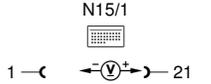
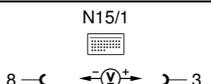
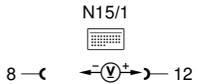
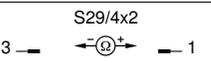
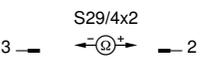
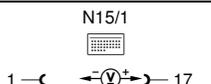
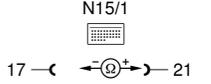


Test programme - electrical Testing

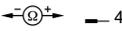
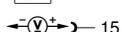
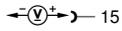
Test step Fault code	Test scope	Test equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 1.0	Power supply	N15/1 	Ignition: ON	11-14 V	Model 124: Cables, ground, battery (W10), overvoltage protection relay 87E, 7-pole (K1/1) Model 129: Cables, ground, components compartment (W16), overvoltage protection relay 87E/87L/30a, 9-pole (series K1/1) (K1/2)
⇒ 2.0 1) 4	Accelerator pedal signal	N15/1 	Ignition: ON Accelerator pedal in idle pos. Accelerator pedal in full throttle pos.	<1 V <2 V	Cables Throttle valve switch (S29/4), Automatic transmission control unit, 5-speed (N15/1)
	Reference voltage	N15/1 	Accelerator pedal in idle pos. Accelerator pedal in full throttle pos. Accelerator pedal in idle pos.	<1 V <2 V 2-3 V	Cables, ⇒ 2.1

1) When operating the accelerator pedal the voltage should continually increase up to the full throttle position.

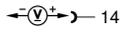
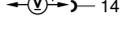
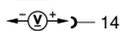
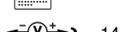
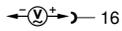
Test programme - electrical Testing

Test step Fault code	Test scope	Test equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 2.1	Accelerator pedal potentiometer (S29/4)	S29/4x2  S29/4x2 	Ignition: OFF Disconnect plug (S29/4x2)	900-1600 Ω 2.0-3.8 kΩ	S29/4
⇒ 3.0	Selector lever signal	N15/1 	Ignition: ON Selector lever position: P to D Selector lever position: 4 to 2	>10 V <1 V	Cables ⇒ 3.1 (model 124), ⇒ 3.2 (model 129) Control unit (N15/1), overvoltage protection relay 87E/87L/30a 9-pole (series K1/1) (K1/2)
⇒ 3.1 Model 124 only	Selector lever switch	N15/1 	Ignition: OFF Disconnect control unit (N15/1) Selector lever position: P to D Selector lever position: 4 to 2	<5 Ω >20 kΩ	Cables "D" position contact switch (S16/9)

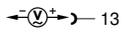
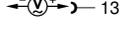
Test programme - electrical Testing

Test step Fault code	Test scope	Test equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 3.2 Model 129 only	Selector lever switch	X22/5 5 —  — 4	Ignition: OFF Detach connector, automatic transmission (X22/5). Selector lever position: P to D Selector lever position: 4 to 2	< 5 Ω >20 kΩ	Cables "D" position contact switch (S16/9)
⇒ 4.0	Switch 2nd driving programme E/S (S16/5)	N15/1  1 —  — 15	Ignition: ON Engine: Idling Switch 2nd driving programme in position: E Operate kick-down switch (reach behind accelerator pedal) Do not operate kick-down switch Switch 2nd driving programme in position: S	>10 V <1 V <1 V	Cables Switch 2nd driving programme (S16/5), kick-down switch 2nd driving programme (S16/7)

Test programme - electrical Testing

Test step Fault code	Test scope	Test equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 5.0	Speed signal TNA	N15/1  1 —  — 14	Engine: Idling	≥ 6 V	Cables, ⇒ 5.1, automatic transmission control unit, 5-speed (N15/1)
⇒ 5.1	Connected control units	N15/1  1 —  — 14	Engine: Idling Control unit (N15/1) disconnected.	≥ 6 V	Electronic ignition control unit (EZL)/anti-knock control (N1/3), Engine units control unit MAS (N16), KE control unit (N3)
⇒ 6.0	Speed signal	N15/1  1 —  — 16	Vehicle drives at approx. 50 km/h on a test roller. ABS/ASR control unit (N30/1) disconnected.	≥ 5 V ~	Cables Instrument cluster (A1) (for testing refer to Body, volume 1-1.1, 1.2 □ 23 Model 124 Hall sensor speed (B6) Model 129 Combination relay (turn, hazard signal, heated rear window, wiper motor) (N10), Hall sensor speed (B6)

Test programme - electrical Testing

Test step Fault code	Test scope	Test equipment/ test connection	Operation/ requirement	Nominal value	Possible cause/remedy
⇒ 7.0	Digital load signal	N15/1  1 —  — 13	Engine: Idling Vacuum hose placed on electronic ignition (EZL)/anti-knock control (AKR) ignition unit (idle) Vacuum hose disconnected at electronic ignition (EZL)/anti-knock control (AKR) ignition unit (full throttle)	approx. 0.8 V ~ >2 V ~	Cables Automatic transmission control unit, 5-speed (N15/1), electronic ignition control unit (EZL)/anti-knock control (AKR) (N1/3)

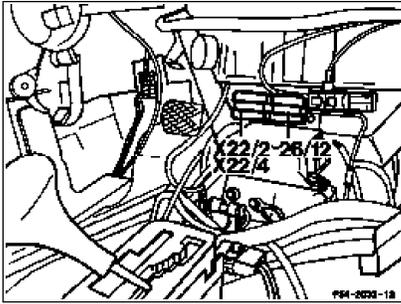


Figure 4
Model 129
 X22/2 Plug connection, automatic transmission/engine (8-pin)

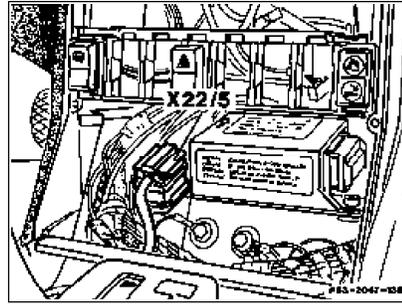


Figure 5
Model 129
 X22/5 Plug connection, automatic 5-speed transmission/engine (6-pin) (vehicles without auxiliary heating)

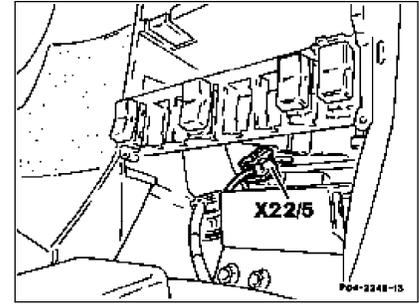


Figure 6
Model 129
 22/5 Plug connection, automatic 5-speed transmission/engine (6-pin) (vehicles with auxiliary heating)

Test programme - electrical Testing

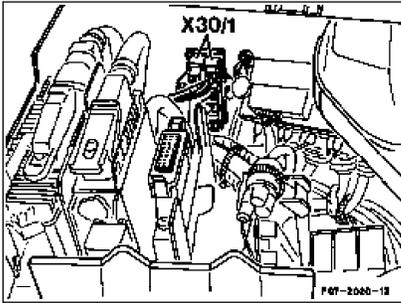


Figure 7
Model 129
 X30/1 Plug connection, multi-function block

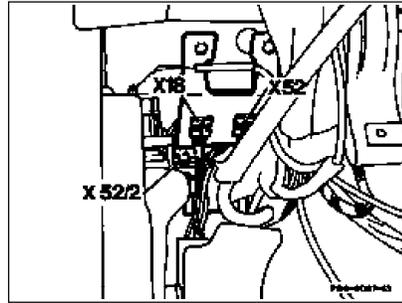


Figure 8
 X18 Connector interior/tail lamp harness, 8-pole

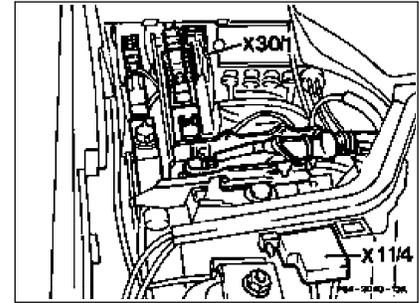


Figure 9
 X11/4 Test connector for diagnosis, 16-pole (pulse signal)
 X30/1 Connector, multiple function block

Test programme - electrical Testing

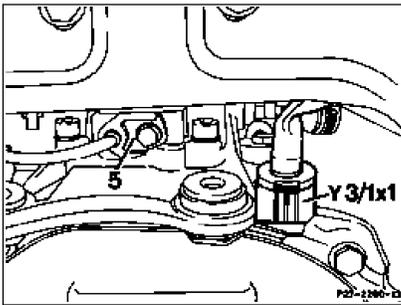


Figure 10
 Y3/1x1 Connector, valve unit automatic 5-speed transmission

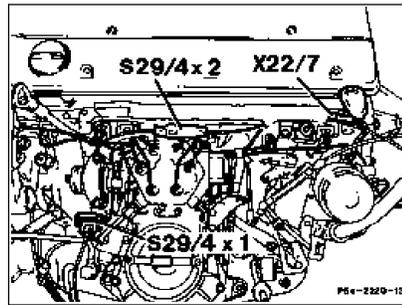


Figure 11
 S29/4x2 Connector, accelerator pedal potentiometer

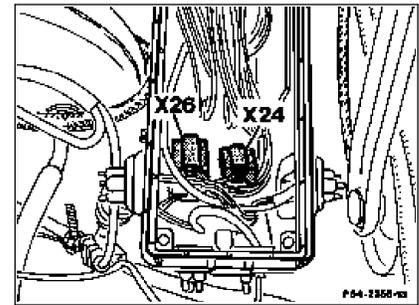


Figure 12
Model 124
 X26 Plug connection, interior/engine (12-pin)

Test programme - electrical Testing

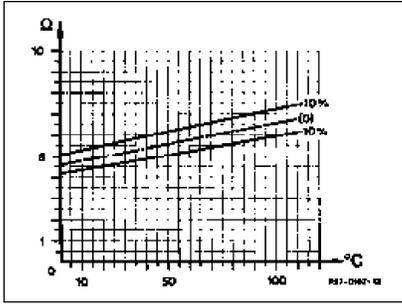


Figure 13
Table
Resistance of control valve (Y3/1y2) as a function of temperatures

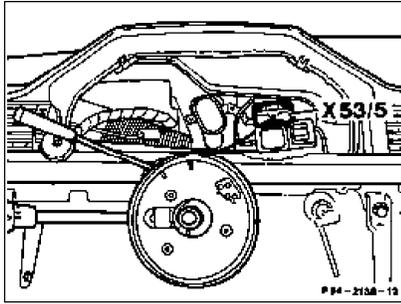


Figure 14
Model 124
X53/5 Multi-point plug connection, Hall-effect sensor road speed signal

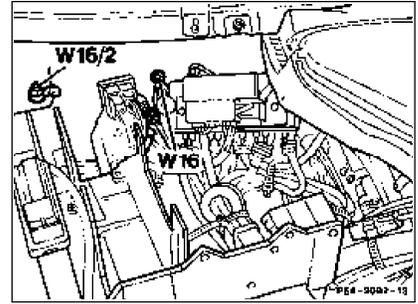


Figure 15
Model 129
W16 Ground, component compartment

Test programme - electrical Testing

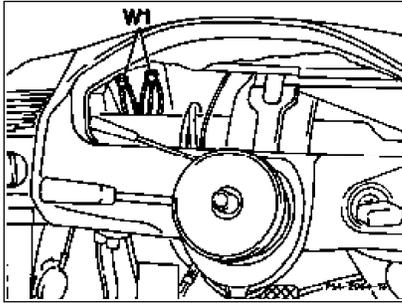


Figure 16
W1 Main ground (behind instrument cluster)