

2.1 Combination Control Module (CCM) Models 170, 210

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Diagnosis – Technical Changes

Version start dates/Changes/Innovations

World wide Manuf. code	Model	LHS ¹⁾ RHS ¹⁾	Manuf. plant	As of chassis number	Up to chassis number	As of production date	Up to production date	Type and reason for change	Reference/Remarks
WDB	210					06/96, production start up			
WDB	170					??/96, production start up		Market introduction SLK	

1) LHS: Left hand steering
RHS: Right hand steering

Diagnosis – Diagnostic Trouble Code (DTC) Memory (CCM)

Preparation for Test

1. All fuses ok,
2. Connect the Hand-Held Tester (HHT) to X11/4, according to diagram, see section 0.



The diagnostic trouble codes (DTC's) can only be read out and erased using the Hand-Held Tester (HHT).

Model 210 Combination control module (N10-1)

Model 170 Combination control module (N10-3)

Note regarding Diagnostic Trouble Codes (DTC's):

Current diagnostic trouble codes are highlighted in black on the display. Additional detailed fault information based on fault type is displayed with nearly all diagnostic codes (DTC's) such as:

- > Ω Resistance too great
- < Ω Resistance too low
- Γ - Short circuit to ground (GND)
- Γ + Short circuit to positive (POS)
- // Open circuit

With some fault codes, additional information as well as fault frequency can be read out.

Fault frequency

Faults are noted by frequency of occurrence, i.e.: 4 periodic faults, 4 occurrences.



Model 210

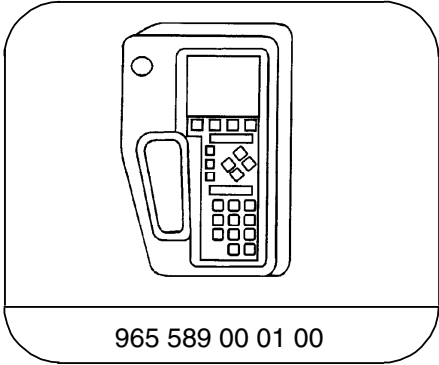
Erasing the Combination Control Module (N10-1) DTC memory, will also erase the DTC memory for the Convenience Feature (CF) and Mirror, steering column adjustment, heated mirrors (MSC).

Model 170

Erasing the Combination Control Module (N10-1) DTC memory, will also erase the DTC memory for the Convenience Feature (CF) and Retractable Hard Top (RHT).

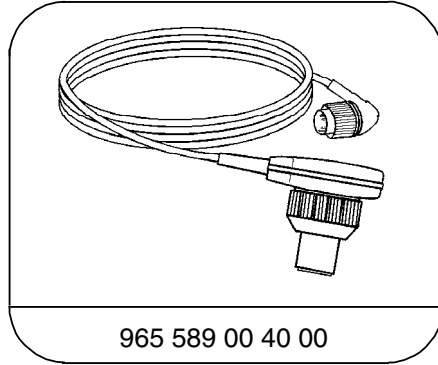
Diagnosis – Diagnostic Trouble Code (DTC) Memory (CCM)

Special Tools



965 589 00 01 00


Hand-Held-Tester



965 589 00 40 00

Test cable

Diagnosis – Diagnostic Trouble Code (DTC) Memory (CCM)

DTC 	Possible cause	Test step/Remedy ¹⁾
B1000	Combination control module (N10-1 or N10-3).	–
B1010	Circuit 30E, voltage < 9 V	–
B1011	Circuit 30E, voltage > 15 V	–
B1013	Circuit 15R voltage supply missing at circuit 15.	23 ⇒ 2.0, 3.0
B1014	Circuit 49 travel direction, has no voltage at circuit 15.	23 ⇒ 26.0
B1021	CAN data line communication with PSE interrupted.	D. M., Body and Accessories, Vol. 2, 5.3 23 ⇒ 9.0, 10.0
B1024	CAN data line LOW or combination control module (N10-1 or N10-3).	D. M., Body and Accessories, Vol. 2, 5.3 23 ⇒ 9.0, 10.0
B1025	CAN data line HIGH or combination control module (N10-1 or N10-3).	D. M., Body and Accessories, Vol. 2, 5.3 23 ⇒ 9.0, 10.0
B1115	Rear window defroster switch >25 s, Γ1+	23 ⇒ 22.0
B1217	<i>Non-USA vehicles only, continue to next test step.</i>	
B1406	Dome lamp control wire Γ1+ from combination control module (N10-1 or N10-3) or N10-1 or N10-3.	23 ⇒ 18.0
B1407	Entrance/exit lamp wiring Γ1+ or combination control module (N10-1)	23 ⇒ 17.0

1) Observe Preparation for Test, see 22.

Diagnosis – Recalling Actual values with HHT

The following tests and activations are possible via the **Hand-Held Tester**

Preparation for Test

1. Fuses ok,
2. Battery voltage 11 – 14 V.
3. Ignition: **ON**
4. Connect the Hand-Held Tester (HHT) to X11/4, according to diagram, see section 0.

CAUTION!

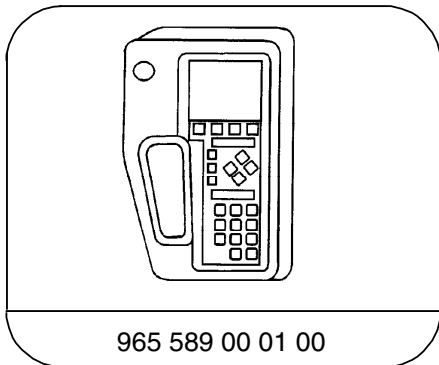
Model 210

Erasing the Combination Control Module (N10-1) DTC memory, will also erase the DTC memory for the Convenience Feature (CF) and Mirror, steering column adjustment, heated mirrors (MSC).

Model 170

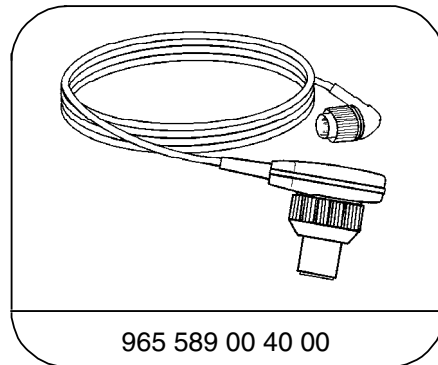
Erasing the Combination Control Module (N10-3) DTC memory, will also erase the DTC memory for the Convenience Feature (CF) and Retractable Hard Top (RHT).

Special Tools



965 589 00 01 00


Hand-Held-Tester



965 589 00 40 00

Test cable

Diagnosis – Recalling Actual

Actual value 	Possible cause	Test step/Remedy ¹⁾
01	Circuit 15R	23 ⇒ 3.0
02	Circuit 15	23 ⇒ 2.0
03	Circuit 49	23 ⇒ 26.0
04	Circuit 49a	23 ⇒ 27.0
05	Rear window defroster switch	23 ⇒ 22.0
06	Rear window heating	23 ⇒ 22.0
07	Low voltage	–
08	Over voltage	–
09	Interior lamp	23 ⇒ 18.0
10	Entrance/exit lamp	23 ⇒ 17.0
11	Intermittent windshield wiper	23 ⇒ 9.0
12	Windshield wiper stage 1	23 ⇒ 9.0
13	Windshield wiper stage 2	23 ⇒ 9.0
14	Circuit 86, windshield wiper wash	23 ⇒ 10.0
15	Circuit 31b, windshield wiper	23 ⇒ 15.0
16	Windshield wiper locked up	Visual inspection of wiper motor (M6/1).

¹⁾ Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
No. 1 Windshield wiper does not function.	Circuit 15R, 31 voltage supply Combination switch (S4) Combination control module (N10-1 or N10-3)	23 ⇒ 3.0, 8.0 23 ⇒ 9.0 23 ⇒ 11.0, 14.0
No. 2 Windshield wiper wash function does not function.	Combination switch (S4)	23 ⇒ 10.0
No. 3 Windshield wiper interval wipe does not function.	Combination switch (S4) Combination control module (N10-1 or N10-3)	23 ⇒ 9.0 23 ⇒ 11.0
No. 4 Windshield wiper stage 1 does not function.	Combination switch (S4) Combination control module (N10-1 or N10-3)	23 ⇒ 9.0 23 ⇒ 12.0
No. 5 Windshield wiper stage 2 does not function.	Combination switch (S4) Combination control module (N10-1 or N10-3)	23 ⇒ 9.0 23 ⇒ 13.0
No. 6 With ignition on , windshield wiper can not be switched off.	Wiper motor (M6/1)	23 ⇒ 15.0
No. 7 Non-USA vehicles only, continue to next test step.		
No. 8 Entrance/exit lamps (E17/3, E17/4, E17/5, E17/6) do not illuminate.	Left/right front door switch (S17/3, S17/4) Left/right rear door switch (S17/5, S17/6) CAN data line Combination control module (N10-1) PSE control module (A37)	23 ⇒ 17.0

¹⁾ Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
No. 9 Front dome lamp (E15/1 or E15/2) does not illuminate.	Left/right front door switch (S17/3, S17/4) Left/right rear door switch (S17/5, S17/6) CAN data line Combination control module (N10-1 or N10-3) PSE control module (A37)	23 ⇒ 18.0
No. 10 Front dome lamp (E15/1 or E15/2) does switch off after approx. 5 minutes.	Combination control module (N10-1 or N10-3)	23 ⇒ 19.0
No. 11 Entrance/exit lamps (E17/3, E17/4, E17/5, E17/6) do not switch off after approx. 5 minutes.	Combination control module (N10-1)	23 ⇒ 20.0
No. 12 Rear dome lamp (E15/3) does not illuminate.	Front dome lamp (E15/2) Rear dome lamp (E15/3)	23 ⇒ 21.0
No. 13 Rear window defroster does not function.	A/C pushbutton control module (N22) defroster switch Voltage supply circuit 30, 31 CAN data lines Combination control module (N10-1 or N10-3) PSE control module (A37)	23 ⇒ 22.0 23 ⇒ 23.0 23 ⇒ 24.0
No. 14 LED in defroster switch for rear window does not illuminate.	Combination control module (N10-1 or N10-3)	23 ⇒ 25.0
No. 15 Turn signal system does not function.	Cockpit switch group (S6/1) Combination control module (N10-1 or N10-3)	23 ⇒ 26.0 23 ⇒ 27.0

¹⁾ Observe Preparation for Test, see 22.

Diagnosis – Complaint Related Diagnostic Chart

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
No. 16 Module box blower motor (M2/2) does not function.	Module box blower motor (M2/2) Combination control module (N10-1 or N10-3)	23 ⇒ 28.0 23 ⇒ 28.0

¹⁾ Observe Preparation for Test, see 22.

Electrical Test Program – Component Locations

Model 210 Wiper System

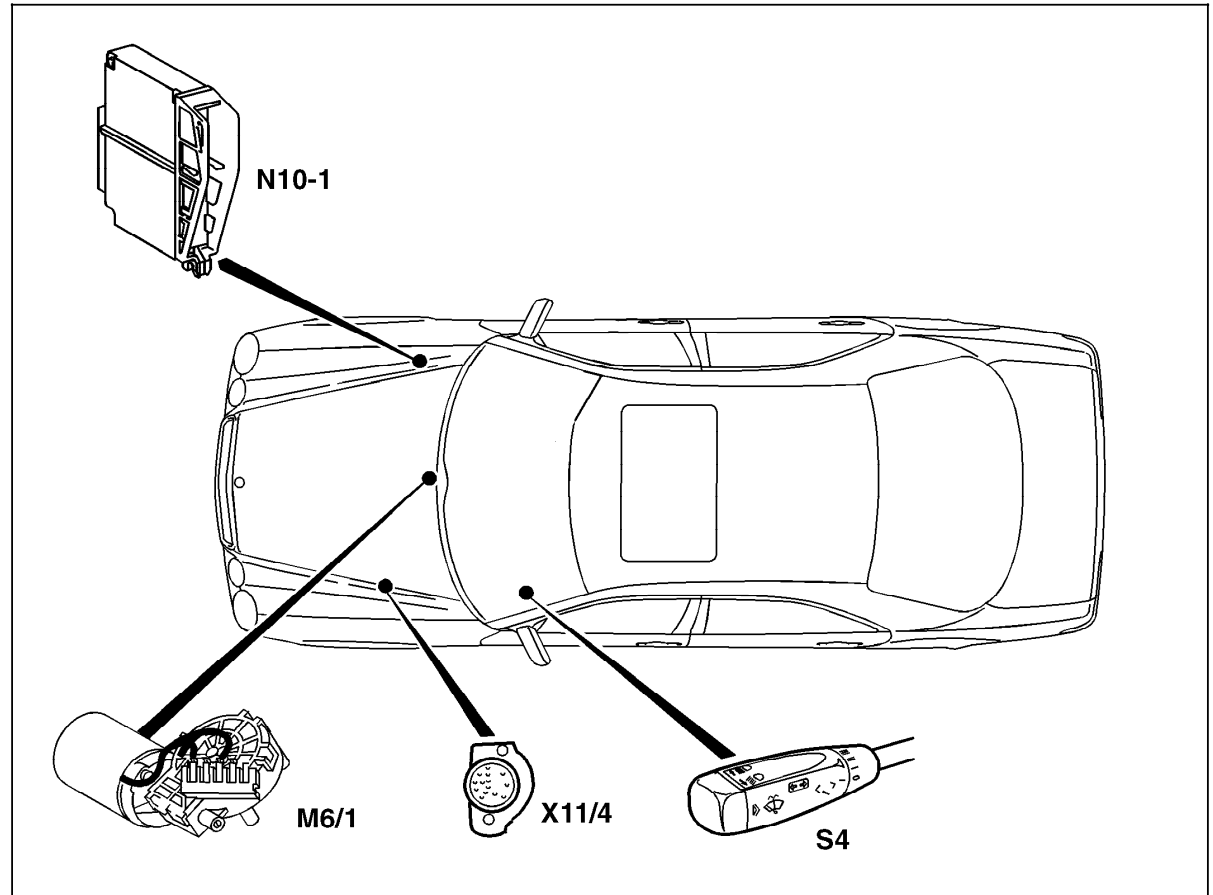


Figure 1

- M6/1 Wiper motor
- N10-1 Combination control module
- S4 Combination switch
- X11/4 Date link connector (DTC readout)

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Electrical Test Program – Component Locations

Model 210 Interior Lighting

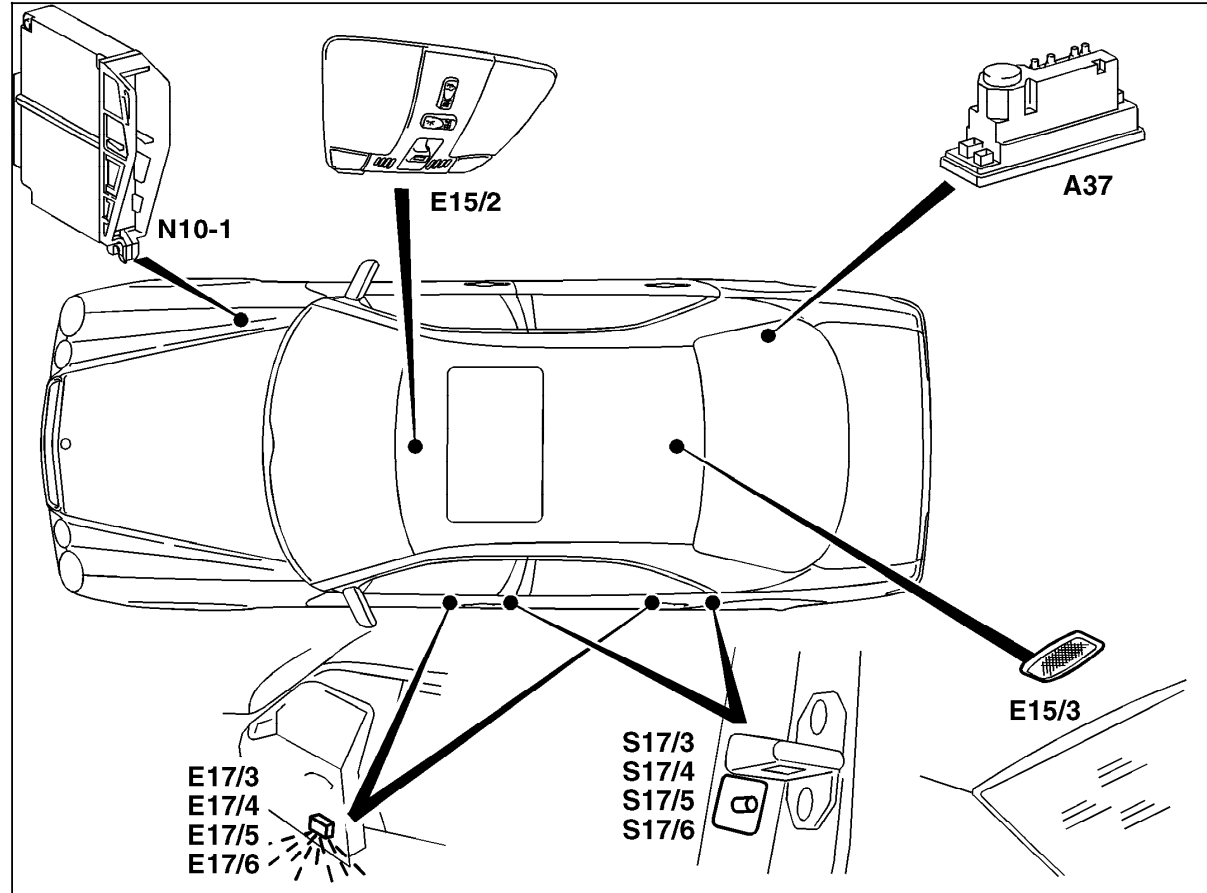


Figure 2

- A37 PSE control module, combined functions
- E15/2 Front dome lamp (with shut-off delay and front reading lamp)
- E15/3 Rear dome lamp
- E17/3 Left front door entrance/exit lamp
- E17/4 Right front door entrance/exit lamp
- E17/5 Left rear door entrance/exit lamp
- E17/6 Right rear door entrance/exit lamp
- N10-1 Combination control module
- S17/3 Left front door switch
- S17/4 Right front door switch
- S17/5 Left rear door switch
- S17/6 Right rear door switch

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Electrical Test Program – Component Locations

Model 210 Heated rear window

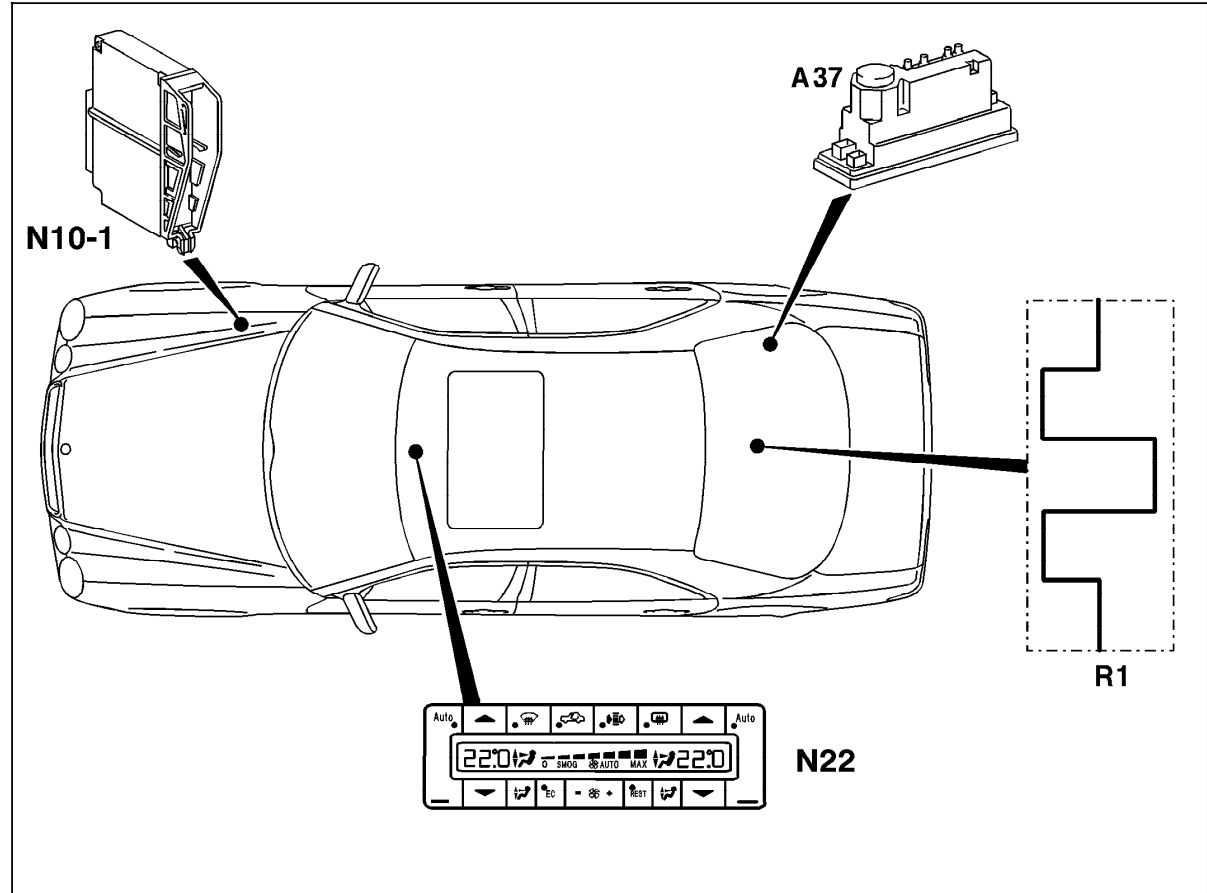


Figure 3

- A37 PSE control module, combined functions
- N10-1 Combination control module
- N22 A/C pushbutton control module (Automatic A/C)
- R1 Rear window defroster element

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Electrical Test Program – Component Locations

Model 210

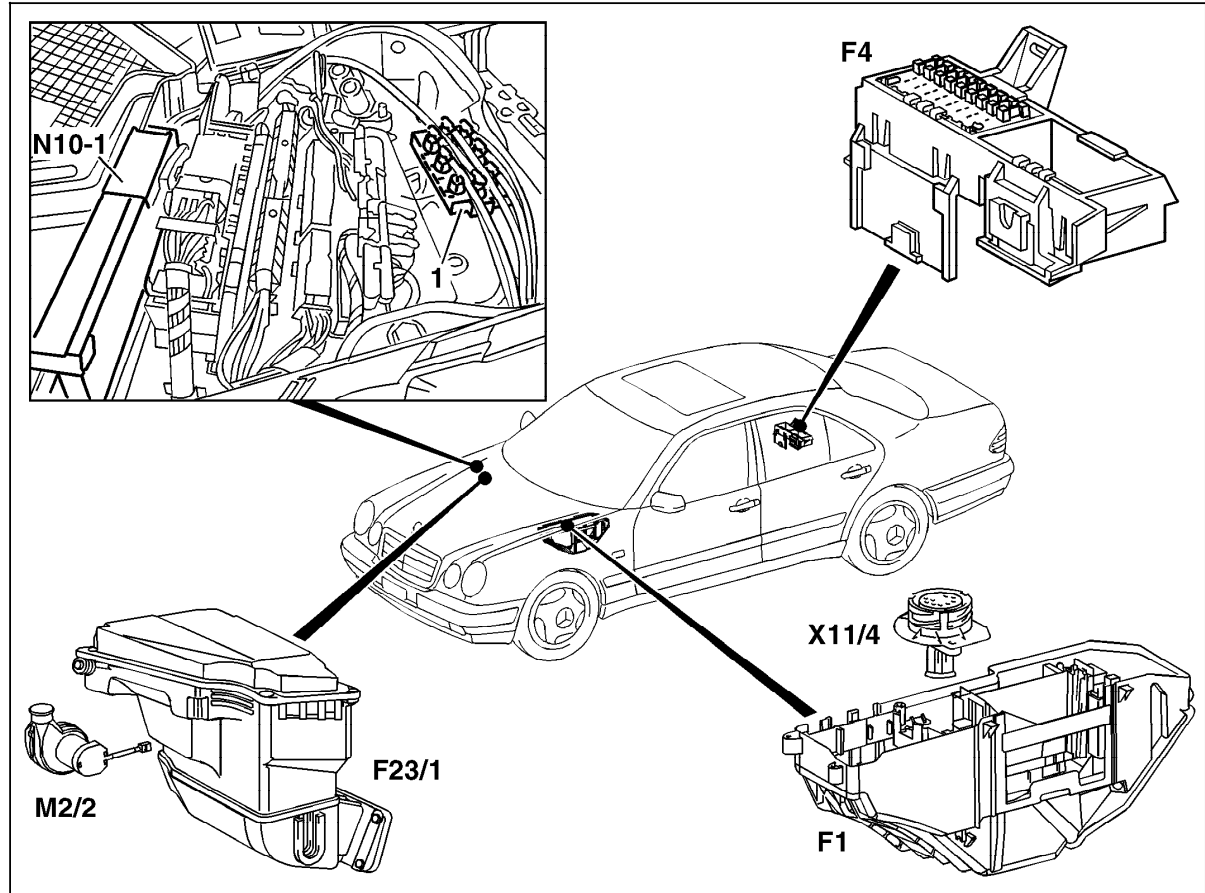


Figure 4

F1	Fuse and relay box
F4	Rear fuse box
F23/1	Control module box
M2/2	Module box blower motor
N10-1	Combination control module
X11/4	Data link connector (DTC readout)

P54.21-0213-06

Electrical Test Program – Component Locations

Model 170 Wiper System

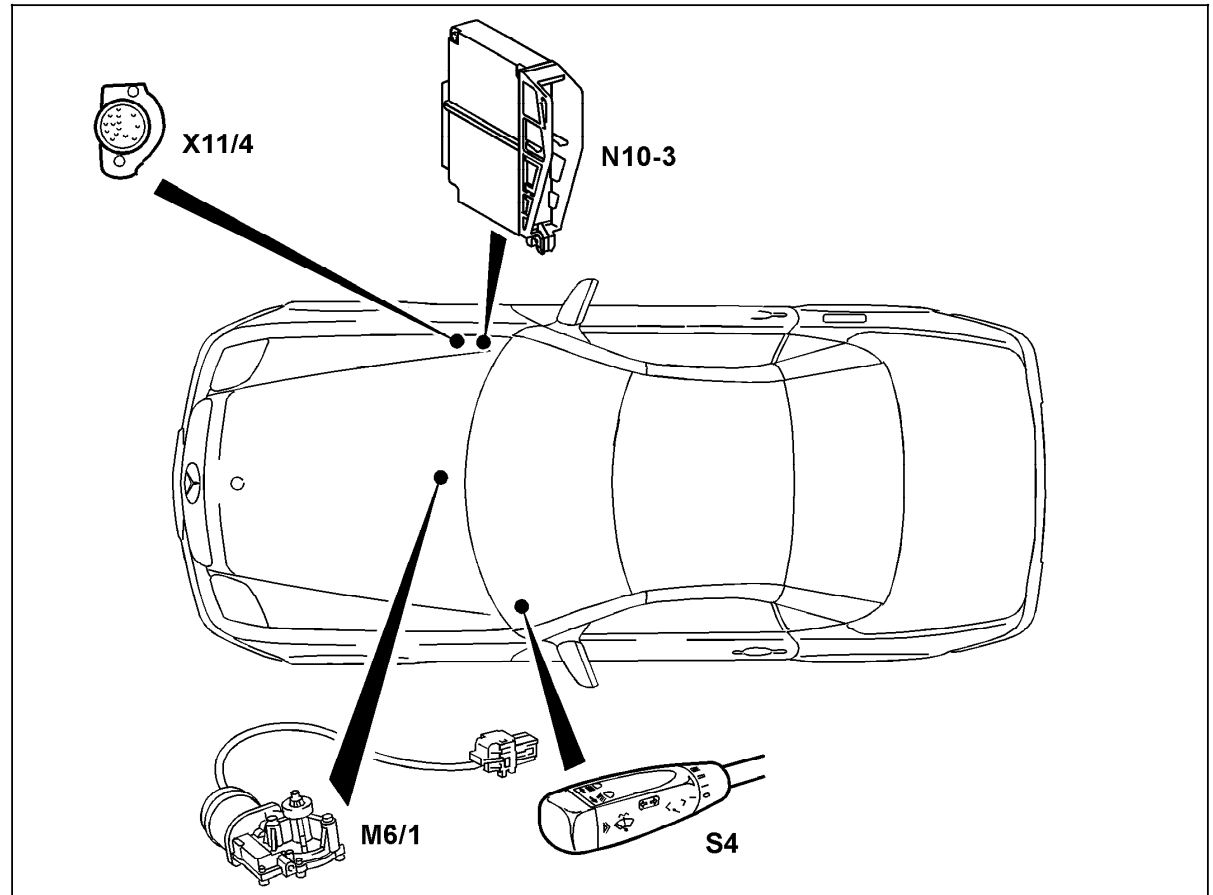


Figure 5

- M6/1 Wiper motor
- N10-3 Combination control module
- S4 Combination switch
- X11/4 Data link connector (DTC readout)

U82.30-0235-06

Electrical Test Program – Component Locations

Model 170 Interior Lighting

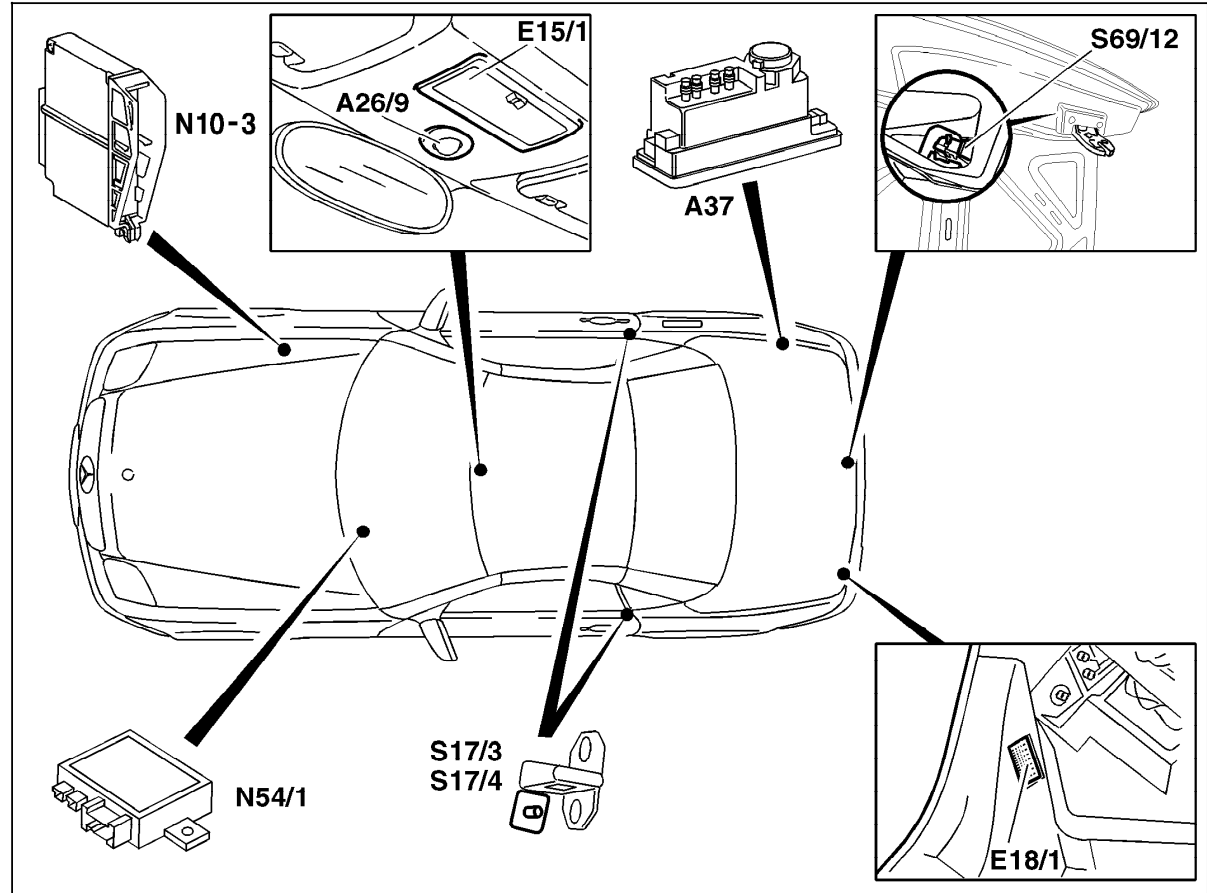


Figure 6

- A26/9 RCL receiver (roof frame)
- A37 PSE control module
- E15/1 Front dome lamp (with switch)
- E18/1 Trunk lamp
- N10-3 Combination control module
- N54/1 IR DAS control module
- S17/3 Left front door switch
- S17/4 Right front door switch
- S69/12 Rotary latch selector switch, trunk lock/trunk illumination

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Electrical Test Program – Component Locations

Model 170 Heated Rear Window

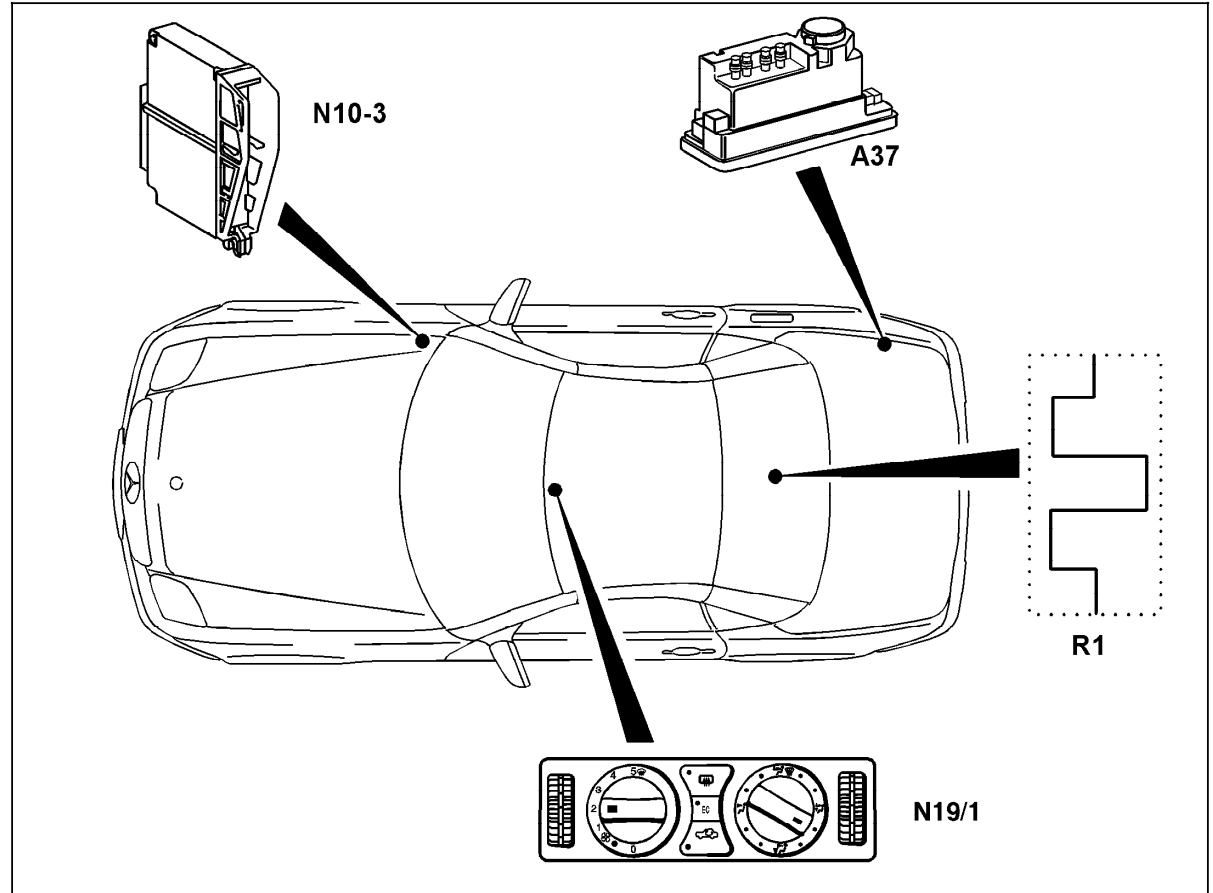


Figure 7

- A37 PSE control module
- N10-3 Combination control module
- N19/1 A/C pushbutton control module (Tempmatic)
- R1 Rear window defroster element

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Electrical Test Program – Component Locations

Model 170

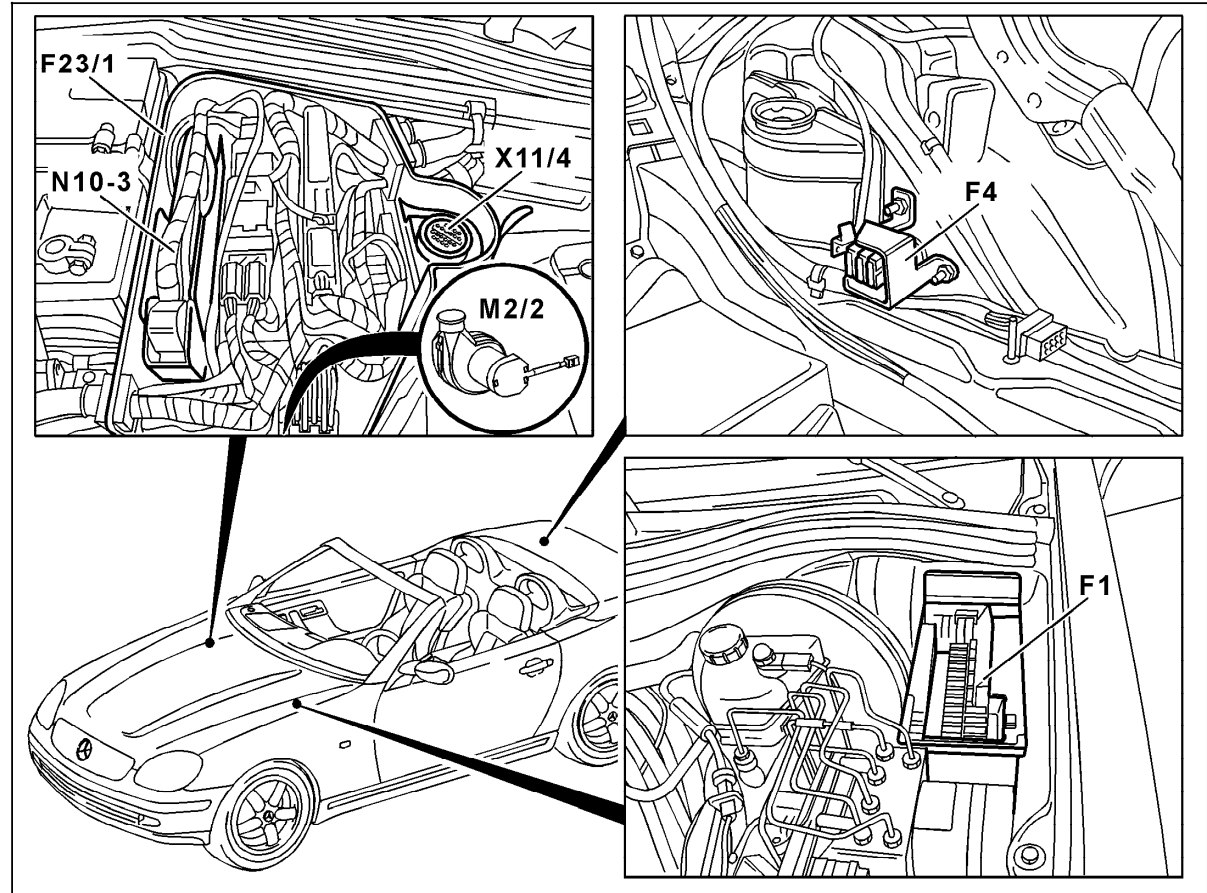
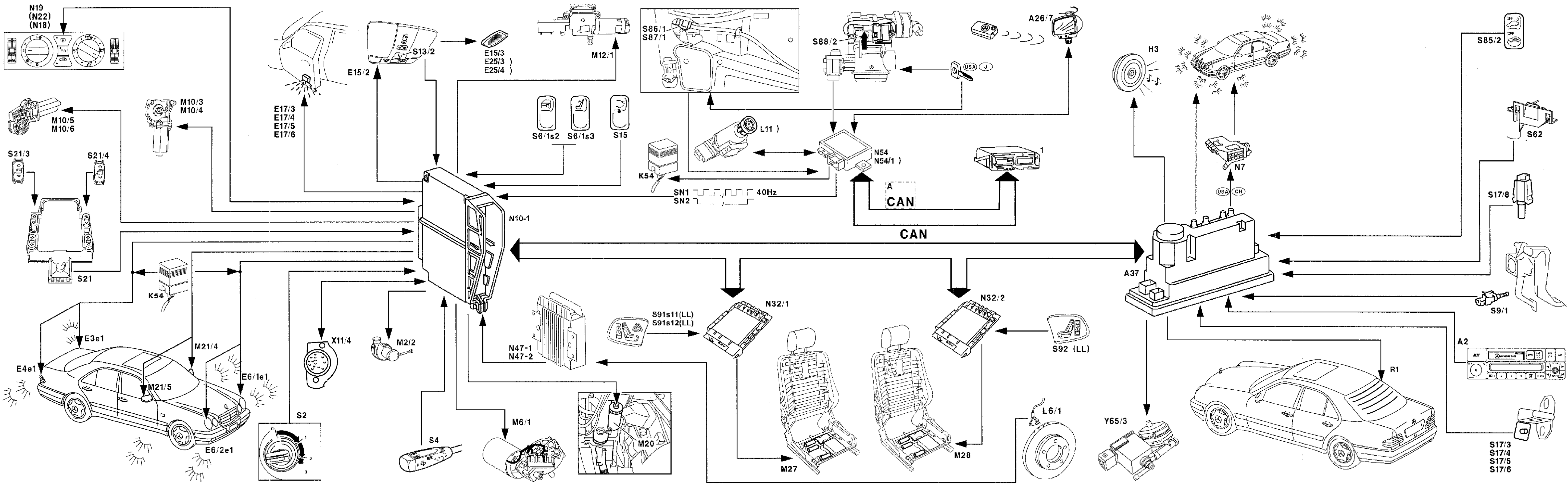


Figure 8

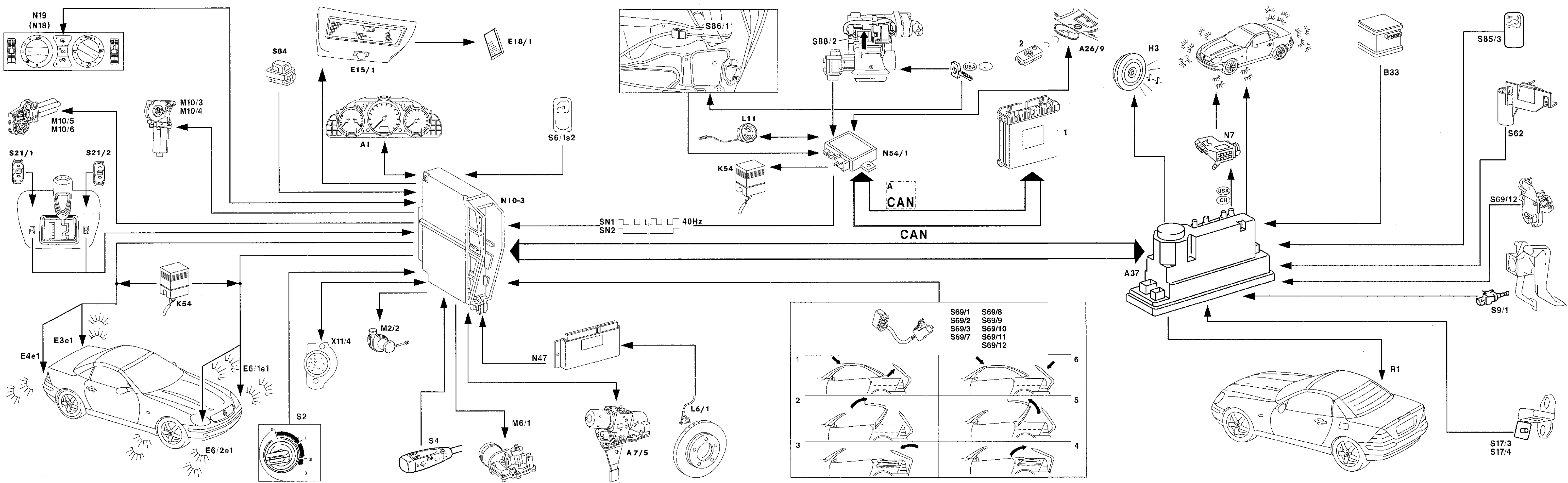
- F1 Fuse and relay box
- F4 Fuse box in trunk
- F23/1 Control module box
- M2/2 Module box blower motor
- N10-3 Combination control module
- X11/4 Data link connector (DTC readout)

P54.21-0214-06



Electrical Test Program – Connection of Components

A2	Radio	N7	Exterior lamp failure monitoring module
A26/7	RCL receiver (interior rearview mirror)	N10-1	Combination control module
A37	PSE control module, combined functions	N22	A/C pushbutton control module (Automatic A/C)
E3e1	Turn signal lamp	N32/1	Left front ESA control module (with memory)
E4e1	Turn signal lamp	N32/2	Right front ESA control module (with memory)
E6/1e1	Turn signal	N47-1	ASR/SPS control module
E6/2e1	Turn signal	N47-2	ETS/SPS control module
E15/2	Front dome lamp (with shut-off delay and front reading lamp)	N54	RCL control module
E15/3	Rear dome lamp	N54/1	IR DAS control module
E17/3	Left front door entrance/exit lamp	R1	Rear window defroster element
E17/4	Right front door entrance/exit lamp	S2	Starter switch
E17/5	Left rear door entrance/exit lamp	S4	Combination switch
E17/6	Right rear door entrance/exit lamp	S6/1s2	Interior switch (CL)
E25/3	Left D-pillar interior lamp	S6/1s3	RHR unlocking switch
E25/4	Right D-pillar interior lamp	S9/1	Stop lamp switch (4-pole)
H3	Alarm horn	S13/2	Sliding/pop-up roof switch
K54	Locking confirmation relay module	S15	Remote trunk release switch
L6/1	Left front axle VSS sensor	S17/3	Left front door switch
L11	Transponder coil	S17/4	Right front door switch
M2/2	Module box blower motor	S17/5	Left rear door switch
M6/1	Wiper motor	S17/6	Right rear door switch
M10/3	Left front power window motor (voltage supply)	S17/8	Trunk lamp switch
M10/4	Right front power window motor (voltage supply)	S21	Center console switch group
M10/5	Left rear power window motor	S21/3	Left rear power window switch
M10/6	Right rear power window motor	S21/4	Right rear power window switch
M12/1	Sliding/pop-up roof	S62	Engine hood switch (ATA)
M20	ESC motor	S86/1	Left front door lock switch (CF) ^{USA}
M21/4	Electrically adjustable and heated driver-side outside rearview mirror (with memory)	S87/1	Right front door lock switch (CF) ^{USA}
M21/5	Electrically adjustable and heated front passenger outside rearview mirror (with memory)	S88/2	Rotary tumbler/trunk lid microswitch ^{USA}
M27	Left front ESA motor group (with memory)	S91	Left front ESA switch group (with memory)
M28	Right front ESA motor group (with memory)	S91s11	Steering column up/down switch
N7	Exterior lamp failure monitoring module	S91s12	Steering column in/out switch
N10-1	Combination control module	S92	Right front ESA switch group (with memory)
N22	A/C pushbutton control module (Automatic A/C)	X11/4	Data link connector (DTC readout)
N32/1	Left front ESA control module (with memory)	Y65/3	RTR control valve (CL)
N32/2	Right front ESA control module (with memory)		
N47-1	ASR/SPS control module	A	CAN-version
N47-2	ETS/SPS control module	SN1	Lock switch circuit 1 (disarm)
		SN2	Lock switch circuit 2 (arm)
		1	Engine control module



Electrical Test Program – Connection of Components

A1	Instrument cluster	S6/1s2	Interior switch (CL)
A7/5	Retractable hardtop hydraulic unit	S9/1	Stop lamp switch (4-pole)
A26/9	RCL receiver (roof frame)	S17/3	Left front door switch
A37	PSE control module, combined functions	S17/4	Right front door switch
E3e1	Turn signal lamp	S17/8	Trunk lamp switch
E4e1	Turn signal lamp	S21/1	Left front power window switch (front center console)
E6/1e1	Turn signal	S21/2	Right front power window switch (front center console)
E6/2e1	Turn signal	S62	Engine hood switch (ATA)
E15/1	Front dome light (with switch)	S69/1	Retractable hardtop closed limit switch (right pin)
E18/1	Trunk lamp	S69/2	Retractable hardtop locked limit switch (right rotary switch)
H3	Alarm horn	S69/3	Retractable hardtop locked limit switch (left rotary switch)
K54	Locking confirmation relay module	S69/7	Trunk lid closed/locked left limit switch
L6/1	Left front axle VSS sensor	S69/8	Trunk lid closed/locked right limit switch
L11	Transponder coil	S69/9	Trunk lid open limit switch
M2/2	Module box blower motor	S69/10	Trunk divider closed limit switch
M6/1	Wiper motor	S69/11	Retractable hardtop open/stored limit switch
M10/3	Left front power window motor (voltage supply)	S69/12	Rotary latch selector switch, trunk lock/trunk illumination
M10/4	Right front power window motor (voltage supply)	S84	Power soft top switch
M10/5	Left rear power window motor	S85/3	ATA status/towing protection switch
M10/6	Right rear power window motor	S86/1	Left front door lock switch (CF) (USA)
N7	Exterior lamp failure monitoring module	S88/2	Rotary tumbler/trunk lid microswitch (USA)
N10-3	Combination control module	X11/4	Data link connector (DTC readout)
N19/1	A/C pushbutton control module (Tempmatic)		
N47	Traction systems control module	A	CAN-version
N54	RCL control module	SN1	Lock switch circuit 1 (disarm)
R1	Rear window defroster element	SN2	Lock switch circuit 2 (arm)
S2	Starter switch	1	Engine control module
S4	Combination switch	2	IR transmitter key

Electrical Test Program – Preparation for Test

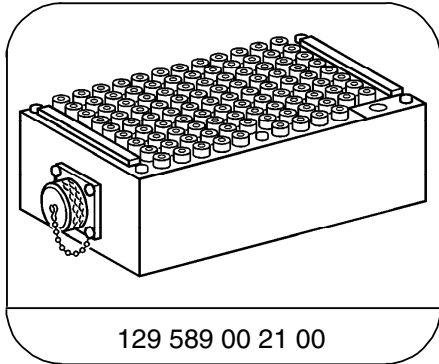
Preparation for Test:

1. Battery voltage 11 – 14 V,
2. Fuses ok,
3. Disconnect battery negative cable prior to disconnecting or connecting any connectors on the combination control module (N10-1 or N10-3) (fault codes will be otherwise stored in DTC memory in error).

Electrical wiring diagrams:

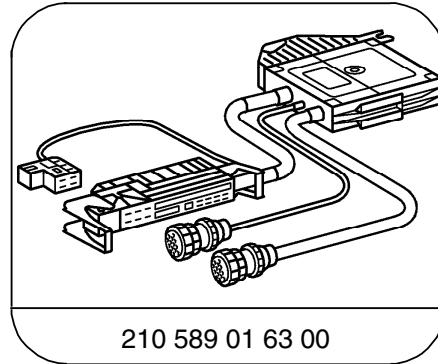
Electrical Troubleshooting Manual, Model 170, (please see future ETM)
Model 210, Volume 2, group 54

Special Tools



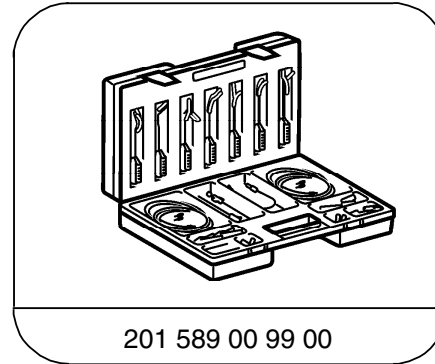
129 589 00 21 00

126-pin socket box



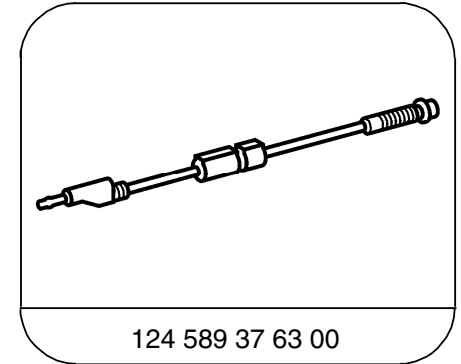
210 589 01 63 00

78-pin test cable



201 589 00 99 00

Electrical connecting set



124 589 37 63 00

Fused cable

Conventional tools, test equipment

Description	Brand, model, etc.
Multimeter ¹⁾	Fluke models 23, 83, 85, 87

¹⁾ Available through the MBUSA Standard Equipment Program.

2.1 Combination Control Module (CCM)

Models 170, 210

Electrical Test Program –

Model 170

Connection Diagram - Socket Box

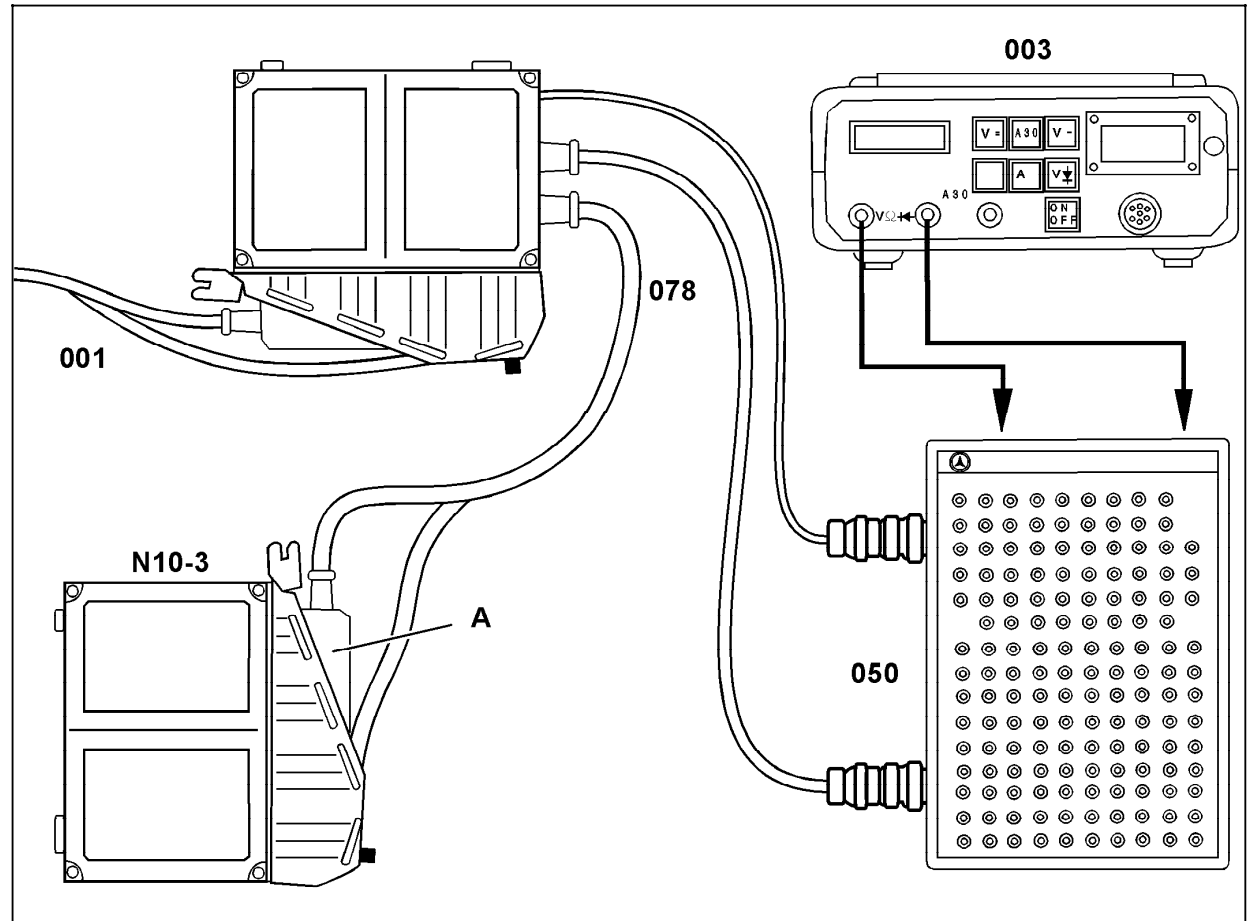


Figure 1

001	Vehicle harness
003	Multimeter
050	Socket box (126-pole)
078	Test cable 210 589 01 63 00
A	Coupling (63 pole)
N10-3	Combination control module

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2.1 Combination Control Module (CCM)

Models 170, 210

Electrical Test Program –

Model 210

Connection Diagram - Socket Box

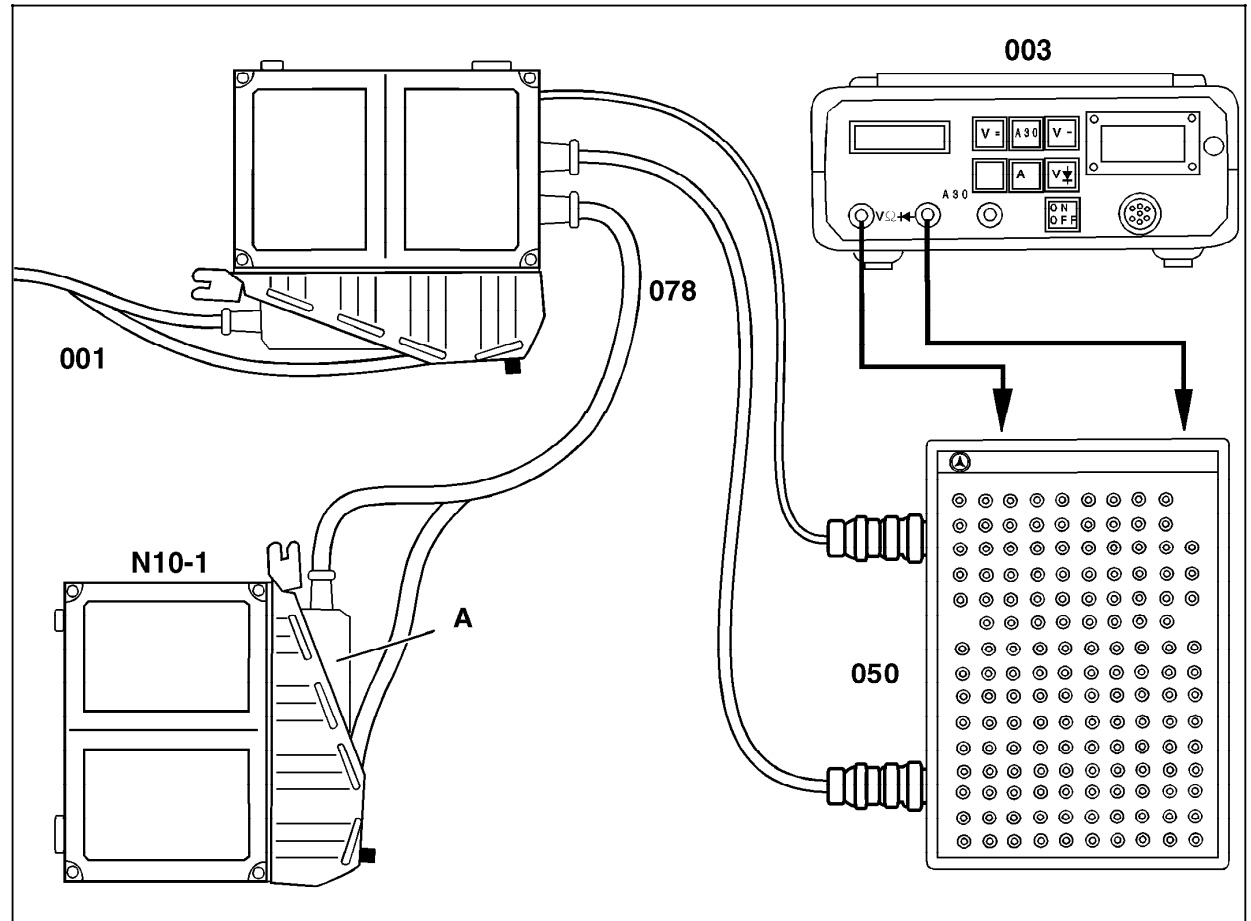

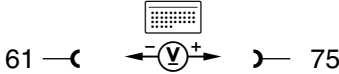
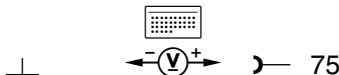
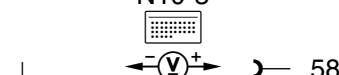



Figure 2


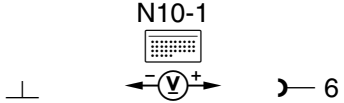

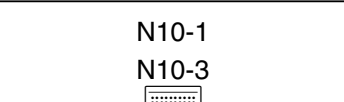
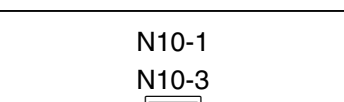
001	Vehicle harness
003	Multimeter
050	Socket box (126-pole)
078	Test cable 210 589 01 63 00
A	Coupling (63 pole)
N10-1	Combination control module

P82.40-0215-06


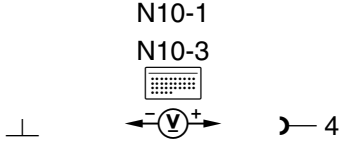
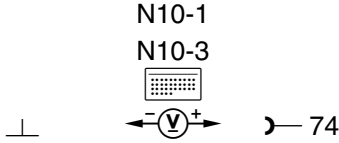
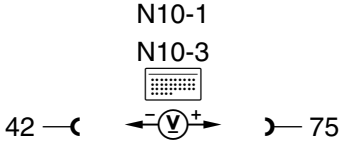
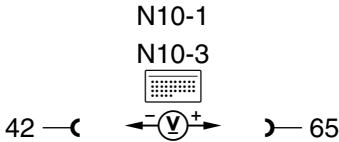
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	B1011	Voltage supply Circuit 30E, 31E	<p>N10-1 N10-3</p> 		11 – 14 V	Wiring, ⇒ 1.1
1.1		Voltage supply Circuit 30E	<p>N10-1 N10-3</p> 		11 – 14 V	Wiring.
2.0	B1013	Voltage supply Circuit 15	<p>N10-1 N10-3</p> 	Ignition: ON	11 – 14 V	Wiring.
3.0	B1013	Voltage supply Circuit 15R	<p>N10-1 N10-3</p> 	Ignition: ON	11 – 14 V	Wiring.


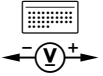
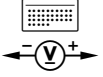
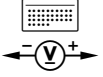
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		Voltage supply Circuit 30C Driver, mirror, steering column memory			11 – 14 V	Wiring.
5.0		Voltage supply Circuit 30A, 31A Front window motor		Ignition: OFF	11 – 14 V	Wiring, ⇒ 5.1
5.1		Voltage supply Circuit 30A, Front window motor		Ignition: OFF	11 – 14 V	Wiring.
6.0		Voltage supply Circuit 30B, 31B Rear window motor		Ignition: OFF	11 – 14 V	Wiring, ⇒ 6.1


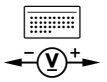
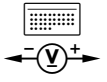
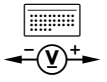
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.1		Voltage supply Circuit 30B Rear window motor		Ignition: OFF	11 – 14 V	Wiring.
7.0		Vehicle speed signal (VSS) Activated by combination control module (N10-1 or N10-3)		Ignition: ON Rotate left front wheel (approx. 1 turn/second).	5 V	Wiring Traction systems control module (N47)
8.0		Voltage supply Circuit 31 Wiper			11 – 14 V	Wiring.
9.0		Combination switch (S4) Activated by combination control module (N10-1 or N10-3)		Ignition: ON Touch wipe Interval wipe Stage 1 Stage 2	6.8 – 8.6 V 3.3 – 4.2 V 6.8 – 8.6 V 11 – 14 V	Wiring, Combination switch (S4).


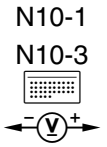
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0		Combination switch (S4) Wash function Activated by combination control module (N10-1 or N10-3)	N10-1 N10-3 	Ignition: ON Combination switch (S4) perform: wash function	11 – 14 V	Wiring, Combination switch (S4).
11.0		Wiper system Interval wipe Activate wiper motor (M6/1) via combination control module (N10-1 or N10-3)	N10-1 N10-3 	Ignition: ON Combination switch (S4) set at: Interval wipe.	Stepped voltage 11 – 14 V	⇒ 9.0, N10-1 or N10-3
12.0		Wiper system stage 1 Activate wiper motor (M6/1) via combination control module (N10-1 or N10-3)	N10-1 N10-3 	Ignition: ON Combination switch (S4) set at: stage 1	11 – 14 V	⇒ 9.0, N10-1 or N10-3


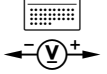
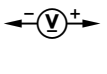
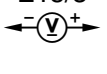
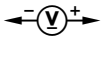
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
13.0		Wiper system stage 2 Activate wiper motor (M6/1) via combination control module (N10-1 or N10-3)	N10-1 N10-3 	Ignition: ON Combination switch (S4) set at: stage 2	11 – 14 V	⇒ 9.0, N10-1 or N10-3
14.0		Wiper motor (M6/1) Circuit 31 Activated by combination control module (N10-1 or N10-3)	N10-1 N10-3 	Ignition: OFF	11 – 14 V	⇒ 8.0, N10-1 or N10-3
15.0		Wipe system circuit 31b Activate combination control module (N10-1 or N10-3) via wiper motor (M6/1)	N10-1 N10-3 	Ignition: ON Wiper arm “parked”.	< 1 V	Wiring, Wiper motor (M6/1).
16.0		Non-USA vehicles only, continue to next test step.				


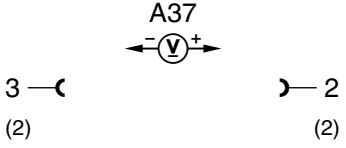
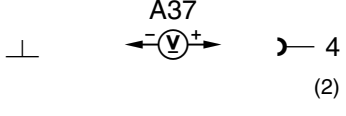
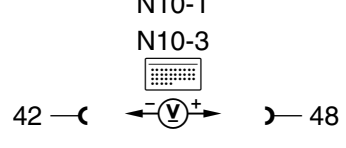
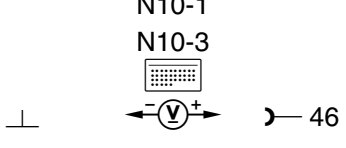
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
18.0		Front dome lamp (E15/1 or E15/2) Activated by combination control module (N10-1 or N10-3)	N10-1 N10-3 	Ignition: OFF Both switches of E15/ 1 or E15/2 in center position. Door: open Door: closed, after approx. 8 seconds delay (soft dim). Model 170 only Trunk lid open Trunk lid: closed, after approx. 8 seconds delay (soft dim)	11 – 14 V < 1 V 11 – 14 V < 1 V	Wiring, Left/right front door switches (S17/3, S17/4), Left/right rear door switches (S17/5, S17/6), D.M. Body and Accessories, Vol. 2, 5.3, 23 ⇒ 5.0–8.0, CAN-data lines, D.M. Body and Accessories, Vol. 2, 5.3, 23 ⇒ 9.0, 10.0, N10-1 or N10-3, PSE control module (A37). Model 170 only Rotary latch selector switch, trunk lock/trunk illumination (S69/12)


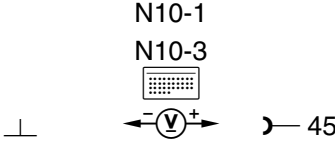
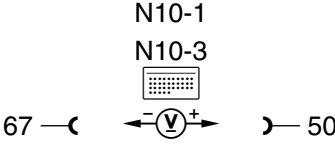
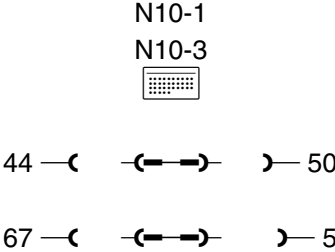
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
19.0		<p>Front dome lamp delayed shut-off after approx. 5 minutes Activated by combination control module (N10-1 or N10-3)</p>	<p>N10-1 N10-3 </p>	<p>Ignition: OFF Door: open After approx. 5 minutes.</p>	<p>11 – 14 V < 1 V</p>	<p>⇒ 18.0, N10-1 or N10-3</p>
20.0		<p>Entrance/exit lamp delayed shut-off after approx. 5 minutes Activated by combination control module (N10-1)</p>	<p>N10-1 </p>	<p>Ignition: OFF Door: open After approx. 5 minutes.</p>	<p>11 – 14 V < 1 V</p>	<p>⇒ 17.0, N10-1</p>
21.0		<p>Rear dome lamp (E15/3) Wire from front dome lamp (E15/2) to rear dome lamp (E15/3)</p>	<p>E15/3 </p>	<p>Switch in front dome lamp set to rear dome lamp ON.</p>	<p>11 – 14 V</p>	<p>Wiring, Front dome lamp (E15/2), Rear dome lamp (E15/3).</p>
22.0		<p>Heated rear window Activate combination control module (N10-1 or N10-3) via defrost switch in A/C pushbutton control module (N19/1 or N22)</p>	<p>N10-1 N10-3 </p>	<p>Ignition: ON Heated rear window: ON, Defrost switched pressed Defrost switch in rest position. Heated rear window OFF, Defrost switch in rest position.</p>	<p>6.2 – 8.0 V < 1 V 6.2 – 8.0 V</p>	<p>Wiring, Defrost switch (N19/1 or N22).</p>

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
23.0		Heated rear window, voltage supply from PSE control module (A37)		Ignition: OFF	11 – 14 V	Wiring.
24.0		Heated rear window relays within PSE control module (A37)		Ignition: ON Heated rear window: ON Connector 2 connected.	11 – 14 V	⇒ 22.0, CAN-data lines, D.M. Body and Accessories, Vol. 2, 5.3, 23 ⇒ 9.0, 10.0 Combination control module (N10-1 or N10-3), PSE control module (A37).
25.0	B1115	Heated rear window switch LED indicator		Ignition: ON Heated rear window: ON Model 170: Retractable hardtop: closed	7.2 – 9.2 V	Wiring, N10-1 or N10-3
26.0	B1014	Turn signal system Circuit 49 Activated by combination control module (N10-1 or N10-3)		Ignition: ON Disconnect connector A from combination control module (N10-1 or N10-3).	11 – 14 V	Wiring, Cockpit switch group (S6/1).

Electrical Test Program – Test



⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
27.0		Turn signal system Circuit 49a Output from combination control module (N10-1 or N10-3)		Ignition: ON	11 – 14 V	Cockpit switch group (S6/1), N10-1 or N10-3
28.0		Module box blower motor (M2/2) voltage supply from combination control module (N10-1 or N10-3)		Ignition: ON	11 – 14 V	⇒ 28.1, N10-1 or N10-3
28.1		Module box blower motor (M2/2)		Ignition: OFF Disconnect coupling A from combination control module (N10-1 or N10-3). Bridge sockets 44 and 50 with fused jumper wire (124 589 37 63 00).	M2/2 runs.	Wiring, M2/2

Version Coding and Programming

Model 210

All new spare parts combination control modules (N10-1) which are installed and connected to the vehicle electrical system must be programmed with the following data, using the Hand-Held-Tester.

Version coding

- /ECE
- 
- Right hand drive/left hand drive
- Model 210.0 (sedan)

Coding accessories

- ATA
- Driver seat with memory
- Passenger seat with memory
- Rain sensor



The combination control module (N10-1) can be reprogrammed as many times as necessary.

CAUTION!

Erasing the Combination Control Module (N10-1) DTC memory, will also erase the DTC memory for the Convenience Feature (CF) and Mirror, steering column adjustment, heated mirrors (MSC).

Version Coding and Programming

Model 170

All new spare parts combination control modules (N10-1) which are installed and connected to the vehicle electrical system must be programmed with the following data, using the Hand-Held-Tester.

Version coding

- /ECE
- 

Coding accessories

- ATA
- Rain sensor



The combination control module (N10-1) can be reprogrammed as many times as necessary.

CAUTION!

Erasing the Combination Control Module (N10-1) DTC memory, will also erase the DTC memory for the Retractable Hardtop.