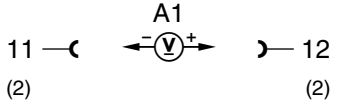
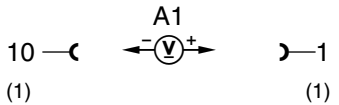
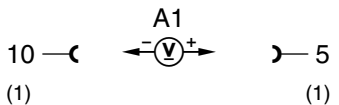
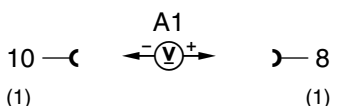


Electrical Test Program – Test (vehicles up to 08/95)

⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		Instrument cluster (A1) Voltage supply circuit 30		Remove A1 Disconnect connector 2	11 – 14 V	Wiring, ⇒ 1.1
1.1		Voltage supply Circuit 15, unfused		Remove A1 Disconnect connector 1 Ignition: ON	11 – 14 V	Wiring, ⇒ 1.2
1.2		Voltage supply Circuit 15, fused		Remove A1 Disconnect connector 1 Ignition: ON	11 – 14 V	Wiring, Values OK: A1
2.0		Instrument cluster (A1) Illumination		Remove A1 Disconnect connector 1 Ignition: ON Turn on parking lights.	11 – 14 V	Wiring, Rotary light switch (S1), Short circuit in circuit 58d (output from A1).
3.0		Fuel level gauge (A1p2)		Activate test mode 1 (see Figure 1).	Analog fuel gauge reading ≈ digital readout	A1, ⇒ 3.1

Electrical Test Program – Test (vehicles up to 08/95)



⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.1	6 – 9	Fuel level gauge (A1p2)		Activate test modes 6 – 9	see Figures 2 – 9	A1, ⇒ 3.2
3.2		Wires and connections or fuel level sensor (B4)	<p style="text-align: center;">B4</p> <p>1—— 2</p>	Ignition: OFF Disconnect connector at B4 Connect resistance substitution unit. Ignition: ON Resistance substitution unit setting: $70 \pm 3 \Omega$ $62 \pm 1 \Omega$ $53 \pm 2 \Omega$ $37 \pm 2 \Omega$ $21 \pm 2 \Omega$ $5 \pm 2 \Omega$ Note: Before changing each resistance value, the ignition must be turned off and then turned on again.	Display in A1p2: ≈ 0 ¹⁾ $\approx \text{Res.}$ ¹⁾ $\approx 1/4$ $\approx 1/2$ $\approx 3/4$ $\approx 1/1$	Wiring, Values OK: B4

1) Fuel reserve indicator lamp lights up.


Electrical Test Program – Test (vehicles up to 08/95)

⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0	2	Fuel consumption indicator (A1p10)		Engine: at Idle Activate test mode 2, Increase engine rpm.	With increasing rpm, the consumption in l/h increases. Note: The readout is only visible on the digital display. The analog reading shows 0.	⇒ 4.1
4.1	6 – 8	A1p10		Activate test modes 6 – 8	see Figures 2 – 7	A1, ⇒ 4.2

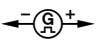
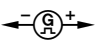
Electrical Test Program – Test (vehicles up to 08/95)

⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.2	2	Fuel consumption signal from LH-SFI control module (N3/1 or N3/3) or engine control module (N3/4) (Vehicles with CFI, see section 1.2 23)	<p>LH-SFI</p> <p>W16  N3/1 or N3/3</p> <p>HFM-SFI</p> <p>W16  N3/4</p>	<p>Ignition: OFF</p> <p>Disconnect N3/1, N3/3 or N3/4 (Figures 10, 15 and 16).</p> <p>Connect signal generator (Figure 17) and set to a voltage amplitude of approx. 10 V.</p> <p>Connect wire for rpm signal as follows:</p> <p>LH-SFI N3/1 or N3/3 socket 9 to N16/1 socket 13.</p> <p>HFM-SFI N3/4 socket 7 to socket 18.</p> <p>Ignition: ON</p> <p>Activate test mode 2.</p>	<p>LH-SFI/ HFM-SFI</p> <p>25 HZ ≈ 5 l/h 50 HZ ≈ 10 l/h 75 HZ ≈ 15 l/h 100 HZ ≈ 20 l/h</p> <p>Note: The readout is only visible on the digital display. The analog reading shows 0.</p>	<p>Wiring, A1, Values OK: N3/1, N3/3 or N3/4 Engines, Volume 2 – 1.1 23 or – 3.1 23 or – 3.2 23</p> <p>Note: If no plausible values are indicated while driving and the speedometer is in order: A1</p>
5.0	3	Engine oil pressure gauge (A1p3)		<p>Engine: at Idle</p> <p>Activate test mode 3. Increase engine rpm</p>	<p>Analog reading ≈ digital readout. The oil pressure increases with increasing engine rpm.</p>	<p>A1 ⇒ 5.1</p>





Electrical Test Program – Test (vehicles up to 08/95)

⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.1	6 – 7	Oil pressure gauge (A1p3)		Activate test modes 6 – 7	see Figure 2 and 5	A1, ⇒ 5.2
5.2		Wires and connections or oil pressure sensor (B5)		Ignition: OFF Disconnect connector at B5. Connect resistance substitution unit. Engine: at Idle Resistance substitution unit setting: 13 Ω 40 Ω 90 Ω 150 Ω Note: Before changing each resistance value, the ignition must be turned off and then turned on again.	Display in A1p3: ≈ 0 ≈ 1 ≈ 2 ≈ 3	Wiring, A1, Values OK: check oil pressure (see SMS Engine, Mechanical), B5
6.0	4	Tachometer (A1p5)		Engine: at Idle Activate test mode 4, increase engine rpm.	Analog tachometer reading ≈ digital readout	A1, ⇒ 6.1


Electrical Test Program – Test (vehicles up to 08/95)

⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.1		Tachometer (A1p5) with LH-SFI:	W16  N16/1 13	Disconnect plug on N16/1 or N3/4 (Figures 10, 15 and 17). Connect signal generator and set to a voltage amplitude of approx. 10 V (Figure 17). Ignition: ON	Engine 104, 120 Readout: 50 Hz ≈ 1000 rpm 194 Hz ≈ 4000 rpm	Wiring, A1, Values OK on LH-SFI engine: N16/1 D.M., Chassis and Drivetrain, Volume 1 – 1.1 23
		with HFM-SFI:	W16  N3/4 18 (1)		Engine 119 Readout: 70 Hz ≈ 1000 rpm 270 Hz ≈ 4000 rpm	Values OK on HFM-SFI engine: N3/4
7.0	5	Low engine oil level indicator lamp (A1e12)		Oil level correct. Engine: at Idle Activate test mode 5. Readout in odometer:	0 ≈ oil level OK 1 ≈ oil level not OK	Wiring, Oil level switch (S43)



Electrical Test Program – Test (vehicles up to 08/95)

⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0		<p>Electronic speedometer (A1p8) Vehicles with VSS from transmission inductive speed sensor (L2) up to approx. 12/93:</p> <p>Vehicles with VSS from left front axle VSS sensor (L6/1) Starting approx. 01/94:</p> <p>Vehicles with ASR or ETS as of 06/94: Left front axle VSS sensor (L6/1) connected to ASR/SPS or ETS/SPS control module (N47-1 or N47-2). See D.M., Chassis and Drivetrain, Vol. 3, 9.1 23</p>	<p>X26/12 2 —  — 1</p> <p>ABS only W16  N30 3 (1)</p> <p>ASR/ABS W16  N30/1 36 (1)</p> <p>ASR/SPS or ETS/SPS W16  N47-1 N47-2</p>	<p>Disconnect 6-pole connector X26/12 (Figure 11). Connect signal generator and set to a voltage amplitude of approx. 2 V (Figure 17). Ignition: ON</p> <p>Remove N30 or N30/1, or N47-1 or N47-2 (Figure 10 or 15). Connect signal generator and set to a voltage amplitude of approx. 10 V (Figure 17). Ignition: ON</p>	<p>With increasing frequency the speed on the speedometer increases.</p>	<p>Wiring, A1, Values OK: L2.</p> <p>N30 or N30/1, D.M., Chassis and Drivetrain, Volume 2 – 5.3 23 or 6.2 23.</p> <p>N47-1 or N47-2, D.M., Chassis and Drivetrain, Volume 3 – 9.1 23</p>

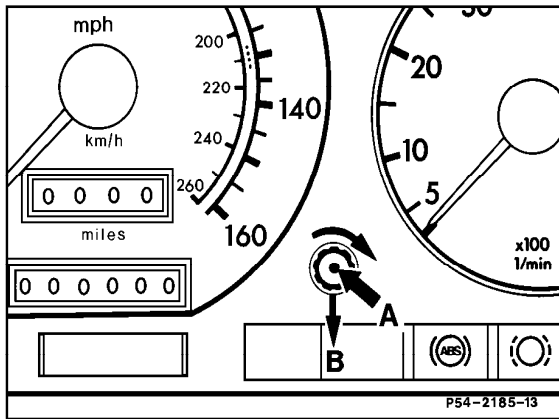
Electrical Test Program – Test (vehicles up to 08/95)

⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0		Outside temperature display (A1p4)	 <p>X67</p>	Disconnect 2-pole connector X67 (Figure 12). Connect resistance substitution unit. Ignition: ON Resistance substitution unit setting: 53 kΩ 9.8 kΩ 1 kΩ	Display in A1p4: ≈ - 30 °C ≈ 0 °C ≈ + 50 °C	Wiring, A1, ⇒ 9.1
9.1	6	Outside temperature indicator temperature sensor (B14)		Ignition: ON Activate test mode 6. 53 kΩ 9.8 kΩ 3.7 kΩ 1.6 kΩ	Readout in odometer: ≈ - 30 °C ≈ 0 °C ≈ 20 °C ≈ 40 °C	B14

Electrical Test Program – Test (vehicles up to 08/95)

⇒	Mode	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0		ECT gauge (A1p1)	W11—C 	Disconnect plug on ECT gauge sensor (B13). Connect resistance substitution unit. Ignition: ON Resistance substitution unit setting: 110 Ω 67 Ω 38 Ω 20 Ω	Display in A1p1: ≈ 60 °C ≈ 80 °C ≈ 100 °C ≈ 120 °C	Wiring, B13, A1
11.0			W11—C 			Wiring, B13, A1

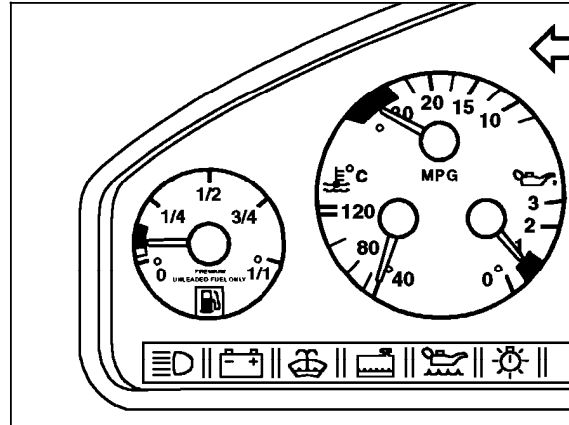
Electrical Test Program – Test (vehicles up to 08/95)



P54-2185-13

Figure 1

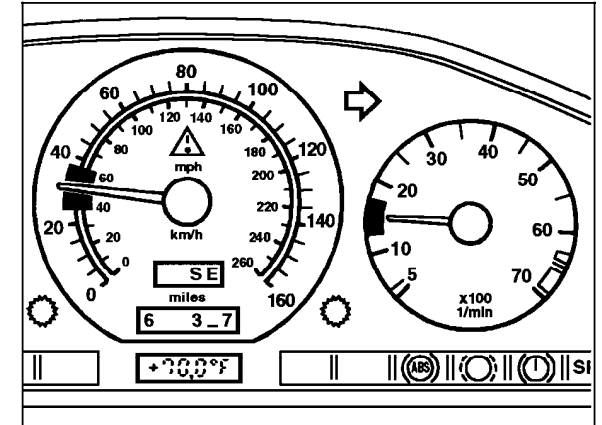
Activation of test mode



P54-6669-13

Figure 2

Activation of instruments
 1st quarter: Fuel tank
 Fuel consumption
 Oil pressure

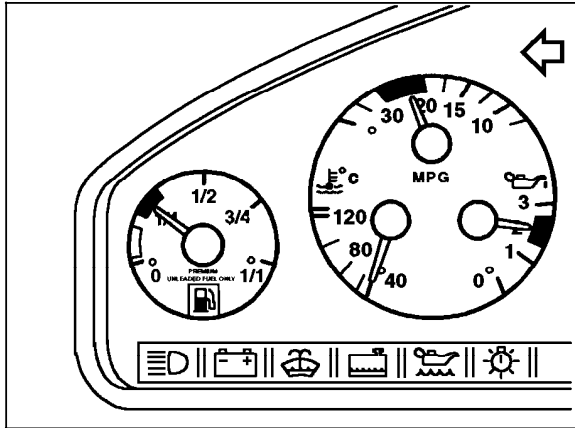


P54-6674-13

Figure 3

Activation of instruments
 1st quarter: Speedometer, Tachometer

Electrical Test Program – Test (vehicles up to 08/95)

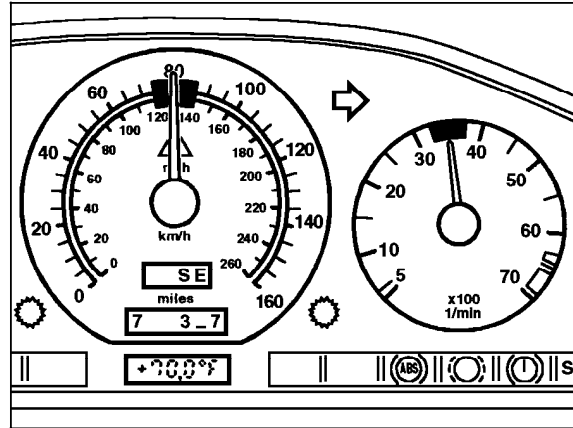


P54-6670-13

Figure 4

Activation of instruments

- 2nd quarter: Fuel tank
- Fuel consumption
- Oil pressure

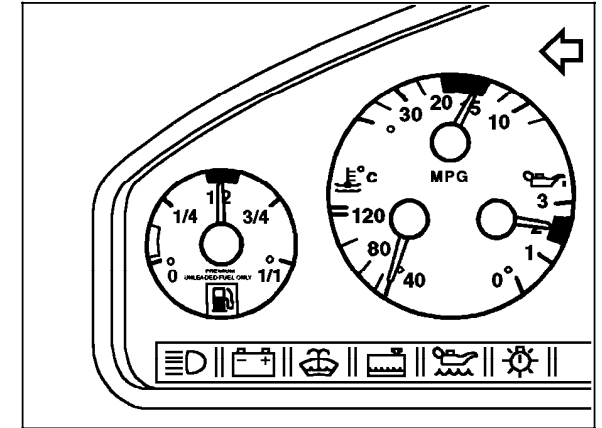


P54-6675-13

Figure 5

Activation of instruments

- 2nd quarter: Speedometer, Tachometer



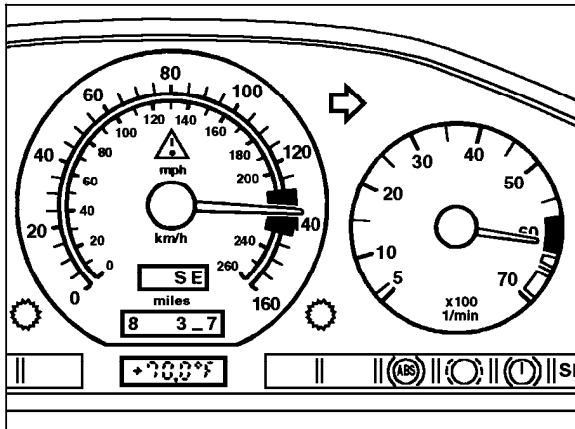
P54-6671-13

Figure 6

Activation of instruments

- 2nd quarter: Oil pressure
- 3rd quarter: Fuel tank
- Fuel consumption

Electrical Test Program – Test (vehicles up to 08/95)

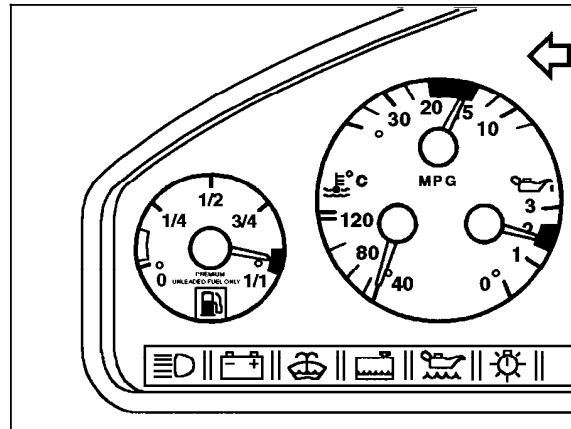


P54-6676-13

Figure 7

Activation of instruments

3rd quarter: Speedometer, Tachometer

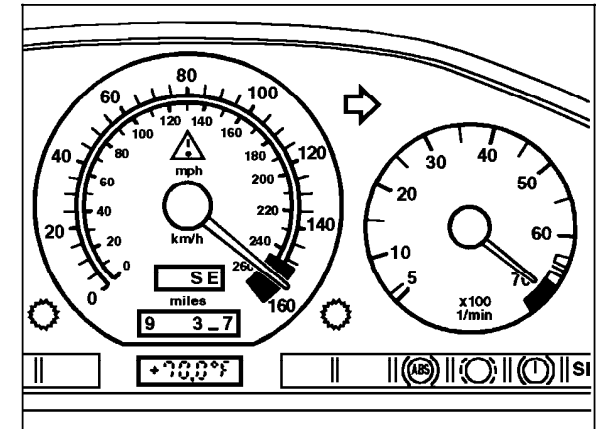


P54-6672-13

Figure 8

Activation of instruments

2nd quarter: Oil pressure
 3rd quarter: Fuel consumption
 4th quarter: Fuel tank



P54-6677-13

Figure 9

Activation of instruments

4th quarter: Speedometer, Tachometer

Electrical Test Program – Test (vehicles up to 08/95)

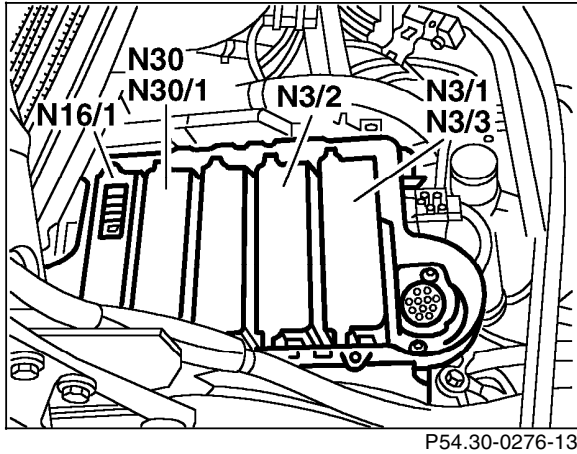


Figure 10
Module box on vehicles with LH-SFI engine

- N3/1 LH-SFI control module
- N3/2 Left LH-SFI control module
- N3/3 Right LH-SFI control module
- N16/1 Base module
- N30 ABS control module
- N30/1 ASR control module

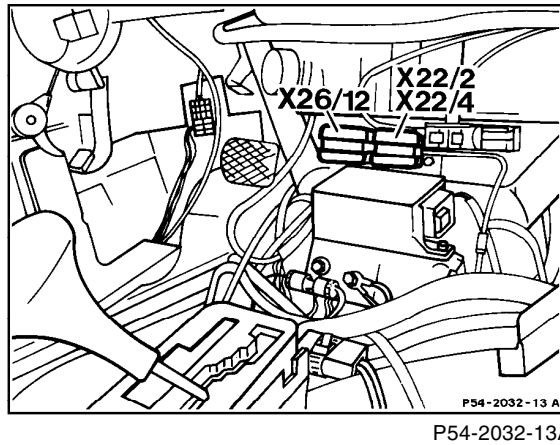


Figure 11
X26/12 Interior/transmission connector (8-pole)

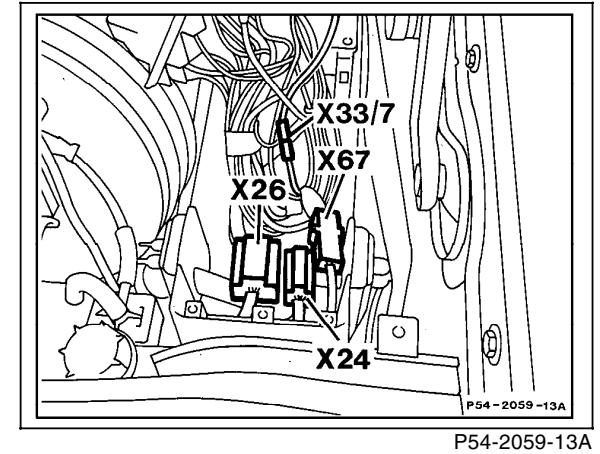
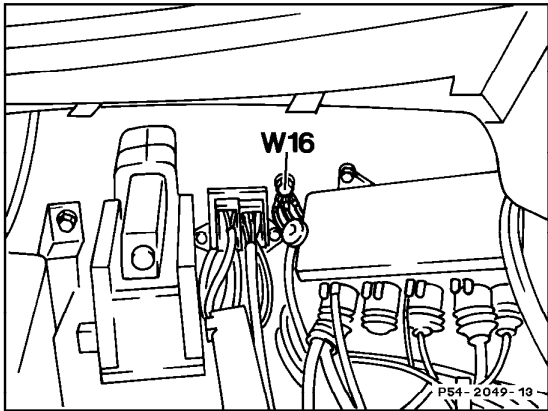


Figure 12
X67 Outside temperature indicator connector (2-pole)

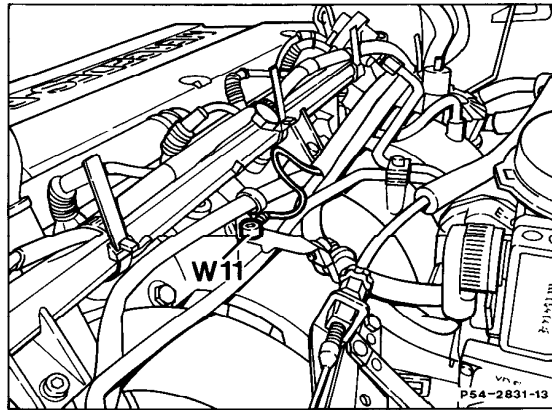
Electrical Test Program – Test (vehicles up to 08/95)



P54-2049-13

Figure 13

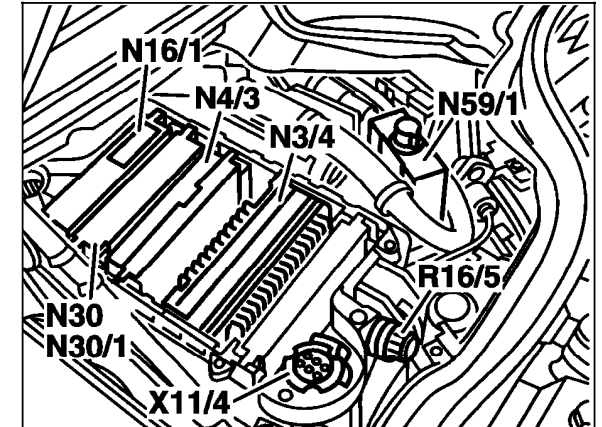
W16 Ground (component compartment)



P54-2831-13

Figure 14

W11 Ground (engine - connection point for ground wires)



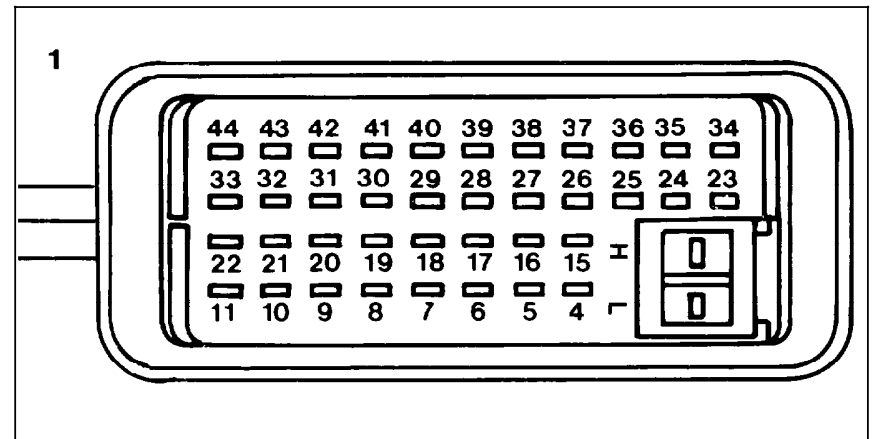
P07-6603-13

Figure 15

Module box on vehicles with HFM-SFI engine

- N3/4 Engine control module (HFM-SFI)
- N30 ABS control module
- N30/1 ASR control module

Electrical Test Program – Test (vehicles up to 08/95)



P07-5936-33

Figure 16
Engine control module (N3/4) connector "1"

- 7 Fuel consumption signal
- 18 Engine rpm output signal (TN-signal)

Electrical Test Program – Test (vehicles up to 08/95)

Connection Diagram – Signal Generator

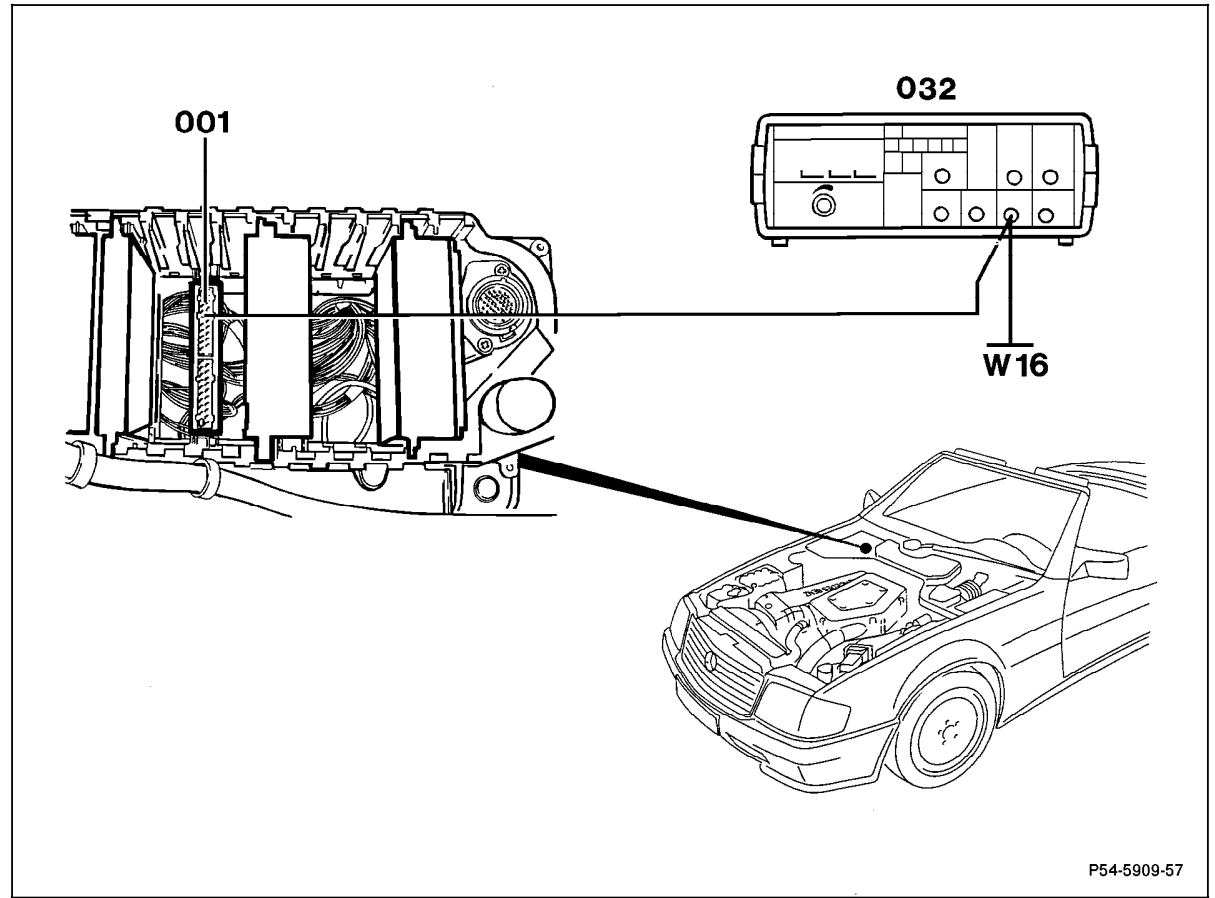


Figure 17

- 001 ABS control module connector
- 032 Signal generator
- W16 Ground (component compartment)

P54-5909-57

P54-5909-57