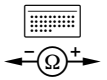
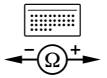
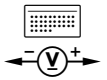
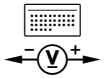
Electrical Test Program – Test

Test step **DTC**	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 1.0	**A/C pushbutton control module (N22)** Voltage supply Circuit 30	N22 19 — V — 8	on right connector (2).	11-14 V	Wires, Circuit 31, ⇒ 1.1
⇒ 1.1	Circuit 30	N22 ⊥ — V — 8		11-14 V	Wires.
⇒ 2.0	**Voltage supply, circuit 15**	N22 19 — V — 9	on right connector (2). Ignition: **ON**	11-14 V	Wires.
⇒ 3.0	**Voltage supply, circuit 15x**	N22 ⊥ — V — 11	on left connector (1). Ignition: **ON**	11-14 V	Wires.

Electrical Test Program – Test

Test step / DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 4.0 03 04 05 06	**In-car temperature sensor with aspirator blower (B10/4)** Resistance	N22 19 — Ω — 20	Ignition: **OFF** on left connector (1). Disconnect N22 from .	°C / kΩ 10 / 19.0 – 21.0 20 / 11.9 – 13.0 30 / 7.7 – 8.4 45 / 4.2 – 4.6	Wires, B10/4.
⇒ 5.0 07 08 09 10	**Outside temperature sensor (B10/5)** Resistance	N22 19 — Ω — 21	Ignition: **OFF** on left connector (1). Disconnect N22 from .	°C / kΩ 10 / 5.2 – 5.8 20 / 3.2 – 3.6 30 / 2.0 – 2.3 45 / 1.1 – 1.25	Wires, B10/5.
⇒ 6.0 19 20 21 22	**Evaporator temperature sensor (B10/6)** Voltage	N22 19 — V — 22	on left connector (1). Ignition: **ON**	°C / V 0 / 3.7 – 4.1 10 / 3.1 – 3.5 20 / 2.6 – 3.0 30 / 2.0 – 2.4 45 / 1.4 – 1.8	Wires, ⇒ 6.1, A/C pushbutton control module (N22).
⇒ 6.1	Resistance	N22 19 — Ω — 22	Ignition: **OFF** on left connector (1). Disconnect N22 from .	°C / kΩ 0 / 7.3 – 10.0 10 / 4.2 – 6.0 20 / 2.8 – 3.9 30 / 1.7 – 2.6 45 / 1.0 – 1.5	Wires, B10/6.

Electrical Test Program – Test

Test step / DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 7.0 11 12 13 14	**Heater core temperature sensor (B10/1)** Resistance	N22  19 — 23	Ignition: **OFF** on left connector (1). Disconnect N22 from .	°C / kΩ 10 / 19.0 – 21.2 20 / 11.9 – 13.2 30 / 7.7 – 8.4 45 / 4.2 – 4.6	Wires, B10/1.
⇒ 8.0 23 24 25 26	**ECT sensor (B10/8)** Resistance	N22  19 — 24	Ignition: **OFF** on left connector (1). Disconnect N22 from .	°C / kΩ 20 / 5.0 – 8.0 60 / 1.0 – 1.5 85 / 0.46 – 0.65 100 / 0.3 – 0.4 120 / 0.19 – 0.22	Wires, B10/8.
⇒ 9.0 27 28 29 30	**Refrigerant pressure sensor (B12)** Voltage	N22  19 — 16	on left connector (1). Ignition: **ON**	bar / V 2 / 0.5 – 0.75 10 / 1.4 – 1.8 18 / 2.4 – 2.8 28 / 3.5 – 4.0	Wires, B12, ⇒ 9.1
⇒ 9.1	Voltage supply	N22  19 — 7	on left connector (1). Ignition: **ON**	4.75 – 5.25 V	Wires, B12, A/C pushbutton control module (N22).

Electrical Test Program – Test

Test step **DTC**	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 10.0	**Diagnostic signal output**	N22 ⊥ V ⟩— 18	Ignition: **ON** on left connector (1).	11 – 14 V	Wires, A/C pushbutton control module (N22).
⇒ 11.0 63 64 65 66	**Auxiliary fan (M4), stage 1**	N22 ⊥ V ⟩— 16	on right connector (2). Ignition: **ON**	11 – 14 V M4: **OFF**	Wires, N22, ⇒ 11.1
			Ignition: **OFF** Unplug engine coolant temperature sensor (B10/8).		
		B10/8 1 —(⟩— 2	Set resistance to 310 Ω	M4: **ON** in stage 1	
		N22 ⊥ V ⟩— 16	Ignition: **ON**	< 1 V	

Electrical Test Program – Test

Test step **DTC**	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 11.1	Auxiliary fan (M4), stage 1		Ignition: **OFF** Unplug ECT sensor (B10/8).		
			B10/8 1 — (▦) — 2		
			Set resistance to 310 Ω Unplug auxiliary fan relay module (K9).		
		K9 ⊥ — (V) — 2/5	Ignition: **ON**	6.5 – 7.5 V	Wires.
		K9 2/5 — (V) — 2/1	Ignition: **ON**	2.5 – 3.5 V	Wires, Auxiliary fan preresistor (R15).
		R15 1 — (Ω) — 2	Ignition: **OFF**	< 1 Ω	R15, Auxiliary fan relay module (K9).

Electrical Test Program – Test

Test step / DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 12.0 67 68 69 70	**Auxiliary fan (M4), stage 2**	N22	on right connector (2).		⇒ 12.1
		⊥ (V) 7	Ignition: **ON**	11 – 14 V M4: **OFF**	
			Ignition: **OFF** Unplug ECT sensor (B10/8).		
		B10/8 1 — 2	Set resistance to 250 Ω.	M4: **ON** in stage 2	
		N22			
		⊥ (V) 7	Ignition: **ON**	< 1 V	
⇒ 12.1	Auxiliary fan, stage 2	K9	Ignition: **OFF**		Wires, K9, ⇒ 12.2
		⊥ (V) 1	Unplug auxiliary fan relay module (K9). Ignition: **ON**	11 – 14 V	
⇒ 12.2	Auxiliary fan, stage 2	K9 2/1 (Ω) 2/5	Ignition: **OFF** Unplug auxiliary fan relay module (K9).	< 1 Ω	Wires, Auxiliary fan preresistor (R15).

Electrical Test Program – Test

Test step / DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 13.0 71 72 73 74 **Gasoline engine only!**	**Engine rpm increase**	N22 ⊥ V 10	on right connector (2). Ignition: **ON** Press pushbutton	< 1 V 9 – 14 V	Wires, A/C pushbutton control module (N22).
⇒ 14.0 47 48 49 50	**Auxiliary coolant pump (M13)**	N22 ⊥ V 12	on right connector (2). Ignition: **ON** Set temperature selector wheel to: "**Red**" detent Set temperature selector wheel to: "**Blue**" detent	< 1 V 11 – 14 V	⇒ 14.1, Wires, N22.
⇒ 14.1	Auxiliary coolant pump (M13) Resistance	M13 2/1 Ω 2/2	Ignition: **OFF** Unplug connector from M13.	2 – 4 Ω	M13.

Electrical Test Program – Test

Test step / DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 15.0 51 52 53 54	**Duovalve (Y21)**	N22 ⊥ V 21	on right connector (2). Ignition: **ON** Press pushbutton: ▲ to display "HI" ▼ to display "LO"	 11 – 14 V < 1 V	Wires, ⇒ 15.1, A/C pushbutton control module (N22).
⇒ 15.1	Duovalve (Y21)	N22 18 Ω 21	Ignition: **OFF** Disconnect N22 from .	10 – 18 Ω	Y21.
⇒ 16.0	**Blower regulator (A32n1) control**	N22 ⊥ V 1	on right connector (2). Ignition: **ON** Stage 1 2 3 4	 0.8 – 1.2 V 1.8 – 2.2 V 2.7 – 3.3 V > 5 V	A/C system blower unit (A32).

Electrical Test Program – Test

Test step **DTC**	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 17.0 31 32	**A/C compressor (A9) activation**	N22 19 — (V) — 25	on right connector (2). Engine: **At Idle** A/C compressor: EC A/C compressor:	 < 1 V 11 – 14 V	Wires, ⇒ 17.1, A/C pushbutton control module (N22).
⇒ 17.1	A/C compressor cut-out	N22 25 — 9	on right connector (2). Engine: **At Idle** Reading Sensor Values 12 LED display: "22"	 > 720 rpm (> 07° 2)	Wires, ⇒ 17.2
⇒ 17.2	A/C compressor rpm sensor (A9l1)	N22 27 — (Ω) — 26	Disconnect N22 from . on left connector (1).	 200 – 350 Ω	Wires, A/C compressor rpm sensor (A9l1).

Electrical Test Program – Test

Test step **DTC**	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 18.0	*Not applicable for U.S. version vehicles*				
⇒ 19.0 75 76 77 78	**Switchover valve block (Y11/3), diverter flap**	N22 15 — ◄ –Ⓥ+ ► — 18	on right connector (2). Ignition: **ON** Display "HI"	< 1 V	Wires, ⇒ 19.1
⇒ 19.1	Switchover valve block (Y11/3), diverter flap	N22 15 — ◄ –Ω+ ► — 18	Disconnect N22 from .	45 – 65 Ω	Wires, A/C pushbutton control module (N22).
⇒ 20.0 79 80 81 82	**Switchover valve block (Y11/3), tempering flap**	N22 6 — ◄ –Ⓥ+ ► — 18	on right connector (2). Ignition: **ON** Display "LO"	11 – 14 V	Wires, ⇒ 20.1
⇒ 20.1	Switchover valve block (Y11/3), valve for blend air flap	N22 6 — ◄ –Ω+ ► — 18	Disconnect N22 from .	45 – 65 Ω	Wires, N22.

Electrical Test Program – Test

Test step / DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 21.0 DTC 83 DTC 84 DTC 85 DTC 86	**Switchover valve block (Y11/3), fresh/recirculating air flap, long stroke (80%)**	N22 5 — (V) — 18	on right connector (2). Ignition: **ON**	< 1 V	Wires, ⇒ 21.1
⇒ 21.1	Switchover valve block (Y11/3), fresh/recirculating air flap, long stroke (80%)	N22 5 — (Ω) — 18	Disconnect N22 from .	45 – 65 Ω	Wires, A/C pushbutton control module (N22).
⇒ 22.0 DTC 87 DTC 88 DTC 89 DTC 90	**Switchover valve block (Y11/3), fresh/recirculating air flap, short stroke (20%)**	N22 4 — (V) — 18	on right connector (2). Ignition: **ON**	< 1 V	Wires, ⇒ 22.1
⇒ 22.1	Switchover valve block (Y11/3), fresh/recirculating air flap, short stroke (20%)	N22 4 — (Ω) — 18	Disconnect N22 from .	45 – 65 Ω	Wires, N22.

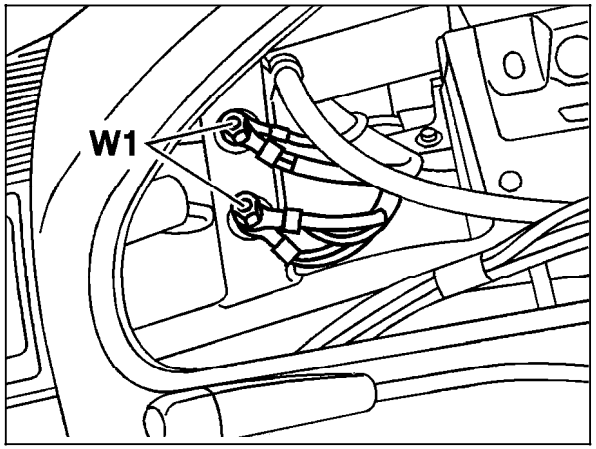
Electrical Test Program – Test

Test step DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 23.0 99 100 101 102	**Switchover valve block (Y11/3), footwell flap, long stroke (80%)**	N22 14 — (V) — 18	on right connector (2). Ignition: **ON**	11 – 14 V	Wires, ⇒ 23.1
⇒ 23.1	Switchover valve block (Y11/3), footwell flap, long stroke (80%)	N22 14 — (Ω) — 18	Disconnect N22 from .	45 – 65 Ω	Wires, A/C pushbutton control module (N22).
⇒ 24.0 103 104 105 106	**Switchover valve block (Y11/3), footwell flap, short stroke (20%)**	N22 13 — (V) — 18	on right connector (2). Ignition: **ON**	11 – 14 V	Wires, ⇒ 24.1
⇒ 24.1	Switchover valve block (Y11/3), footwell flap, short stroke (20%)	N22 13 — (Ω) — 18	Disconnect N22 from .	45 – 65 Ω	Wires, N22.

Electrical Test Program – Test

Test step / DTC	Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
⇒ 25.0 DTC 91, 92, 93, 94	**Switchover valve block (Y11/3), defroster flap, long stroke (80%)**	N22 (V) 23 — 18	on right connector (2). Ignition: **ON**	11 – 14 V	Wires, ⇒ 25.1
⇒ 25.1	Switchover valve block (Y11/3), defroster flap, long stroke (80%)	N22 (Ω) 23 — 18	Disconnect N22 from .	45 – 65 Ω	Wires, A/C pushbutton control module (N22).
⇒ 26.0 DTC 95, 96, 97, 98	**Switchover valve block (8 connections, Y11/3), defroster flap, short stroke (20%)**	N22 (V) 22 — 18	on right connector (2). Ignition: **ON**	< 1 V	Wires, ⇒ 26.1
⇒ 26.1	Switchover valve block (Y11/3), defroster flap, short stroke (20%)	N22 (Ω) 22 — 18	Disconnect N22 from .	45 – 65 Ω	Wires, N22.
⇒ 27.0	**Engine speed signal (TN)**	N22 (V) ⊥ — 25	on left connector (1). Engine: **at Idle**	5 – 7.5 V	Wires.

Electrical Test Program – Test



P83-5605-13

Figure 1

W1 Main ground (behind instrument cluster)

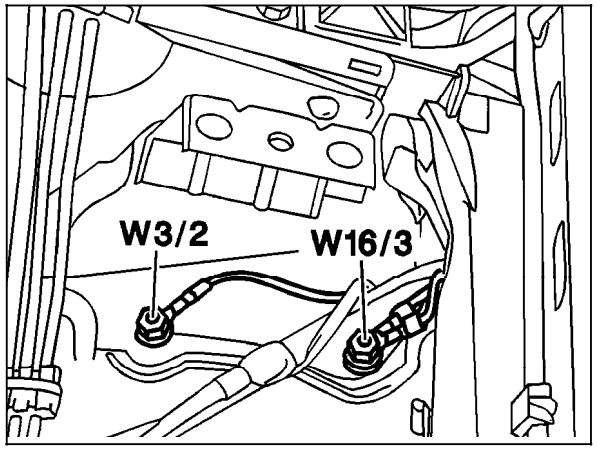


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Figure 2

W16/3 Ground (component compartment - left)

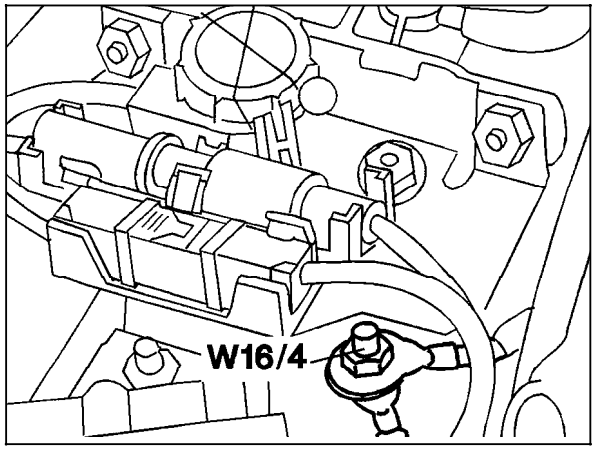

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Figure 3

W16/4 Ground (component compartment - right)

Electrical Test Program – Test

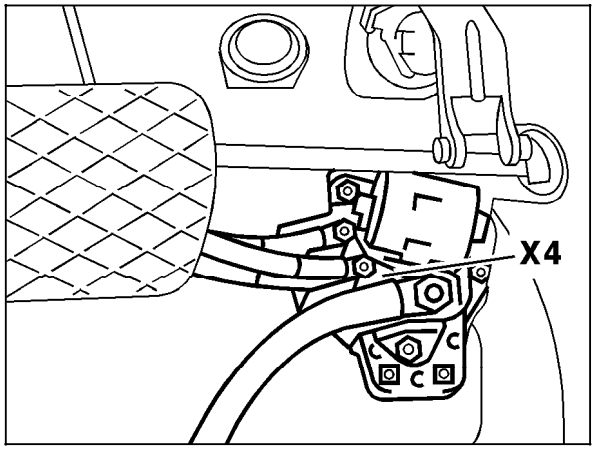

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Figure 4

X4 Terminal block (circuit 30, left footwell)

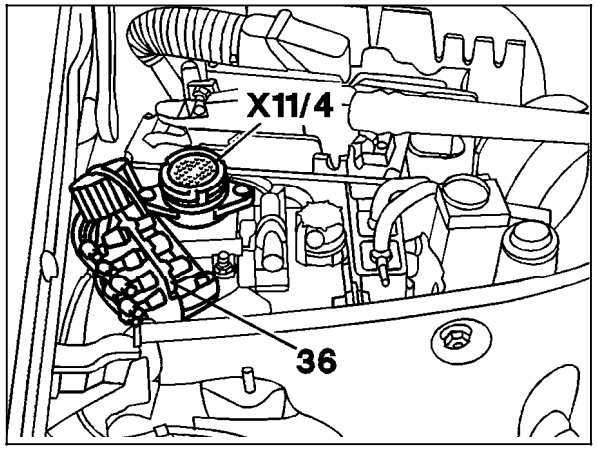

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Figure 5

X11/4 Data link connector (DTC readout)

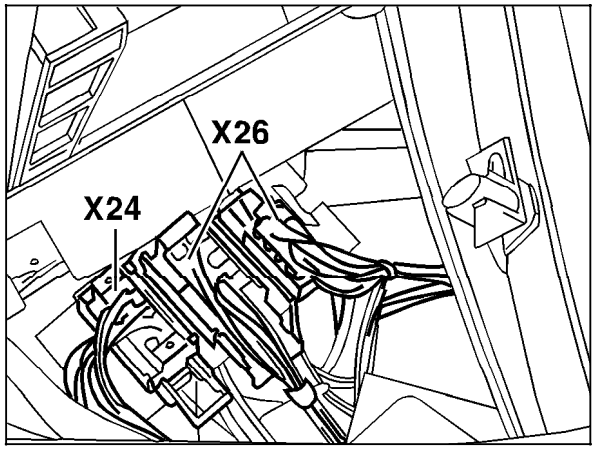

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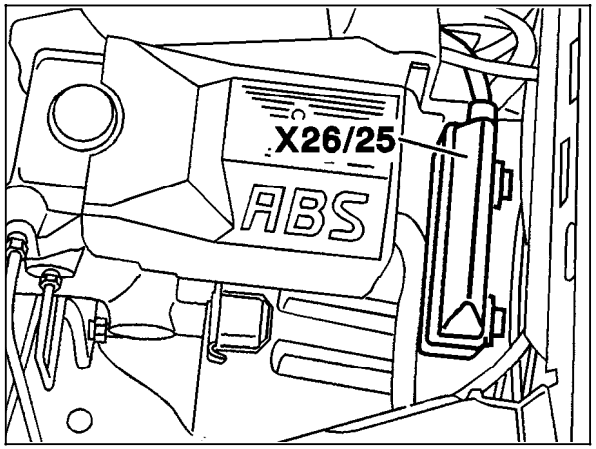
Figure 6

X24 Headlamp harness connector
X26 Interior/engine connector

Electrical Test Program – Test



P83-5674-13

Figure 7

X26/25 Engine/chassis connector (24-pole)