

16.6 Model 210 as of M.Y. 1999

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Diagnosis - Function Test (driver/passenger-side airbag/side airbag/window bag)**⚠ CAUTION!**

Risk of Injury when performing Diagnostic Tests and repairs on components of the SRS system.

Store both airbags and side airbags with opening surface pointing upward.

Do not expose to temperatures above 100°C.

Interrupt any electrical current from reaching the airbag unit.

⚠ CAUTION!

Risk of injury if airbag units and ETR units are ignited accidentally or if stored with the opening end facing downward which may cause the accidentally ignited components to fly about causing injury. Danger to persons also exists if the components are disposed of by cutting apart with cutting torches or other cutting/separation devices. Danger also exists if disposing the untriggered units via refuse collection or via smelting/carbonizing companies.

Protective measures/Supervision

- Place removed airbag unit with the opening side facing upward.
- Allow only **properly trained dealer staff** to supervise, purchase, transport, store, test/replace any of the SRS components.
- Install all airbag or ETR units once pulled from the parts department.
- Protect all airbag or ETR units from any sparks, open flame, or temperatures above 100°C.
- Do not transport airbag or ETR units in the passenger compartment, rather transport securely in their **original packaging** in the trunk.
- Do not allow oil, grease or cleaning agents come in contact with the airbag or ETR units
- Perform SRS tests only with approved test equipment (such as HHT), while installed in the vehicle **without** occupants.

- When reconnecting the vehicle battery or any outside electrical source, with the ignition turned ON, do not allow any occupants inside the vehicle.
- Airbag or ETR units which have been dropped from a height greater than 18 inches must be replaced.
- Prior to disposing the airbag or ETR units, the units must be made un-useable by discharging.
- In order to render the airbag and ETR unit un-useable, the specially made discharge harness must be used and at the same time maintain a **safe distance of at least 33 feet** from the units being discharged.

Prior to undertaking any chassis/body repairs, installation/repair work on airbag and ETR units, or any components which come in contact with the airbag and ETR units, or are part of the electrical circuit of airbag and ETR units (such as installation of the steering wheel), the following conditions must be met:

- Remove ignition key.
- Disconnect any outside source of electrical circuit (i.e. battery charger).
- When performing interior repairs or welding operations, disconnect the connector from the SRS control module.

 **CAUTION!**

Risk of Injury when performing Diagnostic Tests and repairs on components of the SRS system.

Store both airbags and side airbags with opening surface pointing upward.

Do not expose to temperatures above 100°C.

Interrupt any electrical current from reaching the airbag unit.

Preparation for Test:

1. Review 11, 12, 13, 20, 22, 31,
2. Review following page (11/2).

Test step/Test scope	Test condition	Nominal value	Possible cause/Remedy ¹⁾
⇒ 1.0 Supplemental Restraint System (SRS)	Ignition key in position "2".	SRS MIL (A1e15) comes on and then extinguishes after approximately 4 – 20 seconds.	12
⇒ 2.0 Front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48)	MB child seat model: "Babysafe" not installed on passenger seat. Ignition key in position "2".	Automatic child seat recognition warning lamp (N72e1) illuminates and then goes out after approx. 4 seconds.	Automatic child seat recognition warning lamp (N72e1) illuminates and does not go out: 12 Automatic child seat recognition warning lamp (N72e1) does not illuminate: 23 ⇒ 33.0, 23 ⇒ 31.0

¹⁾ Observe Preparation for Test, see 22.

Diagnosis - Function Test (driver/passenger-side airbag/side airbag/window bag)**Function of the SRS MIL (A1e15):**

- SRS system is fully functional, if the SRS MIL goes out after 4 seconds.
- SRS MIL goes out after 2 minutes, system fault noted, occupant protection not affected.
Vehicle without side airbag:
 - Low battery voltage
 - SRS MIL
 - Seat belt buckle latch (USA)
 Vehicle with side airbag:
 SRS system is fully functional, if SRS MIL goes out after approx. 4 – 20 seconds.
 SRS MIL remains illuminated as long as the following faults are present:
 - Low battery voltage
 - SRS MIL
 - Communication fault in the side bag sensors
 - Seat belt buckle latch (USA)
 - Seat occupation recognition
- SRS MIL remains illuminated continuously, which may result in a non-deployment or a possible false airbag deployment.
- SRS MIL blinks after the replacement of the control module, the control module has not been programmed/parametered.

Note: SRS MIL illumination can only be erased via the HHT, if no current DTC's are stored in memory.

- Function of automatic child seat recognition warning lamp (E16, N72e1) (AIRBAG OFF):
If the **"Babysafe" child seat is installed:**
The automatic child seat recognition warning lamp (E16, N72e1) (AIRBAG OFF) is illuminated and thus signals the recognition of the **"Babysafe"** child seat.
The passenger-side airbag is turned off.
Side airbag and ETR remain in use.

If the **"Babysafe" child seat is NOT** installed:
Automatic child seat recognition warning lamp (E16, N72e1) (AIRBAG OFF) goes out after approx. 4 seconds.
If the automatic child seat recognition warning lamp (E16, N72e1) (AIRBAG OFF) **does not go out** after approx. 4 seconds, this indicates a fault in the ACSR system.

When turning on the vehicle illumination, the automatic child seat recognition warning lamp (N72e1) is dimmed as well.

Diagnosis - Diagnostic Trouble Code (DTC) Memory (driver/passenger-side airbag/side airbag/windowbag)

Preliminary work:
 Diagnosis - Function Test 11

Preparation for DTC readout

1. Review 11, 12, 13, 20, 22, 31,
2. Connect Hand-Held Tester (HHT) as per connection diagram, see section 0, and readout DTC memory,
3. Fuses OK,
4. Battery voltage 11 – 14 V.

⚠ CAUTION!

Do not connect battery trickle charger.

⚠ CAUTION!

Risk of Injury when performing Diagnostic Tests and repairs on components of the SRS system and/or the ETR.
 Store both airbags and side airbags with opening surface pointing upward.
 Do not expose to temperatures above 100°C.

Interrupt any electrical current from reaching the airbag unit.

Review pages: 11/1 and 11/2



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



When installing additional accessories, observe harness clearances near SRS sensor lines.

Test equipment; See MBUSA Standard Service Equipment Program


Hand-Held Tester (HHT) ¹⁾	See S.I. in groups 58 and 99.
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¹⁾ Available through the MBUSA Standard Equipment Program.

Diagnosis - Diagnostic Trouble Code (DTC) Memory (driver/passenger-side airbag/side airbag/windowbag)

A current fault is indicated by the DTC being highlighted in black.
Additional detailed information is given with most DTC's, which will indicate possible faults conditions or portions thereof:

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

Fault frequency and time span of the fault can be read by pressing the  key.

Fault frequency:

Faults are noted by frequency of occurrence, i.e.: 5 periodic faults, 5 occurrences, eliminated 5 times.

Time span:

The amount of time elapsed since last fault, or since fault eliminated itself.

Actual values:

Four displays are possible:

√, F, ON, OFF.

√ : Noted values are within the nominal values.

F : Noted values are **outside** the nominal values.

ON : Seat belt buckle latched, front passenger seat **occupied**.

OFF : Seat belt buckle **not** latched, front passenger seat **not occupied**.

Contrary to the DTC memory, actual values are updated continuously, even during diagnosis, so that, e.g.: by moving components, or connections and wiring harnesses, intermittent failures may be indicated, recognized.

Additional Actual Values:

If so equipped, with Seat Occupied Recognition (SOR) with Automatic Child Seat Recognition (ACSR) the additional information is shown:

Function: F / SOR / ACSR

(SOR continues to be active regardless if MB Child seat "Babysafe" is not used or recognized).

Passenger seat: **occupied / not occupied**


Child seat: **F / recognized / not used**

Facing direction of child seat: **F / forwards / backwards**




The actual values: SOR/ACSR are updated approx. every 15 seconds.

Diagnosis - Diagnostic Trouble Code (DTC) Memory (driver/passenger-side airbag/side airbag/windowbag)

DTC 	Possible cause	Hints	Test step/Remedy ¹⁾
No communication with HHT	Diagnostic line		23⇒ 34.0
No fault codes	No fault codes recognized.	In case of complaint; Perform Electrical Test: 23	23
B1000	ARMIN control module (N2/7)		N2/7
B1476	SRS MIL (A1e15)		23⇒ 2.0
B1010	Voltage supply		23⇒ 1.0
B1859	Driver airbag squib (R12/3)		23⇒ 4.0, 23⇒ 3.0
B1861	Front passenger AB squib (R12/8)		23⇒ 6.0, 23⇒ 5.0
B1863	Driver ETR squib (R12/1)		23⇒ 18.0, 23⇒ 17.0
B1864	Front passenger ETR squib (R12/2)		23⇒ 20.0, 23⇒ 19.0
B1865	LR ETR squib (R12/6)		23⇒ 24.0, 23⇒ 23.0
B1866	RR ETR squib (R12/7)		23⇒ 26.0, 23⇒ 25.0


1) Observe Preparation for Test, see 22.

Diagnosis - Diagnostic Trouble Code (DTC) Memory (driver/passenger-side airbag/side airbag/windowbag)

DTC 	Possible cause	Hints	Test step/Remedy ¹⁾
B1867	Left front side airbag squib (R12/20)		23⇒ 8.0, 23⇒ 7.0
B1868	Left rear windowbag squib (R12/22)		23⇒ 28.0, 23⇒ 27.0
B1869	RR side airbag squib (R12/12)		23⇒ 12.0, 23⇒ 11.0
B1871	Right front side airbag squib (R12/21)		23⇒ 10.0, 23⇒ 9.0
B1872	Right rear side airbag squib (R12/23)		23⇒ 30.0, 23⇒ 29.0
B1873	RR side airbag squib (R12/12)		23⇒ 14.0, 23⇒ 13.0
B1321	Left front seat belt buckle switch (AB/ETR) (S68/3)		23⇒ 21.0
B1322	Right front seat belt buckle switch (AB/ETR) (S68/4)		23⇒ 22.0
B1310	Left side airbag sensor (A53/1)		23⇒ 15.0
B1311	Right side airbag sensor (A54/1)		23⇒ 16.0

1) Observe Preparation for Test, see 22.

Diagnosis - Diagnostic Trouble Code (DTC) Memory (driver/passenger-side airbag/side airbag)

DTC 	Possible cause	Hints	Test step/Remedy ¹⁾
B1315	Front passenger seat occupied recognition with automatic child seat recognition (ACSR (B48))		23⇒ 31.0
B1875	Digital crash output		23⇒ 35.0
B1876	Analoge crash output		23⇒ 36.0
B1878	Automatic child seat recognition warning lamp (N72e1) (AIRBAG OFF)		23⇒ 33.0

¹⁾ Observe Preparation for Test, see 22.

Diagnosis - Fault Frequency, Time Span (driver/passenger-side airbag/side airbag)

For each fault a fault time span is provided, showing start and end of fault.

AB	DTC Memory
Fault Frequency 4	
Time span since first fault is: 6 h. 11 min. 14 sec.	
Time span since last fault noted is: 4 h. 35 min. 12 sec.	
	⏪

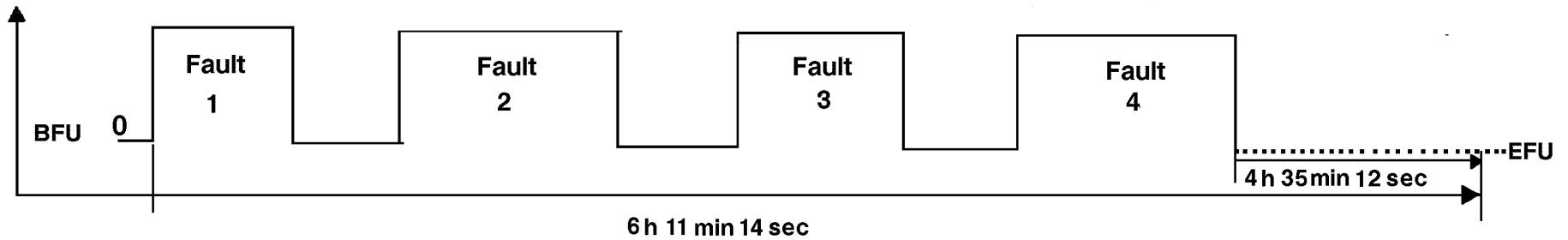
Example:

- Fault frequency:
- Time span since the first fault is:
- Time span since last fault noted is:

Periodic Faults:

- Fault noted 4 times.
- 6 h. 11 min. 14 sec.
- 4 h. 35 min. 12 sec.

Fault Frequency (count)



Time span (h, min, sec.) 0 Fault not present.
 BFU: Start of Fault Time Span. 1, 2, 3, 4 Fault present (occured 4 times, did not occur 4 times).
 EFU: End of Fault Time Span.

U00-0001-JH

Diagnosis - Complaint Related Diagnostic Chart (driver/passenger-side airbag/side airbag/windowbag)

 **CAUTION!**

Risk of Injury when performing Diagnostic Tests and repairs on components of the SRS system.

Store both airbags and side airbags with opening surface pointing upward.

Do not expose to temperatures above 100°C.

Interrupt any electrical current from reaching the airbag unit.

Review pages; 11/1 and 11/2

Preparation for Test:

1. Review 11, 12, 13, 20, 22, 31,
2. Review: GF91.60-P-2003A prior to performing test.

 **i**

Notes regarding front passenger seat occupied recognition with Automatic Child Seat Recognition (ACSR) (B48):

If no DTCs are present, the automatic child seat recognition warning lamp (E16, N72e1) **illuminates only** when the front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48) has recognized the MB child seat: "Babysafe".

With a **non-occupied front passenger seat** (either with MB child seat: "Babysafe" or person), the AB, sidebag and ETR are **deactivated**, therefore the automatic child seat recognition warning lamp (E16, N72e1) **will not illuminate**.

Complaint/Problem	Possible cause	Test step/Remedy
SRS MIL (A1e15) with ignition key in position "2": <ul style="list-style-type: none"> • does not illuminate • does not go out after approximately 4 – 20 seconds • flickers • illuminates for 2 minutes • remains illuminated continuously 		23 ⇒ 2.0
SRS MIL (A1e15) blinks with ignition key in position "1", after the control module has been replaced.	SRS control module not coded.	Control Module Coding Programming Vehicle Equipment 31

Diagnosis - Complaint Related Diagnostic Chart (driver/passenger-side airbag/side airbag/windowbag)

Complaint/Problem	Possible cause	Test step/Remedy
<p>Automatic child seat recognition warning lamp (E16, N72e1) (AIRBAG OFF), does not illuminate with properly installed MB "Babysafe" child seat on the front passenger seat.</p>	<p>Front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48) does not recognize the installed baby seat (defective baby seat or transponder in baby seat does not work) on the passenger seat, Baby seat has been improperly located on the front passenger seat, Automatic child seat recognition warning lamp (E16, N72e1).</p>	<p>23 ⇒ 31.0 23 ⇒ 33.0</p>
<p>SRS MIL (A1e15) and automatic child seat recognition warning lamp (N72e1) are illuminated continuously.</p>	<p>Only one transponder (resonator) of the "baby safe" child seat has been recognized. Non-approved child seat has been recognized, Improper version coding for front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48), Data line fault from ARMIN control module (N2/7) to front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48), Front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48).</p>	<p>23 ⇒ 31.0 Perform proper version coding, see 31 23 ⇒ 31.0 Readout DTC fault codes from SRS system, see 12</p>

Electrical Test Program - Component Locations

Driver/passenger-side airbag/
side airbag/windowbag

Model 210 with rear door sidebags and
rear seat belt ETR's

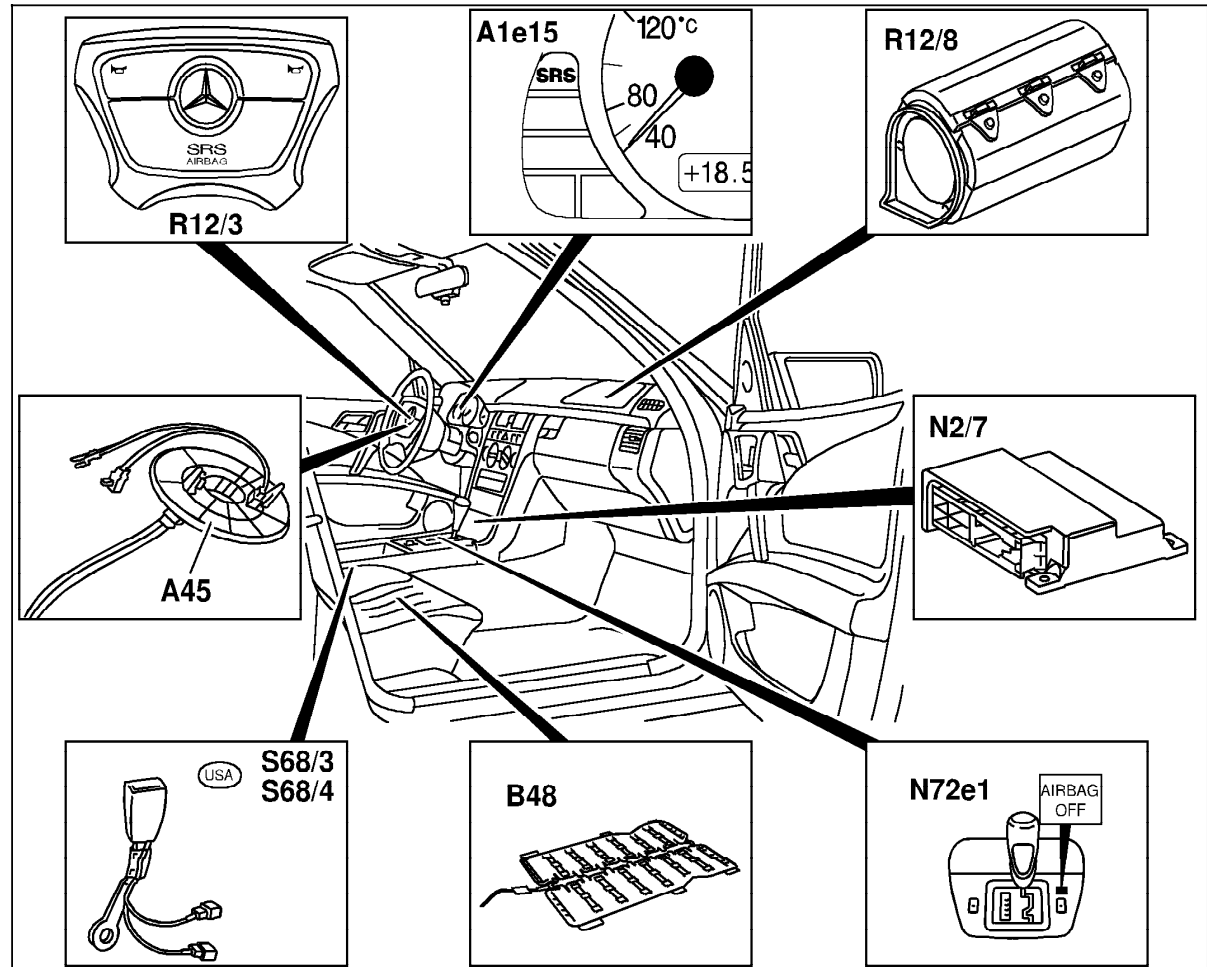


Figure 1

- A1e15 SRS MIL
- A45 Horn/airbag clock spring contact
- B48 Front passenger seat occupied recognition with automatic child seat recognition (ASCR)
- N2/7 ARMIN control module
- N72e1 Automatic child seat recognition warning lamp
- R12/3 Driver airbag squib
- R12/8 Front passenger airbag squib
- S68/3 Left front seat belt buckle switch (airbag/ETR) (USA)
- S68/4 Right front seat belt buckle switch (airbag/ETR) (USA)

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Electrical Test Program - Component Locations

Driver/passenger-side airbag/side airbag/windowbag

Model 210 with rear door sidebags, rear seat belt ETR's and windowbags

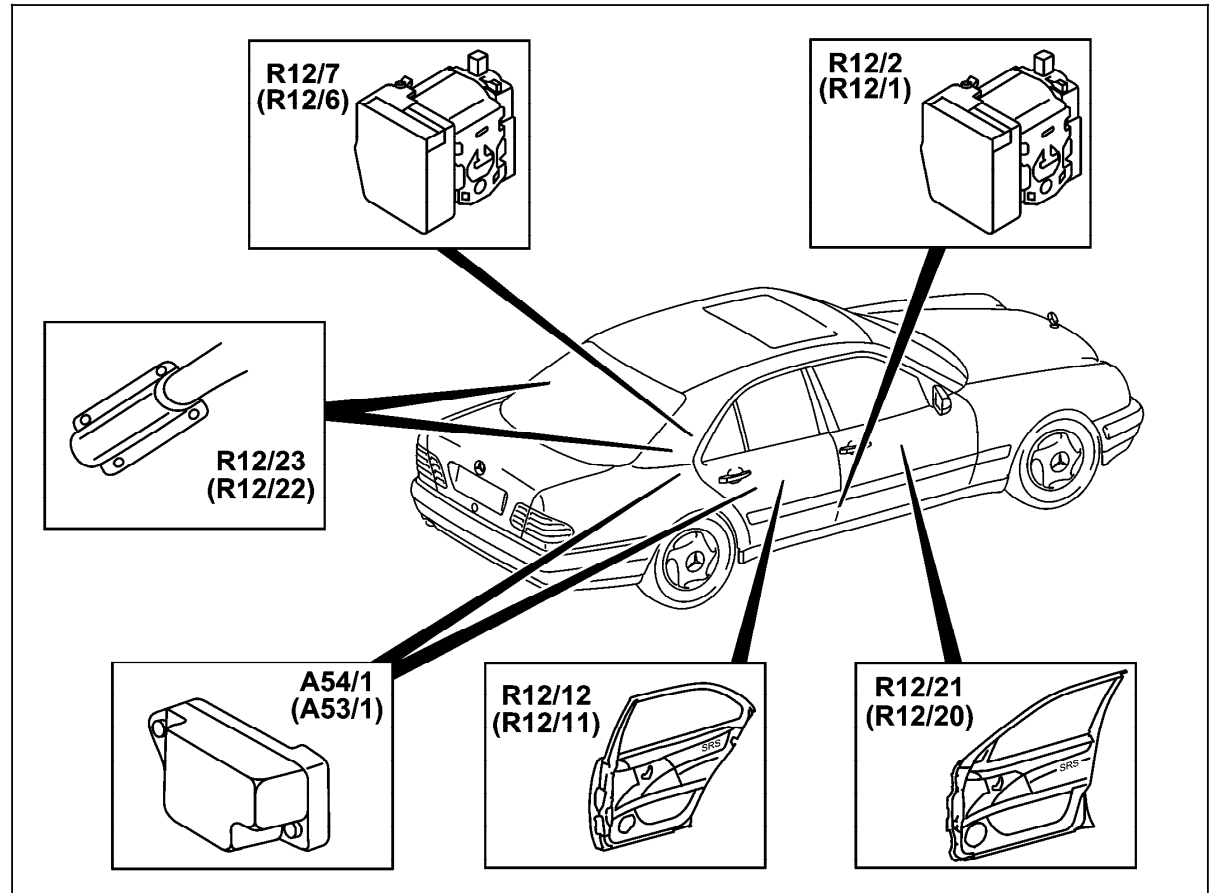


Figure 2

- A53/1 Left side airbag sensor
- A54/1 Right side airbag sensor
- R12/1 Left front ETR squib
- R12/2 Right front ETR squib
- R12/6 LR ETR squib
- R12/7 RR ETR squib
- R12/11 LR side airbag squib
- R12/12 RR side airbag squib
- R12/20 Left front side airbag squib
- R12/21 Right front side airbag squib
- R12/22 Left rear side windowbag squib
- R12/23 Right rear side window squib

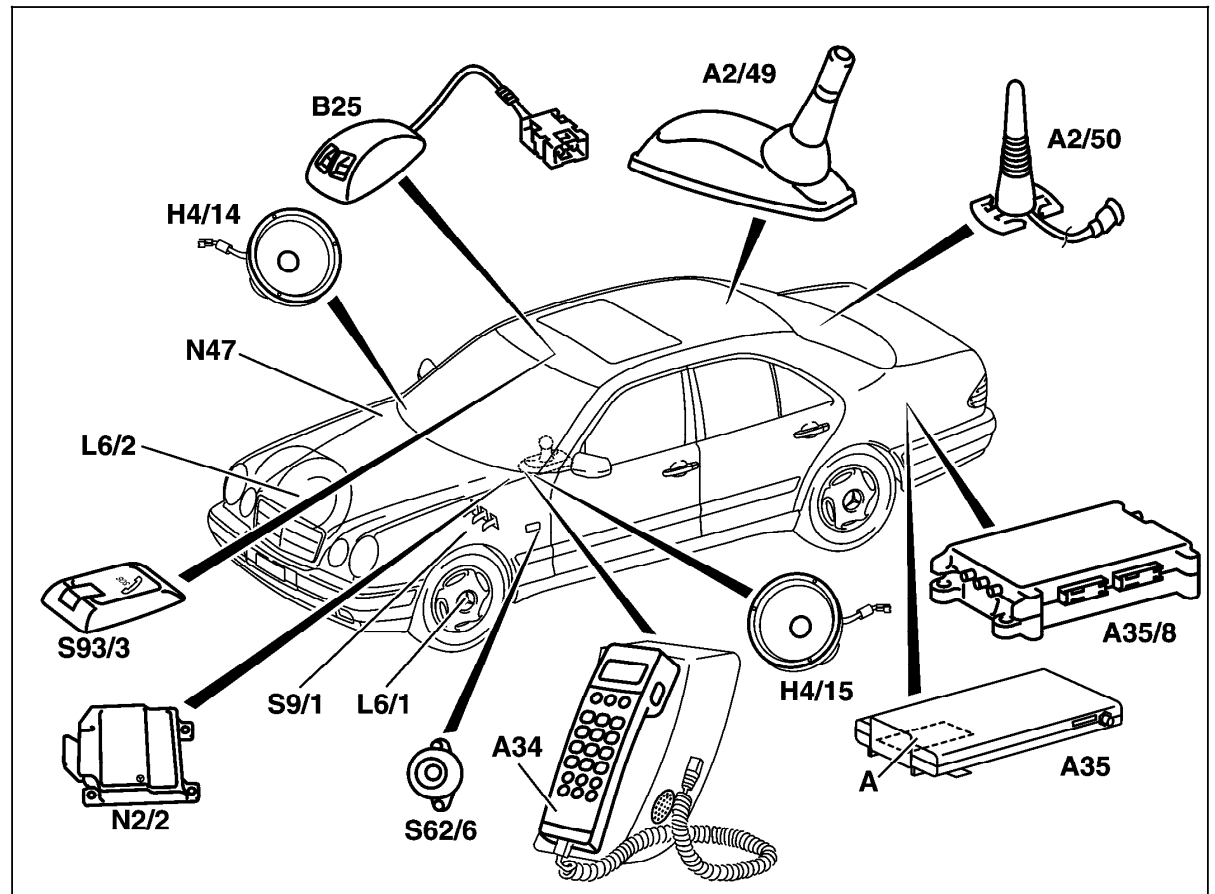
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Electrical Test Program – Location of Components

TELE AID System

Figure 3

- A Telephone card (not **USA**)
- A2/49 CTEL/GPS (Global Positioning System) roof antenna
- A2/50 TELE AID backup antenna
- A34 CTEL handset (not **USA**)
- A35 CTEL transmitter-receiver
- A35/8 Emergency call system control module (TELE AID)
- B25 Hands-free microphone
- H4/14 Right front HFS speaker
- H15/4 Left front HFS speaker
- L6/1 Left front VSS
- L6/2 Right front VSS
- N2/2 SRS control module
- N47 Traction system control module
- S9/1 Stop lamp switch
- S62/6 Panic alarm activation switch (not **USA**)
- S93/3 Emergency call system pushbutton (TELE AID)



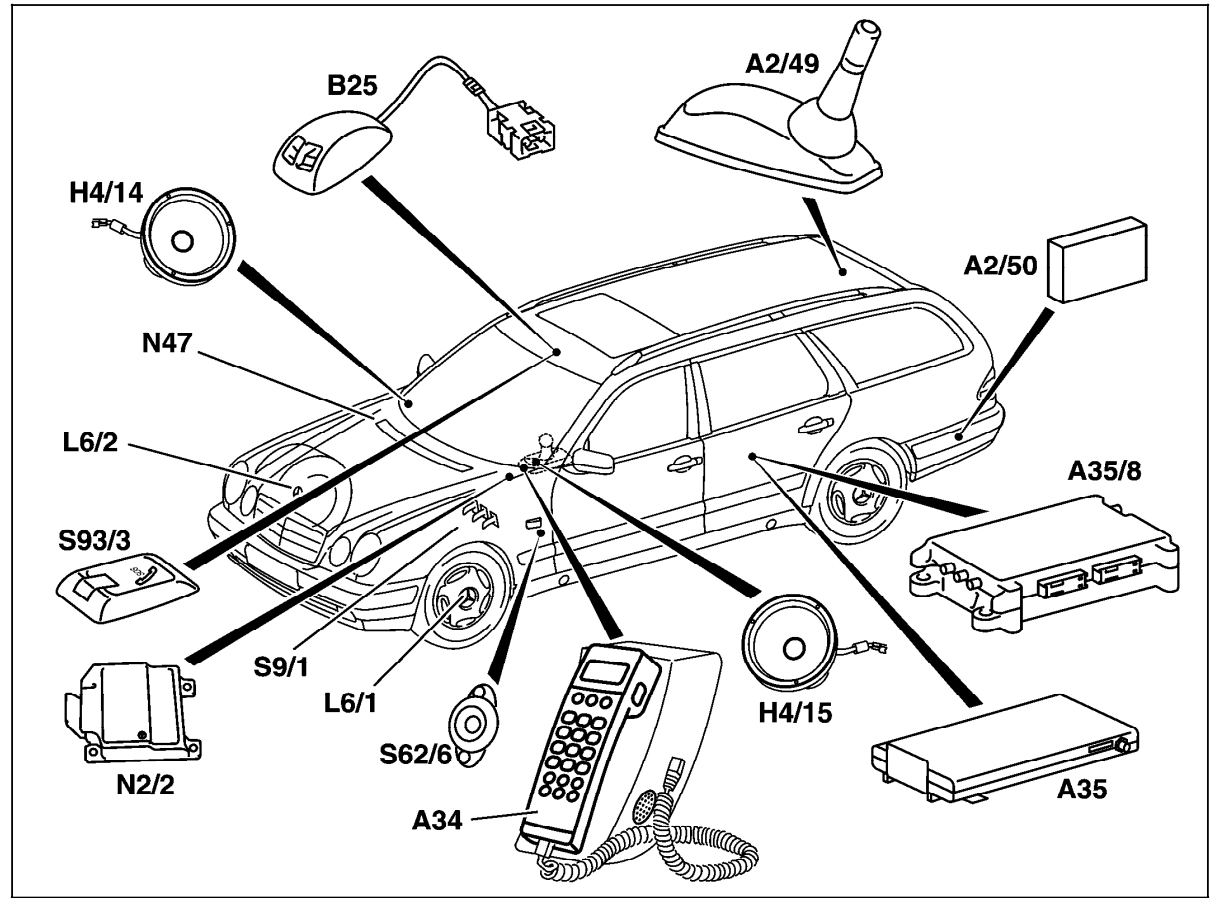
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Electrical Test Program – Location of Components

TELE AID System

Figure 4

- A Telephone card (not **USA**)
- A2/49 CTEL/GPS (Global Positioning System) roof antenna
- A2/50 TELE AID backup antenna
- A34 CTEL handset (not **USA**)
- A35 CTEL transmitter-receiver
- A35/8 Emergency call system control module (TELE AID)
- B25 Hands-free microphone
- H4/14 Right front HFS speaker
- H15/4 Left front HFS speaker
- L6/1 Left front VSS
- L6/2 Right front VSS
- N2/2 SRS control module
- N47 Traction system control module
- S9/1 Stop lamp switch
- S62/6 Panic alarm activation switch (not **USA**)
- S93/3 Emergency call system pushbutton (TELE AID)



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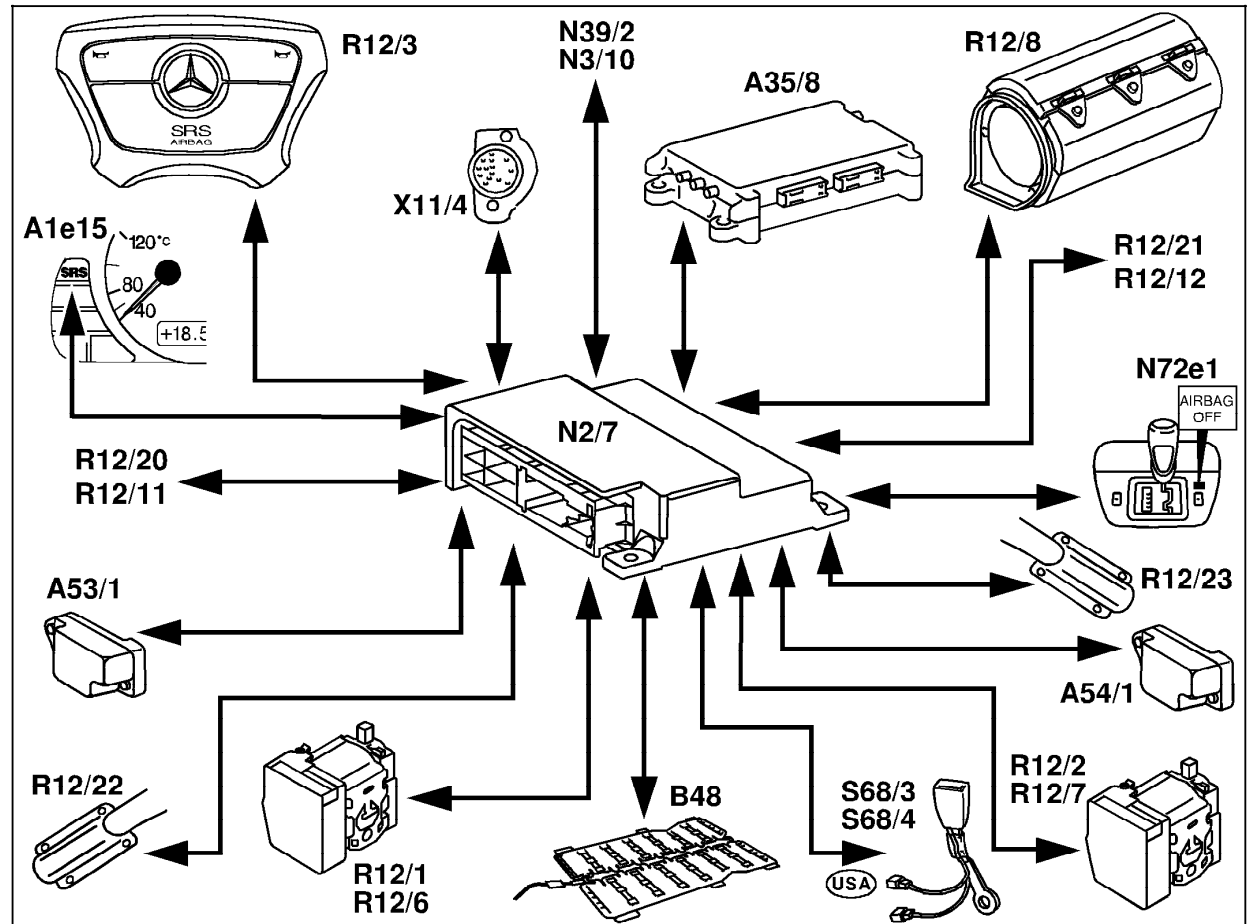
Electrical Test Program – Connection of Components

Connection of Components

Model 210 with rear door sidebags, rear seat belt ETR's and windowbags

Figure 1

- A1e15 SRS MIL
- A35/8 Emergency call system control module (TELE AID) (USA)
- A53/1 Left side airbag sensor
- A54/1 Right side airbag sensor
- B48 Front passenger seat occupied recognition with automatic child seat recognition (ACSR)
- N2/7 ARMIN control module
- N3/10 Engine control module (ME-SFI)
- N39/2 EDC control module
- N72e1 Automatic child seat recognition warning lamp
- R12/1 Driver ETR squib
- R12/2 Front passenger ETR squib
- R12/3 Driver AB squib
- R12/6 LR ETR squib
- R12/7 RR ETR squib
- R12/8 Front passenger AB squib
- R12/11 LR side airbag squib
- R12/12 RR side airbag squib
- R12/20 Left front side airbag squib
- R12/21 Right front side airbag squib
- R12/22 Left rear windowbag squib
- R12/23 Right rear windowbag squib
- S68/3 Left front seat belt buckle switch (airbag/ETR) (USA)
- S68/4 Right front seat belt buckle switch (airbag/ETR) (USA)
- X11/4 Data link connector (DTC readout)



P91.60-2029-06

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Preliminary work:
 Diagnosis - Diagnostic Trouble Code (DTC) Memory 12
 Diagnosis - Fault Frequency, Time Span 13

Electrical Wiring Diagram:

Electrical Troubleshooting Manual, Model 210, Vol. 2, group 91

Preparation for Test:

 **CAUTION!**

Risk of injury if airbag units and ETR units are ignited accidentally or if stored with the opening end facing downward which may cause the accidentally ignited components to fly about causing injury. Danger to persons also exists if the components are disposed of by cutting apart with cutting torches or other cutting/separation devices. Danger also exists if disposing the untriggered units via refuse collection or via smelting/carbonizing companies.

Protective measures/Supervision

- Place removed airbag unit with the opening side facing downward.
- Allow only **properly trained dealer staff** to supervise, purchase, transport, store, test/replace any of the SRS components.
- Install all airbag or ETR units once pulled from the parts department.
- Protect all airbag or ETR units from any sparks, open flame, or temperatures above 100°C.
- Do not transport airbag or ETR units in the passenger compartment, rather transport securely in their **original packaging** in the trunk.
- Do not allow oil, grease or cleaning agents to come in contact with the airbag or ETR units.
- Perform SRS tests only with approved test equipment (such as HHT), while installed in the vehicle **without** occupants inside vehicle.

- When reconnecting the vehicle battery or any outside electrical source, with the ignition turned **ON**, do not allow any occupants inside the vehicle.
- Airbag or ETR units which have been dropped from a height greater than 18 inches must be replaced.
- Prior to disposing the airbag or ETR units, the units must be made un-useable by discharging.
- In order to render the airbag and ETR unit un-useable, the specially made discharge harness must be used and at the same time maintain a **safe distance of at least 33 feet** from the units being discharged.

Prior to undertaking any chassis/body repairs, installation/repair work on airbag and ETR units, or any components which come in contact with the airbag and ETR units, or are part of the electrical circuit of airbag and ETR units (such as removal of the steering wheel), the following conditions must be met:

- Remove ignition key.
- Disconnect any outside source of electrical circuit (i.e. battery charger).
- When performing welding operations, disconnect the connector from the SRS control module.

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Preparation for Test (continued):

 **CAUTION!**

Risk of Injury when performing Diagnostic Tests and repairs on components of the SRS system.

Store both airbags and side airbags with opening surface pointing upward.

Do not expose to temperatures above 100°C.

Interrupt any electrical current from reaching the airbag unit.

Review pages 11/1 and 11/2

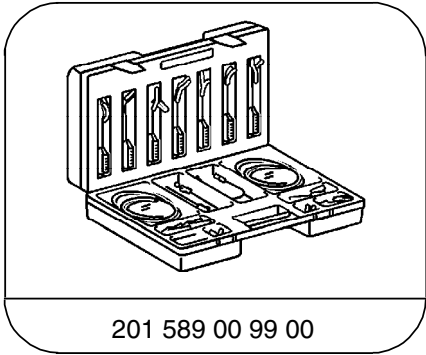
1. Review: Section 0, and 12, 13, 14, 20, 21, 22,
2. Also review: GF91.60-P-2003A,
2. Check fuses,
3. Battery voltage 11 – 14 V

 **CAUTION!**

Do not connect battery trickle charger.

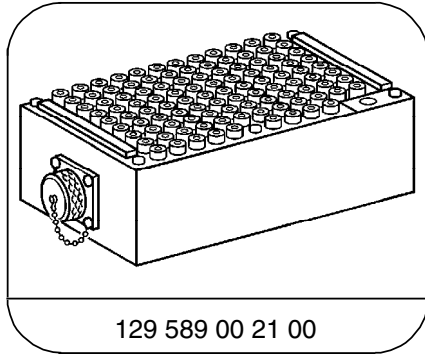
Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Special Tools



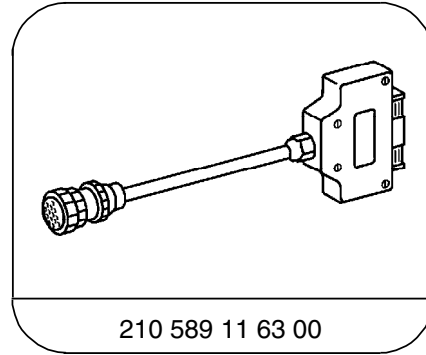
201 589 00 99 00

Electrical connecting set



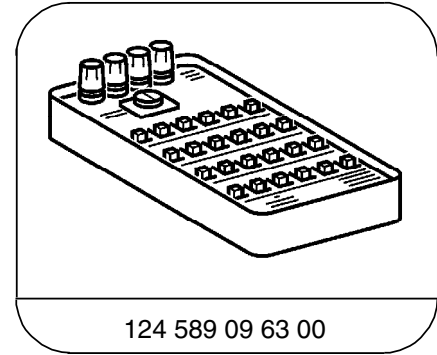
129 589 00 21 00

126-pin socket box



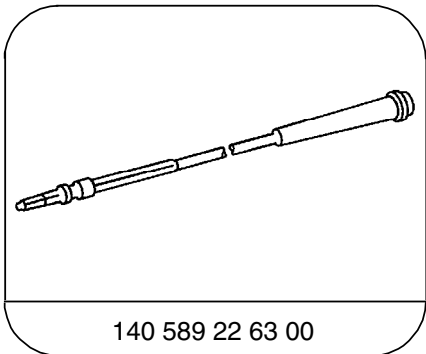
210 589 11 63 00

Test cable



124 589 09 63 00

Ohm decade



140 589 22 63 00

Adapter cable

Test equipment; See MBUSA Standard Service Equipment Program

Description	Brand, model, etc.
Digital multimeter	Fluke models 23, 77 III, 83, 85, 87

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Connection Diagram - Socket Box
Tester/SRS Control Module Connector

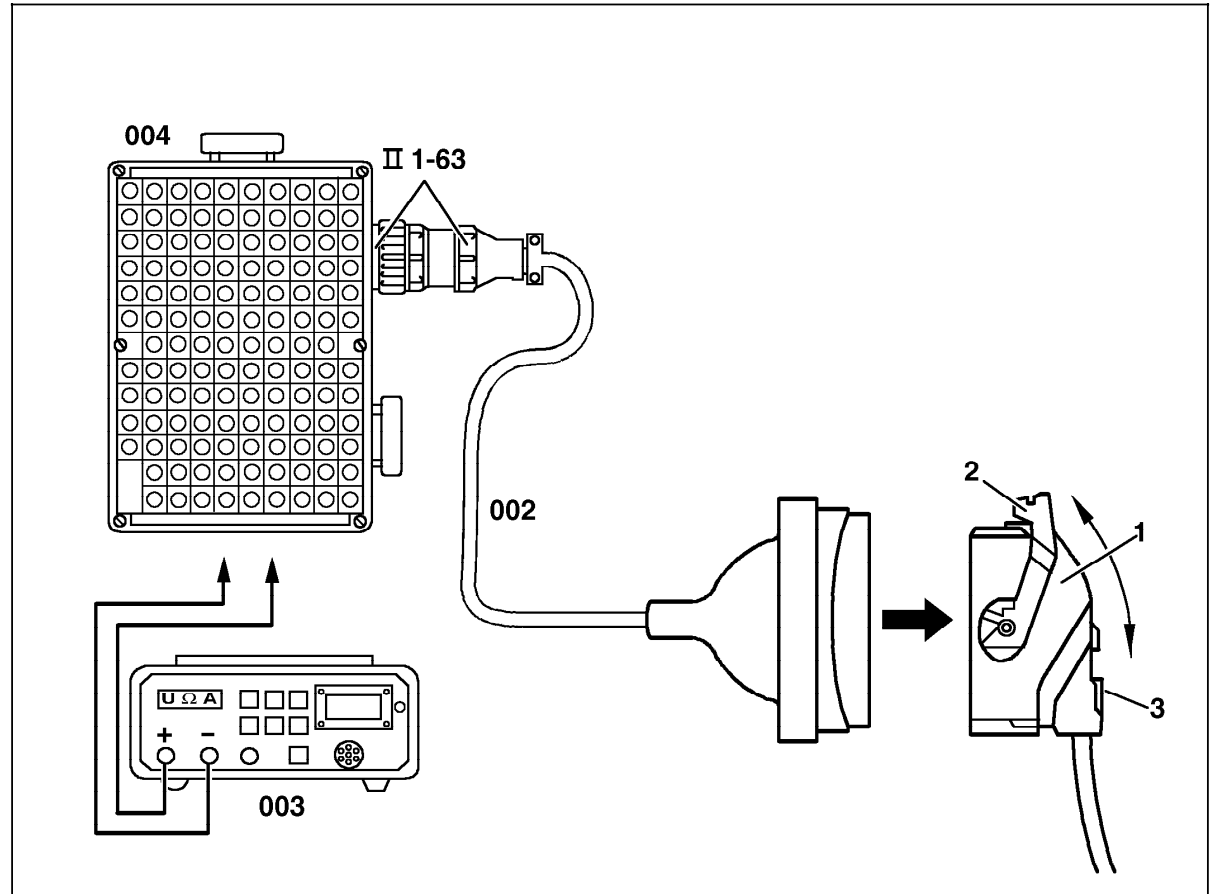


Figure 1

- 002 Test cable
- 003 Multimeter
- 004 Socket box (26-pole socket box)
- 1 SRS control module connector
- 2 Connect and disconnect aid
- 3 Connect and disconnect lock

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Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

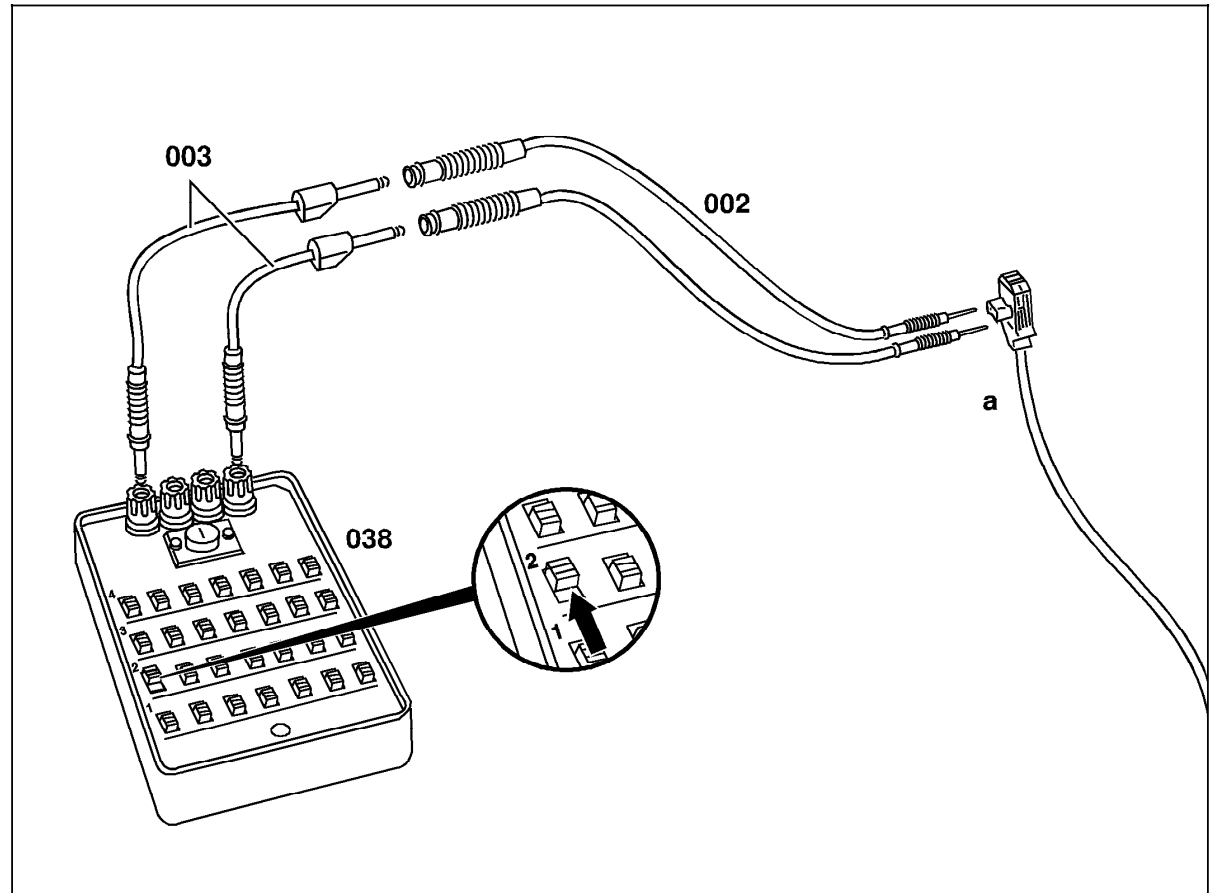
Connection Diagram -
Test Cables/Connectors



Verify the squib connections via the wiring diagram before connecting the test cables.

Figure 2

- 002 Test cable part number 140 589 22 63 00
- 003 Test cables with banana plugs
- 038 Resistance substitution unit
- a Connectors:
 - Left ETR squib (R12/1)
 - Front passenger ETR squib (R12/2)
 - Driver AB squib (R12/3)
 - LR ETR squib (R12/6)
 - RR ETR squib (R12/7)
 - Front passenger AB squib (R12/8)
 - LR side airbag squib (R12/11)
 - RR side airbag squib (R12/12)
 - Left front side airbag squib (R12/20)
 - Right front side airbag squib (R12/21)
 - Left rear side windowbag squib (R12/22)
 - Right rear side windowbag squib (R12/23)



P91.60-2024-06

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Connection Diagram -
Test Cables/Connectors

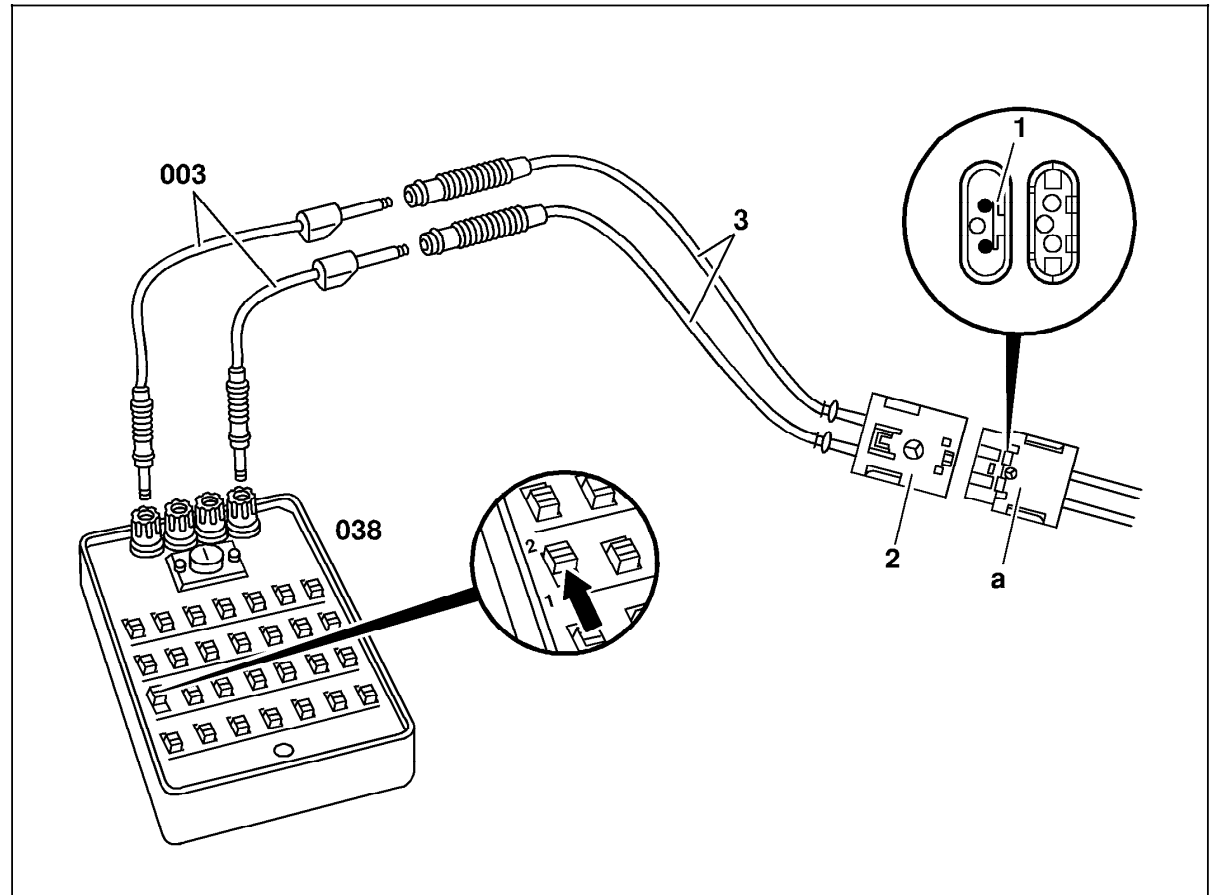


Figure 3

- 003 Test cables with banana plugs
- 038 Resistance substitution unit
- 1 Short circuit bridge
- 2 Connector part number 019 545 19 28
- 3 Test Cables from electrical connection set (2.5 mm pins)
- a Connectors:
Horn/airbag clock spring contact connector (A45x1)
Left rear door/FFS connector (X35/3)
Right rear door/FSS connector (X35/4)
Left front door separation point (X35/41)
Right front door separation point (X35/42)

P91.60-2030-06

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Connection Diagram -
Test Cables/Sidebag Sensors

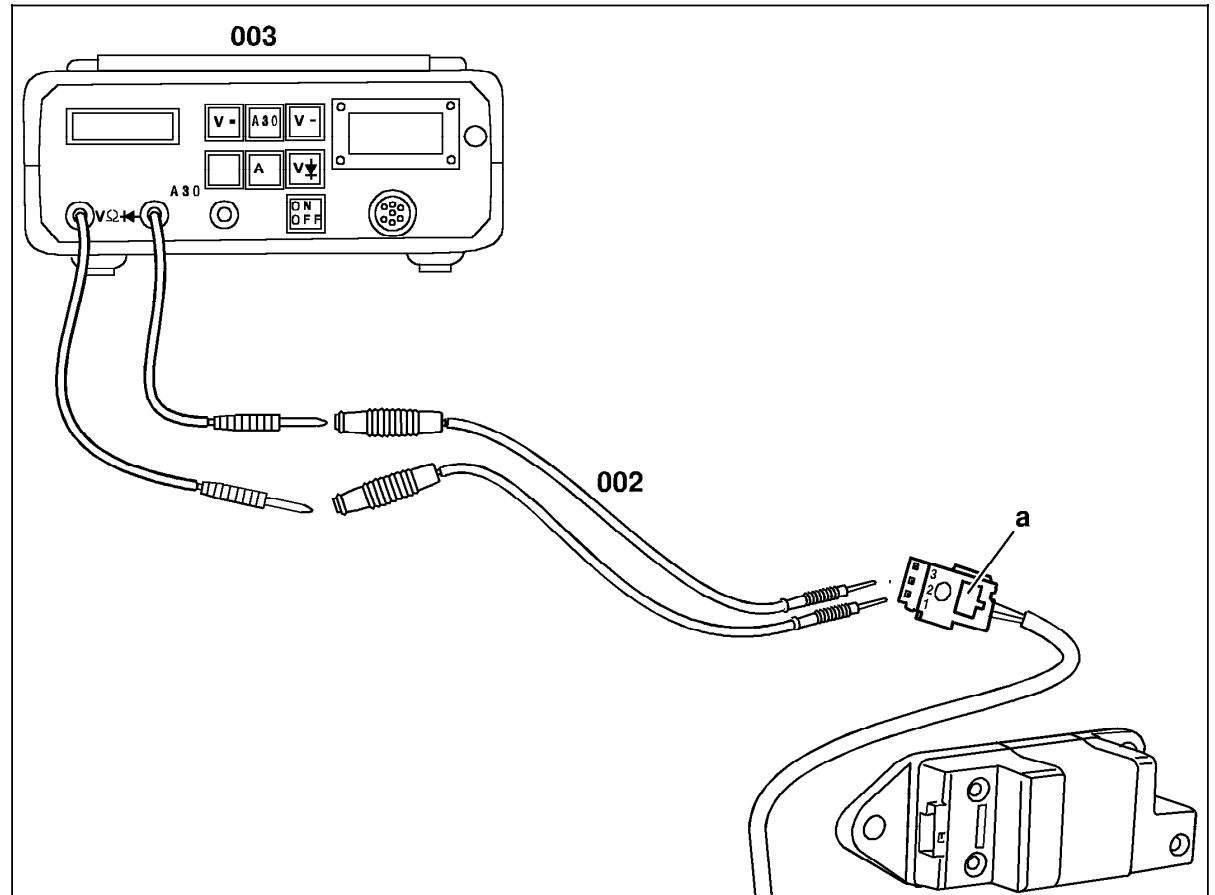


Figure 4

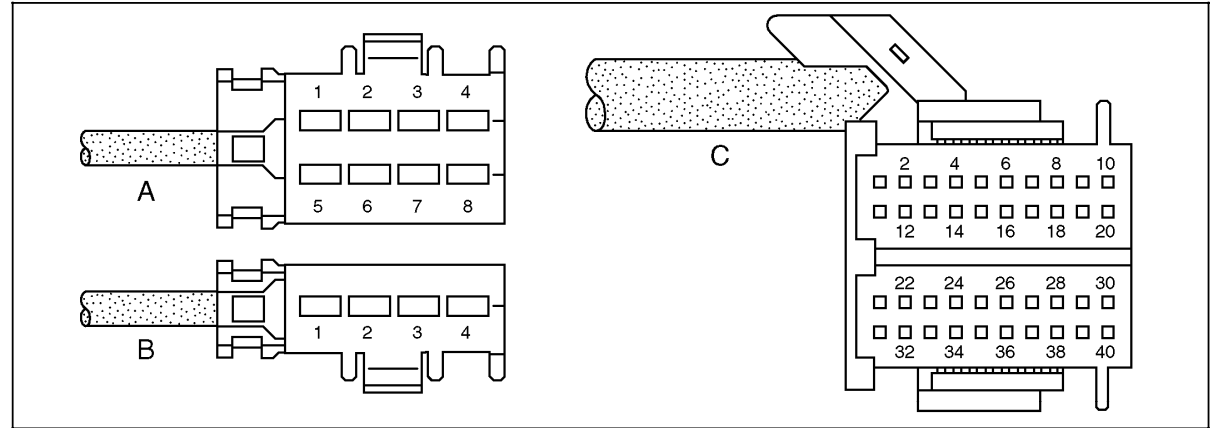
002 Test cable part number 140 589 22 63 00
 003 Multimeter

a Connectors:
 Left side airbag sensor (A53/1)
 Right side airbag sensor (A54/1)

P91.60-2031-06

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Engine 112
Connector Layout - Engine Control Module



P07.61-0251-04

Figure 5

- | | | | | | |
|----|---|----------|---|---------|---------------------------------------|
| 1A | Left O2S 1 heater (before TWC) | 1C – 20C | – | 28C | AIR pump relay module (only USA) |
| 2A | Voltage supply (circuit 87), fused | 21C | Purge control valve | 29C | Fuel pump relay module |
| 3A | Ground,
Model 163: component compartment W16,
Model 202/208/210:
component compartment W16/6 | 22C | Pedal value sensor
(+ nominal value potentiometer 1) | 30C | – |
| 4A | – | 23C | Pedal value sensor
(– nominal value potentiometer 1) | 31C | Right O2S 1 ground (right before TWC) |
| 5A | O2S 1 heater (right before TWC) | 24C | Pedal value sensor
(nominal value potentiometer 1 wiper) | 32C | Right O2S 1 signal (right before TWC) |
| 6A | Engine/climate control electric cooling fan control | 25C | Pedal value sensor
(nominal value potentiometer 2 wiper) | 33C | Left O2S 1 signal (left before TWC) |
| 7A | Ground,
Model 163: component compartment W16
Model 202/208/210:
component compartment W16/6 | 26C | Pedal value sensor
(– nominal value potentiometer 2) | 34C | Left O2S 1 ground (left before TWC) |
| 8A | Ground,
Model 163: component compartment W16
Model 202/208/210:
component compartment W16/6 | 27C | Pedal value sensor
(+ nominal value potentiometer 2) | 35C-37C | – |
| 1B | O2S 2 heater (right after TWC) (only USA) | | | | |
| 2B | O2S 2 heater (left after TWC) (only USA) | | | | |
| 3B | Diagnosis connection (data link connector) | | | | |
| 4B | Voltage supply (circuit 30) | | | | |

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Engine 112
Connector Layout - Engine Control Module

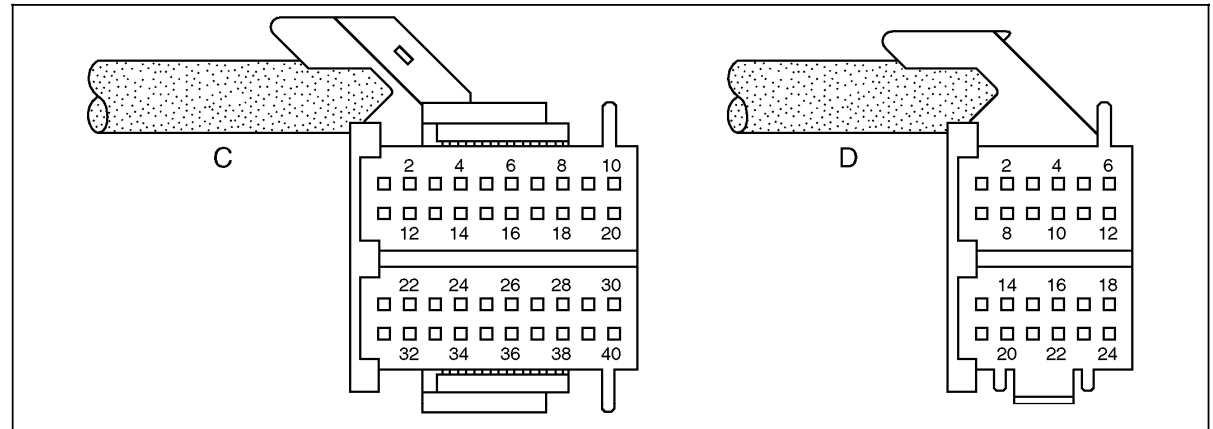


Figure 6

P07.61-0252-04

38C Data link connector (engine rpm signal)
39C Data link connector (ME-SFI DTC's)
40C Signal (circuit 50)

1D FP relay module (K27)
2D Activated charcoal canister shut-off valve (only USA)
3D Starter relay
4D Ground, fuel tank pressure sensor (only USA)
5D Signal, fuel tank pressure sensor (only USA)
6D Voltage supply 5 V for fuel tank pressure sensor (only USA)

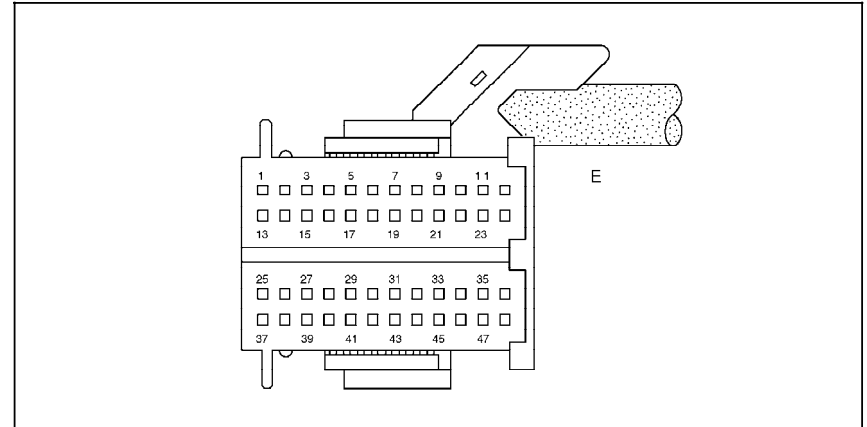
7D Right O2S 2 ground (right after TWC) (only USA)
8D Right O2S 2 signal (right after TWC) (only USA)
9D Left O2S 2 signal (left after TWC) (only USA)
10D Left O2S 2 ground (left after TWC) (only USA)
11D CAN data bus "H"
12D CAN data bus "L"
13D Variable speed limit regulation (without DAS 3 only)
14D Backup lamp switch
15D -
16D Crash signal (as of 06/98)
17D Kick-down switch (only MT as of 06/98)
18D -
19D Clutch pedal switch with MT only
19D P/N recognition with AT
20D CC switch (accelerate/set) (without DAS 3 only)
21D CC switch (decelerate/set) (without DAS 3 only)
22D CC switch (resume) (without DAS 3 only)
23D CC switch (control contact) (without DAS 3 only)
24D CC switch (off) (without DAS 3 only)

1E Injector cyl. 2
2E Injector cyl. 5
3E-4E -
5E EGR switchover valve

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Engine 112

Connector Layout - Connector 1, interior for ME-SFI control module



P07.61-0253-05

Figure 7

6E – 9E	–	28E	ETC sensor ground
10E	AIR pump switchover valve(only USA)	29E	ECT sensor signal
11E	–	30E	–
12E	Resonance intake manifold switchover valve	31E	EA/CC/ISC actuator (actual value potentiometer 1 wiper)
13E	Injector cyl. 3	32E	EA/CC/ISC actuator (actual value potentiometer ground)
14E	Injector cyl. 6	33E	Actual value potentiometer voltage supply
15E	Voltage supply 5 V, oil sensor (level/temperature/quality)	34E	EA/CC/ISC actuator (actual value potentiometer 2 wiper)
16E	Ground for oil sensor (level/temperature/quality)	35E – 36E	–
17E	Signal for oil sensor (level/temperature/quality)	37E	CKP sensor ground
18E – 21E	–	38E	CKP sensor signal
22E	Voltage supply 5 V, pressure sensor (only USA)	39E	Camshaft Hall-effect sensor ground
23E	Pressure sensor signal (only USA)	40E	Camshaft Hall-effect sensor signal
24E	Pressure sensor ground (only USA)		
25E	Injector cyl. 1		
26E	Injector cyl. 4		
27E	AIR pump relay in relay module (only USA)		

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Engine 112
Connector Layout - Engine Control Module

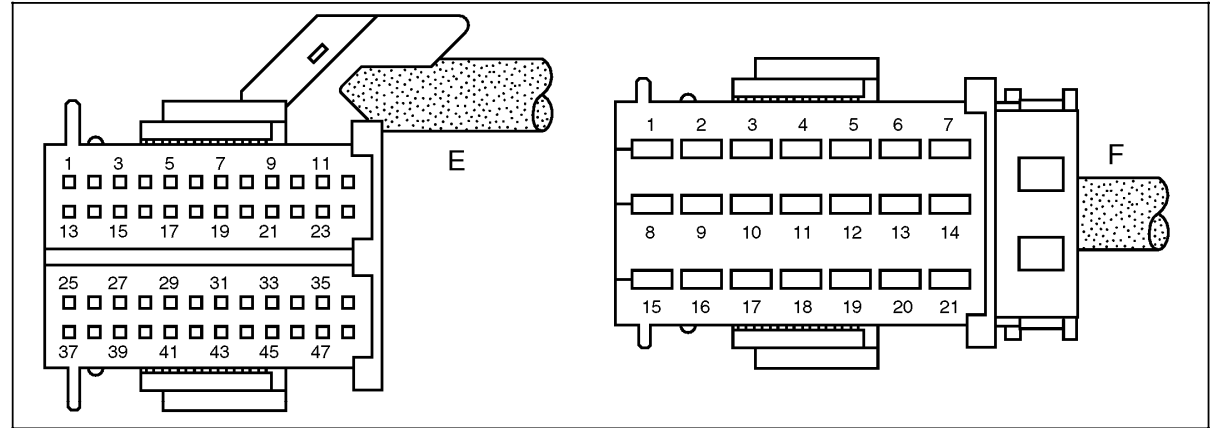


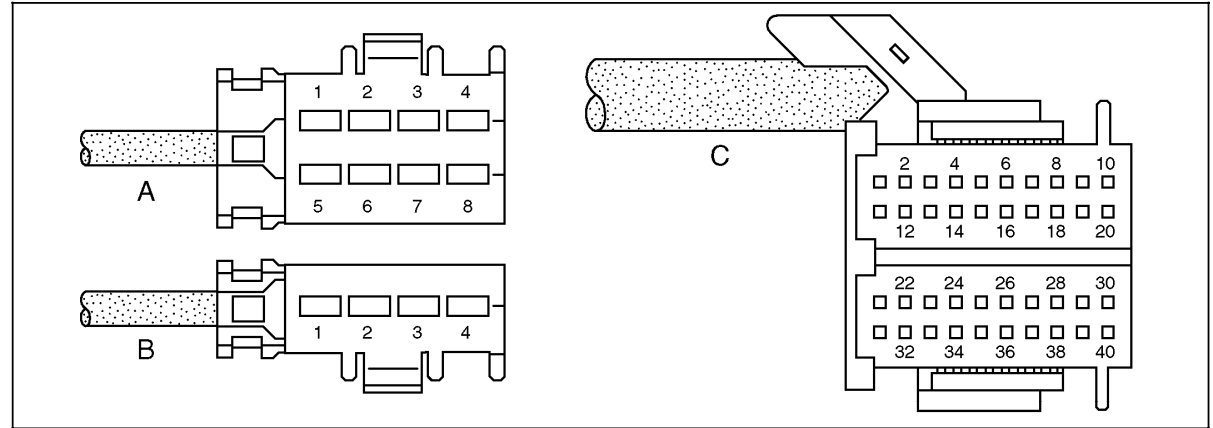
Figure 8

P07.61-0254-04

41E	KS 1 ground (right cylinder side of engine)	1F	EA/CC/ISC actuator (-)	13F	Ignition coil T1/4, a cyl. 4
42E	KS 1 signal (right cylinder side of engine)	2F	EA/CC/ISC actuator (+)	14F	Ignition coil T1/4, b cyl. 4
43E	KS 2 ground (left cylinder side of engine)	3F	-	15F	Ground,
44E	KS 2 signal (left cylinder side of engine)	4F	Ignition coil T1/5 b cyl. 5		Model 163: component compartment W16,
45E	IAT sensor (in hot film MAF sensor)	5F	Ignition coil T1/5 a cyl. 5		Model 202/208/210
46E	Hot film MAF sensor voltage supply 5 V	6F	Ignition coil T1/3 a cyl. 3		component compartment W16/6
47E	Hot film MAF sensor signal	7F	Ignition coil T1/3 b cyl. 3	16F	Ignition coil T1/2, b cyl. 2
48E	Hot film MAF sensor ground	8F	Ground,	17F	Ignition coil T1/2, a cyl. 2
			Model 163: component compartment W16,	18F	Ignition coil T1/6, b cyl. 6
			Model 202/208/210:	19F	Ignition coil T1/6, a cyl. 6
			component compartment W16/6	20F	Ignition coil T1/1, a cyl. 1
		9F - 12F	-	21F	Ignition coil T1/1, b cyl. 1

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Engine 113
Connector Layout - Engine Control Module



P07.61-0251-04

Figure 9

- 1A Left O2S 1 heater (left before TWC)
- 2A Voltage supply (circuit 87), fused
- 3A Ground
Model 129: control module box/module box W27
Model 163: component compartment W16
Model 208/210: component compartment W16/6
- 4A -
- 5A Right O2S 1 heater (right, before TWC)
- 6A Engine/climate control electric cooling fan control
- 7A Ground
Model 129: control module box/module box W27
Model 208/210: component compartment W16/6
- 8A Ground
Model 129: control module box/module box W27
Model 208/210: component compartment W16/6
- 1B Right O2S 2 heater (right, after TWC) (only USA)
- 2B Left O2S 2 heater (left, after TWC) (only USA)
- 3B Diagnosis connection (data link connector)
- 4B Voltage supply (circuit 30)

- 1C - 20C -
- 21C Purge control valve
- 22C Pedal value sensor
(+ nominal value potentiometer 1)
- 23C Pedal value sensor
(- nominal value potentiometer 1)
- 24C Pedal value sensor
(nominal value potentiometer 1 wiper)
- 25C Pedal value sensor
(nominal value potentiometer 2 wiper)
- 26C Pedal value sensor
(- nominal value potentiometer 2)
- 27C Pedal value sensor
(+ nominal value potentiometer 2)

- 28C AIR pump relay module (only USA)
- 29C FP relay module (K27)
- 30C -
- 31C Right O2S 1 ground (right, before TWC)
- 32C Right O2S 1 signal (right, before TWC)
- 33C Left O2S 1 signal (left, before TWC)
- 34C Left O2S 1 ground (left, before TWC)
- 35C-37C -

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Engine 113
Connector Layout - Engine Control Module

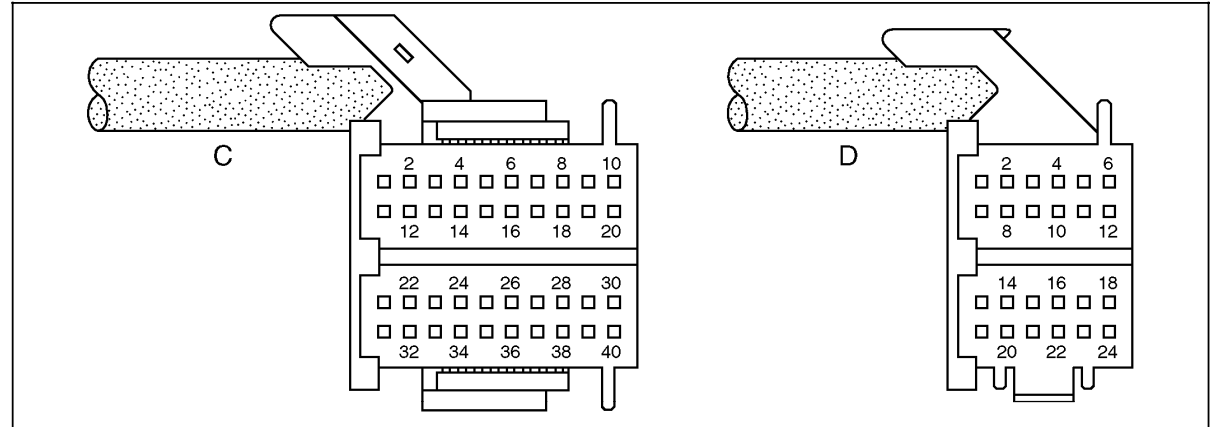


Figure 10

P07.61-0252-04

38C	Datalink connector (engine rpm signal)	36D	Voltage supply 5 V for fuel tank pressure sensor (only USA)	17D-18D	-
39C	Data link connector (ME-SFI DTC's)	7D	Right O2S 2 ground (right, after TWC) (only USA)	19D	P/N recognition with AT
40C	Signal (circuit 50)	8D	Right O2S 2 signal (right, after TWC) (only USA)	20D	CC switch (accelerate/set) (without DAS 3 only)
1D	FP relay module (K27)	9D	Left O2S 2 signal (left, after TWC) (only USA)	21D	CC switch (decelerate/set) (without DAS 3 only)
2D	Activated charcoal canister shut-off valve (only USA)	10D	Left O2S 2 ground (left, after TWC) (only USA)	22D	CC switch (resume) (without DAS 3 only)
3D	Starter relay	11D	CAN data bus "H"	23D	CC switch (control contact) (without DAS 3 only)
4D	Ground, fuel tank pressure sensor (only USA)	12D	CAN data bus "L"	24D	CC switch (off) (without DAS 3 only)
5D	Signal, fuel tank pressure sensor (only USA)	13D	Variable speed limit regulation (without DAS 3 only)		
		14D-15D	-		
		16D	Crash-Signal (as of 06/98)		

16.6 Airbag (AB)

Model 210 as of M.Y. 1999

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Engine 113

Connector Layout - Connector 1, interior for ME-SFI control module

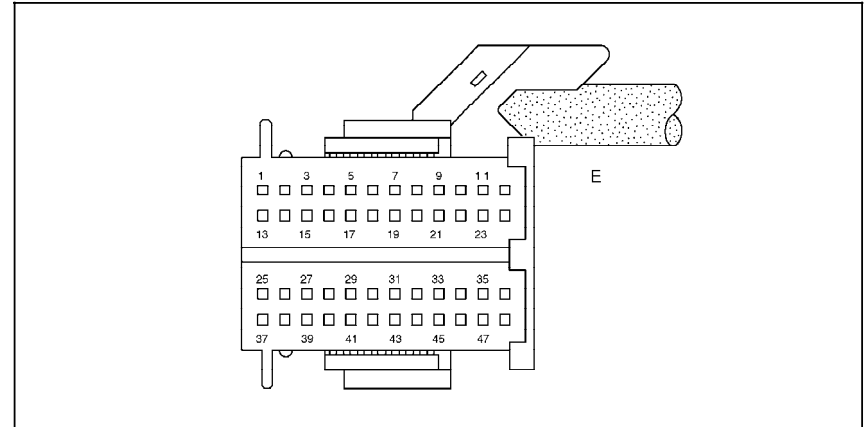


Figure 11

P07.61-0253-05

1E	Injector cyl. 6	6E – 9E	–	28E	ECT sensor ground
2E	Injector cyl. 3	10E	AIR pump switchover valve (only USA)	29E	ECT sensor signal
3E	Injector cyl. 7	11E	–	30E	–
4E	Injector cyl. 8	12E	Resonance intake manifold switchover valve	31E	EA/CC/ISC actuator (actual value potentiometer 1 wiper)
5E	EGR switchover valve	13E	Injector cyl. 4	32E	EA/CC/ISC actuator (actual value potentiometer ground)
		14E	Injector cyl. 2	33E	Actual value potentiometer voltage supply
		15E	Voltage supply 5 V, oil sensor (level/temperature/quality)	34E	EA/CC/ISC actuator (actual value potentiometer 2 wiper)
		16E	Ground for oil sensor (level/temperature/quality)	35E – 36E	–
		17E	Signal for oil sensor (level/temperature/quality)	37E	CKP sensor ground
		18E – 20E	–	38E	CKP sensor signal
		21E	Signal for oil pressure switch	39E	Camshaft Hall-effect sensor ground
		22E	Voltage supply 5 V, pressure sensor (only USA)	40E	Camshaft Hall-effect sensor signal
		23E	Pressure sensor signal (only USA)		
		24E	Pressure sensor ground (only USA)		
		25E	Injector cyl. 1		
		26E	Injector cyl. 5		
		27E	AIR pump relay in relay module (only USA)		

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

Engine 113
Connector Layout - Engine Control Module

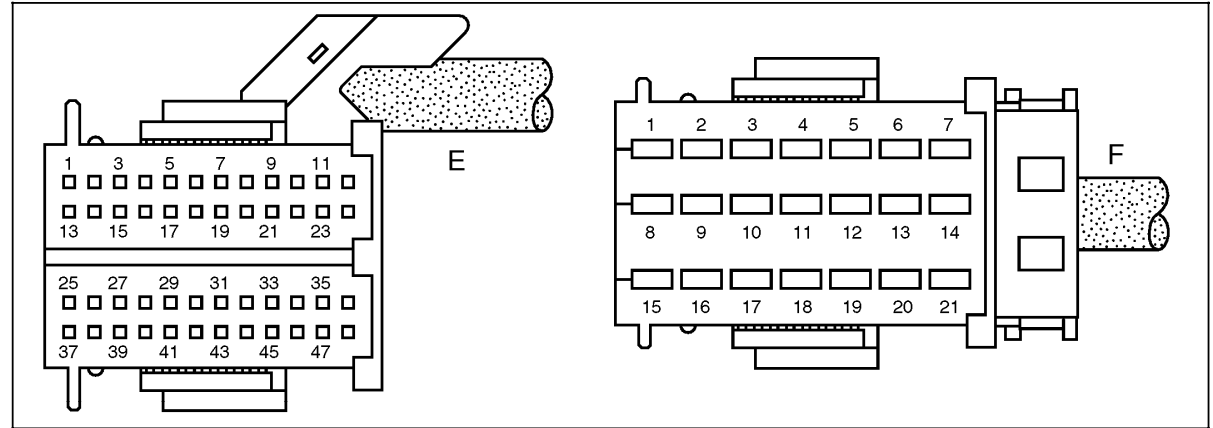


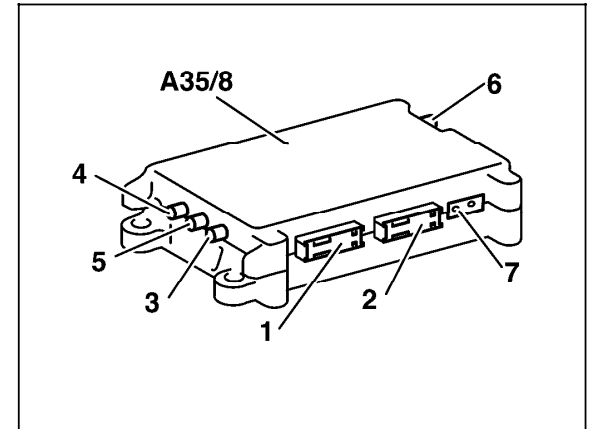
Figure 12

P07.61-0254-04

41E	KS 1 ground (right side of engine)	1F	EA/CC/ISC actuator (-)	15F	Ground
42E	KS 1 signal (right side of engine)	2F	EA/CC/ISC actuator (+)		Model 129: control module box/module box W27
43E	KS 2 ground (left side of engine)	3F	-		Model 163: component compartment W16
44E	KS 2 signal (left side of engine)	4F	Ignition coil T1/3 b cyl. 3		Model 208/210: component compartment W16/6
45E	IAT sensor (in hot film MAF sensor)	5F	Ignition coil T1/3 a cyl. 3	16F	Ignition coil T1/6, b cyl. 6
46E	Hot film MAF sensor voltage supply 5 V	6F	Ignition coil T1/4 a cyl. 4	17F	Ignition coil T1/6, a cyl. 6
47E	Hot film MAF sensor signal	7F	Ignition coil T1/4 b cyl. 4	18F	Ignition coil T1/2, b cyl. 2
48E	Hot film MAF sensor ground	8F	Ground	19F	Ignition coil T1/2, a cyl. 2
			Model 129: control module box/module box W27	20F	Ignition coil T1/1, a cyl. 1
			Model 163: component compartment W16	21F	Ignition coil T1/1, b cyl. 1
			Model 208/210: component compartment W16/6		
		9F	Ignition coil T1/8 b cyl. 8		
		10F	Ignition coil T1/8 a cyl. 8		
		11F	Ignition coil T1/7 b cyl. 7		
		12F	Ignition coil T1/7 a cyl. 7		
		13F	Ignition coil T1/5 a cyl. 5		
		12F	Ignition coil T1/5 b cyl. 5		

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

TELE AID Control module (A35/8)
Connector Layout



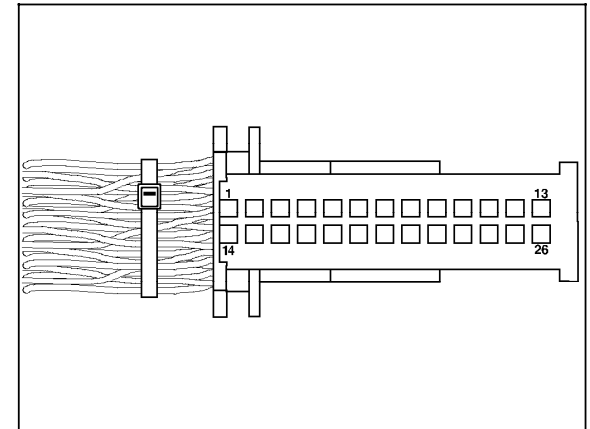
P82.95-2006-01

Figure 13

- 1 Emergency call system pushbutton (TELE AID) (S93/3), Wheel speed sensors (VSS)
- 2 Voltage supply, serial interface to CTEL transmitter-receiver (A35), handset
- 3 CTEL antenna (A2/49a1)
- 4 TELE AID backup antenna
- 5 Active antenna (A2/49a1 or A2/50) output to CTEL transmitter-receiver
- 6 GPS antenna (A2/49a2)
- 7 Buss system D2B connection (input/output)
- A35/8 Emergency call system control module (TELE AID)

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

TELE AID Control module (A35/8) Connector 1 Layout



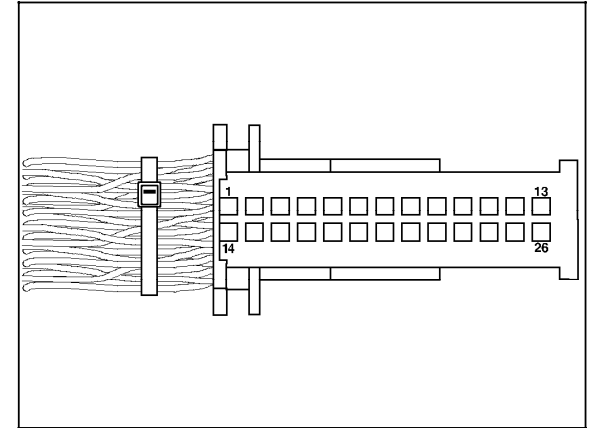
P82.61-0255-01

Figure 14

1	CAN-H	15	Stop lamp signal	22	—
2	CAN-L	16	Reverse lamp signal	23	Wake up (D2B)
3-9	—	17	—	24	—
10	Panic alarm activation switch (S62/2), (with Code 930) (not USA)	18	Emergency call system pushbutton (TELE AID) (S93/3) indicator lamp	25	Circuit 15R
11	Indicator lamp connection (not USA)	19	—	26	—
12	Left front VSS	20	Emergency call system pushbutton (TELE AID) (S93/3)		
13	Right front VSS	21	Diagnostics		
14	Signal from SRS control module (with ETRs)				

Electrical Test Program - Preparation for Test (driver/passenger-side airbag/side airbag/windowbag)

TELE AID Control module (A35/8)
Connector 2 Layout



P82.61-0255-01

Figure 15

1	Ground input signal to speaker	13	ON/OFF, CTEL handset (A34) (not USA)	22	MUte-signal to A35 for radio volume switching
2	ON/OFF, CTEL handset (A34) (not USA)	14	Speaker ground, CTEL and TELE AID system	23	Ground (circuit 31)
3	Switch signal to CTEL transmitter-receiver (A35)	15	Hot positive, (Circuit 30)	24	Ground (circuit 31)
4	TELE AID bus: Downlink to (CTEL transmitter-receiver)	16	Hot positive, (Circuit 30)	25	Ground (circuit 31) for A35
5	TELE AID bus: Uplink to (CTEL transmitter-receiver)	17	Hot positive, (Circuit 30) for A35	26	Ground (circuit 31) for A35
6	TELE AID bus: ground A35	18	Hot positive, (Circuit 30) for A35		
7	Ground, CTEL handset (not USA)	19	Input signal for speaker (+)		
8	Harness shield to CTEL handset (A34) (not USA)	20	Circuit 15		
9	TELE AID bus: Ground to CTEL handset (A34) (not USA)	21	Speaker (+)		
10	TELE AID bus: Downlink to CTEL handset (A34) (not USA)				
11	TELE AID bus: Uplink to CTEL handset (A34) (not USA)				
12	Switch signal from CTEL handset (A34) (not USA)				




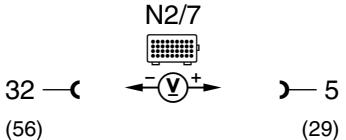


Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⚠ CAUTION!










Risk of Injury when performing Diagnostic Tests and repairs on components of the SRS system.
 Store both airbags and side airbags with opening surface pointing upward.
 Do not expose to temperatures above 100°C.
Interrupt any electrical current from reaching the airbag unit.
Review 11/1 and 11/2

Preparation for Test:




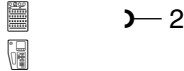


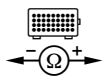


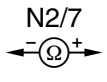

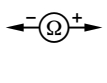


1. Review section 0, 11, 12, 13, 20, 22, 31,
2. Review: GF91.60-P-2003A prior to performing test,
3. Fuses are OK,
4. Battery 11 – 14 V

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
1.0	B1010	Circuit 15R Voltage supply HHT actual values		Ignition key in position "2".	✓ F	Wiring, Battery.
1.1		ARMIN control module (N2/7) Voltage supply		Remove ignition key. Disconnect connector on N2/7 using aid. Connect  (22, Figure 1), Ignition key in position "1".	11 – 14 V	Wiring. If values are OK: N2/7
2.0	B1476	SRS MIL (A1e15) HHT actual values		Ignition key in position "2". SRS MIL (A1e15) illuminates.	SRS MIL (A1e15) goes out after approx. 4 – 20 seconds. ✓ F	⇒ 2.1







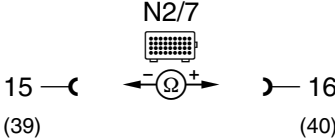

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
2.1		SRS MIL (A1e15) Function Test		Disconnect connector on N2/7. Start engine.	SRS MIL (A1e15) illuminates.	If values are OK: N2/7 If values are not OK: Wiring, SRS MIL (A1e15)
3.0	B1859	Driver AB squib (R12/3) HHT actual values		Ignition key in position "2".	✓ F	⇒ 3.1
3.1		Driver AB squib (R12/3) HHT actual values	1 —  R12/3  — 2	Remove ignition key. Remove driver AB unit, Disconnect connector on R12/3, Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/3 ⇒ 3.2
3.2		Driver AB squib (R12/3) HHT actual values	3 —  A45x1  — 4	Remove ignition key. Disconnect connector (A45x1), Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	Check continuity of A45, ⇒ 3.3



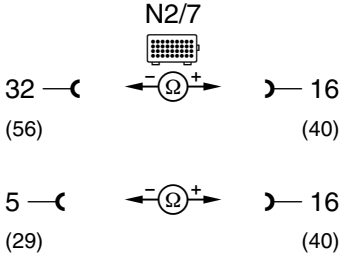




Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
3.3		Driver AB squib (R12/3) HHT actual values	<p>1 —  X28/23</p>  <p>— 2</p>	Remove ignition key. Disconnect connector X28/23. Connect  , Set resistance to 3 Ω, Ignition key in position "2".	✓ F	Wiring. ⇒ 3.4
3.4		Driver AB squib (R12/3) Resistance	<p>9 —  N2/7</p>  <p>(33) — 10 (34)</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	2 – 5 Ω	Wiring.
4.0	B1859	Driver AB squib (R12/3) Short circuit test Γ1- Γ1+	<p>32 —  N2/7</p>  <p>(56) — 9 (33)</p> <p>5 —  N2/7</p>  <p>(29) — 9 (33)</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
5.0	B1861	Front passenger AB squib (R12/8) HHT actual values		Ignition key in position "2".	✓ F	⇒ 5.1





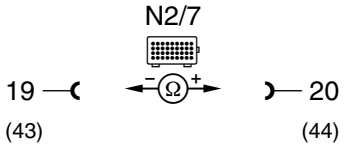

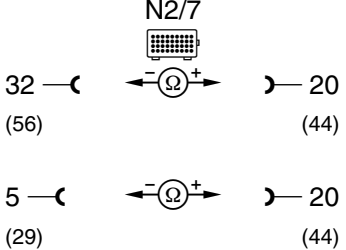


Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
5.1		Front passenger AB squib (R12/8) HHT actual values	 <p>R12/8</p>	Remove ignition key. Remove glovebox insert, Disconnect connector at R12/8, Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/8 ⇒ 5.2
5.2		Front passenger AB squib (R12/8) HHT actual values	 <p>X28/23</p>	Remove ignition key. Disconnect connector X28/23. Connect  , Set resistance to 3 Ω, Ignition key in position "2".	✓ F	Wiring. ⇒ 5.3
5.3		Front passenger AB squib (R12/8) Resistance	 <p>N2/7</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 2).	2 – 5 Ω	Wiring.







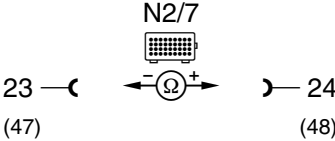

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
6.0	B1861	Front passenger AB squib (R12/8) Short circuit test Γ1- Γ1+		Remove ignition key. Disconnect connector on N2/7 using aid. Connect  (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
7.0	B1867	Left front side airbag squib (R12/20) HHT actual values		Ignition key in position "2".	✓ F	⇒ 7.1
7.1		Left front side airbag squib (R12/20) HHT actual values		Remove ignition key. Disconnect connector at door separation point. Connect  , (22, Figure 3). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	Wiring, R12/20 ⇒ 7.2

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
7.2		Left front side airbag squib (R12/20) HHT actual values	<p>R12/20</p> 	Remove ignition key. Remove door panel. Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/20 ⇒ 7.3
7.3		Left front side airbag squib (R12/20) Resistance	<p>N2/7</p> 	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	2 – 5 Ω	Wiring.
8.0	B1867	Left front side airbag squib (R12/20) Short circuit test Γ1- Γ1+	<p>N2/7</p> 	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
9.0	B1871	Left front side airbag squib (R12/21) HHT actual values		Ignition key in position "2".	✓ F	⇒ 9.1

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
9.1		Left front side airbag squib (R12/21) HHT actual values	 <p>X35/42</p>	Remove ignition key. Disconnect connector at door separation point. Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	Wiring, R12/21 ⇒ 9.2
9.2		Left front side airbag squib (R12/21) HHT actual values	 <p>R12/21</p>	Remove ignition key. Remove door panel. Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/21 ⇒ 9.3
9.3		Left front side airbag squib (R12/21) Resistance	 <p>N2/7</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	2 – 5 Ω	Wiring.





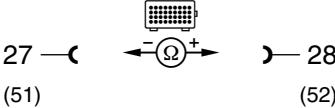

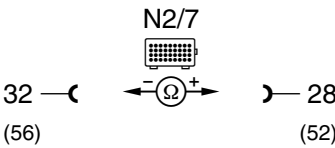
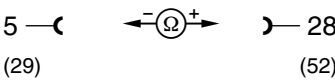

16.6 Airbag (AB)

Model 210 as of M. Y. 1999

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/ display	Possible cause/Remedy
10.0	B1B71	Left front side airbag squib (R12/21) Short circuit test Γ1- Γ1+	<p>N2/7</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
11.0	B1B69	LR side airbag squib (R12/11) HHT actual values (Only for side airbag in rear door, as of 06/98)		Ignition key in position "2".	✓ F	⇒ 11.1
11.1		LR side airbag squib (R12/11) HHT actual values	<p>X35/3</p>	Remove ignition key. Disconnect connector at door separation point (X35/3). Connect , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	Wiring, R12/11 ⇒ 11.2










Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
11.2		LR side airbag squib (R12/11) HHT actual values	<p style="text-align: center;">R12/11</p> 	Remove ignition key. Remove door panel. Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/11 ⇒ 11.3
11.3		LR side airbag squib (R12/11) Resistance	<p style="text-align: center;">N2/7</p> 	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	2 – 5 Ω	Wiring.
12.0	81869	LR side airbag squib (R12/11) Short circuit test Γ1- Γ1+ (Only for side airbag in rear door, as of 06/98)	<p style="text-align: center;">N2/7</p>  <p style="text-align: center;">N2/7</p> 	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R

16.6 Airbag (AB)

Model 210 as of M. Y. 1999

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
13.0	B1B73	RR side airbag squib (R12/12) HHT actual values (Only for side airbag in rear door as of 06/98)		Ignition key in position "2".	✓ F	⇒ 13.1
13.1		RR side airbag squib (R12/12) HHT actual values	1 —  — 2 X35/4 	Remove ignition key. Disconnect connector at door separation point (X35/4). Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	Wiring, R12/12 ⇒ 13.2
13.2		RR side airbag squib (R12/12) HHT actual values	1 —  — 2 R12/12 	Remove ignition key. Remove door panel. Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/12 ⇒ 13.3

16.6 Airbag (AB)

Model 210 as of M. Y. 1999



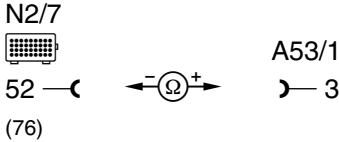

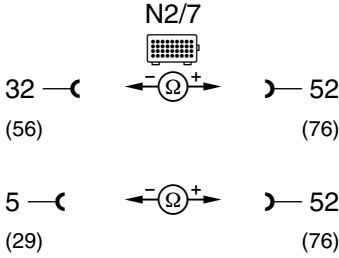


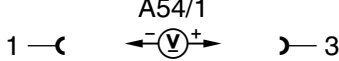
Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/ display	Possible cause/Remedy
13.3		RR side airbag squib (R12/12) Resistance	<p>N2/7</p> <p>29 —(29 (53) ← Ω+ → 30 (54)</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	2 – 5 Ω	Wiring.
14.0	81873	RR side airbag squib (R12/12) Short circuit test Γ1- Γ1+ (Only for side airbag in rear door, as of 06/98)	<p>N2/7</p> <p>32 —(32 (56) ← Ω+ → 29 (53)</p> <p>5 —(5 (29) ← Ω+ → 29 (53)</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
15.0	81310	Left side airbag sensor (A53/1) Voltage supply	<p>A53/1</p> <p>1 —(1 ← V+ → 3</p>	Remove ignition key. Disconnect connector on A53/1. Connect test cables, (22, Figure 4), Ignition key in position “2”.	Voltage cycles between 3 V and 7 V	Wiring.

16.6 Airbag (AB)

Model 210 as of M. Y. 1999

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
15.1		Left side airbag sensor (A53/1) Wiring fault		Remove ignition key. Disconnect connector on A53/1. Disconnect connector on N2/7, Connect  , (22, Figure 1).	<1 Ω	Wiring.
15.2		Left side airbag sensor (A53/1) Short circuit test Γ1- Γ1+		Remove ignition key. Disconnect connector on A53/1 Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
16.0		Right side airbag sensor (A54/1) Voltage supply		Remove ignition key. Disconnect connector on A54/1. Connect test cables, (22, Figure 4), Ignition key in position "2".	Voltage cycles between 3 V and 7 V	Wiring.

16.6 Airbag (AB)

Model 210 as of M. Y. 1999















Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/ display	Possible cause/Remedy
16.1		Left side airbag sensor (A54/1) Wiring fault	N2/7 54 —(— Ω —) — 3 (78)	Remove ignition key. Disconnect connector on A53/1. Disconnect connector on N2/7, Connect , (22, Figure 1).	<1 Ω	Wiring.
16.2	B1867	Left side airbag sensor (A54/1) Short circuit test Γ1- Γ1+	N2/7 32 —(— Ω —) — 54 (56) (78) 5 —(— Ω —) — 54 (29) (78)	Remove ignition key. Disconnect connector on A54/1, Disconnect connector on N2/7 using aid.	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
17.0	B1863	Driver ETR squib (R12/1) HHT actual values		Ignition key in position "2".	V F	⇒ 17.1

16.6 Airbag (AB)

Model 210 as of M. Y. 1999







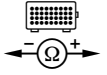
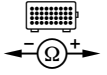



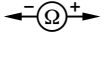
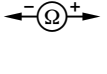

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
17.1		Driver ETR squib (R12/1) HHT actual values	1 —  — 2 R12/1 	Remove ignition key. Disconnect connector on R12/1, Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/1 ⇒ 17.2
17.2		Driver ETR squib (R12/1) Resistance	33 —  — 34 (57) N2/7   (58)	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	2 – 5 Ω	Wiring
18.0		Driver ETR squib (R12/1) Short circuit test Γ1- Γ1+	32 —  — 33 (56) N2/7   (57)	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R

16.6 Airbag (AB)

Model 210 as of M. Y. 1999









Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
19.0	B1864	Front passenger ETR squib (R12/2) HHT actual values		Ignition key in position "2".	✓ F	⇒ 19.1
19.1		Front passenger ETR squib (R12/2) HHT actual values	1 —  — 2 R12/2 	Remove ignition key. Disconnect connector on R12/2, Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/2 ⇒ 19.2
19.2		Front passenger ETR squib (R12/2) Resistance	35 —  — 36 (59) N2/7 (60) 	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	2 – 5 Ω	Wiring.
20.0	B1864	Front passenger ETR squib (R12/2) Short circuit test Γ1– Γ1+	32 —  — 36 (56) N2/7 (60)  5 —  — 36 (29) (60) 	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R

16.6 Airbag (AB)

Model 210 as of M. Y. 1999










Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
21.0	B1321	Left front seat belt buckle switch (AB/ETR) (S68/3) HHT actual values (only USA)		Ignition key in position "2". Seat belt latch is not latched: Seat belt latch is latched:	✓ F OFF ON	⇒ 21.1
21.1		Left front seat belt buckle switch (AB/ETR) (S68/3) Resistance (only USA)	1 —  — 2 X55/3	Disconnect connector X55/3 Seat belt latch is not latched: Seat belt latch is latched:	80 – 210 Ω 320 – 480 Ω	S68/3 ⇒ 21.2
21.2		Left front seat belt buckle switch (AB/ETR) (S68/3) Short circuit test Γ1– Γ1+ (only USA)	32 —  — 43 (56) N2/7 5 —  — 43 (29) (67)	 not connected. Remove ignition key. Seat belt latch is not latched, Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	80 – 210 Ω >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R

16.6 Airbag (AB)

Model 210 as of M. Y. 1999

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
22.0	B1322	Right front seat belt buckle switch (AB/ETR) (S68/4) HHT actual values (only USA)		Ignition key in position "2". Seat belt latch is not latched: Seat belt latch is latched:	✓ F OFF ON	⇒ 22.1
22.1		Right front seat belt buckle switch (AB/ETR) (S68/4) Resistance (only USA)	1 —  — 2 X55/4	Disconnect connector X55/4 Seat belt latch is not latched: Seat belt latch is latched:	 80 – 210 Ω 320 – 480 Ω	S68/4 ⇒ 22.2
22.2		Right front seat belt buckle switch (AB/ETR) (S68/4) Short circuit test Γ1- Γ1+ (only USA)	32 —  — 45 (56) (69) 5 —  — 45 (29) (69) N2/7 	 not connected. Remove ignition key. Seat belt latch is not latched, Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	 80 – 210 Ω >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/ display	Possible cause/Remedy
23.0	B1865	LR ETR squib (R12/6) HHT actual values (for rear side airbag only, as of 06/98)		Ignition key in position "2".	✓ F	⇒ 23.1
23.1		LR ETR squib (R12/6) HHT actual values	1 — — 2	Remove ignition key. Disconnect connector on R12/6, Connect , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/6 ⇒ 23.2
23.2		LR ETR squib (R12/6) Resistance	37 — — 38 (61) (62)	Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	2 – 5 Ω	Wiring.





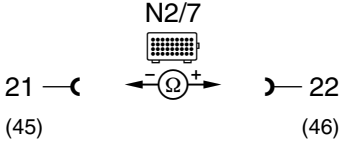


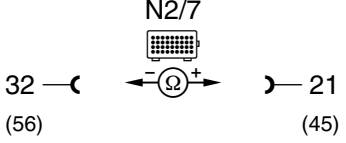
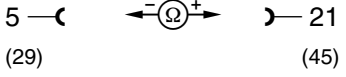



Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/ display	Possible cause/Remedy
24.0	B1865	LR ETR squib (R12/6) Short circuit test Γ1- Γ1+ (for rear side airbag only)	<p style="text-align: center;">N2/7 </p> <p>32 ← (56) → 37 (61)</p> <p>5 ← (29) → 37 (61)</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
25.0	B1866	RR ETR squib (R12/7) HHT actual values (for rear side airbag only, as of 06/98)		Ignition key in position "2".	✓ F	⇒ 25.1
25.1		RR ETR squib (R12/7) HHT actual values	<p style="text-align: center;">R12/7 </p> <p>1 ← → 2</p>	Remove ignition key. Disconnect connector on R12/7, Connect , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/7 ⇒ 25.2

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/ display	Possible cause/Remedy
25.2		RR ETR squib (R12/7) Resistance		Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	2 – 5 Ω	Wiring.
26.0	B1866	RR ETR squib (R12/7) Short circuit test Γ1- Γ1+ (for rear side airbag only, asof 06/98)		Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
27.0	B1868	Left rear side windowbag squib (R12/22) HHT actual values		Ignition key in position "2".	√ F	⇒ 27.1

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
27.1		Left rear side windowbag squib (R12/22) HHT actual values	<p>R12/22</p> 	Remove ignition key. Disconnect connector on R12/22, Connect  , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/22 ⇒ 27.2
27.2		Left rear side windowbag squib (R12/22) Resistance	<p>N2/7</p> 	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	2 – 5 Ω	Wiring.
28.0		Left rear side windowbag squib (R12/22) Short circuit test Γ1- Γ1+	<p>N2/7</p>  	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R
29.0		Right rear side windowbag squib (R12/23) HHT actual values		Ignition key in position "2".	✓ F	⇒ 29.1













16.6 Airbag (AB)

Model 210 as of M. Y. 1999

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/ display	Possible cause/Remedy
29.1		Right rear side windowbag squib (R12/23) HHT actual values	<p>1 — — 2</p> <p>R12/23</p>	Remove ignition key. Disconnect connector on R12/23, Connect , (22, Figure 2). Set resistance to 3 Ω, Ignition key in position "2".	✓ F	R12/23 ⇒ 29.2
29.2		Right rear side windowbag squib (R12/23) Resistance	<p>25 — — 26</p> <p>(49) N2/7 (50)</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	2 – 5 Ω	Wiring.
30.0	81872	Right rear side windowbag squib (R12/23) Short circuit test Γ1– Γ1+	<p>32 — — 25</p> <p>(56) N2/7 (49)</p> <p>5 — — 25</p> <p>(29) N2/7 (49)</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
31.0	B1315	Front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48) Voltage supply	<p>X55/4</p> <p>4 —  —  — 1</p>	Disconnect connector on X55/4. Ignition key in position "1".	11 – 14 V	Wiring. If values are OK: ⇒ 31.1
31.1		Front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48) Short circuit test Γ1- Γ1+	<p>X55/4</p> <p>3 —  —  — N2/7</p> <p>3 —  —  — 5</p> <p>(56) (29)</p>	Remove ignition key. Disconnect connector on X55/4 Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Short circuit to positive, Short circuit to ground. If values are OK: ⇒ 31.2
31.2		Front passenger seat occupied recognition with automatic child seat recognition (ACSR) (B48) Data line Data Line fault/Communication	<p>X55/4</p> <p>3 —  —  — N2/7</p> <p>(70)</p>	Remove ignition key. Disconnect connector on X55/4 Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	<1 Ω	Wiring. B48



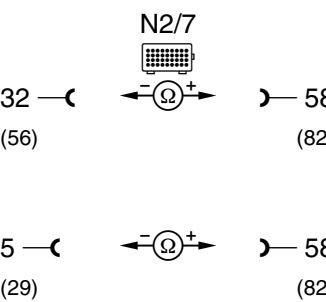

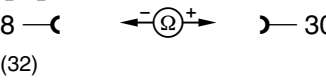

16.6 Airbag (AB)

Model 210 as of M. Y. 1999



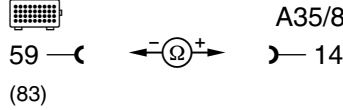


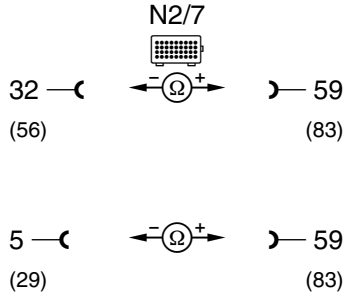
Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/ display	Possible cause/Remedy
32.0	B1315	Non-USA vehicles only, continue to next test step.				
32.1	B1315	<i>Non-USA vehicles only, continue to next test step.</i>				
32.2	B1315	<i>Non-USA vehicles only, continue to next test step.</i>				
33.0	B1878	Automatic child seat recognition warning lamp (N72e1) HHT actual values		Position the version coded and approved MB child seat "Babysafe" onto the front passenger seat facing forward/rearward. Ignition key in position "2". Wait approx. 15 seconds.	N72e1 illuminates. ✓ F	N72e1 ⇒ 33.1
33.1		Automatic child seat recognition warning lamp (N72e1) Continuity Check -//-	<p>N2/7 58 ← Ω → 2 (82)</p>	Remove ignition key. Disconnect connector on lower control field control module (N72). Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).	<1 Ω	Line from N2/7 to N72 ⇒ 33.2





Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
33.2		Automatic child seat recognition warning lamp (N72e1) Short circuit test Γ 1 - Γ 1 +	 <p>N2/7 32 — 58 (56) (82) 5 — 58 (29) (82)</p>	Remove ignition key. Disconnect connector on lower control field control module (N72). Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	>20 kΩ >20 kΩ	Short circuit after circuit 31, 30, 15, 15R
34.0		Diagnostic line (N2/7) Continuity Check	 <p>N2/7 8 — X11/4 — 30 (32)</p>	Remove ignition key. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1). For pin connector information see: AD00.00-P-2000-02A	<1 Ω	Wiring.

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
35.0	81875	Crashoutput (digital) Restraint system control module (N2/7) to Emergency call system control module (TELE AID) (A35/8) Continuity Check As of 07/99	N2/7 	Remove ignition key. Disconnect connector at A35/8. Disconnect connector on N2/7 using aid. Connect  , (22, Figure 1).	<1 Ω	Wiring,  Readout DTC memory in A35/8 see ⇒ 35.1
35.1	81875	Crashoutput (digital) Restraint system control module (N2/7) to Emergency call system control module (TELE AID) (A35/8) Short circuit check Γ1- Γ1+		Remove ignition key. Disconnect connector at A35/8. Disconnect connector at N2/7.	>20 kΩ >20 kΩ	Wiring, Short circuit after circuit 31, 30, 15, 15R

Electrical Test Program - Test (driver/passenger-side airbag/side airbag/windowbag)

⇒		Test scope/ Actual value no. and text	Test connection	Test condition	Nominal value/  display	Possible cause/Remedy
36.0	B1876	<p>Crashoutput (digital) Restraint system control module (N2/7) to Injection system control module (N3) Continuity Check</p> <p>Diesel</p> <p>Gasoline</p>	<p>N2/7 </p> <p>7 —(← — Ω —)— 2.17 (31)</p> <p>N3/9</p> <p>Gasoline</p> <p>7 —(← — Ω —)— D.16 (31)</p> <p>N3/10</p>	<p>Remove ignition key. Disconnect connector on N2/7 using aid. Connect , (22, Figure 1).</p>	<1 Ω	Wiring.

Control Module Coding - Vehicle Equipment

Via coding, the stored vehicle equipment as noted in the SRS control module is matched to the actual vehicle equipment installed.

By using the Hand-Held Tester (HHT), the coding of the SRS control module (N2/2) is undertaken.

The coding of the vehicle equipment (into the SRS control module) can be repeated numerous times depending on changes in the vehicles' installed equipment.



After replacing the SRS control module, the SRS MIL (A1e15) blinks indicating the need to code the control module.

On the initial coding, the vehicle VIN must be entered via the HHT. Subsequently, the entered VIN will be transferred (noted) in the SRS control module.