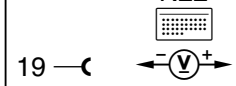
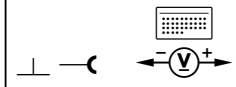
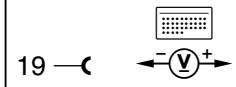
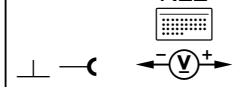
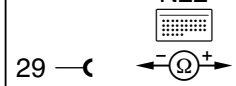
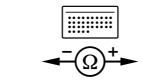
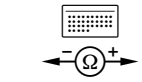
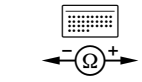
Electrical Test Program – Test

⇒		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 — 8	on right connector	11 – 14 V	Wiring, Circuit 31, ⇒ 1.1
1.1		**Circuit 30**	N22  ⊥ — 8		11 – 14 V	Wiring.
2.0		**Voltage supply** **Circuit 15**	N22  19 — 9	on right connector Ignition: **ON**	11 – 14 V	Wiring.
3.0		**Voltage supply** **Circuit 15x**	N22  ⊥ — 11	on **left** connector Ignition: **ON**	11 – 14 V	Wiring.
4.0	B1226	**In-car temperature sensor (B10/4) with aspirator** Resistance	N22  29 — 20	Ignition: **OFF** on left connector 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	Wiring, B10/4

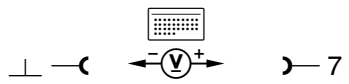
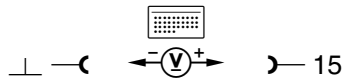
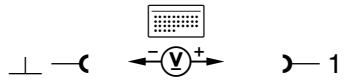
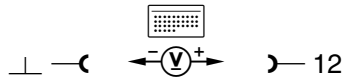
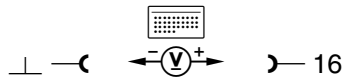
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
5.0	B1230	**Evaporator temperature sensor (B10/6)** Resistance	N22  29 — 22	Ignition: **OFF** on left connector Disconnect N22 from .	°C ≙ kΩ 0 ≙ 7.3 – 10 10 ≙ 4.2 – 6.0 20 ≙ 2.8 – 3.9 30 ≙ 1.7 – 2.6 45 ≙ 1.0 – 1.5	Wiring, B10/6
6.0	B1233	**Refrigerant temperature sensor (B12/1)** Resistance	N22  29 — 13	Ignition: **OFF** on left connector Disconnect N22 from .	° C k Ω 20 < 13 40 < 5.5 50 < 3.7 60 < 2.5 70 < 1.8	Wiring, B12/1
7.0	B1228	**Heater core temperature sensor (B10/2), left** Resistance	N22  29 — 23	Ignition: **OFF** on left connector 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	Wiring, B10/2

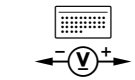
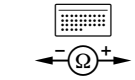
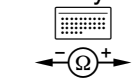
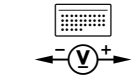
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
8.0	B1229	**Heater core temperature sensor (B10/3), right** Resistance	N22 29 — Ω — 14	Ignition: **OFF** on left connector Disconnect N22 from .	°C = Ω kΩ 10 = 19.0 – 21.2 20 = 11.9 – 13.2 30 = 7.7 – 8.4 45 = 4.2 – 4.6	Wiring, B10/3
9.0	B1231	**ECT sensor (B11/4 or B11/10)** Resistance (up to MY 1997)	N22 29 — Ω — 24	Ignition: **OFF** on left connector Disconnect N22 from .	°C = Ω kΩ 20 = 5.0 – 8.0 60 = 1.0 – 1.5 85 = .45 – .65 100 = .3 – .4 120 = .19 – .22	Wiring, B11/4 or B11/10
10.0	B1227	**Outside temperature sensor (B10/5)** Resistance (up to MY 1997)	N22 29 — Ω — 21	Ignition: **OFF** on left connector Disconnect N22 from .	°C = Ω kΩ 10 = 5.2 – 5.8 20 = 2.6 – 2.9 30 = 2.0 – 2.4 45 = 1.3 – 1.7	Wiring, B11/4 or B11/10

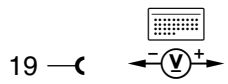
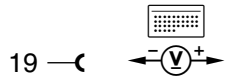
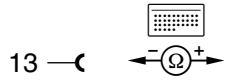
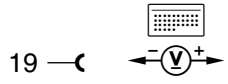
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.0	B1232	**Refrigerant pressure sensor (B12)** Voltage supply	N22  ⊥ — 7	on left connector. Ignition: **ON**	4.75 – 5.25 V	Wiring, B12, N22
12.0		**Sun sensor (B32)** Voltage supply	N22  ⊥ — 15	on left connector. Ignition: **ON**	0 – 4.5 V	Wiring, N22
13.0		**Diagnostic output** Voltage	N22  ⊥ — 1	on left connector. Ignition: **ON**	11 – 14 V	Wiring, N22
14.0	B1235	**Emissions sensor (B31)** Voltage	N22  ⊥ — 12	on left connector. Ignition: **ON**	4 – 6 V	Wiring, N22
15.0	B1421	**Auxliary fan (M4)** Voltage	N22  ⊥ — 16	on right connector Ignition: **ON** Press AUTO > 10 secs. **End**: ignition **OFF**	> 2 V Auxliary fan (M4) on.	Wiring, N22, N65

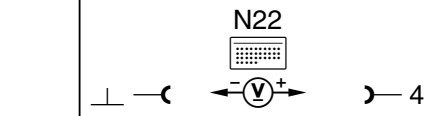
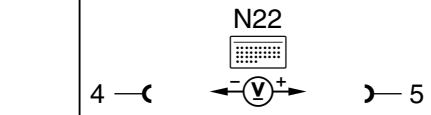
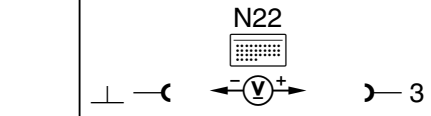
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
16.0		**A/C Pushbutton control module (N22), 12 V output** Voltage	N22  19 — 28	Ignition: **ON** on right connector.	11 - 14 V	Wiring, N22
17.0	B1416	**Coolant circulation pump (A31m1)** Resistance	N22  20 — 28	on right connector Ignition: **OFF** Disconnect N22 from .	2 - 4 Ω	Wiring, A31m1
18.0	B1417 B1418	**Left/right duovalve (A31y1, A31y2)** Resistance	A31y1 A31y2  21 — 12	Ignition: **OFF** on right connector Disconnect N22 from .	8 - 30 Ω	Wiring, A32
19.0		**Blower regulator (A32n1) Control** Voltage	N22  19 — 1	on right connector Ignition: **ON** MIN MA	 > 0.7 V > 0.5 V	Wiring, A31y1, A31y2

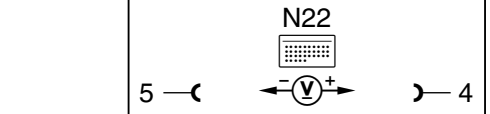
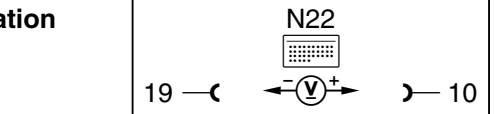
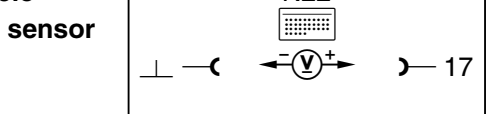
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
20.0	B1423	**Switchover valve block (Y11), (15 connections multiplex)** Voltage	N22  19 — 28	on right connector Ignition: **ON**	< 3 V	Wiring.
21.0	B1419	**A/C compressor (A9) activation** Voltage	N22  19 — 25	on right connector Engine: **At Idle** A/C compressor: EC A/C compressor:	< 1 V 11 – 14 V	Wiring, N22
22.0	B1424 B1425	**Activated charcoal filter actuator (A32m2)** Resistance	N22  13 — 22	Ignition: **OFF** Disconnect N22	50 - 80 Ω	Wiring, A32m2, N22
23.0		REST Voltage	N22  19 — 28	on right connector. Ignition: **OFF** Press REST (illuminates)	11 - 14 V	Wiring.

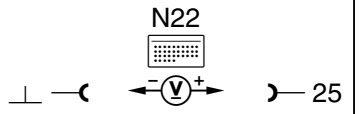
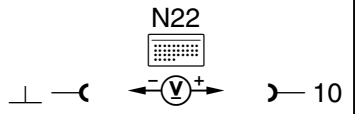
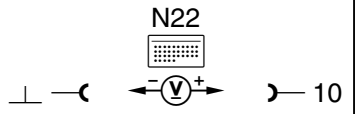
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
24.0		**Warm/cool air switch (S24/1)** Warm air		on left connector. Ignition: **ON** Press AUTO Press and hold warm air button (red): **ON**	4.75 - 5.25 V 1.5 - 3 V S24/1: LED "**WARM**" is illuminated.	Wiring, S24/1 N22 ⇒ 1.1
24.1		**LED** Warm air		Ignition: **ON** S24/1: (warm air) **OFF** S24/1: (warm air) **ON**	< 1 V LED is **OFF** < 6 V LED is **ON**	Wiring, S24/1 N22
25.0		**Warm/cool air switch (S24/1)** Cool air		on left connector. Ignition: **ON** Press AUTO Press and hold cool air button (blue): **ON**	4.75 - 5.25 V 1.5 - 3 V S24/1: LED "**COLD**" is illuminated	Wiring, S24/1 N22/1 ⇒ 1.1

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
25.1		**LED** Cool air	N22  5 — 4	Ignition: **ON** S24/1: (cold air) **OFF** S24/1: (cold air) **ON**	 < 1 V LED is **OFF** < 6 V LED is **ON**	Wiring, S24/1 N22
26.0		**Idle speed stabilization**	N22  19 — 10	on left connector. Engine: **at Idle** Press	< 1 V 10 - 12 V	Wiring, N22
27.0		**Left front axle vehicle speed signal (VSS) sensor**	N22  ⊥ — 17	Raise front vehicle Ignition: **ON** Shift lever: **N** Spin left front wheel by hand for > 1 sec.	> 3 V ~	Wiring, See D.M., Chassis and Drivetrain, Vol. 2, section 6.2, 23
28.0		Not applicable to U.S version vehicles.				

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
29.0		**Engine RPM**		Engine: **at Idle** on left connector	Gasoline engine: 5 - 7.5 V Diesel engine: 5 - 0.5 V	Wiring.
30.0		**Serial Interface (K1)**		on left connector Ignition: **ON**	< 10 V	Wiring.
31.0		**Serial Interface (K2)**		on right connector Ignition: **ON**	> 3 V ~	Wiring.

Electrical Test Program – Test – This page left blank intentionally

Electrical Test Program – Test (Rear A/C)

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		**Voltage supply, circuit 15**	N22/3 20 — (V) — 1	Ignition: **ON**	11-14 V	Wiring, ⇒ 1.1
1.1		**Voltage supply, circuit 15**	N22/3 ⊥ — (V) — 1		11-14 V	Wiring.
2.0	B1240	**Evaporator temperature sensor (B10/6)**	N22/3 4 — (Ω) — 18	Ignition: **OFF** Disconnect N22/3 from ⌨.	°C = Ω 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	Wiring, B10/6, N22/3
3.0	B1236	**Left rear heater core temperature sensor (B10/9)** Resistance	N22/3 4 — (Ω) — 14	Ignition: **OFF** Disconnect N22/3 from ⌨.	°C = Ω kΩ 10 = 19.0 – 21.2 20 = 11.9 – 13.2 30 = 7.7 – 8.4 45 = 4.2 – 4.6	Wiring, B10/9, N22/3

Electrical Test Program – Test (Rear A/C)

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0	B1237	**Right rear heater core temperature sensor (B10/10)**	N22/3 4 — Ω — 16	Ignition: **OFF** Disconnect N22/3 from ⌨.	°C ≙ kΩ 10 ≙ 19.0 – 21.2 20 ≙ 11.9 – 13.2 30 ≙ 7.7 – 8.4 45 ≙ 4.2 – 4.6	Wiring, B10/10, N22/3
5.0		**Potentiometer, rear A/C blower speed selector wheel (N22/3)**	N22/3 20 — V — 11	Ignition: **ON** Potentiometer setting: **MIN** (0 not engaged) **MAX**	 < 1 V (infinitely variable) > 4 V	N22/3
6.0	B1239	**Right potentiometer (temperature selector wheel) N22/3**	N22/3 20 — V — 15	Ignition: **ON** Temperature selector wheel in: **Blue** area **Red** area	 < 1 V (infinitely variable) > 4 V	Wiring, N22/3

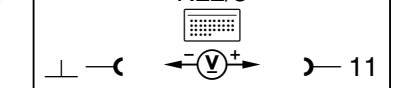
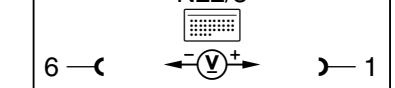
Electrical Test Program – Test (Rear A/C)

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
7.0	B1238	**Left potentiometer (temperature selector wheel) N22/3**	N22/3 20 — (-) (V) (+) — 17	Ignition: **ON** Temperature selector wheel in: **Blue** area **Red** area	 < 1 V (infinitely variable) > 4 V	Wiring, N22/3
8.0	B1430	**Rear refrigerant shut-off valve (Y67)**	N22/3 9 — (-) (V) (+) — 1	Rear A/C: **ON** Rear A/C: **OFF**	11-14 V < 1 V	Wiring, N22/3
9.0	B1427	**Coolant circulation pump (A31/1m1)**	A31/1m1 2/1 — (-) (Ω) (+) — 2/2	Ignition: **ON** Connector 2 disconnected from A31/1m1	2 – 4 Ω	Wiring, A31/1m1, N22/3
10.0	B1429	**Right duovalve (A31/1y2)** Voltage	N22/3 5 — (-) (V) (+) — 1	Ignition: **ON** Both temperature selector wheels at: **Red** detent **Blue** detent	 < 1 V 11 – 14 V	Wiring, ⇒ 10.1

Electrical Test Program – Test (Rear A/C)

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
10.1		Resistance	N22/3 5 — Ω — 7	Ignition: **OFF** Disconnect N22/3 from .	20 – 35 Ω	A31/1y2, N22/3
11.0	81428	**Left duovalve (A31/1y1)** Voltage	N22/3 7 — V — 1	Ignition: **ON** Both temperature selector wheels at: **Red** detent **Blue** detent	 < 1 V 11 – 14 V	Wiring, ⇒ 11.1
11.1		Resistance	N22/3 5 — Ω — 7	Ignition: **OFF** Disconnect N22/3 from .	20 – 35 Ω	A31/1y1, N22/3

Electrical Test Program – Test (Rear A/C)

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.0		**Rear A/C electronic blower regulator (N29/2)**	N22/3  ⊥ — 11	Ignition: **ON** Blower speed wheel set to: **MIN** (not 0) **MAX**	 < 1 V > 5 V, blower motor running	Wiring, N29/2 Rear blower motor (M2/1)
13.0		**Rear tunnel flap vacuum valve (Y67/1)**	N22/3  6 — 1	 Rear A/C: OFF Rear A/C: ON	 < 1 V > 9 V	Wiring, Y67/1