Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
1.0	P0 560	**Engine control module (ME-SFI) (N3/10)** Voltage supply Circuit 30 U	N3/10 3 (3A) — V — 12 (4B)	Ignition: **ON**	11 – 14 V	⇒ 1.1 ⇒ 1.2
1.1		Ground wire, Output ground	N3/10 3 (3A) — V — X11/4 2 7 (7A) — V — X11/4 2 112 (8F) — V — X11/4 2 119 (15F) — V — X11/4 2	Ignition: **ON**	11 – 14 V	Wiring, **Model 208/210:** (electronics ground - component compartment - right) (W16/6) **Model 129:** (control module box/module box) (W27) **Model 163:** (component compartment) (W16) ⇒ 1.2 **Model 463:** Ground: right A-pillar (W29/2), ground bracket - control module box (W27)
1.2		Voltage supply Circuit 30	N3/10 X11/4 1 — V — 12 (4B)	Ignition: **ON**	11 – 14 V	Wiring, Passenger-side fuse and relay module (K40/4), Fuse box (F1), Base module (BM) (N16/1).

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
2.0	P0 560	**Engine control module (ME-SFI) (N3/10)** Voltage supply Circuit 87	N3/10 8 (8A) — 2 (2A)	Ignition: **ON**	11 – 14 V	⇒ 2.1 – 2.2
2.1		Electronics ground	N3/10 8 (8A) — X11/4 — 2	Ignition: **ON**	11 – 14 V	Wiring, **Model 208/210:** (electronics ground - component compartment - right) (W16/6), **Model 129:** (control module box/module box) (W27), **Model 163:** (component compartment) (W16) **Model 463:** Ground: right A-pillar (W29/2)
2.2		Voltage supply Circuit 87	N3/10 X11/4 1 — 2 (2A)	Ignition: **ON** Model 163: connect 16-pole test cable to socket 4 Ignition: **OFF**	11 – 14 V < 1 V	Wiring, Passenger-side fuse and relay module (K40/4), Fuse box (F1), Base module (BM) (N16/1).

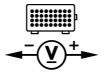
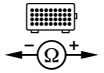
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
3.0		**Starter relay** **Model 208/210:** In passenger-side fuse and relay module box (K40/4k2) **Model 163:** F1k8 **Model 129** Starter lock-out relay module K38/1 Activation **Model 463:** in relay module (K40) Activation	N3/10 35 (3D) 2 (2A)	ECT temperature > 20 ° C Ignition/starter switch (S2/1): position 3 (start position): crank engine **briefly**	11 – 14 V or if engine does not start in approx. 5 seconds.	⇒ 1.1, Engine control module (N3/10)
3.1		Starter signal circuit 50	N3/10 8 (8A) 32 (40C)	Engine: **Start**	11 – 14 V while starting.	Wiring, Ignition/starter switch (S2/1)
4.0	P0 100	**Hot film MAF sensor (B2/5)** Hot film signal	N3/10 104 (48E) 103 (47E)	Ignition: **ON** Engine: **at Idle** Engine coolant temperature >70°C	0.9 – 1.1 V 1.3 – 1.7 V Increasing rpm, increasing voltage.	⇒ 4.1 – 4.3, Wiring, Air intake system leak, B2/5

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
4.1		Hot film MAF sensor (B2/5) Voltage supply 5 V	N3/10 104 (48E) — V — B2/5 — 4	Disconnect MAF sensor (B2/5) connector and measure directly on socket 4 (brown/yellow). Ignition: **ON**	4.7 – 5.2 V	Wiring, N3/10
4.2		Ground wire for hot film MAF sensor (B2/5)	B2/5 3 — V — N3/10 102 (46E)	Disconnect MAF sensor (B2/5) connector and measure directly on socket 3 (brown). Ignition: **ON**	4.7 – 5.2 V	Wiring.
4.3		Hot film MAF sensor (B2/5) Voltage supply 12 V	N3/10 104 (48E) — V — B2/5 2 (2)	Disconnect MAF sensor (B2/5) connector and connect plus of voltmeter to socket 2 (red/blue). Ignition: **ON**	11 – 14 V	Wiring, Passenger-side fuse and relay module (K40/4), Fuse box (F1), Base module (BM) (N16/1).

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
5.0	P0 110	**IAT sensor in hot film MAF sensor (B2/5)** Voltage	N3/10  104 (48E) — 101 (45E)	Ignition: **ON**	°C V 10 3.1 20 2.7 30 2.2 40 1.8 50 1.4 60 1.1 ± 5%	⇒ 5.1 N3/10
5.1		IAT sensor Resistance	N3/10  104 (48E) — 101 (45E)	Ignition: **OFF** Disconnect connector **E** on engine control module (N3/10).	°C Ω 10 3600 20 2420 30 1660 40 1170 50 850 60 600 ± 5%	Wiring, B2/5

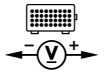
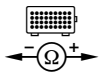
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
6.0	P0 105	**Only** (USA) **Pressure sensor (B28)** Sensor signal	N3/10 80 (24E) — V — 79 (23E)	Connect vacuum tester to B28, using the Y-connector. Ignition: **ON** Engine: **at Idle**	 > 3.5 V < 2 V and vacuum climbs to > 500 mbar.	Vacuum line, Wiring, B28, N3/10
		Pressure sensor (B28) Voltage supply	N3/10 80 (24E) — V — 78 (22E)	Ignition: **ON**	4.7 – 5.3 V	

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
7.0		**FP relay module (K27)** Activation	N3/10 21 (29C) — (V) — 2 (2A)	Ignition: **ON** Engine: **Start**	11 – 14 V for approx. 1 sec. The activation of the FP occurs only once after ignition "ON". For the next activation, the engine must have run briefly.	Fuse, Wiring, K27 or, N3/10
		Current draw (K27) Model 463: K40k1	N3/10 8 (8A) — (A) — 21 (29C)	Ignition: **ON**	0.1 – 0.3 A	

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
8.0	P0 115	**ECT sensor (B11/4)** Voltage	N3/10  84 (28E) — 85 (29E)	Ignition: **ON**	°C V 20 3.4 30 2.9 40 2.4 50 1.9 60 1.5 70 1.2 80 0.9 90 0.7 100 0.5 ±5 %	⇒ 8.1, N3/10
8.1		Resistance (B11/4)	N3/10  84 (28E) — 85 (29E)	Ignition: **OFF** Disconnect connector **E** on engine control module (N3/10).	°C Ω 20 3090 30 2000 40 1330 50 900 60 630 70 440 80 320 90 230 100 170 ±5 %	Wiring, ⇒ 8.2

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
8.2		ECT sensor (B11/4) Resistance	B11/4 1 ◄–Ω+► 2	Disconnect connector on ECT sensor (B11/4).	°C Ω 20 3090 30 2000 40 1330 50 900 60 630 70 440 80 320 90 230 100 170 ±5 %	B11/4
9.0		**Engine control module (N3/10)** TN-signal output	N3/10 8 (8A) ◄–⏚+► (38C) 30	Test with oscilloscope. Engine: **Start** or Engine: **at Idle**	Signal: see Figure 2.	Wiring, N3/10
			N3/10 8 (8A) ◄–V+► (38C) 30	Test with multimeter only if oscilloscope is not available.	7.5 – 9.0 V	
10.0	P0 150 P0 153 P0 160	**Left O2S 1 (before TWC) (G3/3)** O2S signal	N3/10 26 (34C) ◄–V+► (33C) 25	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	⇒ 12.0, Wiring, G3/3

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
11.0	P0 130 P0 133 P0 140	**Right O2S 1 (before TWC) (G3/4)** O2S signal	N3/10 23 (31C) — V — 24 (32C)	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	⇒ 13.0, Wiring, G3/4
12.0	P0 155	**Left O2S 1 (before TWC) (G3/3)** O2S heater Activation	N3/10 1 (1A) — V — 2 (2A)	Engine: **at Idle** ECT > 80° C, run engine at idle for at least 2 minutes.	11 – 14 V	Fuse, Wiring, G3/3, N3/10
		O2S 1 (G3/3) Current draw	N3/10 3 (3A) — A — 1 (1A)	Disconnect connector **A** on engine control module N3/10 Ignition: **ON**	1.5 – 4.5 A	

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
13.0	P0 135	**Right O2S 1** **(before TWC) (G3/4)** O2S heater Activation	N3/10 5 (5A) — (V) — 2 (2A)	Engine: **at Idle** ECT > 80° C, run engine at idle for at least 2 minutes.	11 – 14 V	Fuse, Wiring, G3/4, N3/10
		O2S 2 (G3/4) Current draw	N3/10 3 (3A) — (A) — 5 (5A)	Disconnect connector **A** on engine control module N3/10 Ignition: **ON**	1.5 – 4.5 A	
14.0	P0 156 P0 160	**Only** (USA) **Left O2S 2** **(after TWC) (G3/5)** O2S signal	N3/10 42 (10D) — (V) — 41 (9D)	ECT > 80° C, run engine at 2000-3000 rpm for approx. 2 minutes. Engine: **at Idle**	The range of 450mV to 550mV, must be attained or not attained within 1 minute.	⇒ 16.0, Wiring, G3/5, N3/10
			N3/10 3 (3A) — 66 (10E)	Bridge sockets on socket box.	Air pump runs. Voltage changes within 60 seconds to < 40 mV	
			3 (3A) — 20 (28C)			

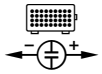
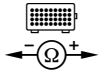
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
15.0	P0 136	**Only** (USA) **Right O2S 2** **(after TWC) (G3/6)** O2S signal	N3/10 39 (7D) — (V) — 40 (8D)	ECT > 80° C, run engine at 2000-3000 rpm for approx. 2 minutes. Engine: **at Idle**	The range of 450mV to 550mV, must be attained or not attained within 1 minute.	⇒ 17.0, Wiring, G3/6, N3/10
			N3/10 3 (3A) — 66 (10E) 3 (3A) — 20 (28C)	Bridge sockets on socket box.	Air pump runs. Voltage changes within 60 seconds to < 40 mV	
16.0	P0 161	**Only** (USA) **Left O2S 2** **(after TWC) (G3/5)** O2S heater Activation	N3/10 10 (2B) — (V) — 2 (2A)	Engine: **at Idle** ECT > 80° C, run engine at idle for at least 2 minutes.	11 – 14 V or voltage fluctuates between 1 – 14 V.	Fuses, Wiring, G3/5, N3/10
		O2S 2 (G3/5) Current draw	N3/10 3 (3A) — (A) — 10 (2B)	Disconnect connector **B** on engine control module N3/10 Ignition: **ON**	1.5 – 4.5 A	

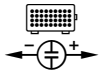
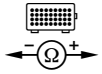
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
17.0	P0 141	**Only** (USA) **Right O2S 2** **(after TWC) (G3/6)** O2S heater Activation	N3/10 9 (1B) — (V) — 2 (2A)	Engine: **at Idle** ECT > 80° C, run engine at idle for at least 2 minutes.	11 – 14 V or voltage fluctuates between 1 – 14 V.	Fuses, Wiring, G3/6, N3/10
		O2S 2 (G3/6) Current draw	N3/10 3 (3A) — (A) — 9 (1B)	Disconnect connector **B** on engine control module Ignition: **ON**	1.5 – 4.5 A	
18.0	P0 201	**Injector (Y62y1)** Activation and injection time	N3/10 81 (25E) — (⏚) — 2 (2A)	**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 3 and 4)	Fuses, Wiring, Y62y1, N3/10, ECT sensor (B11/4), IAT sensor in hot film MAF sensor (B2/5), O2S 1 (G3/3 or G3/4).
		Resistance (Y62y1)	N3/10 81 (25E) — (Ω) — 2 (2A)	Ignition: **OFF**	14 – 18 Ω	

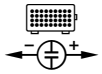
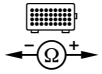
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
19.0	P0 202	**Injector (Y62y2)** Activation and injection time	N3/10  70 (14E) — 2 (2A)	**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)	Fuses, Wiring, Y62y2, N3/10, ECT sensor (B11/4), IAT sensor in hot film MAF sensor (B2/5), O2S 1 (G3/3 or G3/4).
		Resistance (Y62y2)	N3/10  70 (14E) — 2 (2A)	Ignition: **OFF**	14 – 18 Ω	

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
20.0	P0 203	**Injector (Y62y3)** Activation and injection time	N3/10  58 (2E) — 2 (2A)	**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)	Fuses, Wiring, Y62y3, N3/10, ECT sensor (B11/4), IAT sensor in hot film MAF sensor (B2/5), O2S 1 (G3/3 or G3/4).
		Resistance (Y62y3)	N3/10  58 (2E) — 2 (2A)	Ignition: **OFF**	14 – 18 Ω	

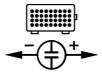
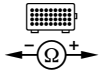
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
21.0	P0 204	**Injector (Y62y4)** Activation and injection time	N3/10  69 (13E) — 2 (2A)	**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)	Fuses, Wiring, Y62y4, N3/10, ECT sensor (B11/4), IAT sensor in hot film MAF sensor (B2/5), O2S 1 (G3/3 or G3/4).
		Resistance (Y62y4)	N3/10  69 (13E) — 2 (2A)	Ignition: **OFF**	14 – 18 Ω	

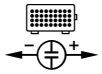
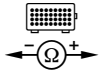
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
22.0	P0 205	**Injector (Y62y5)** Activation and injection time	N3/10 82 (26E) — 2 (2A)	**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)	Fuses, Wiring, Y62y5, N3/10, ECT sensor (B11/4), IAT sensor in hot film MAF sensor (B2/5), O2S 1 (G3/3 or G3/4).
		Resistance (Y62y5)	N3/10 82 (26E) — 2 (2A)	Ignition: **OFF**	14 – 18 Ω	

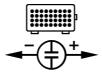
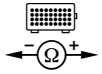
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
23.0	P0 206	**Injector (Y62y6)** Activation and injection time	N3/10  57 (1E) — 2 (2A)	**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)	Fuses, Wiring, Y62y6, N3/10, ECT sensor (B11/4), IAT sensor in hot film MAF sensor (B2/5), O2S 1 (G3/3 or G3/4).
		Resistance (Y62y6)	N3/10  57 (1E) — 2 (2A)	Ignition: **OFF**	14 – 18 Ω	

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
24.0	P0 207	**Injector (Y62y7)** Activation and injection time	N3/10  59 (3E) — 2 (2A)	**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)	Wiring, Y62y7, N3/10, ECT sensor (B11/4), IAT sensor in hot film MAF sensor (B2/5), O2S 1 (G3/3 or G3/4)
		Resistance (Y62y7)	N3/10  59 (3E) — 2 (2A)	Ignition: **OFF**	14 – 18 Ω	

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
25.0	P0 208	**Injector (Y62y8)** Activation and injection time	N3/10  60 (4E) — 2 (2A)	**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)	Wiring, Y62y8, N3/10, ECT sensor (B11/4), IAT sensor in hot film MAF sensor (B2/5), O2S 1 (G3/3 or G3/4).
		Resistance (Y62y8)	N3/10  60 (4E) — 2 (2A)	Ignition: **OFF**	14 – 18 Ω	

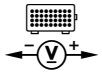
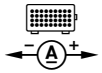
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
26.0	P1 453	Only USA Possible air injection **AIR relay module (K17)** **in Passenger-side fuse and relay module** **box (K40/4)** **Model 129** **AIR relay module (K17)** Activation	N3/10 20 (28C) — (V) — 2 (2A)	Disconnect ECT sensor (B11/4) connector. Simulate 2.5 kΩ resistance at sockets 1 and 2 with resistance substitution unit. Engine: **at Idle**	11 – 14 V for approx. two minutes **and** AIR pump runs.	Fuses, Wiring, K17, K40/4, F1k28, N3/10
		Current draw (K40/4), (K17), or (F1k28)	N3/10 3 (3A) — (A) — 20 (28C)	Ignition: **ON**	0.1 – 0.3 A	
27.0	P1 420	Only USA **AIR pump switchover valve (Y32)** Activation	N3/10 66 (10E) — (V) — 2 (2A)	Disconnect ECT sensor (B11/4) connector. Simulate 2.5 kΩ resistance at sockets 1 and 2 with resistance substitution unit. Engine: **at Idle**	11 – 14 V for approx. two minutes **and** AIR pump runs.	Fuses, Wiring, Y32, N3/10
		Current draw (Y32)	N3/10 3 (3A) — (A) — 66 (10E)	Ignition: **ON**	0.3 – 0.5 A	

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
28.0	P0 410	**Only** (USA) **AIR system** (logic chain)	N3/10 23 (31C) — V — 24 (32C) N3/10 3 (3A) — 66 (10E) 3 (3A) — 20 (28C)	**Note:** The O2S 1 signal before TWC is measured. With ETC > 80°C run engine at idle for at least 2 minutes. Bridge sockets on socket box	The O2S voltage oscillates in the area of –0.2 V and +1.0 V AIR pump runs. Voltage changes to < 100 mV within 20 seconds	Y32 binding, AIR combi valve, AIR pump no output.

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
29.0	P0 400 P1 400	**EGR valve vacuum transducer (Y31/1)** Activation and vacuum control	N3/10  61 (5E) — 2 (2A)	**Note to test connection:** Connect vacuum tester to EGR valve vacuum transducer, after removing the MAF sensor with air box.		Fuses, Wiring, N3/10, Y31/1
				Engine: **at idle** ETC > 60°C	< 1 V and < 10 mbar vacuum.	
				Vehicle at approx. 3000/rpm while on dynamometer	1 – 7 V and 80 – 220 mbar vacuum.	
		Current draw (Y31/1)	N3/10  3 (3A) — 61 (5E)	Ignition: **ON**	0.3 – 0.5 A	

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
30.0	P0 802	**Resonance intake manifold switchover valve (Y22/6)** Activation	N3/10 68 (12E) — 2 (2A)	Engine: **Start** Engine: **at idle** Engine: accelerate briefly to > approx. 3900 rpm	< 1 V 9 – 14 V and vacuum applied to valve.	Wiring, Y22/6, N3/10
		Current draw (Y22/6)	N3/10 3 (3A) — 68 (12E)	Ignition: **ON**	0.3 – 0.5 A	
31.0	P0 441 P0 443	**Purge control valve (Y58/1)** Activation	N3/10 13 (21C) — 2 (2A)	Engine: **at Idle** and at operating temperature.	After approx. 2 minutes, purge control valve (Y58/1) must noticeably cycle, Signal: see Figure 5.	⇒ 32.0, Fuses, Wiring, Y58/1, N3/10
		Current draw (Y58/1)	N3/10 3 (3A) — 13 (21C)	Ignition: **ON**	0.3 – 0.5 A	

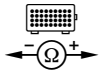
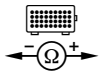
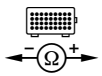
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
32.0	P0 440 P0 441 P0 446	**Purge control valve (Y58/1)** Vacuum control		Connect vacuum tester to purge control valve (Y58/1) between purge line to charcoal canister. Engine at operating temperature and at idle.	After approx. 2 minute, > 50 mbar and needle oscillates, Y58/1 must cycle.	Vacuum line, Y58/1
33.0	P0 440 P0 442 P0 455 P00446	**Only** (USA) **Purge system** Leaks Activated charcoal canister shut-off valve (Y58/4) activated	N3/10 3 (3A) — 34 (2D)	Disconnect purge line (A) to charcoal canister on purge control valve (Y58/1). Connect vacuum tester to purge line. 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, Y58/1, Fuel tank pressure sensor (B4/3).

Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
34.0	P0 446	**Only** (USA) **Activated charcoal canister shut-off valve (Y58/4)** Current draw	N3/10 3 (3A) — (A) — 34 (2D)	Ignition: **ON**	0.5 – 0.9 A	Fuse, Wiring, Y58/4
35.0	P0 450 P0 455 P0 446	**Only** (USA) **Fuel tank pressure sensor (B4/3)** Sender signal	N3/10 36 (4D) — (V) — 37 (5D)	Disconnect purge line (A) to charcoal canister on purge control valve (Y58/1). Connect vacuum tester to purge line.		⇒ 35.1, Wiring, Vacuum line, Charcoal canister plugged, B4/3
		Activated charcoal canister shut-off valve (Y58/4) activated	N3/10 3 (3A) — 34 (2D)	Ignition: **ON**	> 2.9 V	
				Apply approx. 25 mbar of vacuum.	< 2.3 V	
35.1		**Only** (USA) Fuel tank pressure sensor (B4/3) Voltage supply	N3/10 36 (4D) — (V) — 38 (6D)	Ignition: **ON**	4.7 – 5.3 V	N3/10

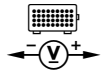
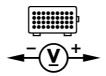
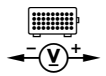
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
36.0	P0 600 P0 811 P1 570 P1 603 P1 747	**CAN data bus**	N3/10  43 (11D) — 44 (12D)	Ignition: **OFF**	55 – 65 Ω	⇒ 36.1 ⇒ 36.2 Data line.
36.1		CAN element in EIS electronic ignition switch (N73), DAS radio frequency/infrared control module (N54/4), Instrument cluster (A1), DAS control module (N54/1) Resistance	N3/10  43 (11D) — 44 (12D)	Ignition: **OFF** Disconnect connector **D** from engine control module N3/10.	115 – 125 Ω	Wiring, **Model 208/210:** N73 **Model 129:** DAS radio frequency/infrared control module (N54/4), **Model 163:** Instrument cluster (A1) **Model 463:** DAS control module (N54/1)
36.2		CAN element in engine control module (N3/10) Resistance	N3/10  43 (11D) — 44 (12D)	Ignition: **OFF** Disconnect connector **D** from test cable and reconnect connector **D** to N3/10	115 – 125 Ω	N3/10

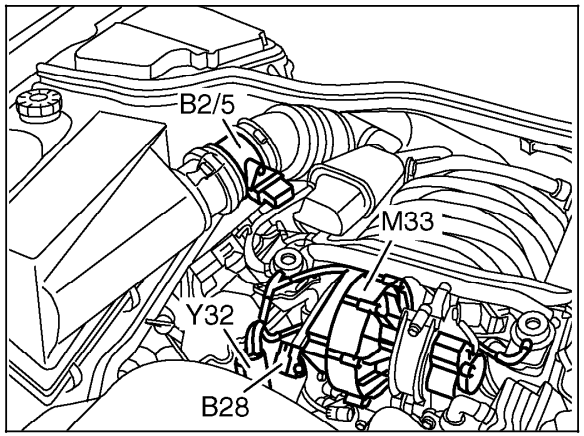
Electrical Test Program – Sequential Multiport Fuel Injection System Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy
37.0	P1 177 P1 178 P1 179 P1 180 P1 185	**Oil sensor (level/ temperature/quality) (B40)**	N3/10 72 (16E) — 73 (17E) N3/10 72 (16E) — 73 (17E)	Test with oscilloscope. Range: 2V Duration: 50ms Test with multimeter only if oscilloscope is not available. Ignition: **ON**	Signal: see Figure 6 0.3 – 3 V, voltage jumps	⇒ 37.1, oil level, oil quality, wiring, B40
37.1		Voltage supply (B40)	N3/10 72 (16E) — 71 (15E)	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
38.0	P0 801 P1 181	**With engine/climate control electric cooling fan only** **Engine/climate control electric cooling fan control module (N76)** Activation	N3/10  3 (3A) 6 (6A)	Engine: **at idle** ECT< 70° C Ignition: **ON** A/C: **ON** ECT > 85° C	 1 – 1.9 V and cooling fan is stationary. 2 – 4 V and cooling fan runs. between 2.5 – 12.5 V and cooling fan speed is based on activation.	Wiring, N76, N3/10
39.0		**Diagnosis line** Activation	N3/10  3 (3A) 31 (39C)	Ignition: **ON**	11 – 14 V	Wiring, N3/10
40.0	P1 681	**Vehicles as of 06/98** **Crash signal**	N3/10  8 (8A) 48 (16D)	Ignition: **ON**	<1 V	Wiring, Readout DTC memory.

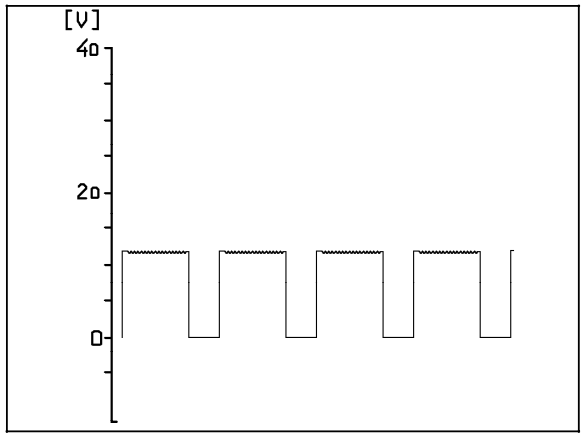
Electrical Test Program – Sequential Multiport Fuel Injection System Test



P07.61-0449-01

Figure 1

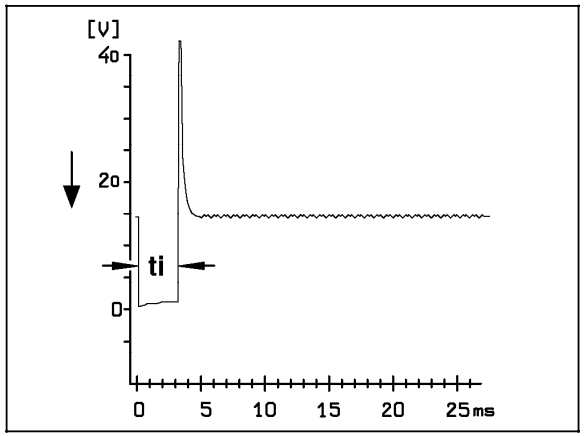
B28 Pressure sensor only (USA)



P07.61-0537-01

Figure 2

TN signal

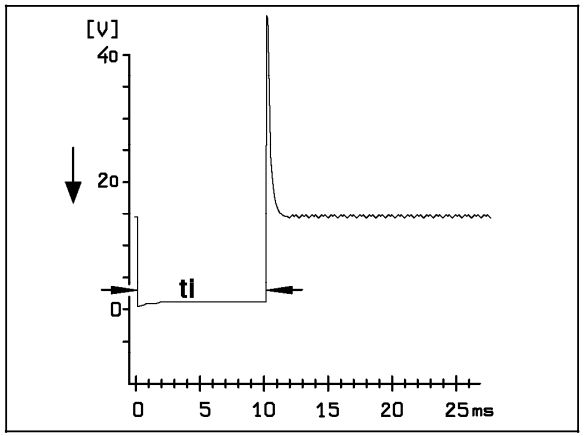


P07.61-0538-01

Figure 3

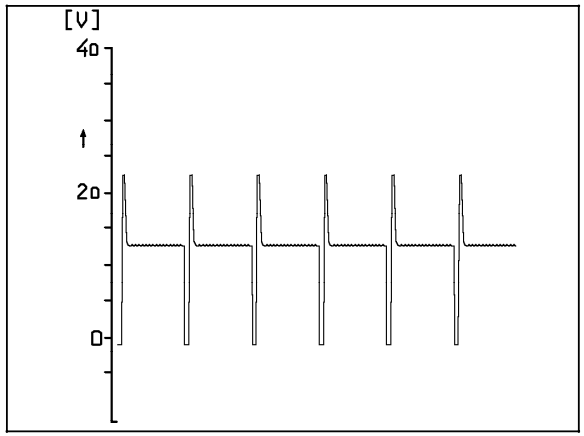
Injection duration “ti” at CTP

Electrical Test Program – Sequential Multiport Fuel Injection System Test



P07.61-0539-01

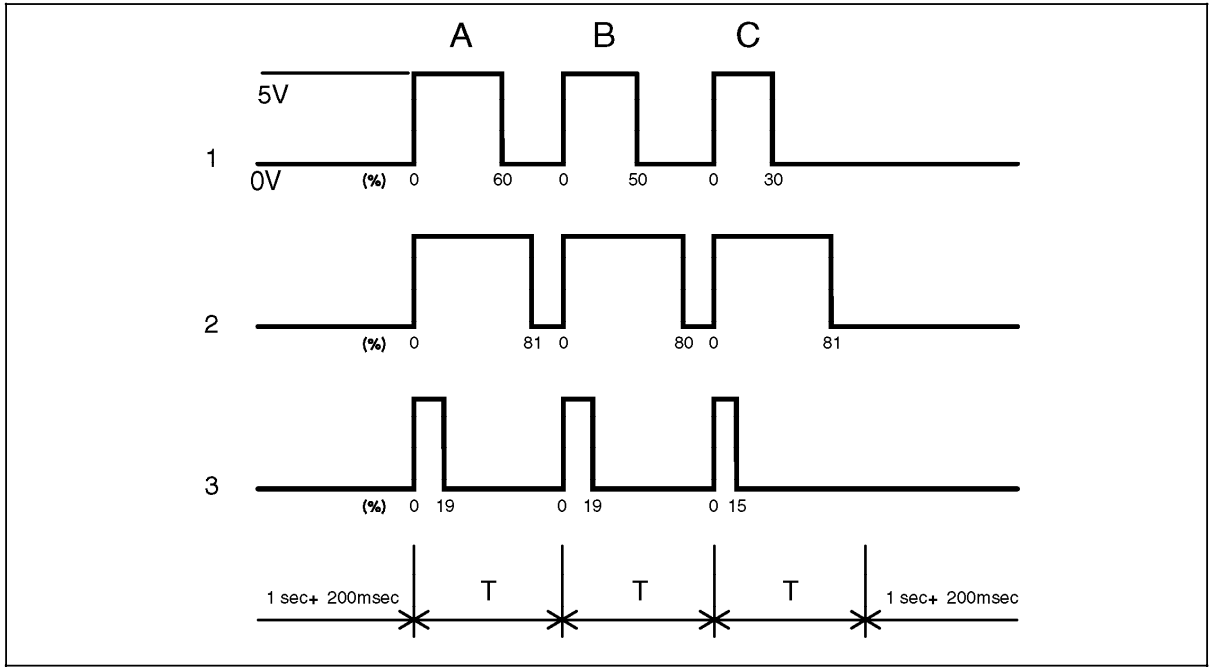
Figure 4
Injection duration “ti” at WOT



P07.61-0540-01

Figure 5
Model 129
Y58/1 Purge control valve

Electrical Test Program – Sequential Multiport Fuel Injection System Test



P07.61-0445-05

Figure 6

Oil Sensor (B40) Signal Survey

1 Sensor signal sensitivity ok
2 Sensor signal sensitivity > 80%
- A Oil temperature > +160° C
- B Oil level > 80mm
- C Oil quality good

3 Sensor signal sensitivity < 20%
- A Oil temperature < -40° C
- B Oil level < 0 mm
- C Oil quality poor