4.8 Models 129, 140, 202, 210, M.Y. 1997 (except 210.072 up to 05/96, see 4.7)

Components

– RCL control module (N54),
– IR DAS control module (N54/1),
– IR transmitter and mechanical key with transponder,
– Coil in steering lock (L11),
– 3 IR receivers
  – Models 129, 140 on driver's door (A26/1), passenger door (A26/2),trunk lid (A26/3).
  – Models 202, 210 on driver's door (A26/1), trunk lid (A26/3), interior rear view mirror (A26/7).
– Mechanical rotary lock switch
  – Models 129, 140 on driver's door (S86/1) and trunk lid (S88/2).
  – Models 202, 210 on passenger door (S87/1) and trunk lid (S88/2).

Note:

RCL control module (N54):

The RCL control module (N54) performs the following functions:

– Receiving of the IR signal.
– Activation of:
  –IR DAS control module (N54/1) via signals from rotary lock switch 1 and 2 (except model 129),
  –Lock/unlock verification signals via receiver units
  –ATA (model 129 only),
  –Convenience Feature (CF) (model 129 only).

• The reception of a valid IR signal is indicated by a verfication signal (feedback) via the indicator lamps in the IR receiver units.
• The verification signal occurs only at the IR receiver which was activated by the IR signal.
• When unlocking or locking the vehicle via the mechanical key, a verification signal is not indicated.

IR DAS control module (N54/1):

The IR DAS control module (N54/1) performs the following functions:

a) Infrared remote control

– Receiving and evaluation of the signals rotary lock switch 1 and 2 from the RCL control module (RCL) (except model 129)

– Activation of:
- – of the central locking system (CL) (except model 129)
- – of the remote trunk release (RTR) (Model 140 and 202/210 sedans only)
- – of the anti-theft alarm (ATA) (except model 129)
- – of the convenience feature (CF) (except model 129)

- Programming and evaluating of the mechanical rotary lock switches or switching and working elements (except model 129)

b) Drive authorization system stage X

- Activation of the coil for transponder on steering lock
- Programming and evaluating of the transponder signals
- Release of engine control module via CAN with valid transponder code.

Note:
The Drive Authorization System (DAS) is independent in function from the of the RCL lock status and battery voltage in the IR transmitter keys.
An additional requirement is that the transponder in the ignition key supply the IR DAS control module (N54/1) with data via the coil in the ignition switch.

Deactivation of the motor electronics is accomplished via the IR DAS control module (N54/1). The IR DAS control module (N54/1) is also connected to the engine control module via the CAN data bus. Upon deactivation of the motor electronics (ignition key has been removed from the ignition switch), the engine control module in turn deactivates the fuel injection system.
The IR DAS control module (N54/1) and engine control module are “married“ together via an identification code exchange. This identification can not be erased. Therefore, it is impossible to swap control modules (either IR DAS or engine control modules) for troubleshooting purposes.

Actual values:
Via the Hand-Held-Tester (HHT) up to 8 different transponders can be tested for locking approval. Additionally, the indication is given if the IR DAS control module (N54/1) is “married“ (via an identification code), after approx. 250 activations, (circuit 15 ON), thereafter changes in version coding can no longer be done. The readout of actual values is menu driven.

Version coding
Replacement of IR DAS control module requires version coding via the HHT. The version coding is menu driven.

The IR DAS control module (N54/1) and engine control module are “married“ together via an identification code exchange. These identification codes can not be changed and this code remains with the vehicle for its service life. Only the mechanical locks can be replaced.

If the IR DAS or RCL control module is defective:

- A new IR DAS or RCL control module must be specially ordered for the specific vehicle, using the same indentification code as the previously installed IR DAS or RCL control module.

If a mechanical lock or key is defective:

- Replace the mechanical lock or key with a new one, using the same mechanical lock code number (special order from your facing PDC).

If the customer loses an IR transmitter key (which includes a mechanical key):

- The vehicle‘s RCL identification code remains, the lost IR transmitter key (s) is made invalid via desynchronization in the RCL control module (N54) and by deactivation of the transponder in the IR DAS control module (N54/1). To maintain vehicle security, all mechanical locks may be replaced if desired, using a new mechanical lock number code. You must notify your facing PDC of any mechanical lock changes, by using the Lock Change Notice Form.

Desynchronization

If an IR transmitter is lost, it must be desynchronized in the RCL control module (N54) and the mechanical locks replaced. The desynchronization is only possible via the Hand-Held Tester (HHT) and is menu driven. After desynchronization, all still available IR transmitter must be resynchronized (see owner's manual).
During desynchronization of an IR transmitter, the transponder is **NOT** locked.

Transponder Deactivation

Deactivation of the transponder is accomplished at the IR DAS control module (N54/1).

- Via the Hand-Held Tester (HHT), the transponder in the IR transmitter keys can be **revocably** deactivated. The deactivation of individual transponders is menu driven. The reactivation of **revocably** deactivated transponders is accomplished via the HHT.
- Via the HHT, the transponder in the IR transmitter keys can be **irrevocably** deactivated (**only upon vehicle owner‘s consent**). The deactivation of the transponder is menu driven. The reactivation of **irrevocably** deactivated transponders is **not** possible.

If a mechanical key is lost, the transponder must be deactivated as well.

Diagnosis – Function Test

Preliminary work: Check operation of central locking;
Check batteries in infrared transmitter key,
see SMS, Job No. 80–420

Models 129, 140
(model 140 shown)

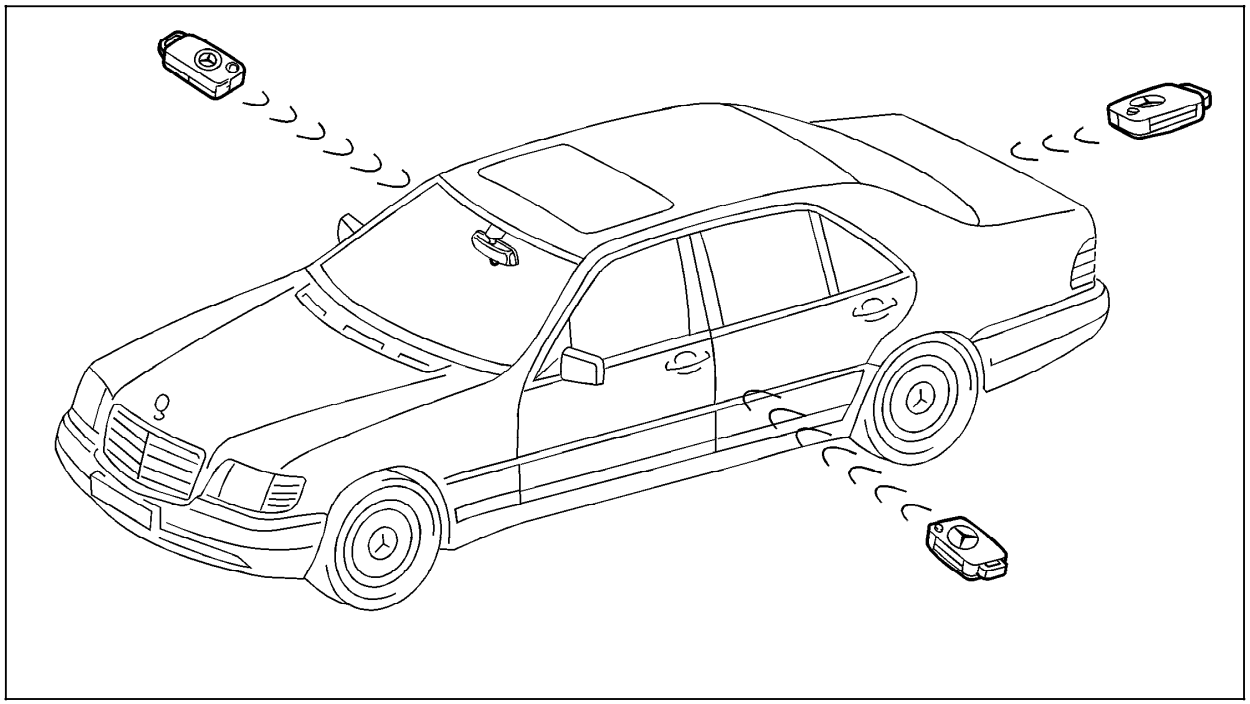

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Figure 1

Diagnosis – Function Test

Models 202, 210
(model 210 shown)

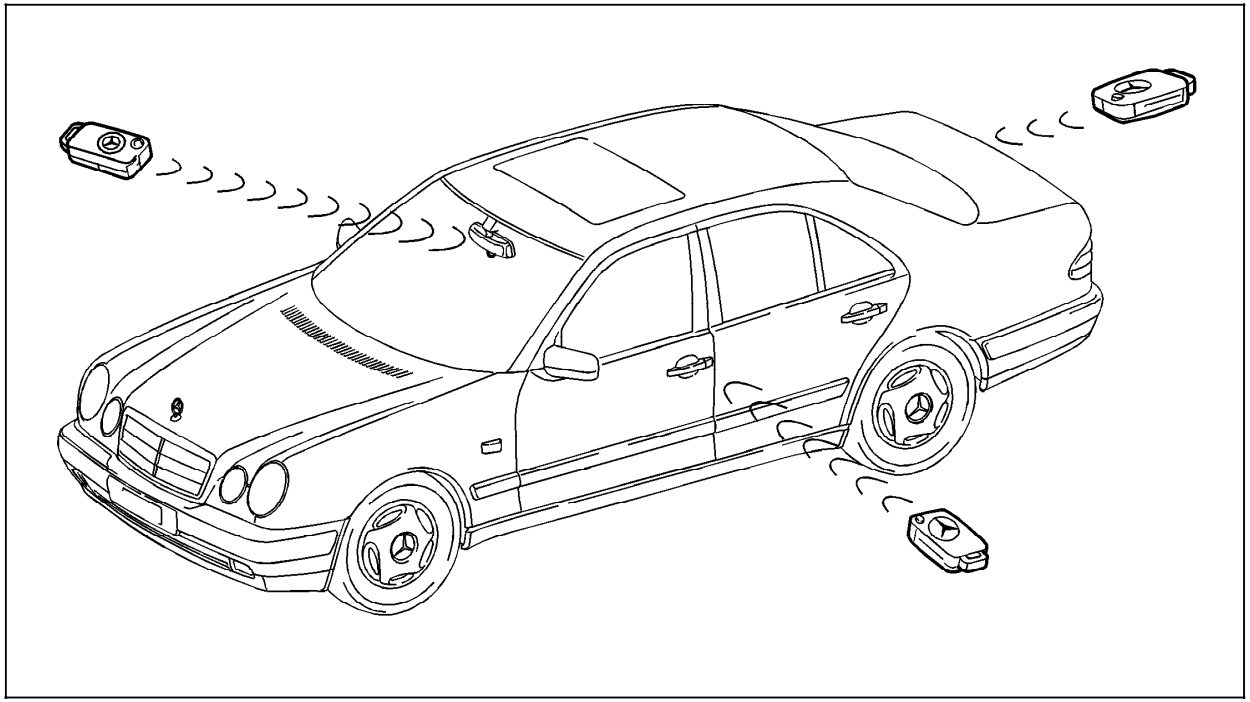

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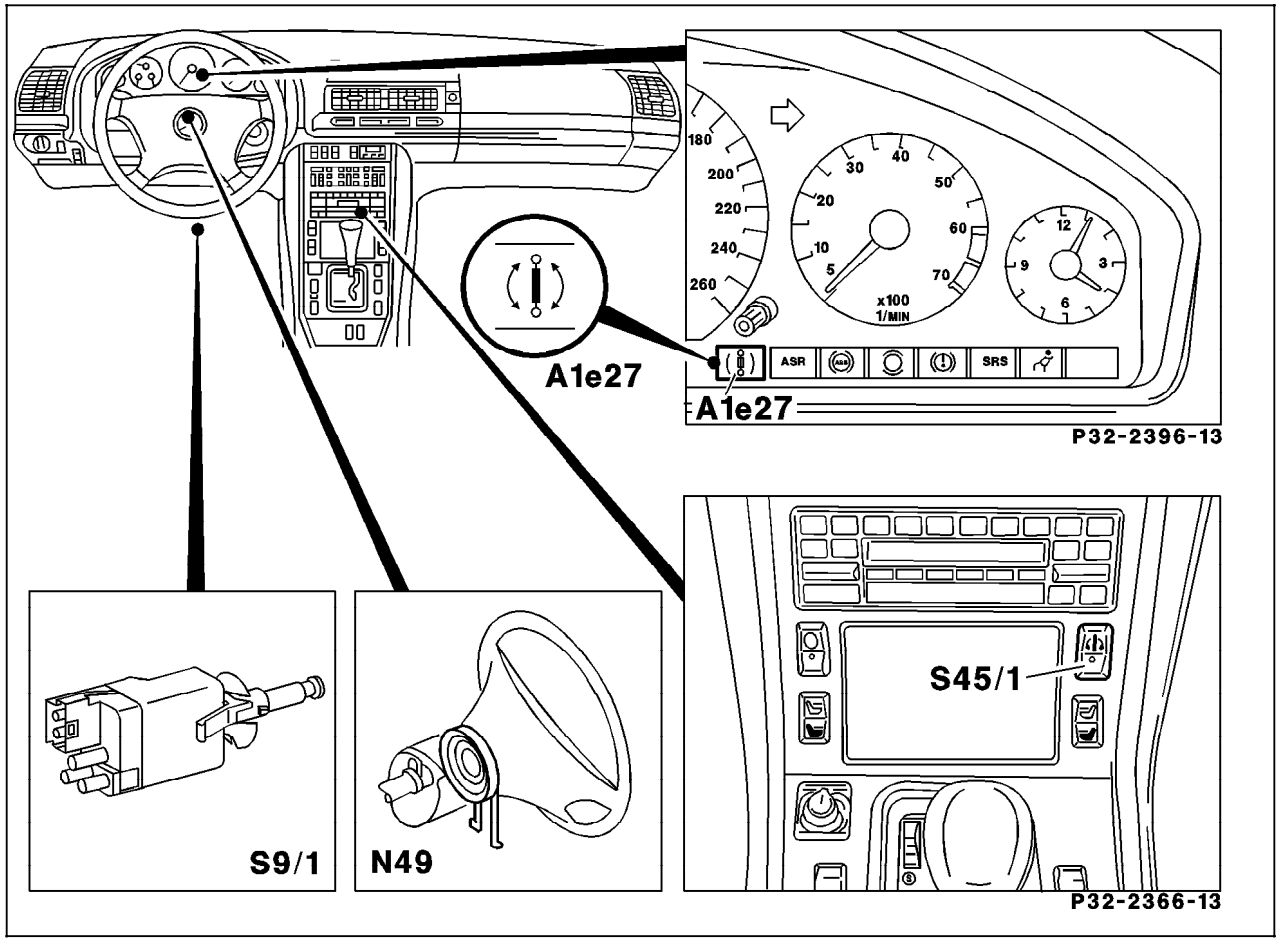
Figure 2

Diagnosis – Function Test

Preparation for Test:

1. Battery voltage 11 – 14 V,
2. Fuses ok,
3. Central locking system in proper operating condition,
4. Batteries in IR transmitter ok,
5. IR transmitter synchronized,
6. Key removed from steering lock,
7. Side windows lowered approx. 100 mm (4 in.),
8. Sliding/pop-up roof open,
9. All doors and trunk lid closed,
10. Central locking system unlocked.



P32-5801-57

Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 1.0 Locking of vehicle with infrared remote control via left front door IR receiver (A26/1).	Lock vehicle using IR transmitter via left front door IR receiver.	Vehicle is locked. Red indicator lamps in left front driver door IR receiver blink for a maximum of approx. 3 seconds.	23 ⇒ 1.0 – 5.0, 20.0, 22.0, 29.0 – 35.0, 38.0, 39.0
⇒ 2.0 Unlocking of vehicle with infrared remote control via left front door IR receiver (A26/1).	Unlock vehicle using IR transmitter via left front door IR receiver.	Vehicle is unlocked. Green indicator lamps in left front driver door IR receiver blink for a maximum of approx. 3 seconds.	23 ⇒ 1.0 – 4.0, 6.0, 19.0, 21.0, 26.0 – 28.0, 33.0 – 37.0, 39.0
⇒ 3.0 Locking of vehicle via right front door IR receiver (A26/2) (models 129, 140 only).	Lock vehicle using IR transmitter via right front door IR receiver.	Vehicle is locked. Red indicator lamps in right front door IR receiver blink for a maximum of approx. 3 seconds.	23 ⇒ 1.0, 2.0, 11.0– 13.0, 20.0, 22.0, 27.0, 29.0, 30.0, 32.0 – 34.0, 38.0
⇒ 4.0 Unlocking of vehicle via right front door IR receiver (A26/2) (models 129, 140 only).	Unlock vehicle using IR transmitter via right front door IR receiver.	Vehicle is unlocked. Green indicator lamps in right front door IR receiver blink for a maximum of approx. 3 seconds.	23 ⇒ 1.0, 2.0, 11.0, 12.0, 14.0, 19.0, 21.0, 26.0, 27.0, 33.0, 34.0, 36.0, 37.0
⇒ 5.0 Locking of vehicle via trunk lid IR receiver (A26/3).	Lock vehicle using IR transmitter via trunk lid IR receiver.	Vehicle is locked. Red indicator lamps in trunk lid IR receiver blink for a maximum of approx. 3 seconds.	23 ⇒ 1.0, 2.0, 7.0 – 9.0, 20.0, 22.0, 29.0 – 35.0, 38.0, 39.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 6.0 Unlocking of vehicle via trunk lid IR receiver (A26/3).	Unlock vehicle using IR transmitter via trunk lid IR receiver.	Vehicle is unlocked. Green indicator lamps in trunk lid IR receiver blink for a maximum of approx. 3 seconds.	23 ⇒ 1.0, 2.0, 7.0, 8.0, 10.0, 19.0, 21.0, 26.0 – 28.0, 33.0 – 37.0, 39.0
⇒ 7.0 Locking of vehicle via RCL receiver (interior rear view mirror) (A26/7) (models 202, 210 only).	Lock vehicle using IR transmitter via RCL receiver (interior rear view mirror).	Vehicle is locked. Red indicator lamps in RCL receiver (interior rear view mirror) blink for a maximum of approx. 3 seconds.	23 ⇒ 1.0, 2.0, 15.0 – 17.0, 20.0, 22.0, 30.0 – 32.0, 35.0, 38.0, 39.0
⇒ 8.0 Unlocking of vehicle via RCL receiver (interior rear view mirror) (A26/7) (models 202, 210 only).	Unlock vehicle using IR transmitter via RCL receiver (interior rear view mirror).	Vehicle is unlocked. Green indicator lamps in RCL receiver (interior rear view mirror) blink for a maximum of approx. 3 seconds.	23 ⇒ 1.0, 2.0, 15.0, 16.0, 18.0, 19.0, 21.0, 27.0, 28.0, 35.0 – 37.0, 39.0
⇒ 9.0 Locking of vehicle with a mechanical lock cylinder.	Lock vehicle using mechanical key via mechanical lock cylinder.	Vehicle is locked.	23 ⇒ 2.0, 23.0 – 25.0, 29.0 – 35.0, 38.0, 39.0
⇒ 10.0 Unlocking of vehicle with a mechanical lock cylinder.	Unlock vehicle using mechanical key via mechanical lock cylinder.	Vehicle is unlocked.	23 ⇒ 2.0, 23.0 – 28.0, 33.0 – 37.0, 39.0

[1] Observe Preparation for Test, see 22.

Diagnosis – Function Test

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy [1]
⇒ 11.0 Close side windows and sliding/pop-up roof with infrared remote control.	Point IR transmitter towards one of the IR receivers and press IR transmitter button for > 1 second and hold pressed.	Side windows and sliding/pop-up roof close.	23 ⇒ 1.0 – 5.0, 7.0 – 9.0, 11.0 – 13.0, 15.0 – 17.0, 20.0, 22.0, 29.0 – 35.0 38.0, 39.0
⇒ 12.0 Open side windows with infrared remote control.	After side windows close, within 8 seconds (models 140, 202), or 3 seconds (model 129) or 5 seconds (model 210), point IR transmitter towards one of the IR receivers, and press IR transmitter button for > 1 second and hold pressed.	Side windows open.	23 ⇒ 1.0 – 4.0, 6.0, 7.0, 8.0, 10.0, 15.0, 16.0, 18.0, 19.0, 21.0, 26.0 – 28.0, 33.0 – 37.0, 39.0
⇒ 13.0 Activate engine management.	Turn ignition key **right** to stop in steering column lock.	Engine starts.	12, 23⇒ 2.0, 39.0 – 48.0, DTC memory, engine, Actual values, engine, drive authorization.
⇒ 14.0 Open trunk lid with infrared remote control. **(vehicles with RTR only)**	Trunk lid lock key slot is **not** in 90° (key can be removed) position. Lock vehicle using IR transmitter. Point IR transmitter towards one of the IR receivers and press IR transmitter button **twice** within 0.8 seconds.	Trunk lid opens. Trunk lid handle extends [2].	23 ⇒ 1.0, 2.0, 7.0, 8.0, 10.0, 22.0, 22.0, 27.0, 28.0, 35.0 – 37.0, 39.0, PSE electrical/pneumatic fault, Trunk lid lock mechanical fault.

1) Observe Preparation for Test, see 22.
2) Model 140

Diagnosis – Diagnostic Trouble Code (DTC) Memory

Preparation for Test (DTC readout):

1. Fuses OK.
2. Battery voltage >11 V.
3. Unlock via RCL vehicle.
4. Ignition ON.
5. Connect Hand-Held Tester (HHT) according to connection diagram shown in section 0.

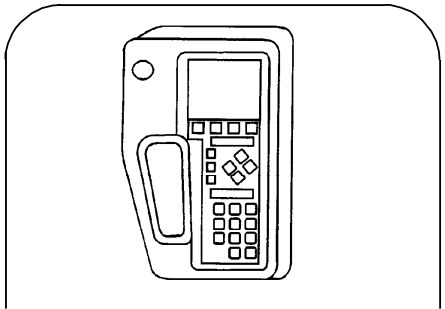
Note:
The diagnostic trouble codes (DTC‘s) can only be read out and erased **using the Hand-Held Tester (HHT)**.

Model 129
The RCL control module (N54) 129 820 29 26 can only be read out via the **impluse counter**.

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:

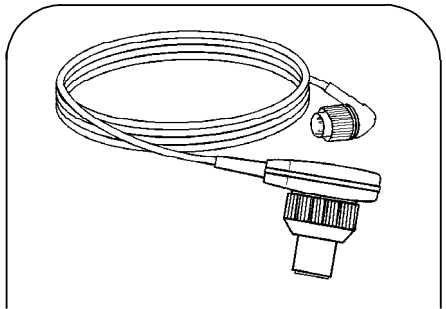
> Ω	Resistance too great
< Ω	Resistance too low
⌜⌝–	Short circuit to ground (GND)
⌜⌝+	Short circuit to positive (POS)
–//–	Open circuit

Special Tools



965 589 00 01 00

Hand-Held-Tester



965 589 00 40 00

Test cable

Diagnosis – Diagnostic Trouble Code (DTC) Memory

RCL control module (N54) Diagnostic Trouble Codes

DTC	Possible cause	Test step/Remedy [1]
005	Red indicator lamp, ⌜⌝–	23 ⇒ 5.0, 9.0, 13.0
006	Green indicator lamp, ⌜⌝–	23 ⇒ 6.0, 10.0, 14.0
009	Red indicator lamp, ⌜⌝+	23 ⇒ 5.0, 9.0, 13.0
010	Green indicator lamp, ⌜⌝+	23 ⇒ 6.0, 10.0, 14.0

[1] Observe Preparation for Test, see 22.

IR DAS control module (N54/1) Diagnostic Trouble Codes

DTC	Possible cause	Test step/Remedy [1]
B1000	IR DAS control module (N54/1)	Replace N54/1
B1100	Control line deactivation, ⌜1+ or ⌜1–	23 ⇒ 33.0 – 37.0, 39.0
B1101	Control line activation, ⌜1+ or ⌜1–	23 ⇒ 32.0 – 35.0, 38.0, 39.0
B1701	Incorrect authorization code, motor electronics (CAN)	11 ⇒ 13.0
B1702	Incorrect authorization code, engine control module, left cylinder bank, (CAN)	11 ⇒ 13.0
B1703	Invalid transponder code	IR transmitter defective, replace IR transmitter key.
B1704	Coil for transponder (energy could not be built up; or transponder does not respond).	23 ⇒ 40.0, 41.0 Erase DTC memory, Try another IR transmitter key.

[1] Observe Preparation for Test, see 22.

Electrical Test Program – Component Locations

Model 129 with ME-SFI

Note:
Mechanical lock cylinders are located on left door and trunk lid only.
A mechanical lock cylinder is not located on the right door.

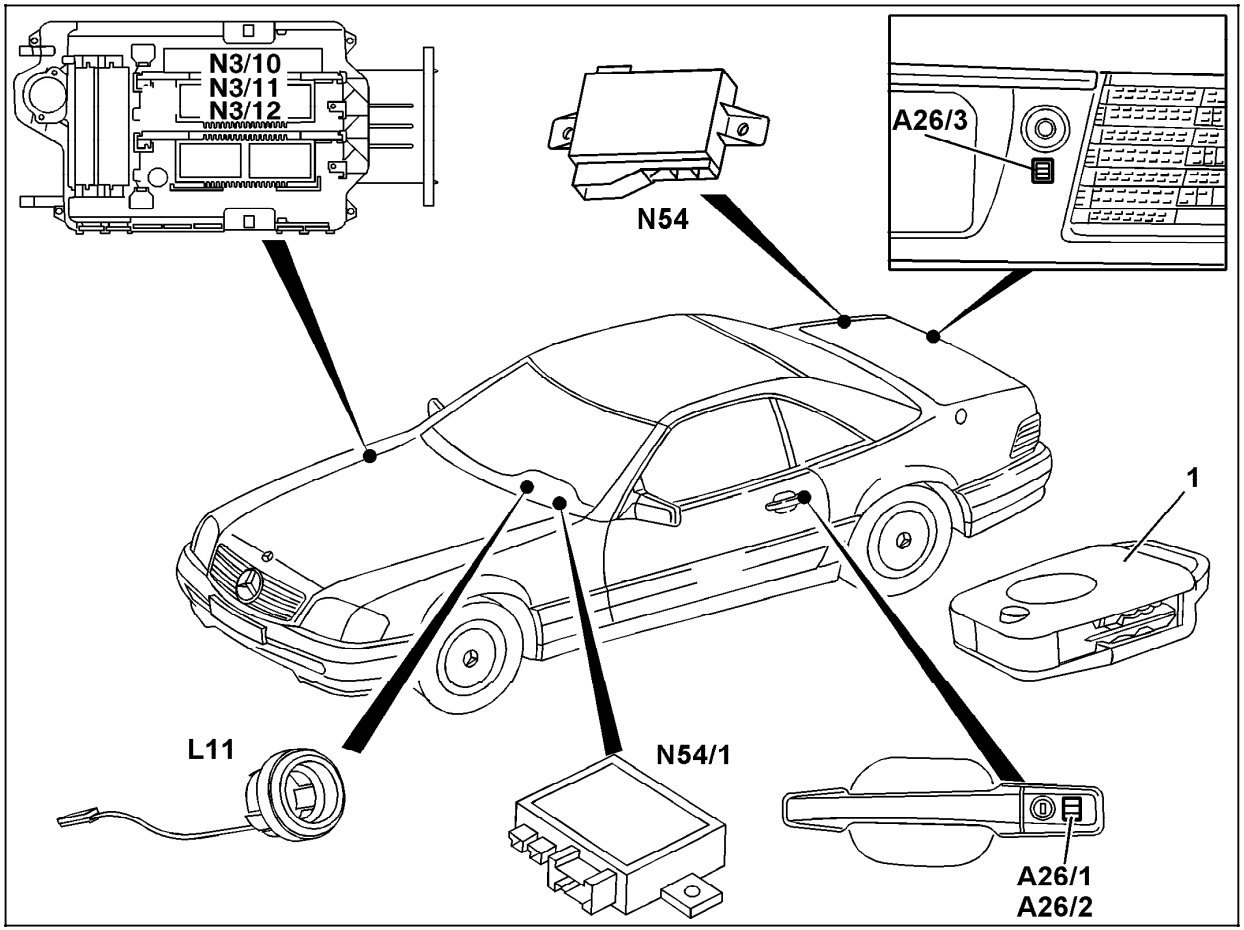


Figure 1

A26/1	Left front door IR receiver
A26/2	Right front door IR receiver
A26/3	Trunk lid IR receiver
L11	Transponder coil (on ignition/starter switch)
N3/10	Engine control module (ME-SFI)
N3/11	Left engine control module (ME-SFI)
N3/12	Right engine control module (ME-SFI)
N54	RCL control module
N54/1	IR DAS control module (behind instrument cluster)
1	IR transmitter with transponder

Electrical Test Program – Component Locations

Model 140 with ME-SFI

Note:
Mechanical lock cylinders are located on left front door and trunk lid only.
A mechanical lock cylinder is not located on the right front door.

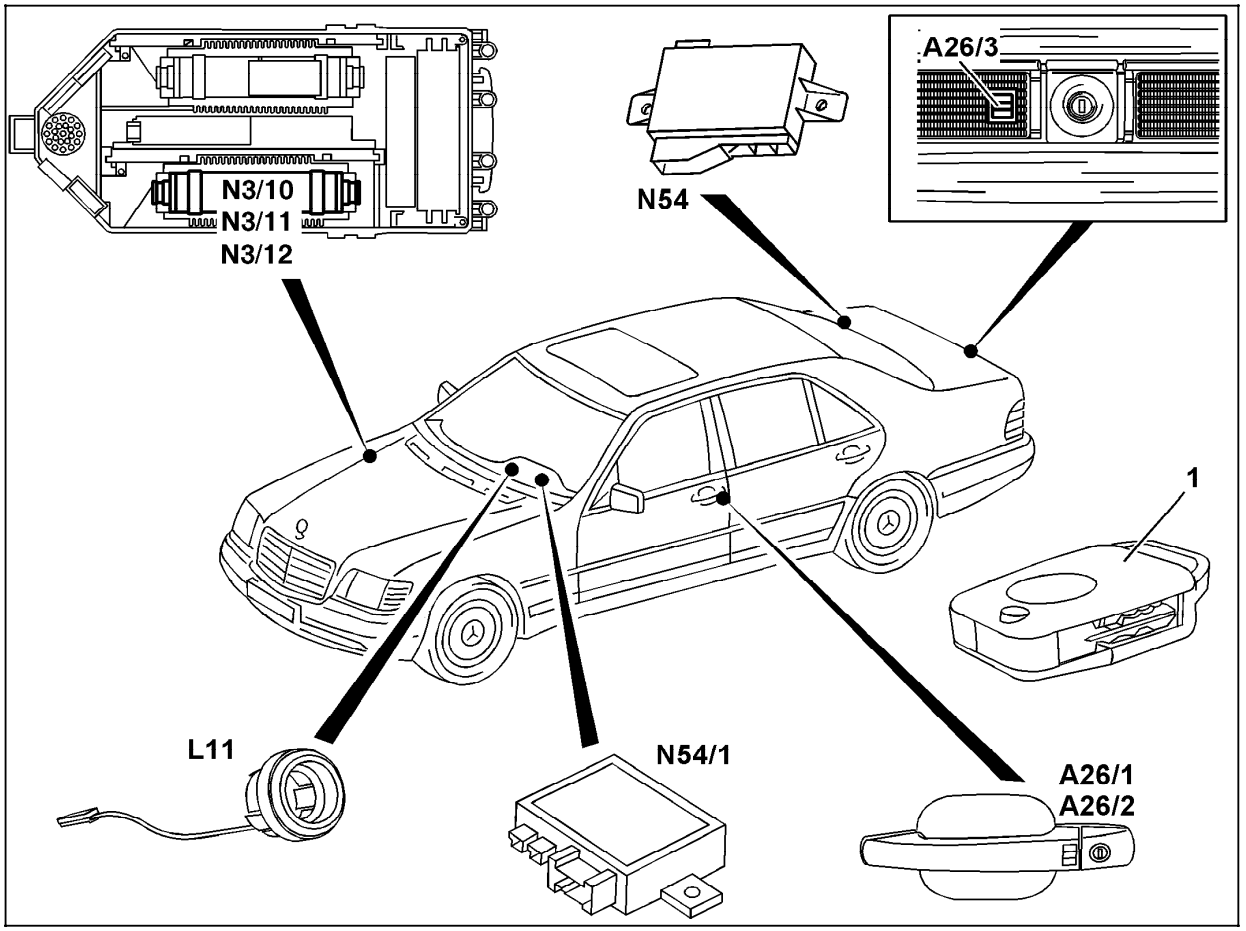


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Figure 2

A26/1	Left front door IR receiver
A26/2	Right front door IR receiver
A26/3	Trunk lid IR receiver
L11	Transponder coil (on ignition/starter switch)
N3/10	Engine control module (ME-SFI)
N3/11	Left engine control module (ME-SFI)
N3/12	Right engine control module (ME-SFI)
N54	RCL control module
N54/1	IR DAS control module (behind instrument cluster)
1	IR transmitter with transponder

Electrical Test Program – Component Locations

Model 140 (coupé) with ME-SFI

Note:
Mechanical lock cylinders are located on left door and trunk lid only.
A mechanical lock cylinder is not located on the right door.

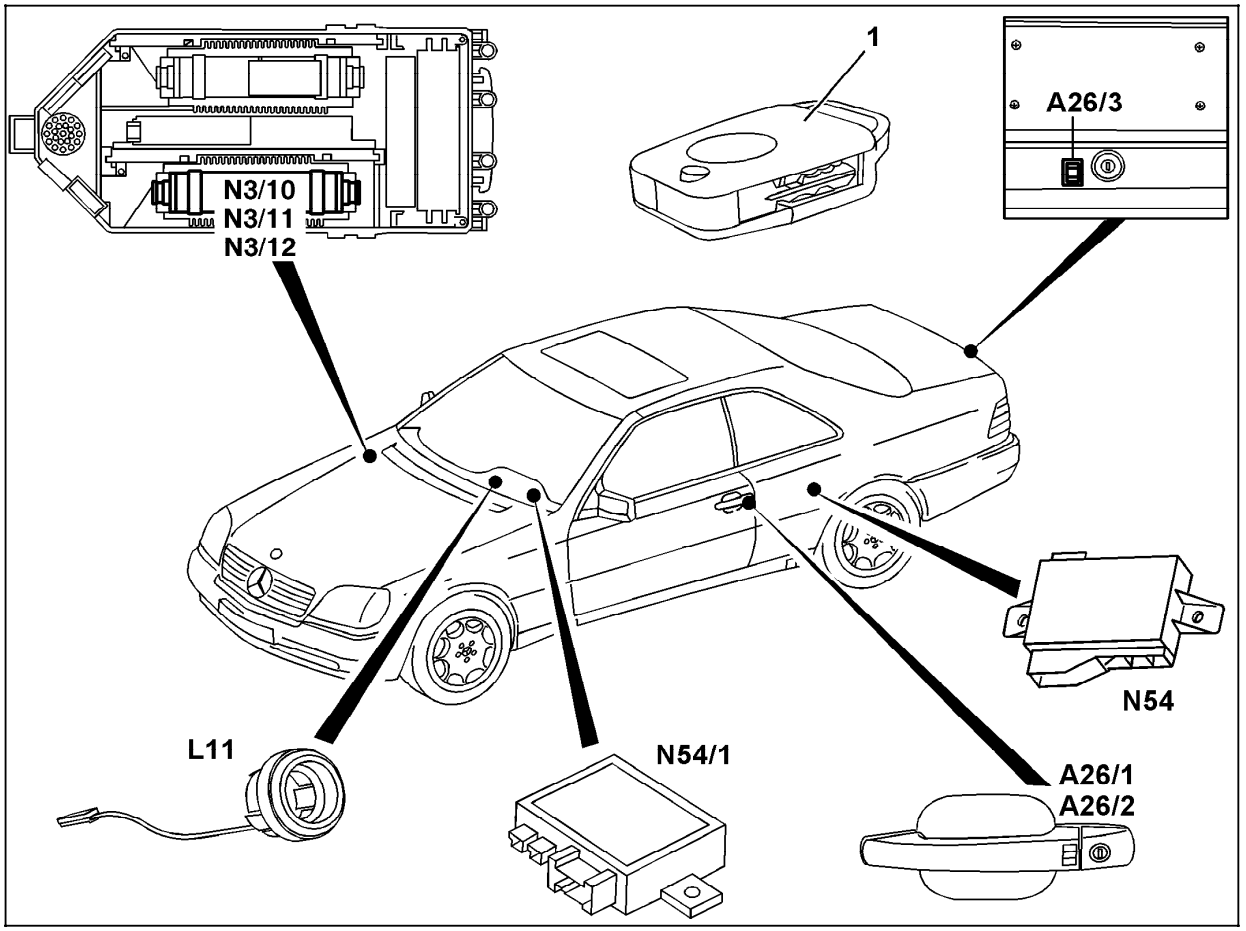

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Figure 3

A26/1	Left front door IR receiver
A26/2	Right front door IR receiver
A26/3	Trunk lid IR receiver
L11	Transponder coil (on ignition/starter switch)
N3/10	Engine control module (ME-SFI)
N3/11	Left engine control module (ME-SFI)
N3/12	Right engine control module (ME-SFI)
N54	RCL control module
N54/1	IR DAS control module (behind instrument cluster)
1	IR transmitter with transponder

Electrical Test Program – Component Locations

Model 202 with ME-SFI

Note:
Mechanical lock cylinders are located on right front door and trunk lid only.
A mechanical lock cylinder is not located on the left front door.

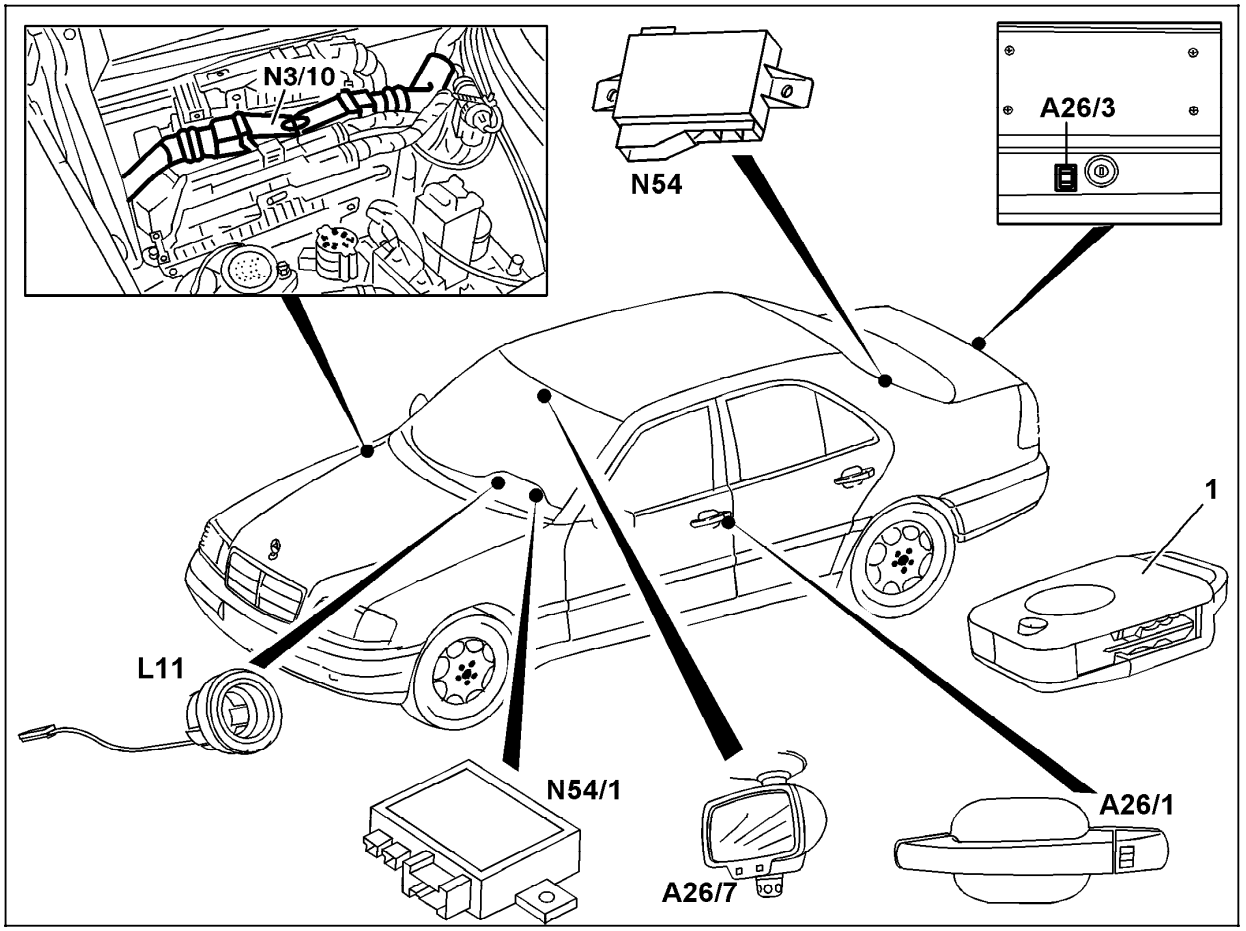

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Figure 4

A26/1	Left front door IR receiver
A26/3	Trunk lid IR receiver
A26/7	RCL receiver (interior rear view mirror)
L11	Transponder coil (on ignition/starter switch)
N3/10	Engine control module (ME-SFI)
N54	RCL control module
N54/1	IR DAS control module (behind instrument cluster)
1	IR transmitter with transponder

Electrical Test Program – Component Locations

Model 210 with ME-SFI

Note:
Mechanical lock cylinders are located on right front door and trunk lid only.
A mechanical lock cylinder is not located on the left front door.

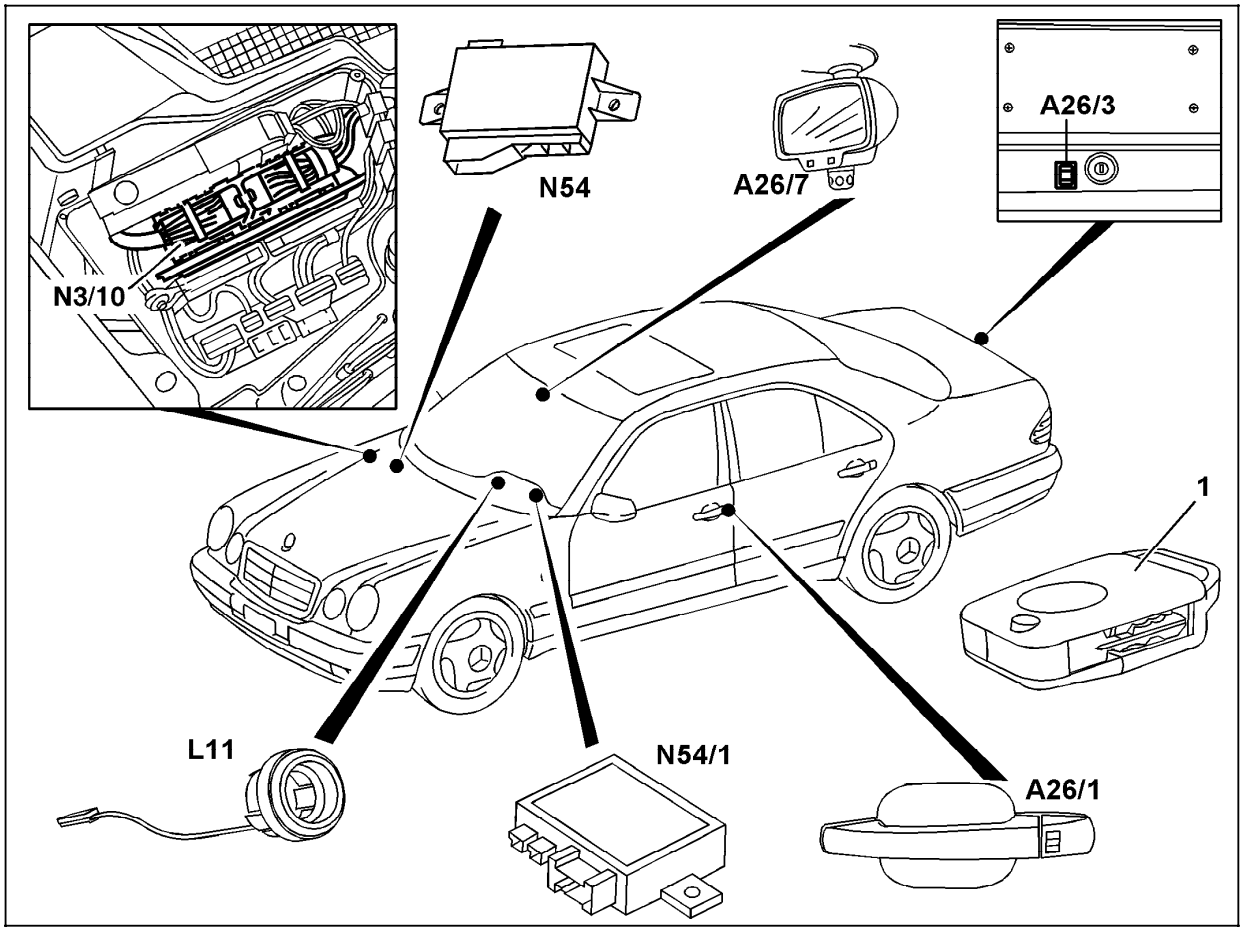

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Figure 5

A26/1	Left front door IR receiver
A26/3	Trunk lid IR receiver
A26/7	RCL receiver (interior rear view mirror)
L11	Transponder coil (on ignition/starter switch)
N3/10	Engine control module (ME-SFI)
N54	RCL control module
N54/1	IR DAS control module (behind instrument cluster)
1	IR transmitter with transponder

Electrical Test Program – Connection of Components

Model 129

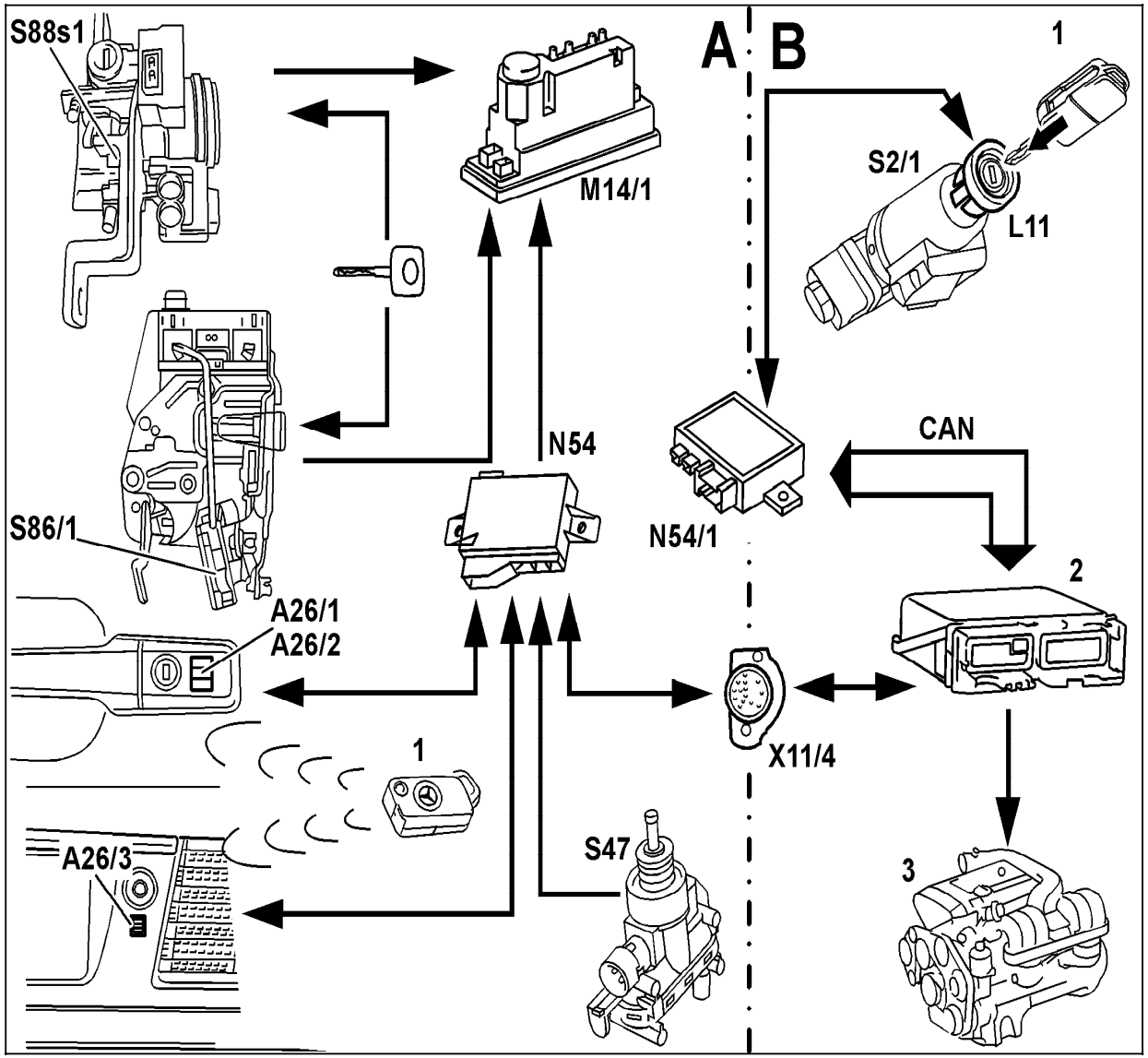

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Figure 1

A	Infrared remote central locking (RCL)
B	Drive authorization system stage X (activation of motor electronics via transponder)
A26/1	Left front door IR receiver (RCL)
A26/2	Right front door IR receiver (RCL)
A26/3	Trunk lid IR receiver (RCL)
CAN	Control-Area-Network
L11	Coil for transponder
M14/1	Supply pump (CL)
N54	RCL control module
N54/1	IR DAS control module
S2/1	Ignition/starter switch
S47	Left front door actuator
S86/1	Left front door lock switch (CF)
S88s1	ATA/CF microswitch
X11/4	Data link connector (DTC readout)
1	IR transmitter key with transponder
2	Engine control module
3	Engine

Electrical Test Program – Connection of Components

Model 140

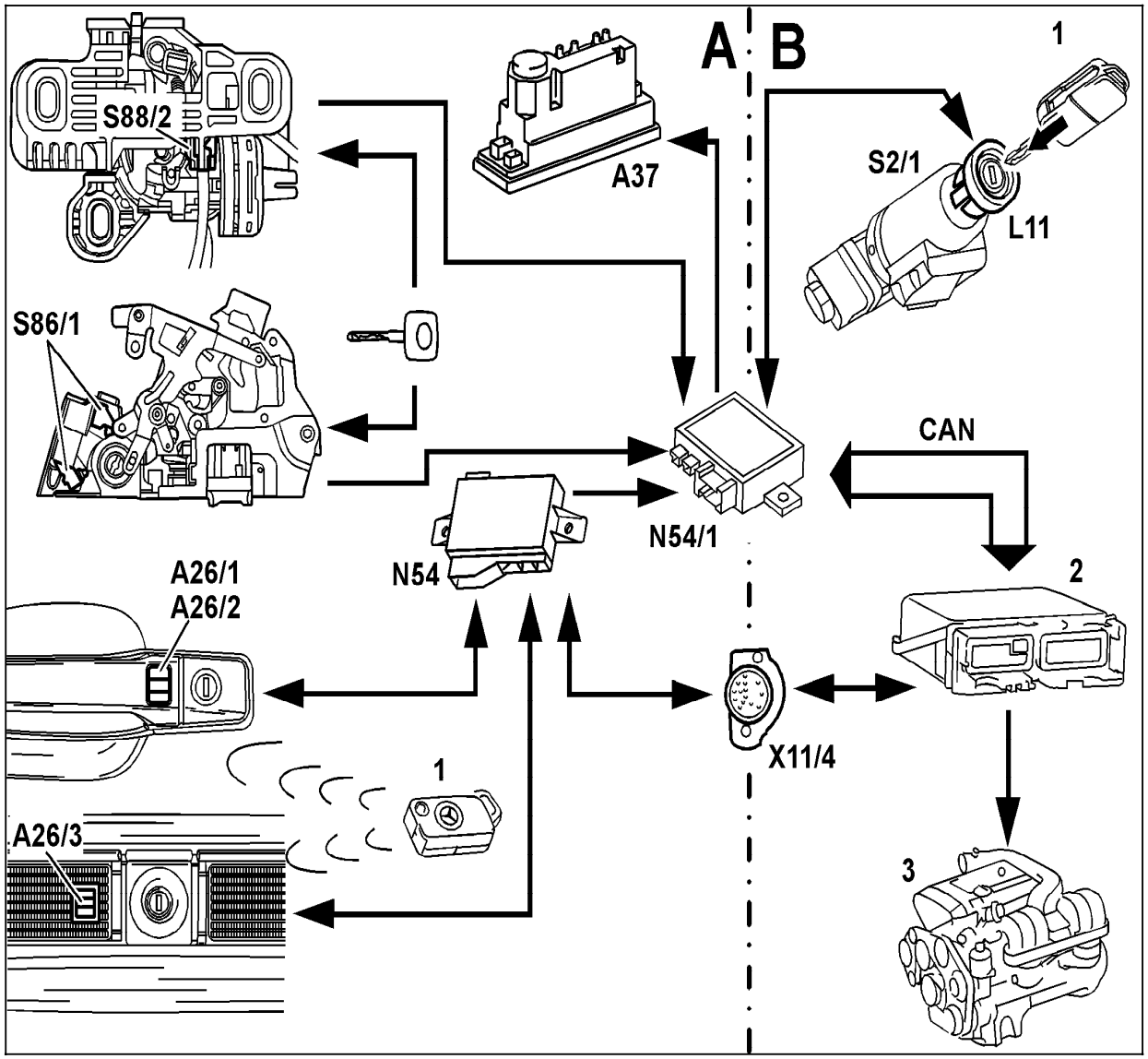

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Figure 2

A	Infrared remote central locking (RCL)
B	Drive authorization system stage X (activation of motor electronics via transponder)
A26/1	Left front door IR receiver (RCL)
A26/2	Right front door IR receiver (RCL)
A26/3	Trunk lid IR receiver (RCL)
A37	PSE control module
CAN	Control-Area-Network
L11	Coil for transponder
N54	RCL control module
N54/1	IR DAS control module
S2/1	Ignition/starter switch
S86/1	Left front door lock switch (CF)
S88s1	ATA/CF microswitch
X11/4	Data link connector (DTC readout)
1	IR transmitter key with transponder
2	Engine control module
3	Engine

Electrical Test Program – Connection of Components

Model 202

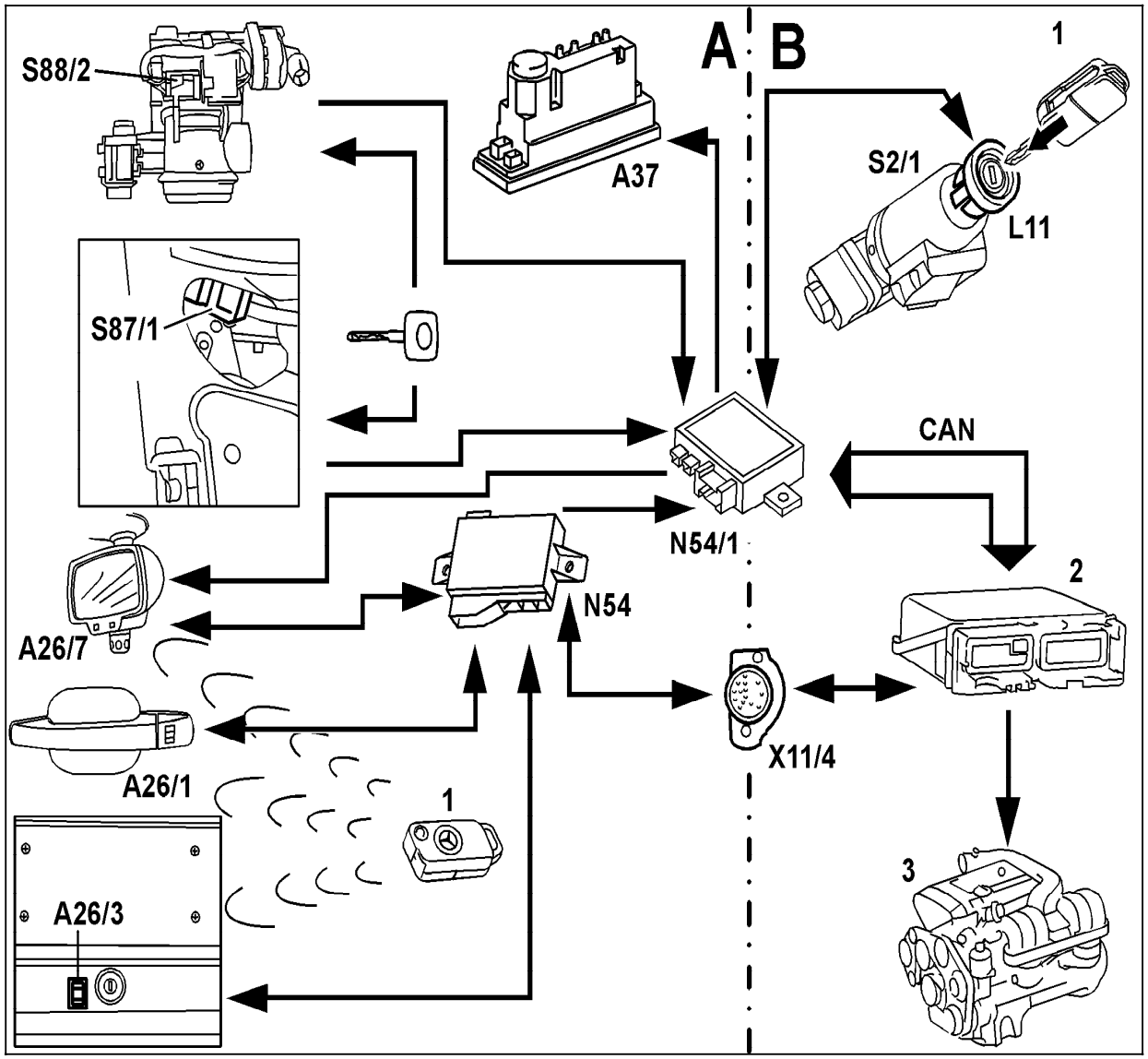

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Figure 3

A	Infrared remote central locking (RCL)
B	Drive authorization system stage X (activation of motor electronics via transponder)
A26/1	Left front door IR receiver (RCL)
A26/3	Trunk lid IR receiver (RCL)
A26/7	RCL receiver (interior rearview mirror)
A37	PSE control module
CAN	Control-Area-Network
L11	Coil for transponder
N54	RCL control module
N54/1	IR DAS control module
S2/1	Ignition/starter switch
S87/1	Right front door lock switch (CF)
S88/2	Trunk lid lock switch (CF)
X11/4	Data link connector (DTC readout)
1	IR transmitter key with transponder
2	Engine control module
3	Engine

Electrical Test Program – Connection of Components

Model 210

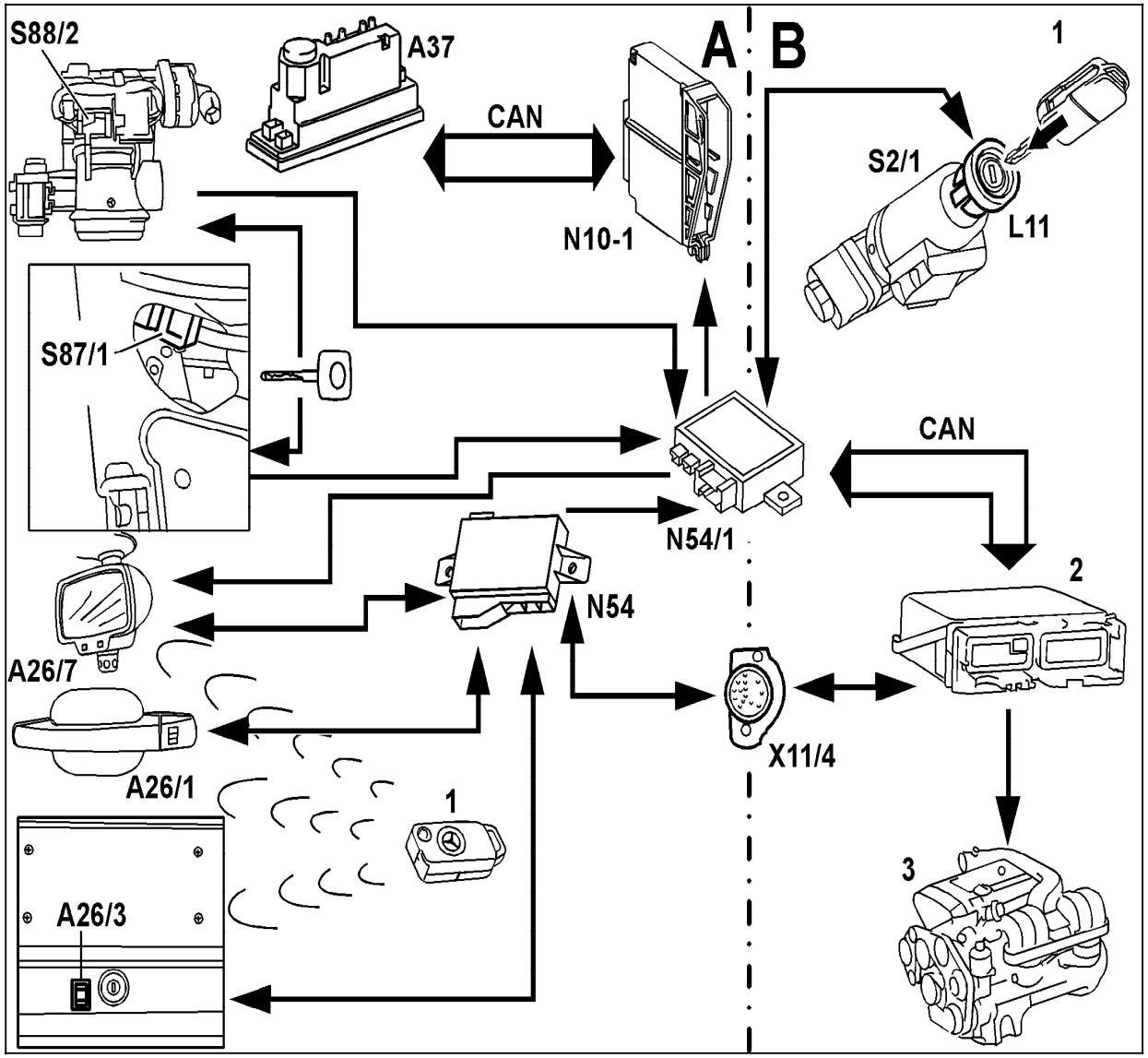

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Figure 4

A	Infrared remote central locking (RCL)
B	Drive authorization system stage X (activation of motor electronics via transponder)
A26/1	Left front door IR receiver (RCL)
A26/3	Trunk lid IR receiver (RCL)
A26/7	RCL receiver (interior rearview mirror)
A37	PSE control module
CAN	Control-Area-Network
L11	Coil for transponder
N10-1	Combination control module (CF, windshield wiper, rear window defroster)
N54	RCL control module
N54/1	IR DAS control module
S2/1	Ignition/starter switch
S87/1	Right front door lock switch (CF)
S88/2	Trunk lid lock switch (CF)
X11/4	Data link connector (DTC readout)
1	IR transmitter key with transponder
2	Engine control module
3	Engine

Electrical Test Program – Preparation for Test

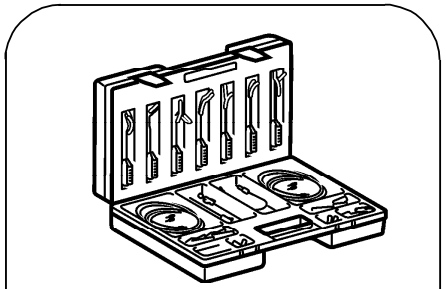
Preliminary work:
Diagnosis - Diagnostic Trouble Code (DTC) Memory 12

Preparation for Test:

1. Fuses OK.
2. Battery voltage >11 V.
3. Install model specific HHT module into HHT.
4. Connect Hand-Held Tester (HHT)) according to connection diagram shown in section 0.
5. Connect socket box with test harness according to connection diagram (see 22, Figure 1 and 2).
6. Model 129: Connect impluse counter according to connection diagram (see section 0).

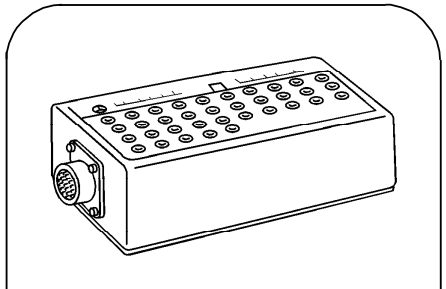
Electrical wiring diagrams:
Electrical Troubleshooting Manual, Model 129, Volume 2, group 80,
Model 140, Volume 2, group 80,
Model 202, Volume 2, group 80,
Model 210, Volume 2, group 80.

Special Tools



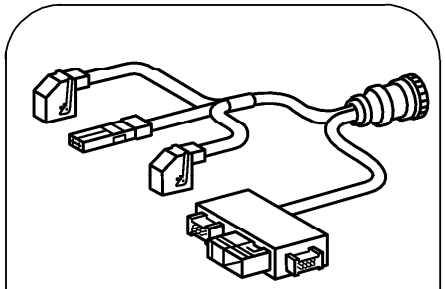
201 589 00 99 00

Electrical connecting set



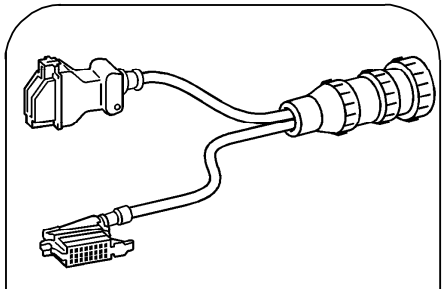
124 589 00 21 00

35-pin socket box



202 589 15 63 00

18-pin and 12-pin CAN test cable

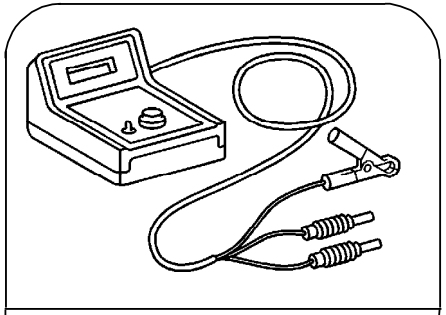


126 589 20 63 00

27-pin test cable

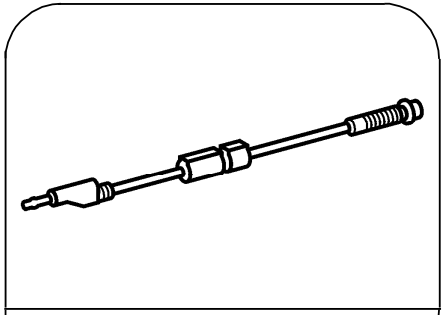
Electrical Test Program – Preparation for Test

Special Tools



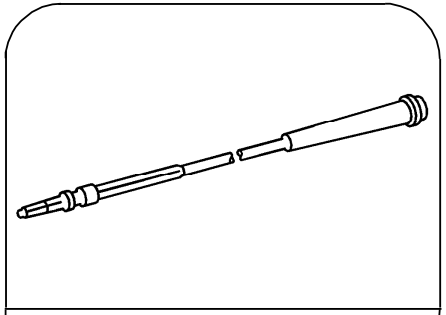
124 589 19 21 00

Pulse counter



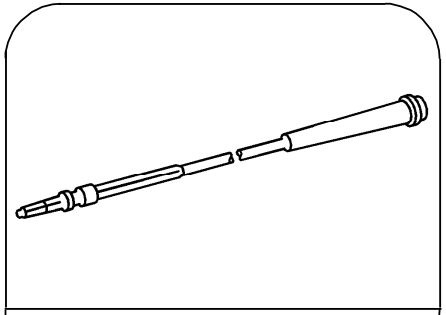
124 589 37 63 00

Fused cable



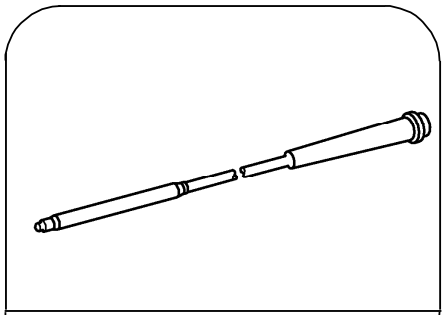
140 589 21 63 00

Adapter cable



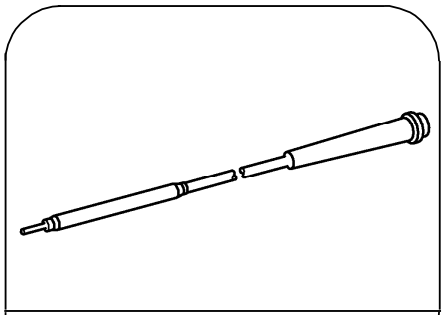
140 589 22 63 00

Adapter cable



210 589 05 63 00

Adapter cable



210 589 06 63 00

Adapter cable

Conventional tools, test equipment

Description	Brand, model, etc.
Multimeter [1)]	Fluke models 23, 83, 85, 87, 88

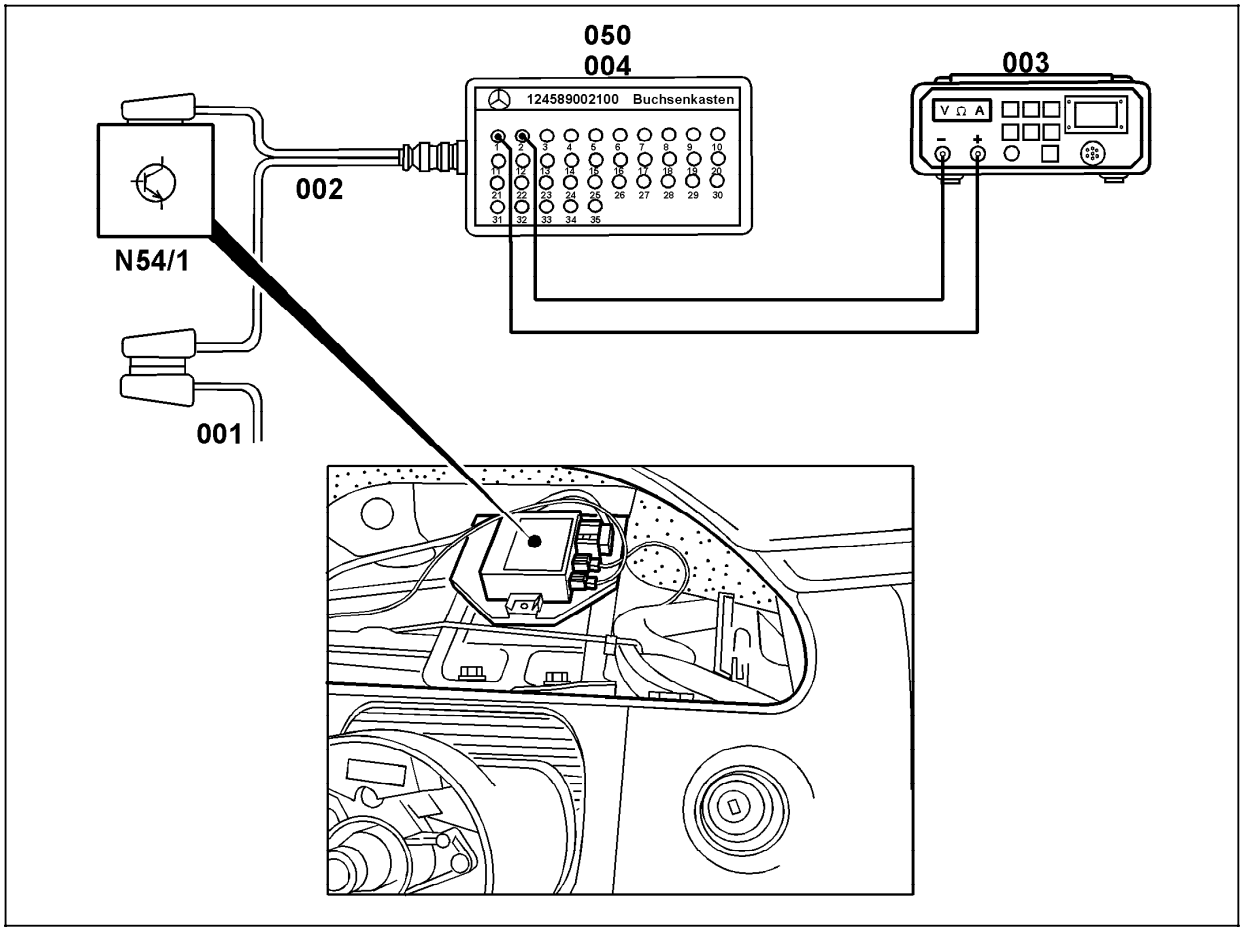
1) Available through the MBUSA Standard Equipment Program.

Electrical Test Program – Preparation for Test

Connection Diagram - Socket Box

Note:

- IR DAS control module (N54/1) located behind instrument cluster (model 210 shown).
- Using the Hand-Held tester (HHT), erase DTC'S for SRS Airbag after installation of instrument cluster and steering wheel.



P80.30-0291-06

Figure 1

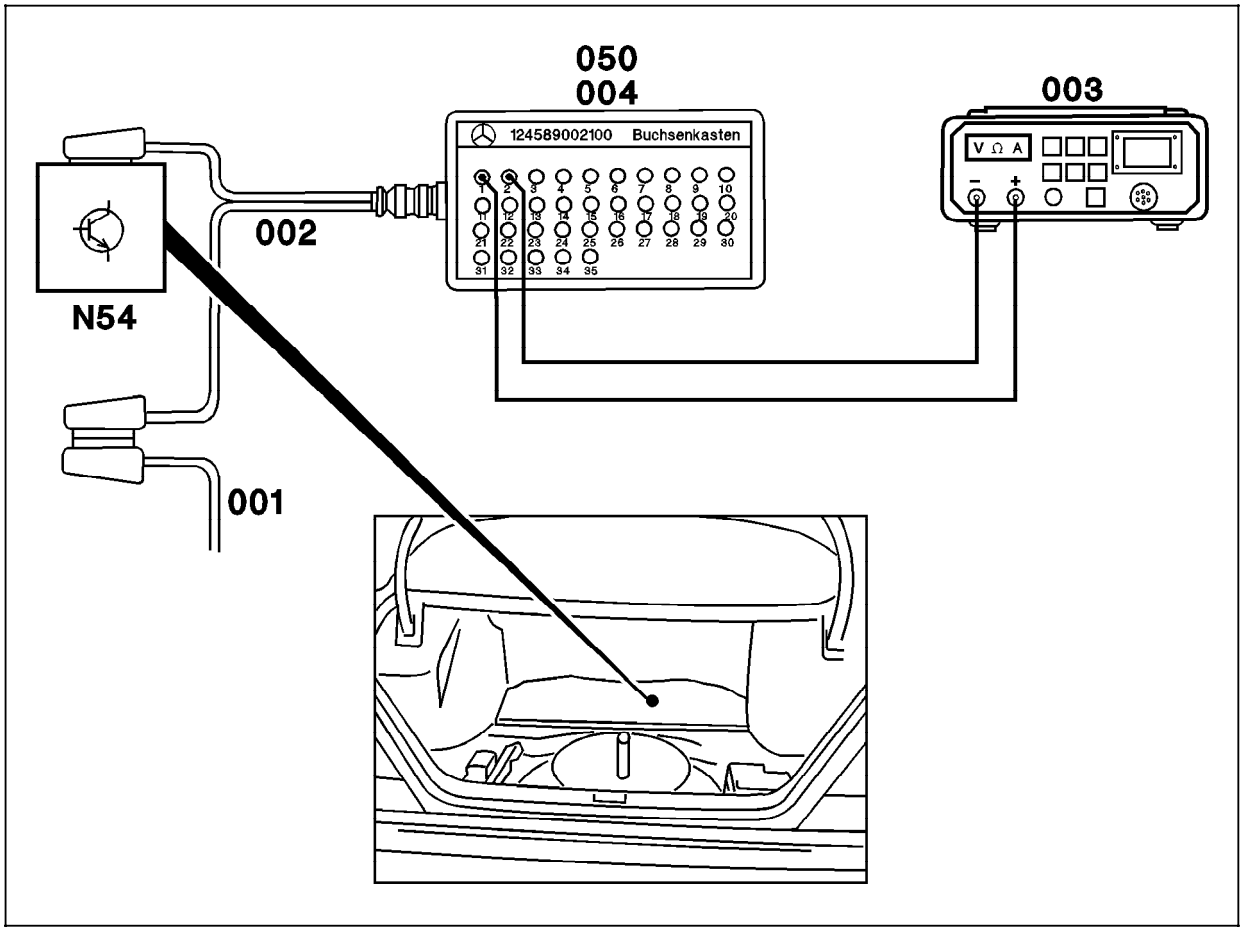
001	IR DAS control module connector
002	Test cable (202 589 15 63 00)
003	Multimeter
004/050	Socket box (35-pole)
N54/1	IR DAS control module

Electrical Test Program – Preparation for Test

Connection Diagram - Socket Box
(model 202 shown)

Note:

- RCL control module (N54)
  for models 129, 140, 210
  see: Components Locations 20/1



P80-5135-57

Figure 2

001	IR DAS control module connector
002	Test cable (126 589 20 63 00)
003	Multimeter
004/050	Socket box (35-pole)
N54	RCL control module

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		**RCL control module (N54)** Voltage supply	N54 27 — (V) — 9	Ignition: **OFF**	11 – 14 V	Wiring, Circuit 30, Circuit 31, ⇒ 1.1
			N54 27 — (V) — 14	Ignition: **OFF**	< 1 V	Wiring, Circuit 15, Circuit 31, ⇒ 1.2
				Ignition: **ON**	11 – 14 V	
1.1		Circuit 30	N54 ⊥ — (V) — 9	Ignition: **OFF**	11 – 14 V	Wiring, Circuit 30
1.2		Circuit 15	N54 ⊥ — (V) — 14	Ignition: **OFF**	< 1 V	Wiring, Circuit 15
				Ignition: **ON**	11 – 14 V	

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0		**IR DAS control module (N54/1)** Voltage supply	N54/1 15 (1.1) — V — 26 (1.12)	Ignition: **OFF**	11 – 14 V	Wiring, Circuit 30, Circuit 31, ⇒ 2.1
			N54/1 15 (1.1) — V — 23 (1.9)	Ignition: **OFF**	< 1 V	Wiring, Circuit 15, Circuit 31, ⇒ 2.2
				Ignition: **ON**	11 – 14 V	
2.1		Circuit 30	N54/1 ⊥ — V — 26 (1.12)	Ignition: **OFF**	11 – 14 V	Wiring, Circuit 30
2.2		Circuit 15	N54/1 ⊥ — V — 23 (1.9)	Ignition: **OFF**	< 1 V	Wiring, Circuit 15
				Ignition: **ON**	11 – 14 V	

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0		**Left front door IR receiver (A26/1)** Voltage supply Models 140, 202, 210 Model 129	N54 13 — (V) — 12 13 — (V) — 5		 11 – 14 V 11 – 14 V	Wiring, ⇒ 3.1 A26/1, N54
3.1		**A26/1** Voltage supply Models 140, 202, 210 Model 129	A26/1 2 — (V) — 3 3 — (V) — 7	Remove A26/1	 11 – 14 V 11 – 14 V	Wiring, N54

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		**Left front door IR receiver (A26/1)** IR signal control line	N54 27 — V — 18	Lock vehicle by pointing IR transmitter at left front door IR receiver, keep IR transmitter button pressed. After vehicle completes locking process, read value. Afterwards, release button and read second value.	Difference of values between button depressed and button released approx. 0.3 – 1.5 V	Wiring, A26/1, IR transmitter key.
5.0	B005 B009	**Left front door IR receiver (A26/1)** Red indicator lamps Models 140, 202, 210 Model 129	N54 27 — 13 3 — 9 27 — 13 1 — 9	Disconnect N54 from . No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	 Red indicator lamps off. Red indicator lamps light.	Wiring, A26/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0	8006 8010	**Left front door IR receiver (A26/1)** Green indicator lamps Models 140, 202, 210 Model 129	N54 27 — 13 10 — 9 27 — 13 20 — 9	Disconnect N54 from . No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	 Green indicator lamps off. Green indicator lamps light.	Wiring, A26/1
7.0		**Trunk lid IR receiver (A26/3)** Voltage supply Models 140, 202, 210 Model 129	N54 24 — V — 5 24 — V — 12		 11 – 14 V 11 – 14 V	Wiring, ⇒ 7.1, A26/3, N54
7.1		**A26/3** Voltage supply Models 140, 202, 210 Model 129	A26/3 2 — V — 3 7 — V — 3	Remove A26/3	 11 – 14 V 11 – 14 V	Wiring, N54

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0		**Trunk lid IR receiver (A26/3)** IR signal control line	N54 27 — V — 4	Lock vehicle by pointing IR transmitter at trunk lid IR receiver, keep IR transmitter button pressed. After vehicle completes locking process, read value. Afterwards, release button and read second value.	Difference of values between button depressed and button released approx. 0.3 – 1.5 V	Wiring, A26/3, IR transmitter.
9.0	B005 B009	**Trunk lid IR receiver (A26/3)** Red indicator lamps	N54 27 — 24 21 — 9	Disconnect N54 from . No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	Red indicator lamps off. Red indicator lamps light.	Wiring, A26/3

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0	8006 8010	**Trunk lid IR receiver (A26/3)** Green indicator lamps Models 140, 202, 210 Model 129	N54 27 — 24 20 — 9 27 — 24 2 — 9	Disconnect N54 from . No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	 Green indicator lamps off. Green indicator lamps light.	Wiring, A26/3
11.0		**Right front door IR receiver (A26/2)** Voltage supply Model 140 Model 129	N54 13 — 22 15 — 22		 11 – 14 V 11 – 14 V	Wiring, ⇒ 11.1, A26/2, N54
11.1		A26/2 Voltage supply Model 140 Model 129	A26/2 2 — 3 7 — 3	Remove A26/2	 11 – 14 V 11 – 14 V	Wiring, N54

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.0		**Right front door IR receiver (A26/2)** IR signal control line Models 129, 140	N54 27 — V — 8	Lock vehicle by pointing IR transmitter at right front door IR receiver, keep IR transmitter button pressed. After vehicle completes locking process, read value. Afterwards, release button and read second value.	Difference of values between button depressed and button released approx. 0.3 – 1.5 V	Wiring, A26/2, IR transmitter.
13.0	8005 8009	**Right front door IR receiver (A26/2)** Red indicator lamps Model 140 Model 129	N54 27 — 13 1 — 9 27 — 15 3 — 9	Disconnect N54 from ⌨. No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	 Red indicator lamps off. Red indicator lamps light.	Wiring, A26/2

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
14.0	8006 8010	**Right front door IR receiver (A26/2)** Green indicator lamps Model 140 Model 129	N54 27 — 13 2 — 9 27 — 15 10 — 9	Disconnect N54 from . No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	 Green indicator lamps off. Green indicator lamps light.	Wiring, A26/2
15.0		**RCL receiver (interior rear view mirror) (A26/7)** Voltage supply Models 202, 210	N54/1 16 (1.2) — V — 25 (1.11)		4.5 – 5.5 V	Wiring, ⇒ 15.1 A26/7, N54, N54/1
15.1		A26/7 Voltage supply	A26/7 13 — V — 8	Remove A26/7	4.5 – 5.5 V	Wiring, N54/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
16.0		**RCL receiver (interior rear view mirror) (A26/7)** IR signal control line Models 202, 210	N54 27 — 8	Lock vehicle by pointing IR transmitter at RCL receiver (interior rear view mirror), keep IR transmitter button pressed. After vehicle completes locking process, read value. Afterwards, release button and read second value.	Difference of values between button depressed and button released approx. 0.3 – 1.0 V	Wiring, A26/7, IR transmitter key.
17.0		**RCL receiver (interior rear view mirror) (A26/7)** Red indicator lamps Models 202, 210	N54 1 — 9 N54/1 15 — 16 (1.1) (1.2)	Disconnect N54 from . Disconnect N54/1 from . No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	 Red indicator lamps off. Red indicator lamps light.	Wiring, A26/7

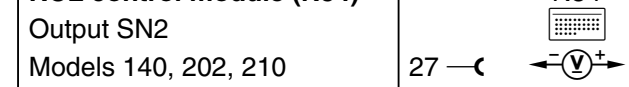
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
18.0		**RCL receiver (interior rear view mirror) (A26/7)** Green indicator lamps Models 202, 210	N54 2 — 9 N54/1 15 (1.1) — 16 (1.2)	Disconnect N54 from . Disconnect N54/1 from . No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	 Green indicator lamps off. Green indicator lamps light.	Wiring, A26/7

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
19.0		**RCL control module (N54)** Output SN1 Models 140, 202, 210	N54 27 — (V) — 11	All doors closed and **locked**.	11 – 14 V	Wiring, ⇒ 1.0, N54
				Unlock vehicle by pointing IR transmitter at left front door IR receiver (A26/1), keeping IR transmitter button pressed.	< 1V **Green** indicator lamps blink.	Wiring, ⇒ 1.0, 3.0, 6.0, A26/1, N54
				Unlock vehicle by pointing IR transmitter at right front door IR receiver (A26/2) (model 140 only), keeping IR transmitter button pressed.	< 1V **Green** indicator lamps blink.	Wiring, ⇒ 1.0, 11.0, 14.0, A26/2, N54
				Unlock vehicle by pointing IR transmitter at trunk lid IR receiver (A26/3), keeping IR transmitter button pressed.	< 1V **Green** indicator lamps blink.	Wiring, ⇒ 1.0, 7.0, 10.0, A26/3, N54
				Unlock vehicle by pointing IR transmitter at RCL receiver (interior rearview mirror) (A26/7) (models 202, 210 only), keeping IR transmitter button pressed.	< 1V **Green** indicator lamps blink.	Wiring, ⇒ 1.0, 2.0, 15.0, 18.0, A26/7, N54, N54/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
20.0		**RCL control module (N54)** Output SN2 Models 140, 202, 210	N54  27 — 23	All doors closed and **unlocked.**	11 – 14 V	Wiring, ⇒ 1.0, N54
				Lock vehicle by pointing IR transmitter at left front door IR receiver (A26/1), keeping IR transmitter button pressed.	< 1V **Red** indicator lamps blink.	Wiring, ⇒ 1.0, 3.0, 5.0, A26/1, N54
				Lock vehicle by pointing IR transmitter at right front door IR receiver (A26/2) (model 140 only), keeping IR transmitter button pressed.	< 1V **Red** indicator lamps blink.	Wiring, ⇒ 1.0, 11.0, 13.0, A26/2, N54
				Lock vehicle by pointing IR transmitter at trunk lid IR receiver (A26/3), keeping IR transmitter button pressed.	< 1V **Red** indicator lamps blink.	Wiring, ⇒ 1.0, 7.0, 9.0, A26/3, N54
				Lock vehicle by pointing IR transmitter at RCL receiver (interior rearview mirror) (A26/7) (models 202, 210 only), keeping IR transmitter button pressed.	< 1V **Red** indicator lamps blink.	Wiring, ⇒ 1.0, 2.0, 15.0, 17.0, A26/7, N54, N54/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
21.0		**IR DAS control module (N54/1)** Input SN1 Models 140, 202, 210	N54/1 15 (1.1) — V — 22 (1.8)	All doors closed and **locked**.	11 – 14 V	Wiring, ⇒ 1.0, N54
				Unlock vehicle by pointing IR transmitter at left front door IR receiver (A26/1), keeping IR transmitter button pressed.	< 1V **Green** indicator lamps blink.	Wiring, ⇒ 1.0, 19.0 A26/1, N54
				Unlock vehicle by pointing IR transmitter at right front door IR receiver (A26/2) (model 140 only), keeping IR transmitter button pressed.	< 1V **Green** indicator lamps blink.	Wiring, ⇒ 1.0, 19.0 A26/2, N54
				Unlock vehicle by pointing IR transmitter at trunk lid IR receiver (A26/3), keeping IR transmitter button pressed.	< 1V **Green** indicator lamps blink.	Wiring, ⇒ 1.0, 19.0 A26/3, N54
				Unlock vehicle by pointing IR transmitter at RCL receiver (interior rearview mirror) (A26/7) (models 202, 210 only), keeping IR transmitter button pressed.	< 1V **Green** indicator lamps blink.	Wiring, ⇒ 1.0, 2.0, 19.0 A26/7, N54, N54/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
22.0		**IR DAS control module (N54/1)** Input SN2 Models 140, 202, 210	N54 15 (1.1) — V — 24 (1.10)	All doors closed and **unlocked.**	11 – 14 V	Wiring, N54
				Lock vehicle by pointing IR transmitter at left front door IR receiver (A26/1), keeping IR transmitter button pressed.	< 1V **Red** indicator lamps blink.	Wiring, ⇒ 1.0, 20.0, A26/1, N54
				Lock vehicle by pointing IR transmitter at right front door IR receiver (A26/2) (model 140 only), keeping IR transmitter button pressed.	< 1V **Red** indicator lamps blink.	Wiring, ⇒ 1.0, 20.0, A26/2, N54
				Lock vehicle by pointing IR transmitter at trunk lid IR receiver (A26/3), keeping IR transmitter button pressed.	< 1V **Red** indicator lamps blink.	Wiring, ⇒ 1.0, 20.0, A26/3, N54
				Lock vehicle by pointing IR transmitter at RCL receiver (interior rearview mirror) (A26/7) (models 202, 210 only), keeping IR transmitter button pressed.	< 1V **Red** indicator lamps blink.	Wiring, ⇒ 1.0, 2.0, 20.0, A26/7, N54, N54/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
23.0		**Lock switch circuit** Left front door lock switch (S86/1) (model 140), Right front door lock switch (S87/1) (models 202, 210), Trunk lid lock switch (S88/2) (models 140, 202, 210)	N54/1 22 (1.8) — V — 26 (1.12)	Disconnect N54/1 from ⌨. Disconnect trunk lid lock switch (S88/2). S86/1 or S87/1: **Rest position**	< 1V	Wiring, S86/1 or S87/1
				S86/1 or S87/1: **Hold: unlock**	11 – 14 V	
			N54/1 24 (1.10) — V — 26 (1.12)	S86/1 or S87/1: **Rest position**	< 1V	
				S86/1 or S87/1: **Hold: lock**	11 – 14 V	
		Left front door lock switch (S86/1) (model 129) and ATA/CF microswitch (S88s1)	N54 11 — V — 9	Disconnect N54 from ⌨. Disconnect trunk lid lock switch (S88/2). S86/1: **Rest position**	< 1V	Wiring, S86/1
				S86/1: **Hold: lock**	11 – 14 V	

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
24.0		**Lock switch circuit** Left front door lock switch (S86/1) (model 140), Right front door lock switch (S87/1) (models 202, 210), Trunk lid lock switch (S88/2) (models 140, 202, 210)	N54/1 22 (1.8) — V — 26 (1.12)	Disconnect N54/1 from ⌨. Connect trunk lid lock switch (S88/2). S88/2: **Rest position** S88/2: **Hold: unlock**	< 1V 11 – 14 V	Wiring, S88/2
			N54/1 24 (1.10) — V — 26 (1.12)	S88/2: **Rest position** S88/2: **Hold: lock**	< 1V 11 – 14 V	
		Left front door lock switch (S86/1) (model 129) and ATA/CF microswitch (S88s1)	N54 11 — V — 9	Disconnect N54 from ⌨. Connect trunk lid lock switch (S88/2). S88/2: **Rest position** S88/2: **Hold: lock**	< 1V 11 – 14 V	Wiring, S88s1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
25.0		**Left front door actuator (S47) Switch and working element** Model 129	N54 27 — ◄ V ► — 6	Disconnect N54 from .	11 – 14 V	Wiring, S47
26.0		**RCL control module (N54) output deactivation (PSE/CL)** Model 129	N54/1 27 — ◄ V ► — 23	All doors closed and **locked**. **Disconnect supply pump (M14/1, M14/2)** **Unlock** vehicle by pointing IR transmitter at one IR receiver, keeping IR transmitter button pressed.	Green indicator lamps blink, vehicle unlocks. 11 – 14 V for approx. 0.6 seconds. (values measurable by using Fluke 83, 88).	Wiring, ⇒ 3.0, 4.0, 6.0 – 8.0, 10.0 –12.0, 14.0, N54

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
27.0		**IR DAS control module (N54/1) output deactivation (PSE/CL, CF, ATA)** Models 140, 202	N54/1 15 (1.1) — V — 17 (1.3)	All doors closed and **locked**.	11 – 14 V	Wiring, N54, N54/1, PSE control module (A37), CF control module (N57), ATA control module (N26).
				Unlock vehicle by pointing IR transmitter at one IR receiver, keeping IR transmitter button pressed.	< 1V Green indicator lamps blink, vehicle unlocks.	Wiring, ⇒ 3.0, 4.0, 6.0 – 8.0, 10.0 – 12.0, 14.0 – 16.0, 18.0, 19.0, 21.0, N54, N54/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
28.0		**IR DAS control module (N54/1) output deactivation (PSE/CL, CF, ATA)** Model 210	N54/1 17 (1.3) — V — 26 (1.12)	All doors closed and **locked**.	< 1V	Wiring, N54, N54/1, Combination control module (N10-1).
				Unlock vehicle by pointing IR transmitter at one IR receiver, keeping IR transmitter button pressed.	6 – 8 V Green indicator lamps blink, vehicle unlocks.	Wiring, ⇒ 3.0, 4.0, 6.0 – 8.0, 10.0, 15.0, 16.0, 18.0, 19.0, 21.0, N54, N54/1

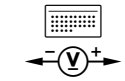
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
29.0		**RCL control module (N54) output activation (PSE/CL)** Model 129	N54 9 — V — 23	All doors closed and **unlocked**. **Lock** vehicle by pointing IR transmitter at one IR receiver, keeping IR transmitter button pressed.	< 1V Red indicator lamps blink, vehicle locks. 11 – 14 V for approx. 0.6 seconds. (values measurable by using Fluke 83, 88).	Wiring, ⇒ 3.0 – 5.0, 7.0 – 9.0, 11.0 – 13.0, N54, N54/1, Supply pump (M14/1, M14/2), Power soft top control module (N57), ATA control module (N26).

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
30.0		**IR DAS control module (N54/1) output activation (PSE/CL, CF, ATA)** Models 140, 202	N54/1 15 (1.1) — V — 18 (1.4)	All doors closed and **unlocked**.	11 – 14 V	Wiring, N54/1, A37, N57, N26
				Lock vehicle by pointing IR transmitter at one IR receiver, keeping IR transmitter button pressed.	< 1V Red indicator lamps blink, vehicle locks.	Wiring, ⇒ 3.0 – 5.0, 7.0 – 9.0, 11.0 – 13.0, 15.0 – 17.0, 20.0, 22.0, N54/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
31.0		**IR DAS control module (N54/1) output activation (PSE/CL, CF, ATA)** Model 210	N54/1  17 (1.3) — 26 (1.12)	All doors closed and **unlocked**.	< 1V	Wiring, N54, N54/1, N10-1
				Lock vehicle by pointing IR transmitter at one IR receiver, keeping IR transmitter button pressed.	11 – 14 V Red indicator lamps blink, vehicle locks.	Wiring, ⇒ 3.0 – 5.0, 7.0 – 9.0, 15.0 – 17.0, 20.0, 22.0, N54, N54/1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
32.0	B1101	**Control line activation (PSE/CL, CF, ATA)** Γ1– Models 140, 202	N54/1 15 (1.1) — Ω — 18 (1.4)	Disconnect N54/1 from ⌨. Disconnect PSE control module (A37).	>20 kΩ	Wiring.
33.0	B1100 B1101	**Control line deactivation/ activation (PSE/CL)** Γ1+ Model 129	N54 23 — Ω — 9	Disconnect N54 from ⌨. Disconnect PSE control module (A37). Disconnect ground wire from 🔋.	>20 kΩ	Wiring.
34.0	B1100 B1101	**Control line deactivation/ activation (PSE/CL)** Γ1– Model 129	N54 23 — Ω — 27	Disconnect N54 from ⌨. Disconnect PSE (M14/1, M14/2). Disconnect ground wire from 🔋.	>20 kΩ	Wiring.
35.0	B1100 B1101	**Control line deactivation/ activation (PSE/CL, CF, ATA)** Γ1+ Model 210	N54/1 26 (1.12) — Ω — 17 (1.3)	Disconnect N54/1 from ⌨. Disconnect combination control module (N10-1). Disconnect ground wire from 🔋.	>20 kΩ	Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
36.0	B1100	**Control line deactivation (PSE/CL, CF, ATA)** Γ1+ Models 140, 202 Model 129	N54/1 26 (1.12) — Ω — 17 (1.3) N54 26 (1.12) — Ω — 17 (1.3)	Disconnect N54/1 from ⌨. Disconnect PSE control module (A37 or M14/1, M14/2). Disconnect ground wire from 🔋. Disconnect ATA control module (N26). Disconnect power soft top control module (N52) (model 129 only).	>20 kΩ	Wiring.
37.0	B1100	**Control line deactivation (PSE/CL, CF, ATA)** Γ1– Models 140, 202 Model 129	N54/1 15 (1.1) — Ω — 17 (1.3) N54 11 — Ω — 27	Disconnect N54/1 from ⌨. Disconnect PSE control module (A37 or M14/1, M14/2). Disconnect ATA control module (N26). Disconnect power soft top control module (N52) (model 129 only).	>20 kΩ	Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
38.0	B1101	**Control line activation (PSE/CL, CF, ATA)** Γ1+ Models 140, 202	N54/1 26 (1.12) — Ω — 18 (1.4)	Disconnect N54/1 from ⌨. Disconnect PSE control module (A37). Disconnect ground wire from 🔋.	>20 kΩ	Wiring.
39.0	B1100 B1101	**Control line deactivation/ activation (PSE/CL, CF, ATA)** Γ1– Model 210	N54/1 15 (1.1) — Ω — 17 (1.13)	Disconnect N54/1 from ⌨. Disconnect combination control module (N10-1).	>20 kΩ	Wiring.
40.0	B1704	**Coil for transponder (L11) activation**	N54/1 1 (3) — f — N54/1 2 (3)	Disconnect connector 3 from N54/1 Ignition: **ON**	125 kHz for approx. 0.2 – 0.8 seconds. (values measurable by using Fluke 83, 88).	N54/1
41.0	B1704	**Coil for transponder (L11)** Resistance	L11 1 — Ω — L11 2	Disconnect connector 3 from N54/1	4 – 6 Ω	L11

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
42.0		**CAN L data line** Motor electronics activation –//– (CAN only)	N54/1 13 — Ω — 1)	Disconnect N54/1 from . Disconnect engine control module.	<1 Ω	Wiring.
43.0		**CAN H data line** Motor electronics activation –//– (CAN only)	N54/1 14 — Ω — 1)	Disconnect N54/1 from . Disconnect engine control module.	<1 Ω	Wiring.
44.0		**CAN L data line** Motor electronics activation ⌐¬+ (CAN only)	N54/1 13 — Ω — 26 (1.12)	Disconnect N54/1 from . Disconnect ground wire from . Disconnect engine control module.	>20 kΩ	Wiring.
45.0		**CAN H data line** Motor electronics activation ⌐¬+ (CAN only)	N54/1 14 — Ω — 26 (1.12)	Disconnect N54/1 from . Disconnect ground wire from . Disconnect engine control module.	>20 kΩ	Wiring.

1) Prior to testing, please see appropriate ETM (group 7) to determine control module harness socket number.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
46.0		**CAN L data line** Motor electronics activation ⌜⌝– (CAN only)	N54/1 15 — (1.1) Ω — 13	Disconnect N54/1 from . Disconnect engine control module.	>20 kΩ	Wiring.
47.0		**CAN H data line** Motor electronics activation ⌜⌝– (CAN only)	N54/1 15 — (1.1) Ω — 14	Disconnect N54/1 from . Disconnect engine control module.	>20 kΩ	Wiring.
48.0		**CAN H/CAN L data line** Motor electronics activation ⌜⌝ to each other (CAN only)	N54/1 13 — Ω — 14	Disconnect N54/1 from . Disconnect engine control module.	>20 kΩ	Wiring.

Version Coding

- The IR DAS control module (N54/1) must be coded according to menu item 6 on the HHT‘s display.
- The version coding is menu-driven.

Possible version coding

Version	Model 129	Model 140	Model 202	Model 210
Motor electronics	X	X	X	X
Vehicle version	X	X	X	X
Country version	X	X	X	X
Convenience Feature (CF)	X	X	X	X
Locking/unlocking verification via turn signal system	X	X	X	X
Remote trunk lid release (RTR)	–	X	X	X