motor (M27m3)	27 ⇒ 5.0 27 ⇒ 6.0, 7.0
Rear seat height adjustment does not function.	Rear raise/lower switch (S91s2) Rear raise/lower motor (M27m2)	27 ⇒ 8.0 27 ⇒ 9.0, 10.0
Backrest forward/back adjustment does not function.	Backrest fore/aft switch (S91s5) Backrest fore/aft motor (M27m5)	27 ⇒ 11.0 27 ⇒ 12.0, 13.0
Headrest up/down adjustment does not function.	Head restraint raise/lower switch (S91s4) Head restraint raise/lower motor (M27m4)	27 ⇒ 14.0 27 ⇒ 15.0, 16.0
Position memory does not function.	Left front power seat switch group (S91), memory position Left front power seat switch group (S91)	27 ⇒ 17.0 27 ⇒ 18.0, 23.0

[1] Observe Preparation for Test, see 26.

Diagnosis - Complaint Related Diagnostic Chart (left seat)

Complaint/Problem	Possible cause	Test step/Remedy [1]
Convenience feature does not function or some functions fail.	Left seat proximity control module (N32/5)	27 ⇒ 19.0, 20.0
Switch illumination does not function.	Left front power seat switch group (S91e1), Illumination	27 ⇒ 21.0
Acoustical warning signal sounds if the door is closed and ignition is turned on.	Backrest is not correctly latched. Left/right backrest lock switch (S52/1, S52/2) Left backrest lock safety package (N32/7)	 27 ⇒ 22.0 27 ⇒ 24.0, 25.0
Backrest lock safety package/automatic locking feature does not function.	Left/right backrest lock switch (S52/1, S52/2) Left backrest lock safety package (N32/7)	27 ⇒ 22.0 27 ⇒ 24.0, 25.0
Unlocked backrest is not indicated by an optical warning signal, although an acoustical warning signal sounds.	Seat belt/backrest lock reminder lamp (A1e9)	27 ⇒ 26.0
Optical warning signal comes on constantly with the engine running, although the left and right backrests are locked.	Left/right backrest lock safety package (N32/7, N32/8) (no acoustical warning signal)	27 ⇒ 27.0
Unlocked backrest is not indicated by an acoustical warning signal.	Left/right backrest lock safety package (N32/7, N32/8) (no acoustical warning signal)	27 ⇒ 27.0

[1] Observe Preparation for Test, see 26.

Diagnosis - Complaint Related Diagnostic Chart (right seat)

Complaint/Problem	Possible cause	Test step/Remedy [1]
Entire seat adjustment does not function.	Right front power seat control module (N32/2) Right front power seat switch group (S92)	28 ⇒ 1.0 28 ⇒ 18.0, 23.0
Forward/back seat adjustment does not function.	Fore/aft switch (S92s1) Fore/aft motor (M28m1)	28 ⇒ 2.0 28 ⇒ 3.0, 4.0
Front seat height adjustment does not function.	Front raise/lower switch (S92s3) Front raise/lower motor (M28m3)	28 ⇒ 5.0 28 ⇒ 6.0, 7.0
Rear seat height adjustment does not function.	Rear raise/lower switch (S92s2) Rear raise/lower motor (M28m2)	28 ⇒ 8.0 28 ⇒ 9.0, 10.0
Backrest forward/back adjustment does not function.	Backrest fore/aft switch (S92s5) Backrest fore/aft motor (M28m5)	28 ⇒ 11.0 28 ⇒ 12.0, 13.0
Head rest up/down adjustment does not function.	Head restraint raise/lower switch (S92s4) Head restraint raise/lower motor (M28m4)	28 ⇒ 14.0 28 ⇒ 15.0, 16.0
Position memory does not function.	Right front power seat switch group (S92), memory position Right front power seat switch group (S92)	28 ⇒ 17.0 28 ⇒ 18.0, 23.0

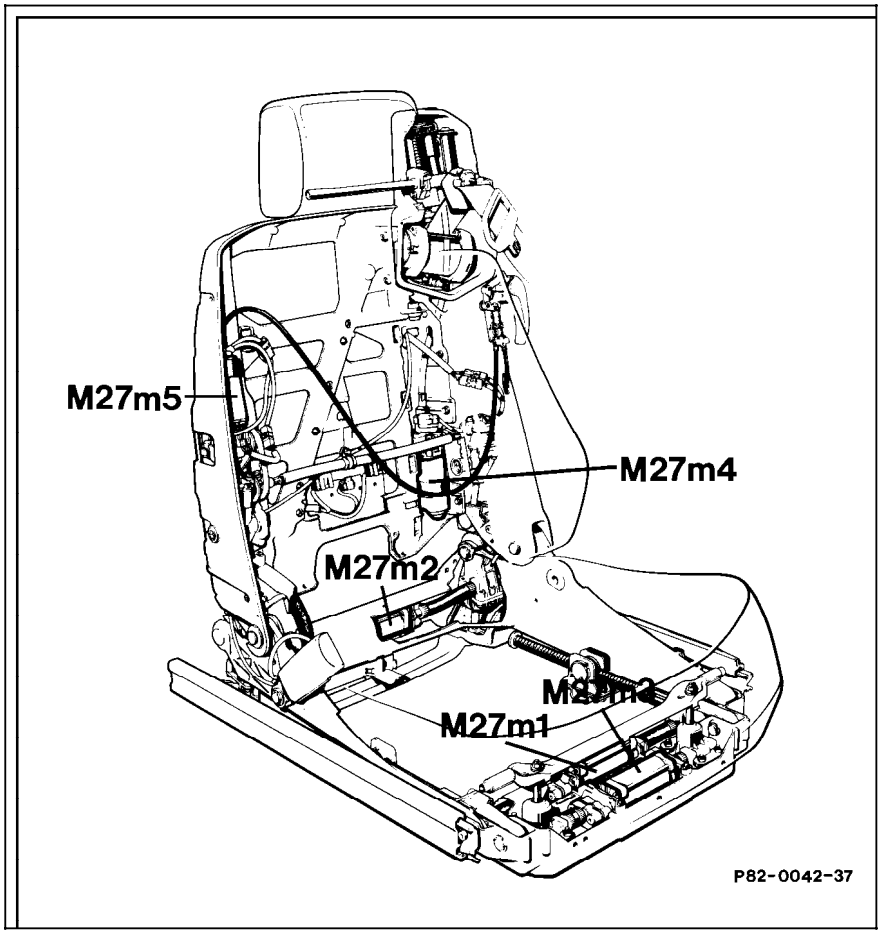
[1] Observe Preparation for Test, see 26.

Diagnosis - Complaint Related Diagnostic Chart (right seat)

Complaint/Problem	Possible cause	Test step/Remedy [1]
Convenience feature does not function or some functions fail.	Right seat proximity control module (N32/6)	28 ⇒ 19.0, 20.0
Switch illumination does not function.	Right front power seat switch group Illumination, (S92e1), illumination	28 ⇒ 21.0
Acoustical warning signal sounds if the door is closed and ignition is turned on.	Backrest is not correctly locked. Left/right backrest lock switch (S52/3, S52/4) Left backrest lock safety package (N32/8)	 28 ⇒ 22.0 28 ⇒ 24.0, 25.0
Backrest lock safety package/automatic locking feature does not function.	Left/right backrest lock switch (S52/3, S52/4) Right backrest lock safety package (N32/8)	28 ⇒ 22.0 28 ⇒ 24.0, 25.0
Unlocked backrest is not indicated by an optical warning signal, although an acoustical warning signal sounds.	Seat/backrest lock reminder lamp (A1e9)	28 ⇒ 26.0
Optical warning signal comes on constantly with the engine running, although the left and right backrests are locked.	Left/right backrest lock safety package (N32/7, N32/8) (no acoustical warning signal)	28 ⇒ 27.0
Unlocked backrest is not indicated by an acoustical warning signal.	Left/right backrest lock safety package (N32/7, N32/8) (no acoustical warning signal)	28 ⇒ 27.0

[1] Observe Preparation for Test, see 26.

Electrical Test Program - Component Locations



P82-0042-37

Figure 1

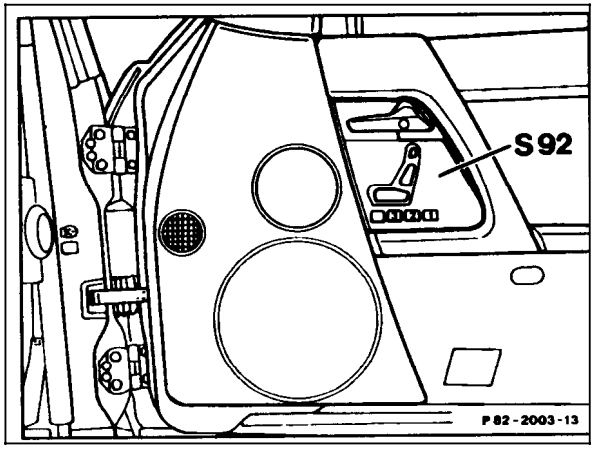
M27	Left front ESA motor group (with memory)
M27m1	Fore/aft motor
M27m2	Rear raise/lower motor
M27m3	Front raise/lower motor
M27m4	Head restraint raise/lower motor
M27m5	Backrest fore/aft motor

Note:

Right power seat layout (not pictured) similar to left

M28	Right front ESA motor group (with memory)
M28m1	Fore/aft motor
M28m2	Rear raise/lower motor
M28m3	Front raise/lower motor
M28m4	Head restraint raise/lower motor
M28m5	Backrest fore/aft motor

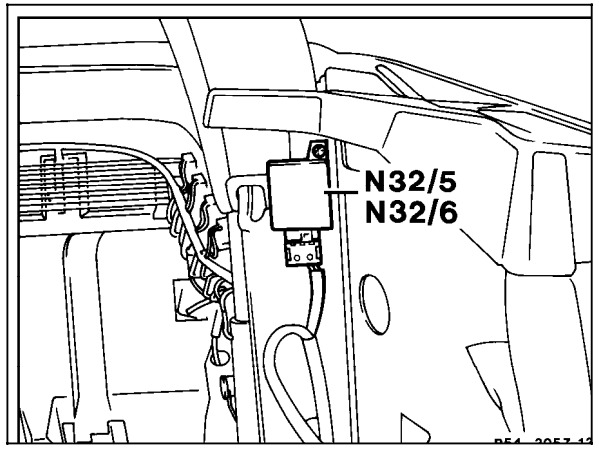
Electrical Test Program - Component Locations



P82-2003-13

Figure 2

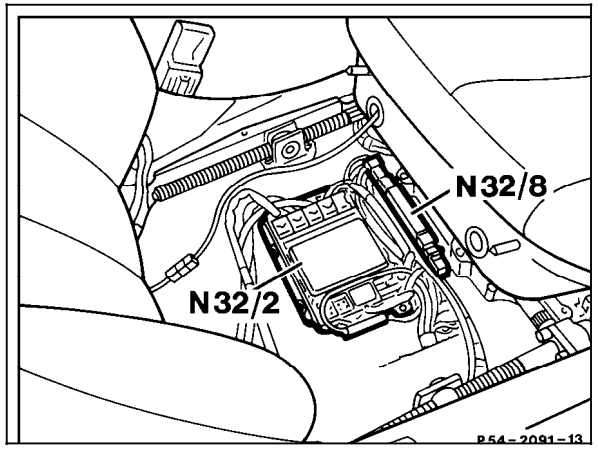
S92 Right front ESA switch group (with memory)
S91 Left front ESA switch group (with memory)
(not pictured, layout similar to right)



P54-2057-13

Figure 3

N32/5 Left seat proximity control module (soft top compartment panel removed)
N32/6 Right seat proximity control module
(not pictured, layout similar to left)

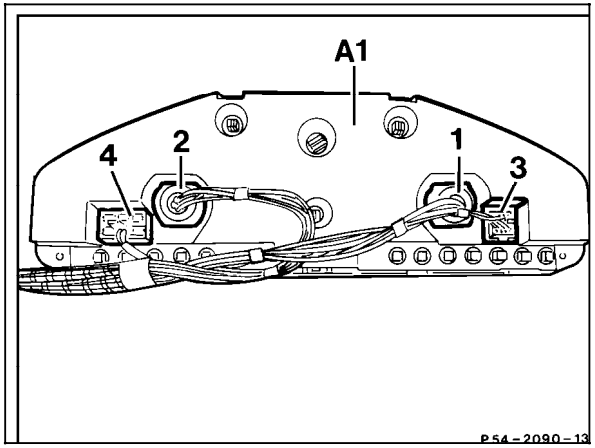


P54-2091-13

Figure 4

N32/2 Right front ESA control module (with memory)
N32/8 Right backrest lock safety package
N32/7 Left backrest lock safety package
(not pictured, layout similar to right)
N32/1 Left front ESA control module (with memory)
(not pictured, layout similar to right)

Electrical Test Program - Component Locations



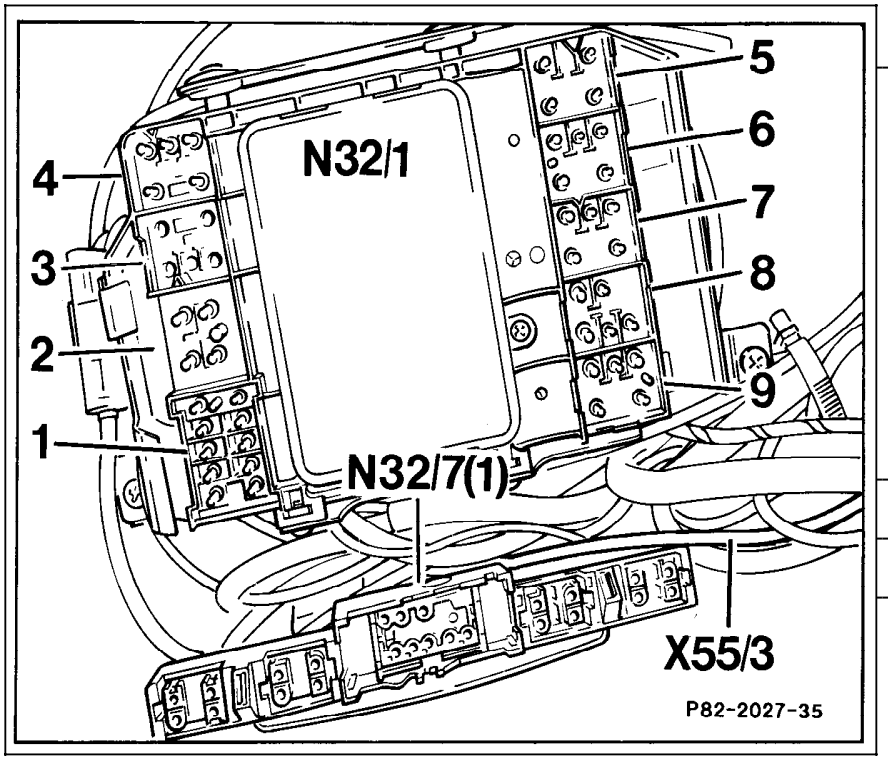
P54-2090-13

Figure 5

A1 Instrument cluster, reverse side
2 Connector, with terminal no. 7 for backrest lock warning lamp

Electrical Test Program - Preparation for Test

Connection Diagram - Left Seat Control Module



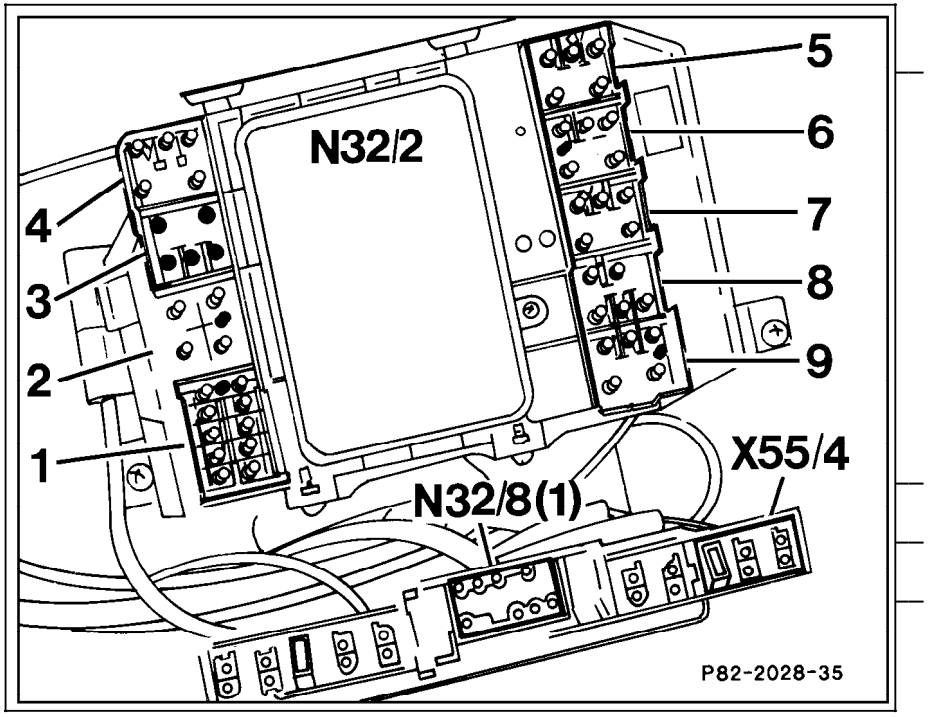
P82-2027-35

Figure 1

N32/1	Left front ESA control module (with memory)
Connector 1	Left front ESA switch group (with memory) (S91)
Connector 2	Voltage supply
Connector 3	Steering column adjustment
Connector 4	Proximity switch
Connector 5	Seat rear raise/lower motor (M27m2)
Connector 6	Seat front raise/lower motor (M27m3)
Connector 7	Seat fore/aft motor (M27m1)
Connector 8	Backrest fore/aft motor (M27m5)
Connector 9	Head restraint raise/lower motor (M27m4)
N32/7 (1)	Left backrest lock safety package, backrest latch
X55/3	Left seat contact strip

Electrical Test Program - Preparation for Test

Connection Diagram - Right Seat Control Module



P82-2028-35

Figure 2

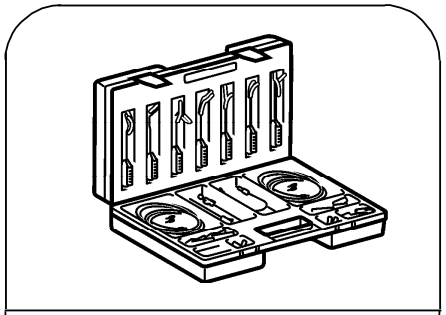
N32/2	Right front ESA control module (with memory)
Connector 1	Right front ESA switch group (S92)
Connector 2	Voltage supply
Connector 3	Steering column adjustment
Connector 4	Proximity switch
Connector 5	Seat rear raise/lower motor (M28m2)
Connector 6	Seat front raise/lower motor (M28m3)
Connector 7	Seat fore/aft motor (M28m1)
Connector 8	Backrest fore/aft motor (M28m5)
Connector 9	Head restraint raise/lower motor (M28m4)
N32/8 (1)	Right backrest lock safety package connector, backrest latch
X55/4	Right seat contact strip

Electrical Test Program - Preparation for Test

1. Battery voltage 11 – 14 V (vehicle connected to battery charger).
2. Fuses F1-E, F1-F O.K.
3. When testing for voltage: turn ignition on or open door.

Electrical wiring diagrams:
Electrical Troubleshooting Manual, Model 129

Special Tools



201 589 00 99 00

Electrical connecting set

Equipment

Digital multimeter [1]	Fluke models 23, 83, 85, 87

[1] Available through the MBUSA Standard Equipment Program.

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 1.0	**Left front ESA control module (N32/1)** Voltage supply	N32/1 1 — (V) — 2 1 — (V) — 4 1 — (V) — 3 (2) (2)	Connector (2) unplugged from N32/1.	 11 – 14 V 11 – 14 V 11 – 14 V	Wiring, CF relay module (K24).
⇒ 2.0	**Fore/aft switch (S91s1)** Resistance	N32/1 4 — (Ω) — 3 (1) (1)	Connector (1) unplugged from N32/1. Press switch (S91s1): forward backward	 approx. 2.2 kΩ approx. 43 Ω approx. 16 Ω	Wiring, S91
⇒ 3.0	**Fore/aft motor (M27m1)** Voltage supply **Up to 11/96**	N32/1 2 — (V) — 1 (7) (7) N32/1 3 — (V) — 5 4 — (V) — 5 (7) (7)	Connector (1) plugged at N32/1. Set backrest vertical. Connector (7) unplugged from N32/1. Press switch (S91s1): forward backward	 < 1 V 11 – 14 V –11 to –14 V approx. 5 V approx. 5 V	Wiring, S91, N32/1

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒[3.0]	**Fore/aft motor (M27m1)** Voltage supply Hall sensor **As of 12/96**	N32/1 2 (7) – V + 1 (7)	Connector (1) plugged at N32/1. Set backrest vertical. Connector (7) unplugged from N32/1. Press switch (S91s1): forward backward	 < 1 V for 1 second: 11 – 14 V for 1 second: –11 to –14 V	Wiring, S91, N32/1
		N32/1 4 (7) – V + 5 (7)		11 – 14 V	N32/1
		N32/1 4 (7) – V + 5 (7)	Open connector (7) and connect to N32/1	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M27m1

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 4.0	**Fore/aft motor (M27m1)**	N32/1 4 — (2) 1 — (7) 1 — (2) 2 — (7)	Connectors (7) and (2) unplugged from N32/1. ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00	Motor (M27m1) runs.	Wiring, M27m1
⇒ 5.0	**Front raise/lower switch (S91s3)** Resistance	N32/1 4 — (1) 2 — (1)	Connector (1) unplugged from N32/1. Press switch (S91s3): raise front lower front	 approx. 2.2 kΩ approx. 43 Ω approx. 16 Ω	Wiring, S91

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 6.0	**Front raise/lower motor (M27m3)** Voltage supply **Up to 11/96**	N32/1 2 (6) – V – 1 (6)	Connector (1) plugged in at N32/1. Connector (6) unplugged from N32/1. Press switch (S91s3): raise front lower front	 < 1 V 11 – 14 V –11 to –14 V	Wiring, S91, N32/1
		N32/1 3 (6) – V – 5 (6)		approx. 5 V	
		N32/1 4 (6) – V – 5 (6)		approx. 5 V	

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ [6.0]	**Front raise/lower motor (M27m3)** Voltage supply Hall sensor **As of 12/96**	N32/1 2 (6) – V – 1 (6)	Connector (1) plugged in at N32/1. Connector (6) unplugged from N32/1. Press switch (S91s3): raise front lower front	 < 1 V for 1 second: 11 – 14 V for 1 second: –11 to –14 V	Wiring, S91, N32/1
		N32/1 4 (6) – V – 5 (6)		11 – 14 V	N32/1
		N32/1 4 (6) – V – 5 (6)	Open connector (6) and connect to N32/1	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M27m3

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 7.0	**Front raise/lower motor (M27m3)**	N32/1 4 (2) — 1 (6) 1 (2) — 5 (6)	Connectors (6) and (2) unplugged from N32/1. ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00	Motor (M27m3) runs.	Wiring, M27m3
⇒ 8.0	**Rear raise/lower switch (S91s2)** Resistance	N32/1 4 (1) — 3 (1)	Connector (1) unplugged from N32/1. Press switch (S91s2): raise rear lower rear	approx. 2.2 kΩ approx. 160 Ω approx. 75 Ω	Wiring, S91

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 9.0	**Rear raise/lower motor (M27m2)** Voltage supply **Up to 11/96**	N32/1 2 (5) – V – 1 (5)	Connector (1) plugged in N32/1. Connector (5) unplugged from N32/1. Press switch (S91s3): raise rear lower rear	 < 1 V 11 – 14 V –11 to –14 V	Wiring, S91, N32/1
		N32/1 4 (5) – V – 5 (5)		approx. 5 V	
		N32/1 3 (5) – V – 5 (5)		approx. 5 V	

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ [9.0]	**Rear raise/lower motor (M27m2)** Voltage supply Hall sensor **As of 12/96**	N32/1 2 (5) – V – 1 (5)	Connector (1) plugged in at N32/1. Connector (5) unplugged from N32/1. Press switch (S91s3): raise front lower front	 for 1 second: 11 – 14 V for 1 second: –11 to –14 V	Wiring, S91, N32/1
		N32/1 4 (5) – V – 5 (5)		11 – 14 V	N32/1
		4 (5) – V – 5 (5)	Open connector (5) and connect to N32/1	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M27m2

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 10.0	**Rear raise/lower motor (M27m2)** Resistance	N32/1 4 (2) — 1 (5) 1 (2) — 2 (5)	Connector (2) and (5) unplugged from N32/1. ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00	Motor (M27m2) runs.	Wiring, M27m2
⇒ 11.0	**Backrest fore/aft switch (S91s5)** Resistance	N32/1 4 (1) — 1 (1)	Connector (1) unplugged from N32/1. Press switch (S91s5): forward rearward	approx. 2.2 kΩ approx. 42 Ω approx. 16 Ω	Wiring, S91

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 12.0	**Backrest fore/aft motor (M27m5)** Voltage supply **Up to 11/96**	N32/1 2 (8) – V – 1 (8)	Connector (1) plugged in at N32/1. Connector (8) unplugged from N32/1. Press switch (S91s5): forward rearward	< 1 V 11 – 14 V –11 to –14 V	Wiring, S91, N32/1
		N32/1 5 (8) – V – 4 (8)		approx. 5 V	
		N32/1 3 (8) – V – 4 (8)		approx. 5 V	

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ [12.0]	**Rear raise/lower motor (M27m5)** Voltage supply Hall sensor **As of 12/96**	N32/1 2 (8) — V — 1 (8)	Connector (1) plugged in at N32/1. Connector (8) unplugged from N32/1. Press switch (S91s5): raise front lower front	< 1 V for 1 second: 11 – 14 V for 1 second: –11 to –14 V	Wiring, S91, N32/1
		N32/1 5 (8) — V — 4 (8)		11 – 14 V	N32/1
		N32/1 5 (8) — V — 4 (8)	Open connector (8) and connect to N32/1	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M27m5

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 13.0	**Rear raise/lower motor (M27m5)** Resistance	N32/1 4 (2) — (8) 1 1 (2) — (8) 2	Connector (2) and (8) unplugged from N32/1. ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00	Motor (M27m5) runs.	Wiring, M27m5
⇒ 14.0	**Head restraint raise/lower switch (S91s4)** Resistance	N32/1 4 (1) — Ω (1) 2	Connector (1) unplugged from N32/1. Press switch (S91s4): raise lower	approx. 2.2 kΩ approx. 160 Ω approx. 75 Ω	Wiring, S91

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 15.0	**Head restraint raise/lower motor (M27m4)** Voltage supply **Up to 11/96**	N32/1 4 (9) – V – 1 (9) N32/1 5 (9) – V – 2 (9) N32/1 3 (9) – V – 2 (9)	Connector (1) plugged in at N32/1. Connector (9) unplugged from N32/1. Press switch (S91s4): raise lower	< 1 V –11 to –14 V 11 – 14 V approx. 5 V approx. 5 V	Wiring, S91, N32/1

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ [15.0]	**Head restraint raise/lower motor (M27m4)** Voltage supply Hall sensor **As of 12/96**	N32/1 1 (9) — V — 4 (9)	Connector (1) plugged in at N32/1. Connector (9) unplugged from N32/1. Press switch (S91s4): raise lower	< 1 V for 1 second: –11 to –14 V for 1 second: 11 – 14 V	Wiring, S91, N32/1
		N32/1 5 (9) — V — 2 (9)		11 – 14 V	N32/1
		N32/1 5 (9) — V — 2 (9)	Open connector (9) and connect to N32/1	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M27m4

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 16.0	**Head restraint raise/lower motor (M27m4)**	N32/1 4 (2) — (9) 1 1 (2) — (9) 4	Connector (9) unplugged from N32/1. ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00	Motor (M27m4) runs.	Wiring, M27m4

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 17.0	**Left front power seat switch group (S91), position memory** Resistance		Connector (1) unplugged from N32/1. Memory button 1 switch: Rest position: Push button:	 approx. 2.2 kΩ approx. 167 Ω	S91
			Memory button 2 switch: Rest position: Push button:	 approx. 2.2 kΩ approx. 330 Ω	
			Memory button 3 switch: Rest position: Push button:	 approx. 2.2 kΩ approx. 330 Ω	
			Green memory button switch: Rest position: Push button:	 approx. 2.2 kΩ approx. 330 Ω	

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 18.0	**Left front power seat switch group (S91)** Voltage supply	N32/1 4 — V — 1 4 — V — 2 4 — V — 3 (1) (1)	Connector (1) unplugged from N32/1.	approx. 5 V approx. 5 V approx. 5 V	N32/1
⇒19.0	**Left seat proximity control module (N32/5)** Voltage supply	N32/1 4 — V — 2 1 — V — 2 (4) (4)	Connector (4) unplugged from N32/1.	11 – 14 V 11 – 14 V	N32/1
⇒ 20.0	**Left seat proximity control module (N32/5)** Voltage supply	N32/1 ⊥ — V — 4 (4)	Move backrest backward until it rests against soft top compartment wall. Unplug connector (4) from N32/1. Open connector and remove the wiring. Plug the connector in again at N32/1.	> 4 V	Wiring, N32/5

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 21.0	**Left front power seat switch group illumination (S91e1)** Voltage supply	S91 6 — (V) — 3	S91 removed. Connector (1) unplugged from S91. Parking lamps turned on.	11 – 14 V	Wiring.
⇒ 22.0	**Left backrest lock switch (S52/1) (left seat)** **Right backrest lock switch (S52/2) (left seat)** Resistance	N32/7 5 — (Ω) — 8 N32/7 5 — (Ω) — 10	Left backrest lock safety package (N32/7) unplugged. Backrest latched. Backrest unlatched. Backrest latched. Backrest unlatched.	 < 1 Ω > 20 kΩ < 1 Ω > 20 kΩ	Wiring, S52/1, S52/2
⇒ 23.0	**Left front power seat switch group (S91)** Resistance	N32/1 4 — (Ω) — 1 4 — (Ω) — 2 4 — (Ω) — 3 (1) (1)	Connector (1) disconnected from N32/1.	approx. 2.2 kΩ approx. 2.2 kΩ approx. 2.2 kΩ	Wiring, S91

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 24.0	**Left backrest lock safety package (N32/7)** Voltage supply	N32/7 1 — ◄ (V) ► — 5	N32/7 disconnected. Ignition: **ON** **Note:** If N32/7 is unplugged, the acoustical warning from the right backrest lock safety package (N32/8) sounds for approx. 20 seconds.	11 – 14 V	⇒ 24.1
⇒ 24.1	Wiring between the left and right backrest lock safety package	N32/7 — N32/8 7 — ◄ (Ω) ► — 5	Left and right backrest lock safety packages unplugged.	< 1 Ω	Wiring.
⇒ 25.0	**Left backrest lock safety package (N32/7)** Signal output for automatic latch	N32/1 ⊥ ◄ (V) ► — 3 (4)	Connector (4) unplugged from N32/1. Backrest unlatched. Both doors closed. Ignition: **ON**	> 4 V	Wiring, N32/7
⇒ 26.0	**Seat belt/backrest lock reminder lamp (A1e9)**		Ignition: **ON** Start engine. Right backrest unlatched. Both doors closed.	Reminder lamp must illuminate.	If the nominal value is obtained: Wiring, N32/7 If the nominal value is **not** obtained: Wiring, A1e9

Electrical Test Program - Test (left seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 27.0	**Warning signal from left backrest lock safety package (N32/7) and from right backrest lock safety package (N32/8)**		N32/8 unplugged. Connector N32/8 removed. Open connector and remove socket 3. Plug N32/8 into connector again. Ignition: **ON** Start engine Left and right backrest latched. Both doors closed.	Reminder lamp goes out.	If the nominal value is **not** obtained: Wiring, N32/7 If the nominal value is obtained: N32/8.

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 1.0	**Right ESA control module (N32/2)** Voltage supply	N32/2 1 — (V) — 2 1 — (V) — 4 1 — (V) — 3 (2) (2)	Connector (2) unplugged from N32/2.	11 – 14 V 11 – 14 V 11 – 14 V	Wiring, CF relay module (K24).
⇒ 2.0	**Fore/aft switch (S92s1)** Resistance	N32/2 4 — (Ω) — 3 (1) (1)	Connector (1) unplugged from N32/2. Press switch (S92s1): forward backward	approx. 2.2 kΩ approx. 43 Ω approx. 16 Ω	Wiring, S92
⇒ 3.0	**Fore/aft motor (M28m1)** Voltage supply **Up to 11/96**	N32/2 2 — (V) — 1 (7) (7) N32/2 3 — (V) — 5 4 — (V) — 5 (7) (7)	Connector (1) plugged at N32/1. Set backrest vertical. Connector (7) unplugged from N32/1. Press switch (S92s1): forward backward	 < 1 V 11 – 14 V –11 to –14 V approx. 5 V approx. 5 V	Wiring, S92, N32/2

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒[3.0]	**Fore/aft motor (M28m1)** Voltage supply Hall sensor **As of 12/96**	N32/2 2 (7) – V + – 1 (7)	Connector (1) plugged at N32/1. Set backrest vertical. Connector (7) unplugged from N32/2. Press switch (S92s1): forward backward	 < 1 V for 1 second: 11 – 14 V for 1 second: –11 to –14 V	Wiring, S92, N32/2
		N32/2 5 (7) – V + – 4 (7)		11 – 14 V	N32/2
		N32/2 5 (7) – V + – 4 (7)	Open connector (7) and connect to N32/2	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M28m1

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 4.0	**Fore/aft motor (M28m1)** Resistance	N32/2 4 (2) — 1 (7) 1 (2) — 2 (7)	Connector (7) unplugged from N32/2. ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00	Motor (M28m1) runs.	Wiring, M28m1
⇒ 5.0	**Front raise/lower switch (S92s3)** Resistance	N32/2 4 (1) — 2 (1)	Connector (1) unplugged from N32/2. Press switch (S92s3): raise front lower front	approx. 2.2 kΩ approx. 43 Ω approx. 16 Ω	Wiring, S92

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 6.0	**Front raise/lower motor (M28m3)** Voltage supply **Up to 11/96**	N32/2 2 (6) – V – 1 (6) N32/2 3 (6) – V – 5 (6) N32/2 4 (6) – V – 5 (6)	Connector (1) plugged in at N32/2. Connector (6) unplugged from N32/2. Press switch (S92s3): raise front lower front	< 1 V 11 – 14 V –11 to –14 V approx. 5 V approx. 5 V	Wiring, S92, N32/2

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ [6.0]	**Front raise/lower motor (M28m3)** Voltage supply Hall sensor **As of 12/96**	N32/2 2 (6) – V – 1 (6)	Connector (1) plugged in at N32/2. Connector (6) unplugged from N32/2. Press switch (S92s3): raise front	 < 1 V for 1 second: 11 – 14 V for 1 second: –11 to –14 V	Wiring, S92, N32/2
		N32/2 5 (6) – V – 4 (6)		11 – 14 V	N32/2
		N32/2 5 (6) – V – 4 (6)	Open connector (6) and connect to N32/2	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M28m3

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 7.0	**Front raise/lower motor (M28m3)** Resistance	N32/2 4 (2) — 1 (6) 1 (2) — 2 (6)	Connectors (6) and (2) unplugged from N32/2. ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00	Motor (M28m3) runs.	M28m3
⇒ 8.0	**Rear raise/lower switch (S92s2)** Resistance	N32/2 4 (1) — 3 (1)	Connector (1) unplugged in N32/2. Press switch (S92s2): raise rear lower rear	approx. 2.2 kΩ approx. 160 Ω approx. 75 Ω	Wiring, S92

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 9.0	**Rear raise/lower motor (M28m2)** Voltage supply **Up to 11/96**	N32/2 2 (5) – V – 1 (5)	Connector (1) plugged in N32/1. Connector (5) unplugged from N32/2. Press switch (S92s2): raise rear lower rear	 < 1 V 11 – 14 V –11 to –14 V	Wiring, S92, N32/2
		N32/2 4 (5) – V – 5 (5)		approx. 5 V	
		N32/2 3 (5) – V – 5 (5)		approx. 5 V	

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ [9.0]	**Rear raise/lower motor (M28m2)** Voltage supply Hall sensor **As of 12/96**	N32/2 2 (5) — V — 1 (5)	Connector (1) plugged in at N32/1. Connector (5) unplugged from N32/2. Press switch (S92s2): raise front lower front	 < 1 V for 1 second: 11 – 14 V for 1 second: –11 to –14 V	Wiring, S92, N32/2
		N32/2 5 (5) — V — 4 (5)		11 – 14 V	N32/2
		N32/2 5 (5) — V — 4 (5)	Open connector (5) and connect to N32/2	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M28m2

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 10.0	**Rear raise/lower motor (M28m2)** Resistance	N32/2 4 (2) — 1 (5) 1 (2) — 2 (5)	Connector (5) unplugged from N32/2 ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00.	Motor (M28m2) runs.	M28m2
⇒ 11.0	**Backrest fore/aft switch (S92s5)** Resistance	N32/2 4 (1) — 1 (1)	Connector (1) unplugged from N32/2. Press switch (S92s5): forward rearward	approx. 2.2 kΩ approx. 43 Ω approx. 16 Ω	Wiring, S92

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 12.0	**Backrest fore/aft motor (M28m5)** Voltage supply **Up to 11/96**	N32/2 2 (8) – V – 1 (8)	Connector (1) plugged in at N32/2. Connector (8) unplugged from N32/2. Press switch (S92s5): forward rearward	 < 1 V 11 – 14 V –11 to –14 V	Wiring, S92, N32/2
		N32/2 5 (8) – V – 4 (8)		approx. 5 V	
		N32/2 3 (8) – V – 4 (8)		approx. 5 V	

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ [12.0]	**Rear raise/lower motor (M28m5)** Voltage supply Hall sensor **As of 12/96**	N32/2 2 (8) — V — 1 (8)	Connector (1) plugged in at N32/1. Connector (8) unplugged from N32/2. Press switch (S92s5): raise front lower front	< 1 V for 1 second: 11 – 14 V for 1 second: –11 to –14 V	Wiring, S92, N32/2
		N32/2 4 (8) — V — 5 (8)		11 – 14 V	N32/2
		N32/2 4 (8) — V — 5 (8)	Open connector (8) and connect to N32/2.	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M28m5

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 13.0	**Backrest fore/aft motor (M28m5)**	N32/2 4 (2) — 1 (8) 1 (2) — 2 (8)	Connector (2) and (8) unplugged from N32/2. ⚠ Danger of being wedged in. Bridge sockets 4 and 1 with fused jumper wire 124 589 37 63 00	Motor (M28m5) runs.	M28m5, Wiring.
⇒ 14.0	**Head restraint raise/lower switch (S92s4)** Resistance	N32/2 4 (1) — 2 (1)	Connector (1) unplugged from N32/2. Press switch (S92s4): raise lower	approx. 2.2 kΩ approx. 156 Ω approx. 75 Ω	Wiring, S92

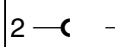
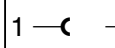
Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 15.0	**Head restraint raise/lower motor (M28m4)** Voltage supply **Up to 11/96**	N32/2 4 (9) – V – 1 (9)	Connector (1) plugged in at N32/2. Connector (9) unplugged from N32/2. Press switch (S92s4): raise lower	 < 1 V –11 to –14 V 11 – 14 V	Wiring, S92, N32/2
		N32/2 5 (9) – V – 2 (9)		approx. 5 V	
		N32/2 3 (9) – V – 2 (9)		approx. 5 V	

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ [15.0]	**Head restraint raise/lower motor (M28m4)** Voltage supply Hall sensor **As of 12/96**	N32/2 4 (9) — V — 1 (9)	Connector (1) plugged in at N32/1. Connector (9) unplugged from N32/2. Press switch (S92s4): raise lower	< 1 V for 1 second: –11 to –14 V for 1 second: 11 – 14 V	Wiring, S92, N32/2
		N32/2 2 (9) — V — 5 (9)		11 – 14 V	N32/2
		N32/2 2 (9) — V — 5 (9)	Open connector (9) and connect to N32/2	7.7 – 8.8 V or 11.3 – 12.7 V	Wiring, M28m4

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 16.0	**Head restraint raise/lower motor (M28m4)** Resistance	N32/2 2 (2) — 1 (9)  1 (2) — 4 (9) 	Connector (9) unplugged from N32/2. ⚠ Danger of being wedged in. Bridge sockets 2 and 1 with fused jumper wire 124 589 37 63 00	Motor (M28m4) runs.	Wiring, M28m4

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 17.0	**Right front power seat switch group (S92), position memory** Resistance	S92 1 (1) — Ω — 4 (1)	Connector (1) unplugged from N32/2. Memory button 1 switch: Rest position: Push button:	 approx. 2.2 kΩ approx. 167 Ω	S92
		S92 1 (1) — Ω — 2 (1)	Memory button 2 switch: Rest position: Push button:	 approx. 2.2 kΩ approx. 330 Ω	
		S92 1 (1) — Ω — 5 (1)	Memory button 3 switch: Rest position: Push button:	 approx. 2.2 kΩ approx. 330 Ω	
		S92 1 (1) — Ω — 4 (1)	Green memory button switch: Rest position: Push button:	 approx. 2.2 kΩ approx. 330 Ω	

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 18.0	**Right front power seat switch group (S92)** Voltage supply	N32/2 4 — V — 1 4 — V — 2 4 — V — 3 (1) (1)	Connector (1) unplugged from N32/2.	approx. 5 V approx. 5 V approx. 5 V	N32/2
⇒19.0	**Right seat proximity control module (N32/6)** Voltage supply	N32/2 4 — V — 2 1 — V — 2 (4) (4)	Connector (4) unplugged from N32/2.	11 – 14 V 11 – 14 V	N32/2

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 20.0	**Right seat proximity control module (N32/6)** Voltage supply	N32/2 ⊥ (−)(V)(+) 4 (4)	Move backrest backward until it rests against soft top compartment wall. Unplug connector (4) from N32/2. Open connector and remove the wiring. Plug the connector in again at N32/2.	> 4 V	Wiring, N32/6
⇒ 21.0	**Right front power seat switch group illumination (S92e1)** Voltage supply	S92 5 (1) (−)(V)(+) 4 (1)	S92 removed. Connector (1) unplugged from S92. Parking lamps turned on.	11 – 14 V	Wiring.

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 22.0	**Left backrest lock switch (S52/3) (right seat)** **Right backrest lock switch (S52/4) (right seat)** Resistance	N32/8 4 — (Ω) — 6	Left backrest lock safety package (N32/8) unplugged. Backrest latched. Backrest unlatched. Backrest latched. N32/8 4 — (Ω) — 8 Backrest unlatched.	 < 1 Ω > 20 kΩ < 1 Ω > 20 kΩ	Wiring, S52/3, S52/4
⇒ 23.0	**Right front power seat switch group (S92)** Resistance	N32/2 4 — (Ω) — 1 (1) 4 — (Ω) — 2 4 — (Ω) — 3 (1)	Connector (1) disconnected from N32/2.	approx. 2.2 kΩ approx. 2.2 kΩ approx. 2.2 kΩ	Wiring, S92

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 24.0	**Right backrest lock safety package (N32/8)** Voltage supply	N32/8 1 — (V) — 4	N32/8 disconnected. Ignition: **ON** **Note:** If N32/8 is unplugged, the acoustical warning from the left backrest lock safety package (N32/7) sounds for approx. 20 seconds.	11 – 14 V	Wiring, ⇒ 24.1
⇒ 24.1	Wiring between the left and right backrest lock safety package	N32/8 — N32/7 5 — (Ω) — 7	Left and right backrest lock safety packages unplugged.	< 1 Ω	Wiring.
⇒ 25.0	**Right backrest lock safety package (N32/8)** Signal output for automatic latch	N32/2 ⊥ — (V) — 3 (4)	Connector (4) unplugged from N32/2. Backrest unlatched. Both doors closed. Ignition: **ON**	> 4 V	Wiring, N32/8

Electrical Test Program - Test (right seat)

Test step	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 26.0	**Seat belt/backrest lock reminder lamp (A1e9)**		Ignition: **ON** Start engine. Right backrest unlatched. Both doors closed.	Reminder lamp must illuminate.	If the nominal value is obtained: N32/8, Wiring. If the nominal value is **not** obtained: A1e9, Wiring.
⇒ 27.0	**Warning signal from left backrest lock safety package (N32/7) and from right backrest lock safety package (N32/8)**		N32/8 unplugged. Connector N32/8 removed. Open connector and remove socket 3. Plug N32/8 into connector again. Ignition: **ON** Start engine Left and right backrest latched. Both doors closed.	Reminder lamp goes out.	If the nominal value is **not** obtained: N32/7, Wiring. If the nominal value is obtained: N32/8