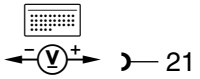
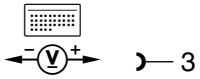
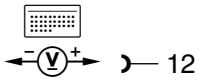
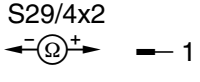
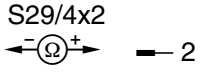
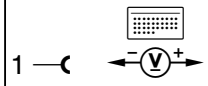
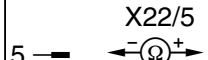
Electrical Test Program - Test

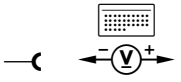
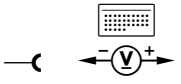
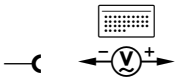
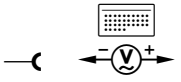
Test step **DTC**	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 1.0	**Voltage supply**	N15/1  1 — 21	Igition: **ON**	11 – 14 V	Wiring, Ground (component compartment) (W16), Overvoltage protection relay module (K1/2).
⇒ 2.0 [1] 4	**Accelerator pedal signal**	N15/1  8 — 3	Ignition: **ON** Accelerator pedal in: CTP WOT CTP	 < 1 V < 2 V 2 – 3 V	Wiring, TB switch (S29/4), TCM (N15/1).
	Reference voltage	N15/1  8 — 12	 CTP WOT CTP	 < 1 V < 2 V 2 – 3 V	 Wiring, ⇒ 2.1.
⇒ 2.1	TB Switch (S29/4)	S29/4x2  3 — 1 S29/4x2  3 — 2	Ignition: **OFF** Disconnect TB switch AP potentiometer connector (S29/4x2).	900 – 1600 Ω 2.0 – 3.8 kΩ	S29/4

[1] The voltage should increase continually when bringing the accelerator pedal to WOT.

Electrical Test Program - Test

Test step **DTC**	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 3.0	**Transmission range**	N15/1  1 — (V) — 17	Ignition: **ON** Selector lever in: **P-R-N-D** **4-3-2**	 > 10 V < 1 V	 Wiring, ⇒ 3.2, TCM (N15/1), Overvoltage protection relay module (K1/2).
⇒ 3.1	***Non - USA vehicles only***				
⇒ 3.2	Transmission range	X22/5  5 — (Ω) — 4	Ignition: **OFF** Disconnect 5-speed AT/engine connector (X22/5). Selector lever in: **P-R-N-D** **4-3-2**	 < 5 Ω > 20 kΩ	Wiring, TR “D“ contact switch (S16/9)
⇒ 4.0	***Non - USA vehicles only***				

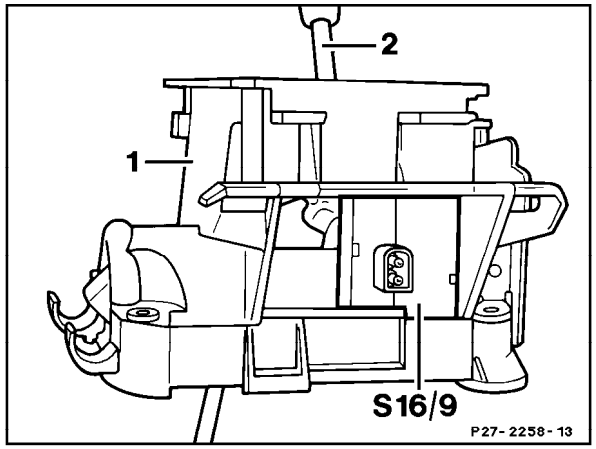
Electrical Test Program - Test

Test step / DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 5.0 5	**Engine speed signal TN**	N15/1  1 — 14	Engine: **at Idle**	6 V	Wiring, ⇒ 5.1, TCM (N15/1).
⇒ 5.1	Control module	N15/1  1 — 14	Engine: **at Idle** TCM (N15/1) disconnected.	6 V	DI control module (N1/3), Engine systems (MAS) control module (N16), CFI control module (N3).
⇒ 6.0 6	**Vehicle speed signal (VSS)**	N15/1  1 — 16	Drive vehicle at approximately 31 mph (50 km/h) on a dynamometer. ABS/ASR control module (N30/1) disconnected.	6 V ~	Wiring, Instrument cluster (A1), DM, B&A, Vol. 1, section 1.2 23, Combination relay (N10), Hall-effect speed sensor (B6).
⇒ 7.0	**Digital load signal**	N15/1  1 — 13	Engine: **at Idle** Vacuum line on DI control module connected (CTP) Vacuum line on DI control module disconnected (WOT)	 approx. 0.8 V ~ > 2 V ~	Wiring, TCM (N15/1), DI control module (N1/3).

Electrical Test Program - Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 8.0	**Kickdown switch (S16/6)** Activation	N15/1 1 — (V) — 20	Engine: **at Idle** Depress kickdown switch by hand (behind pedal).	< 1 V > 10 V	Wiring. ⇒ 8.1, TCM (N15/1), Kickdown switch (S16/6).
⇒ 8.1	Kickdown solenoid valve (Y3/1y1), internal resistance	N15/1 1 — (Ω) — 20	Ignition: **OFF** TCM (N15/1) disconnected.	10 – 30 Ω	Wiring, Valve block (Y3/1).
⇒ 9.0 7 9 10	**Valve block control valve (Y3/1y2)** Activation in 4GR Activation in 5GR	N15/1 2 — (V~) — 22	Engine: **at Idle** Engine speed > 1000 rpm Drive vehicle on a dynamometer at approximately 50 mph (80 km/h). TR “D“	> 5 V ~ < 1 V ~	Wiring ⇒ 9.1, TCM (N15/1) ⇒ 2.0, ⇒ 5.0 – 7.0
⇒ 9.1	Coil resistance	N15/1 2 — (Ω) — 22	Ignition: **OFF** TCM (N15/1) disconnected.	2 – 10 Ω (see control valve resistance table)	Valve block control valve (Y3/1y2)

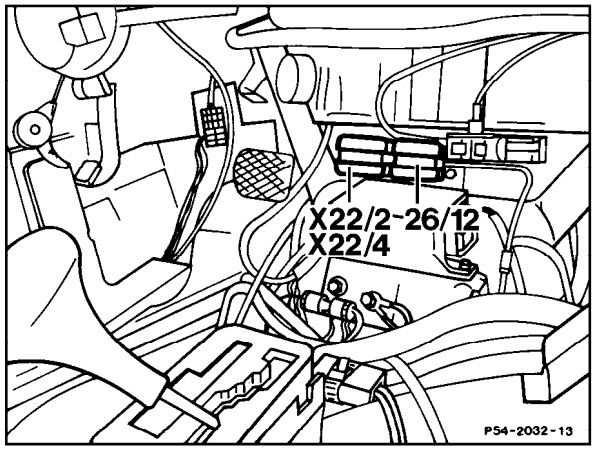
Electrical Test Program - Test



P27-2258-13

Figure 1

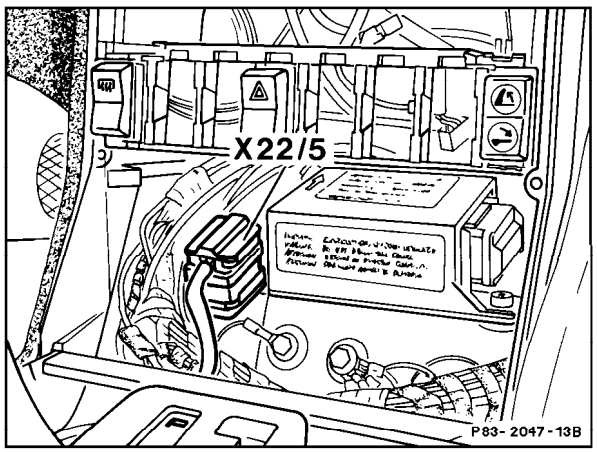
S16/9 Transmission range “D” contact switch



P54-2032-13

Figure 2

X22/2 AT/engine connector

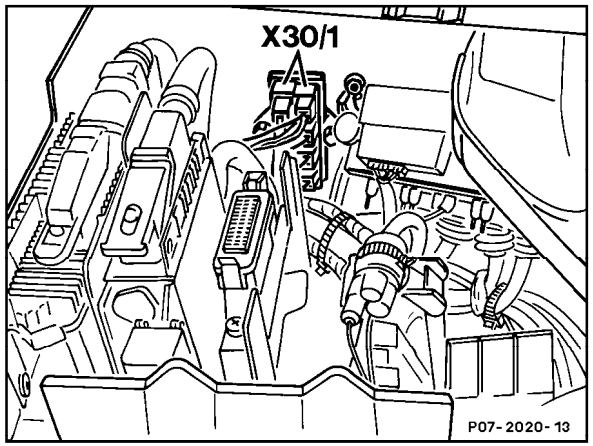


P83-2047-13B

Figure 3

X22/5 5-speed AT/engine connector

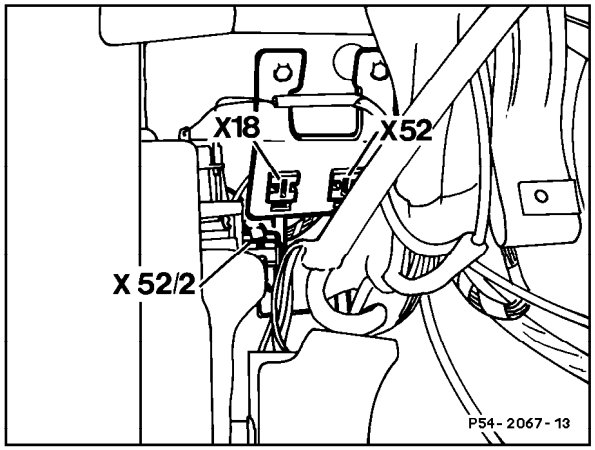
Electrical Test Program - Test



P07-2020-13

Figure 4

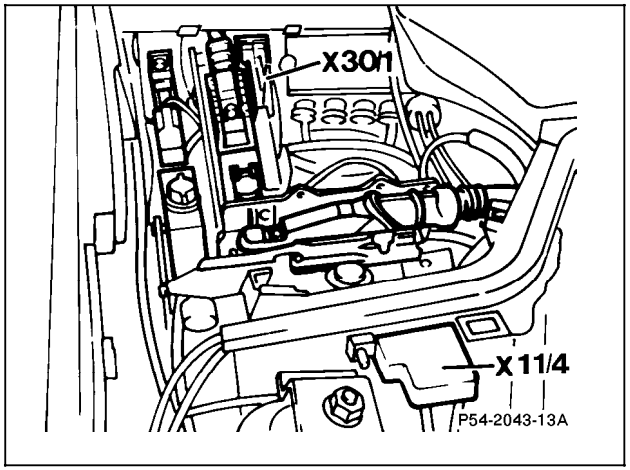
X30/1 Multi-function connector block



P54-2067-13

Figure 5

X18 Interior/taillamp harness connector

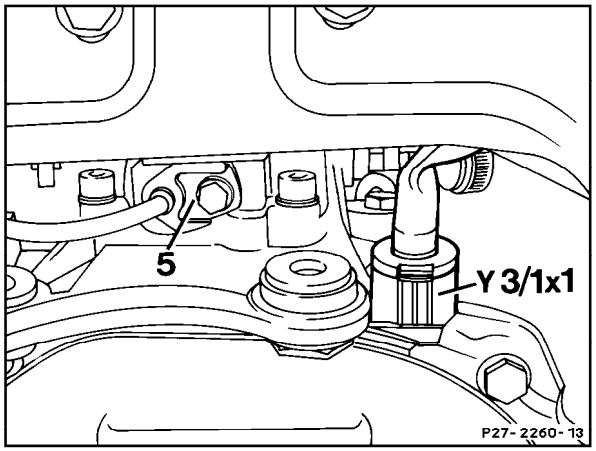


P54-2043-13A

Figure 6

X11/4 Data link connector (DTC readout)
X30/1 Multi-function connector block

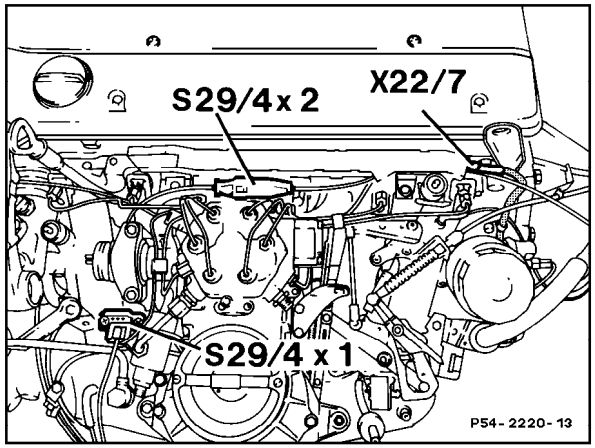
Electrical Test Program - Test



P27-2260-13

Figure 7

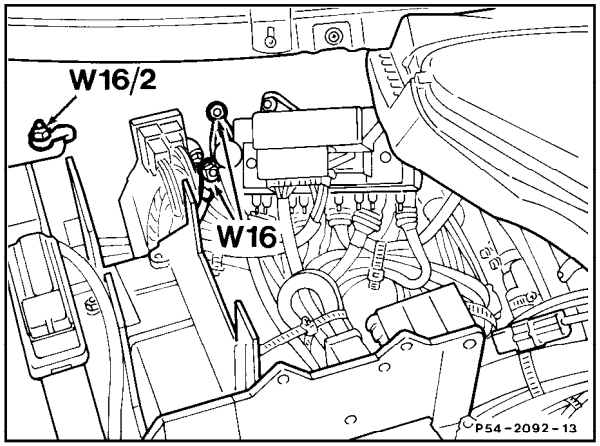
Y3/1x1 Valve block connector (5-speed AT)



P54-2220-13

Figure 8

S29/4x2 AP potentiometer connector

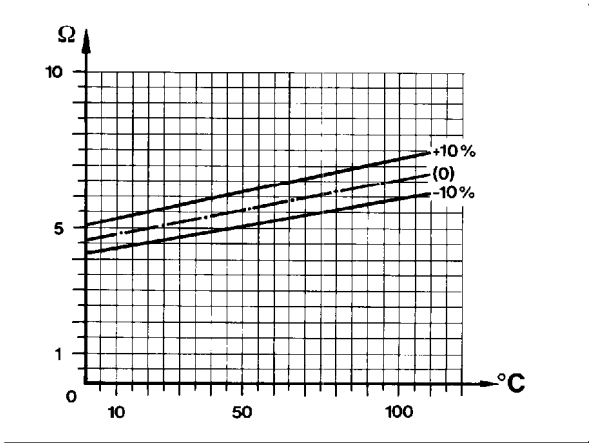


P54-2092-13

Figure 9

W16 Ground (component compartment)

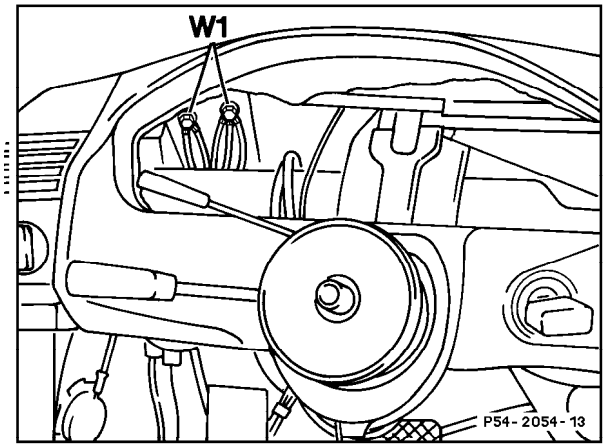
Electrical Test Program - Test



P27-0187-13

Figure 10

Valve block control valve (y3/1y2), temperature dependant resistance table



P54-2054-13

Figure 11

W1 Main ground (behind instrument cluster)