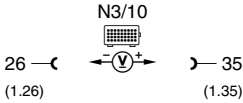
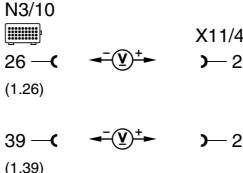
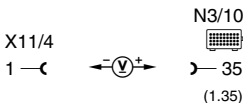


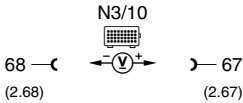
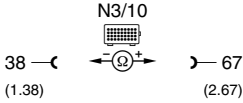
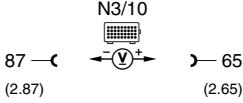
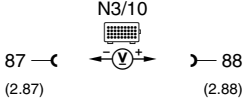
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		Engine control module (ME-SFI) (N3/10) Voltage supply Circuit 30	 26 — (1.26) 35 (1.35)	Ignition: ON	11 – 14 V	⇒ 1.1
1.1		Ground wire	 26 — (1.26) 2 39 — (1.39) 2	Ignition: ON	11 – 14 V	Wiring, Model 129: Ground, module box bracket (W27), Model 140: Output ground (W15), right footwell, Model 210: Electronic ground (W16/6), right component compartment, ⇒ 1.2
1.2		Voltage supply Circuit 30	 1 — (1.35) 35 (1.35)	Ignition: ON	11 – 14 V	Wiring, Model 129, 140: Base module (N16/1) or fuse on base module, Model 210: Relay module (K40).

Electrical Test Program – Sequential Multiport Fuel Injection System Test

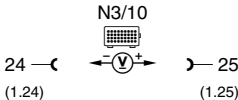
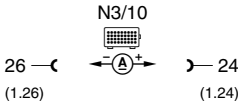
⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
2.0	PO 560	Engine control module (ME-SFI) (N3/10) Voltage supply Circuit 87M		Ignition: ON	11 – 14 V	⇒ 2.1
2.1		Electronics ground		Ignition: ON	11 – 14 V	Wiring, Model 129 and 140: Electronic ground (W15/1), right footwell, Model 210: Electronic ground (W16/6), right component compartment, ⇒ 2.2
2.2		Voltage supply Circuit 87M		Ignition: ON Ignition: OFF	11 – 14 V < 1 V	Wiring, Model 129, 140: Base module (N16/1) or fuse on base module, Model 210: Relay module (K40).
3.0	PO 560	Engine control module (ME-SFI) (N3/10) Voltage supply Circuit 87M		Ignition: ON Ignition: OFF	11 – 14 V < 1 V	Wiring, Model 129, 140: Base module (N16/1) or fuse on base module, Model 210: Relay module (K40).

Electrical Test Program – Sequential Multiport Fuel Injection System Test

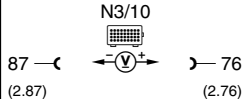
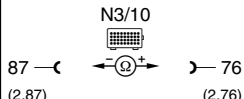
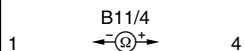
⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0	PO 100	Hot film MAF sensor (B2/5) Voltage at hot film		Engine: at Idle Engine coolant temperature >70°C	0.7 – 1.0 V ²⁾	Wiring ⇒ 5.0, Air intake system leak, B2/5
5.0	PO 100	Ground wire for hot film MAF sensor (B2/5)		Ignition: OFF Disconnect MAF sensor (B2/5) connector. Bridge sockets 1 and 4.	< 1 Ω	Ground wire.
6.0	PO 105	Pressure sensor (B28) Sensor signal		Connect vacuum tester to pressure sensor (B28) using Y-fitting (Figure 1). Ignition: ON Engine: at Idle	> 3.5 V < 2 V and pressure climbs to > 500 mbar.	Vacuum line, Wiring, ⇒ 6.1 B28
6.1		Pressure sensor (B28) Voltage supply		Ignition: ON	4.7 – 5.3 V	N3/10

²⁾ Voltage increases with increasing rpm.

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0		Model 129, 140 FP relay module (K27) Model 210 Relay module (K40) Control signal		Ignition: ON Engine: Start	11 – 14 V for approx. 1 sec. 11 – 14 V during cranking and while engine runs.	⇒ 7.1, N3/10
7.1		Current draw K27 or K40		Ignition: ON	0.1 – 0.3 A	Wiring, K27 or K40

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy																						
8.0	PD IIS	ECT sensor (B11/4) Voltage		Ignition: ON	<table><tr><th>°C</th><th>V</th></tr><tr><td>20</td><td>3.5</td></tr><tr><td>30</td><td>3.1</td></tr><tr><td>40</td><td>2.7</td></tr><tr><td>50</td><td>2.3</td></tr><tr><td>60</td><td>1.9</td></tr><tr><td>70</td><td>1.5</td></tr><tr><td>80</td><td>1.2</td></tr><tr><td>90</td><td>1.0</td></tr><tr><td>100</td><td>0.8</td></tr><tr><td></td><td>±5 %</td></tr></table>	°C	V	20	3.5	30	3.1	40	2.7	50	2.3	60	1.9	70	1.5	80	1.2	90	1.0	100	0.8		±5 %	⇒ 8.1, N3/10
°C	V																											
20	3.5																											
30	3.1																											
40	2.7																											
50	2.3																											
60	1.9																											
70	1.5																											
80	1.2																											
90	1.0																											
100	0.8																											
	±5 %																											
8.1		Resistance (B11/4)		Ignition: OFF Disconnect connector 2 on engine control module (N3/10).	<table><tr><th>°C</th><th>Ω</th></tr><tr><td>20</td><td>2500</td></tr><tr><td>30</td><td>1700</td></tr><tr><td>40</td><td>1170</td></tr><tr><td>50</td><td>830</td></tr><tr><td>60</td><td>600</td></tr><tr><td>70</td><td>435</td></tr><tr><td>80</td><td>325</td></tr><tr><td>90</td><td>245</td></tr><tr><td>100</td><td>185</td></tr><tr><td></td><td>±5 %</td></tr></table>	°C	Ω	20	2500	30	1700	40	1170	50	830	60	600	70	435	80	325	90	245	100	185		±5 %	Wiring, ⇒ 8.2
°C	Ω																											
20	2500																											
30	1700																											
40	1170																											
50	830																											
60	600																											
70	435																											
80	325																											
90	245																											
100	185																											
	±5 %																											
8.2		ECT sensor (B11/4) Resistance		Disconnect connector on ECT sensor (B11/4).	Nominal value, see ⇒ 8.1	B11/4																						

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy																		
9.0		IAT sensor (B17) Voltage	N3/10  87 —  (2.87) —  64 (2.64)	Ignition: ON	<table><thead><tr><th>°C</th><th>V</th></tr></thead><tbody><tr><td>10</td><td>3.2</td></tr><tr><td>20</td><td>2.6</td></tr><tr><td>30</td><td>2.1</td></tr><tr><td>40</td><td>1.6</td></tr><tr><td>50</td><td>1.2</td></tr><tr><td>60</td><td>0.9</td></tr><tr><td>70</td><td>0.7</td></tr><tr><td colspan="2">±5 %</td></tr></tbody></table>	°C	V	10	3.2	20	2.6	30	2.1	40	1.6	50	1.2	60	0.9	70	0.7	±5 %		⇒ 9.1, N3/10
°C	V																							
10	3.2																							
20	2.6																							
30	2.1																							
40	1.6																							
50	1.2																							
60	0.9																							
70	0.7																							
±5 %																								
9.1		Resistance (B17)	N3/10  87 —  (2.87) —  64 (2.64)	Ignition: OFF Disconnect connector 2 on engine control module (N3/10).	<table><thead><tr><th>°C</th><th>Ω</th></tr></thead><tbody><tr><td>10</td><td>9670</td></tr><tr><td>20</td><td>6060</td></tr><tr><td>30</td><td>3900</td></tr><tr><td>40</td><td>2600</td></tr><tr><td>50</td><td>1760</td></tr><tr><td>60</td><td>1220</td></tr><tr><td>70</td><td>860</td></tr><tr><td colspan="2">±5 %</td></tr></tbody></table>	°C	Ω	10	9670	20	6060	30	3900	40	2600	50	1760	60	1220	70	860	±5 %		Wiring, ⇒ 9.2
°C	Ω																							
10	9670																							
20	6060																							
30	3900																							
40	2600																							
50	1760																							
60	1220																							
70	860																							
±5 %																								
9.2		IAT sensor (B17) Resistance	B17  1 —  —  2	Disconnect connector from IAT sensor (B17).	Nominal value, see ⇒ 9.1	B17																		

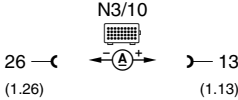
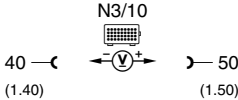
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.0		Engine control module (N3/10) TN-signal output	 	Engine: Start or Engine: at Idle	Signal: see Figure 2. 5 – 7.5 V	Wiring, N3/10
11.0	PO 150 PO 153	Left O2S 1 (before TWC) (G3/3) O2S signal		ECT > 80 ° C, run engine at idle for at least two minutes.	fluctuates from – 0.2 V to + 1.0 V, by more than 0.3 V	Wiring, G3/3, ⇒ 13.0
12.0	PO 130 PO 133	Right O2S 1 (before TWC) (G3/4) O2S signal		ECT > 80 ° C, run engine at idle for at least two minutes.	fluctuates from – 0.2 V to + 1.0 V, by more than 0.3 V	Wiring, G3/4, ⇒ 13.0
13.0	PO 135 PO 155	Left O2S 1 (before TWC) (G3/3) Right O2S 1 (before TWC) (G3/4) O2S heater control signal		ECT > 80 ° C, run engine at idle for at least two minutes.	11 – 14 V	⇒ 13.1, N3/10

3) Test with oscilloscope.

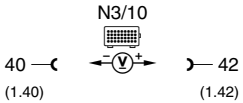
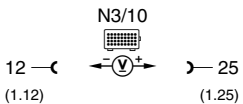
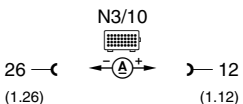
4) Test with multimeter only if oscilloscope is not available.

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
13.1		O2S 1 (G3/3 and G3/4) Current draw		Ignition: ON	1.2 – 6.8 A ⁵⁾	Wiring, G3/3 or G3/4
14.0	 	Left O2S 2 (afterTWC) (G3/5) O2S signal		ECT > 80° C, Engine: Start Raise and hold engine speed at 2000 – 3000 rpm for approx. three minutes until O2S 2 heater turns on (see HHT). Briefly depress accelerator pedal to WOT.	450 mV constant Voltage changes. Voltage changes by > 100 mV.	Wiring, ⇒ 16.0

⁵⁾ The current draw for one O2S is 0.6 – 3.4 A.

Electrical Test Program – Sequential Multiport Fuel Injection System Test

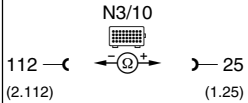
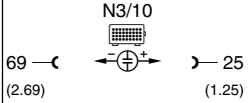
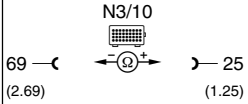
⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
15.0	PO 136 PO 140	Right O2S 2 (after TWC) (G3/6) O2S signal		ECT > 80° C, Engine: Start Raise and hold engine speed at 2000 – 3000 rpm for approx. three minutes until O2S 2 heater turns on (see HHT). Briefly depress accelerator pedal to WOT.	450 mV constant Voltage changes. Voltage changes by > 100 mV.	Wiring, ⇒ 16.0
16.0	PO 141 PO 161	Left O2S 2 (after TWC) (G3/5) Right O2S 2 (after TWC) (G3/6) O2S heater control signal		Engine: at Idle ECT > 80° C, run engine at idle for at least two minutes.	11 – 14 V	⇒ 16.1, N3/10
16.1		O2S 2 (G3/5 or G3/6) Current draw		Ignition: ON	1.2 – 6.8 A ⁵⁾	Wiring, G3/5 or G3/6

⁵⁾ The current draw for one O2S is 0.6 – 3.4 A.

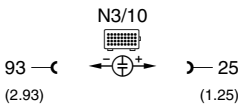
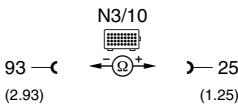
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
17.0	PO 201	Injector (Y62y1) Activation and injection duration		ECT approx. 20° C at start ECT approx. 80° C at idle accelerate briefly	Injection time: approx. 8 ms approx. 3 – 5 ms approx. 14 ms (signal see Figures 3 and 4)	⇒ 17.1, N3/10, Further possibilities: ECT sensor (B11/4), IAT sensor (B17), O2S 1 (G3/3 or G3/4).
17.1		Resistance (Y62y1)		Ignition: OFF	14 – 17 Ω	Wiring, Y62y1.
18.0	PO 202	Injector (Y62y2) Activation and injection duration		ECT approx. 20° C at start ECT approx. 80° C at idle accelerate briefly	Injection time: approx. 8 ms approx. 3 – 5 ms approx. 14 ms (signal see Figures 3 and 4)	⇒ 18.1, N3/10, Further possibilities: ECT sensor (B11/4), IAT sensor (B17), O2S 1 (G3/3 or G3/4).

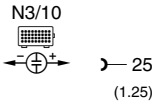
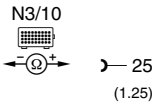
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
18.1		Resistance (Y62y2)		Ignition: OFF	14 – 17 Ω	Wiring, Y62y2
19.0		Injector (Y62y3) Activation and injection duration		ECT approx. 20° C at start ECT approx. 80° C at idle accelerate briefly	Injection time: approx. 8 ms approx. 3 – 5 ms approx. 14 ms (signal see Figures 3 and 4)	⇒ 19.1, N3/10, Further possibilities: ECT sensor (B11/4), IAT sensor (B17), O2S 1 (G3/3 or G3/4).
19.1		Resistance (Y62y3)		Ignition: OFF	14 – 17 Ω	Wiring, Y62y3

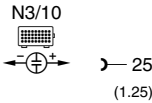
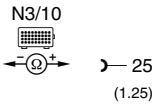
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
20.0		Injector (Y62y4) Activation and injection duration		ECT approx. 20° C at start ECT approx. 80° C at idle accelerate briefly	Injection time: approx. 8 ms approx. 3 – 5 ms approx. 14 ms (signal: see Figures 3 and 4)	⇒ 20.1, N3/10 Further possibilities: ECT sensor (B11/4), IAT sensor (B17), O2S 1 (G3/3 or G3/4).
20.1		Resistance (Y62y4)		Ignition: OFF	14 – 17 Ω	Wiring, Y62y4

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
21.0	PO 205	Injector (Y62y5) Activation and injection duration		ECT approx. 20° C at start ECT approx. 80° C at idle accelerate briefly	Injection time: approx. 8 ms approx. 3 – 5 ms approx. 14 ms (signal: see Figures 3 and 4)	⇒ 21.1, N3/10 Further possibilities: ECT sensor (B11/4), IAT sensor (B17), O2S 1 (G3/3 or G3/4).
21.1		Resistance (Y62y5)		Ignition: OFF	14 – 17 Ω	Wiring, Y62y5

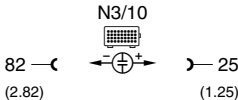
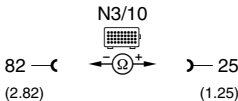
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
22.0	PO 206	Injector (Y62y6) Activation and injection duration		ECT approx. 20° C at start ECT approx. 80° C at idle accelerate briefly	Injection time: approx. 8 ms approx. 3 – 5 ms approx. 14 ms (signal see Figures 3 and 4)	⇒ 22.1, N3/10, Further possibilities: ECT sensor (B11/4), IAT sensor (B17), O2S 1 (G3/3 or G3/4).
22.1		Resistance (Y62y6)		Ignition: OFF	14 – 17 Ω	Wiring, Y62y6

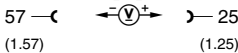
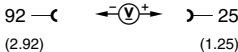
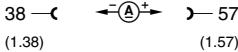
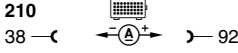
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
23.0	PO 207	Injector (Y62y7) Activation and injection duration		ECT approx. 20° C at start ECT approx. 80° C at idle accelerate briefly	Injection time: approx. 8 ms approx. 3 – 5 ms approx. 14 ms (signal see Figures 3 and 4)	⇒ 23.1, N3/10, Further possibilities: ECT sensor (B11/4), IAT sensor (B17), O2S 1 (G3/3 or G3/4).
23.1		Resistance (Y62y7)		Ignition: OFF	14 – 17 Ω	Wiring, Y62y7

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
24.0	PO 208	Injector (Y62y8) Activation and injection duration		ECT approx. 20° C at start ECT approx. 80° C at idle accelerate briefly	Injection time: approx. 8 ms approx. 3 – 5 ms approx. 14 ms (signal: see Figures 3 and 4)	⇒ 24.1, N3/10 Further possibilities: ECT sensor (B11/4), IAT sensor (B17), O2S 1 (G3/3 or G3/4).
24.1		Resistance (Y62y8)		Ignition: OFF	14 – 17 Ω	Wiring, Y62y8

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
25.0	PO 410 PI 453	Only (USA) Model 129, 140 AIR relay module (K17) Model 210 Relay module (K40) Activation	Models 129/140 N3/10  Model 210 N3/10 	Disconnect ECT sensor (B11/4) connector. Simulate 2.5 kΩ resistance at sockets 1 and 4 with resistance substitution unit. Engine: at Idle	11 – 14 V for approx. two minutes and AIR pump runs.	⇒ 25.1, N3/10
25.1		Model 129, 140 AIR relay module (K17) Model 210 Relay module (K40) Current draw	Models 129/140 N3/10  Model 210 N3/10 	Ignition: ON	0.1 – 0.3 A	Wiring, K17 or K40

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
26.0	PO 410 PI 420	Only ^(USA) AIR pump switchover valve (Y32) Activation		Disconnect ECT sensor (B11/4) connector. Simulate 2.5 kΩ resistance at sockets 1 and 4 with resistance substitution unit. Engine: at Idle	11 – 14 V for approx. two minutes and AIR pump runs.	N3/10
26.1		Current draw (Y32)		Ignition: ON	0.3 – 0.5 A	Wiring, Y32
27.0	PI 522 PI 533	Left adjustable camshaft timing solenoid (Y49/1) Current draw		Connect test cable (102 589 04 63 00) to solenoid. Engine: Start and increase engine speed to 3000 rpm.	approx. 1.3 A	⇒ 27.1, ⇒ 29.0, N3/10
27.1		Resistance Y49/1 and Y49/2		Ignition: OFF	14 – 24 Ω ⁶⁾	Wiring, Y49/1 or Y49/2

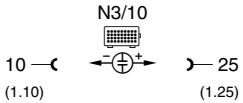
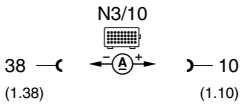
⁶⁾ The resistance of one solenoid is 7 – 12 Ω.

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
28.0	PI 519 PI 525	Right adjustable camshaft timing solenoid (Y49/2) Current draw		Connect test cable (102 589 04 63 00) to solenoid. Engine: Start and increase engine speed to 3000 rpm.	approx. 1.3 A	⇒ 28.1, ⇒ 30.0, N3/10
28.1		Resistance Y49/2 and Y49/1		Ignition: OFF	14 – 24 Ω ⁶⁾	Wiring, Y49/2 or Y49/1
29.0	PI 522 PI 533	Left adjustable camshaft timing solenoid (Y49/1) Mechanical function		Engine: at Idle Bridge sockets on socket box for a maximum of 10 seconds.	Engine runs rough after approx. 5 seconds.	Check function of camshaft adjuster (see SMS, Engine 119, Job NO. 05-2160).
30.0	PI 519 PI 525	Right adjustable camshaft timing solenoid (Y49/2) Mechanical function		Engine: at Idle Bridge sockets on socket box for a maximum of 10 seconds.	Engine runs rough after approx. 5 seconds.	Check function of camshaft adjuster (see SMS, Engine 119, Job NO. 05-2160).

⁶⁾ The resistance of one solenoid is 7 – 12 Ω.

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
31.0	P0 440 P0 441 P0 443 P0 446	Purge control valve (Y58/1) Activation		Engine: at Idle and at operating temperature.	After approx. 1 minute, purge control valve (Y58/1) must noticeably cycle (Fig. 5 to 7) Signal: see Figure 8.	⇒ 31.1, ⇒ 32.0, N3/10
31.1		Current draw (Y58/1)		Ignition: ON	0.1 – 0.3 A	Wiring, Y58/1
32.0	P0 440 P0 441	Purge control valve (Y58/1) Vacuum control		Connect vacuum tester to purge control valve (Y58/1) connector (A) (Figure 5 and 6). Engine at operating temperature and at idle. Slowly increase engine speed to 3000 rpm.	After approx. 1 minute, > 50 mbar and needle oscillates.	Vacuum line, Y58/1

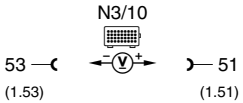
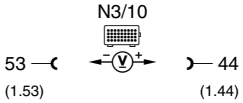
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
33.0	P0 440 P0 442 P0 446 P0 455	Only  Model 140, 210, Model 129 as of 09/97 Purge system Leaks Activated charcoal canister shut-off valve (Y58/4) Activated		Disconnect purge line (A) to charcoal canister on purge control valve (Y58/1). Connect vacuum tester to purge line (Figure 6 and 7). Ignition: ON Apply approx. 25 mbar of vacuum.	After approx. 1 minute, < 5 mbar vacuum loss.	Fuel tank cap, Purge line to charcoal canister, Purge line from charcoal canister to Y58/4, Charcoal canister, Y58/4
34.0	P0 446	Only  Model 140, 210, Model 129 as of 09/97 Activated charcoal canister shut-off valve (Y58/4) Current draw		Ignition: ON	0.5 – 0.9 A	Wiring, Y58/4

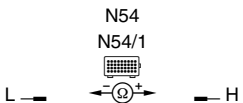
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
35.0	 	Only Model 140, 210, Model 129 as of 09/97 Fuel tank pressure sensor (B4/3) Sender signal Activated charcoal canister shut-off valve (Y58/4) activated		Disconnect purge line (A) to charcoal canister on purge control valve (Y58/1). Connect vacuum tester to purge line (Figure 6 and 7). Ignition: ON Apply approx. 25 mbar of vacuum.	> 3 V < 2.5 V	⇒ 35.1, Wiring, Vacuum line, Charcoal canister plugged, B4/3
35.1		Only Fuel tank pressure sensor (B4/3) Voltage supply		Ignition: ON	4.7 – 5.3 V	N3/10

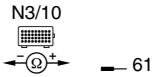
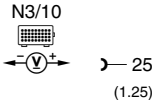
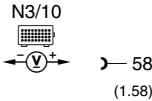
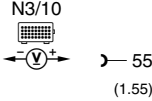
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
36.0	 450	Only  , Model 129, up to 08/97 Purge monitoring pressure sensor (B4/4) Sender signal		Disconnect purge line on purge monitoring pressure sensor (B4/4). Connect vacuum tester to pressure sensor (Figure 5). Ignition: ON Apply approx. 300 mbar of vacuum.	> 3.5 V < 3 V	Wiring, ⇒ 36.1, B4/4
36.1		Fuel tank pressure sensor (B4/4) Voltage supply		Ignition: ON	4.7 – 5.3 V	N3/10

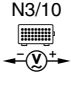
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
37.0	PD 600 PI 570 PI 747	CAN data bus		Ignition: OFF Disconnect connector 1 from test cable and measure resistance directly at connector 1 (interior) of engine harness using an ohmmeter. Wire connections see 22	115 – 125 Ω	⇒ 37.1, Data line.
37.1		Model 129/140 up to 05/96 CAN element in RCL control module (N54) Model 129/140 as of 06/96 and Model 210.072 CAN element in DAS control module (N54/1) Resistance		Ignition: OFF Disconnect control module (N54 or N54/1) and test directly at pins of control module (Figure 10).	115 – 125 Ω	N54 or N54/1

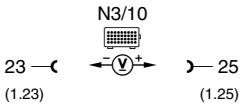
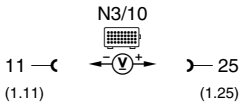
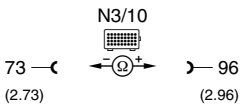
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
38.0		CAN element in engine control module (N3/10) Resistance		Ignition: OFF Disconnect control module connector 1 (interior) from N3/10 and test directly at control module.	115 – 125 Ω	N3/10
39.0	PI 153	Oil level switch (S43)		Ignition: ON Oil level okay. Oil level low.	11 – 14 V < 1 V	Wiring, S43
40.0		Model 129/140 up to 05/96 Model 210 up to 05/97 (afterwards via CAN) Fuel consumption signal		Engine: at Idle and briefly accelerate engine.	> 0.5 V	Wiring, N3/10
41.0		Diagnosis line Activation		Ignition: ON	11 – 14 V	Wiring, N3/10

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
42.0	PI 505	(only until 05/96, as of 06/96 deleted) Body acceleration sensor (B24) Sensor signal static Sensor signal dynamic	 	Ignition: ON Vigorously move left front corner of vehicle by hand.	2.35 – 2.65 V > 5 mV Note: Value changes with movement.	Wiring, ⇒ 42.1, B24
42.1		Voltsge supply (B24/7)		Ignition: ON	4.7 – 5.3 V	N3/10
43.0	PI 444	Not applicable to U.S.A. version vehicles				
44.0	PI 437 PI 444	Not applicable to U.S.A. version vehicles				

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
45.0		Model 140 til 05/96 Model 210 til 05/97 (afterwards via CAN) Fuel tank cap open signal		Engine: at Idle Tank cap open Tank cap closed after approx. 18 minutes	11 – 14 V < 1 V	Leak in purge system, ⇒ 33.0
46.0		Model 140 til 05/96 Model 210 til 05/97 (afterwards via CAN) “CHECK ENGINE” MIL (A1e26)		Ignition: ON	11 – 14 V	N3/10
47.0		Engine control module (ME-SFI) coding Bridge		Ignition: OFF	< 1 Ω	Wiring.

Electrical Test Program – Sequential Multiport Fuel Injection System Test

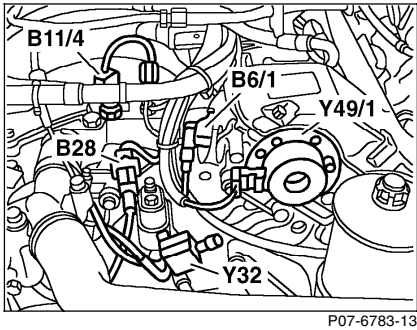


Figure 1
B28 Pressure sensor

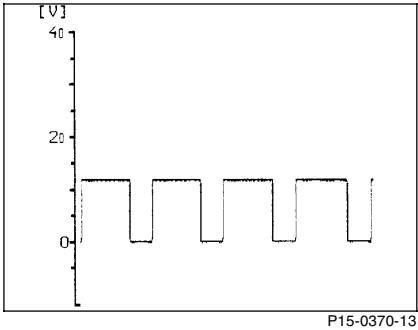


Figure 2
TN signal

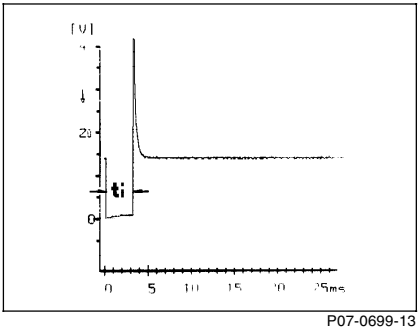


Figure 3
Injection duration "ti" at CTP

Electrical Test Program – Sequential Multiport Fuel Injection System Test

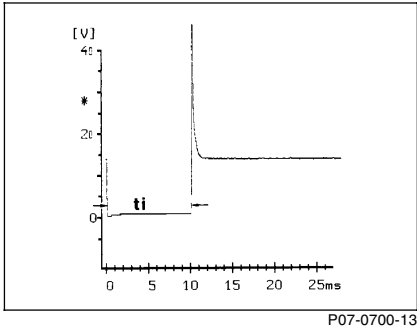


Figure 4
Injection duration "ti" at WOT

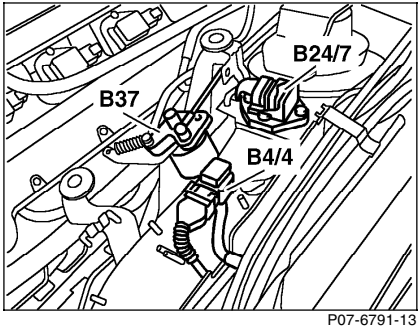


Figure 5
Model 129
B4/4 Fuel tank emissions monitoring pressure sensor

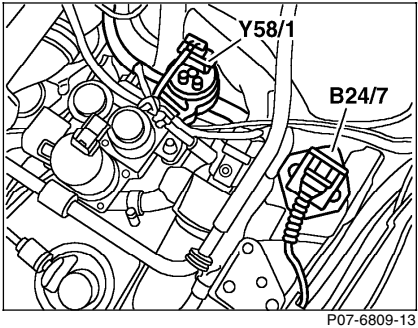


Figure 6
Model 140
Y58/1 Purge control valve

Electrical Test Program – Sequential Multiport Fuel Injection System Test

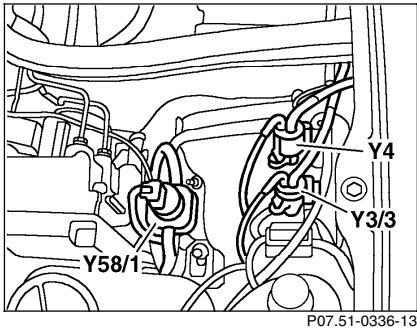


Figure 7
Model 210
Y58/1 Purge control valve

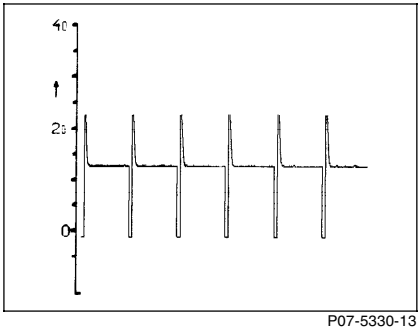


Figure 8
Purge control valve signal

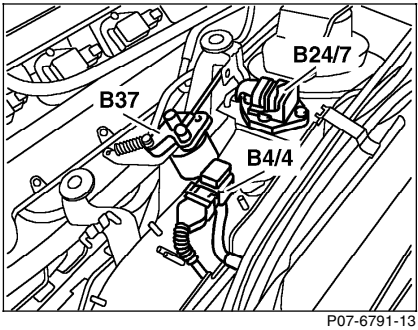
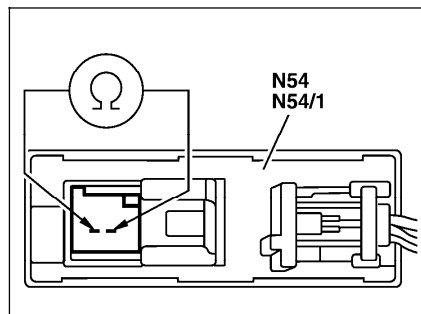


Figure 9
Model 129 
B4/4 Fuel tank emissions monitoring pressure sensor

Electrical Test Program – Sequential Multiport Fuel Injection System Test



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Figure 10

N54 RCL control module
N54/1 DAS control module