

All values measured to ground unless otherwise noted

Conn./Plug/Pin	Pin Information	Test Value	Comments
<u>N22</u>			
1.1	"Diagnostic port" for readout and diagnostic purpose.  Stored DTC data's are memory persistent	No reliable test. Check continuity to X11/4 pin 16.	Note 1
1.3	"Warm/cool" signal input.	Ignition on, "AUTO" mode approx. 5 VDC. Warm air button held depressed approx. 1.5-3 VDC. Cool air button held depressed < 1VDC.	Warm LED on Cool LED on
1.4	"Warm" indicator LED switched ground signal output.	Ignition on, "AUTO" mode approx. 12 VDC. Warm air button on < 5VDC.	Warm LED on
1.5	"Cool" indicator LED switched ground signal output.	Ignition on, "AUTO" mode approx. 12 VDC. Cool air button on < 5VDC.	Cool LED on
1.6	Defrost indicator input, activates LED integrated in defrost switch.	Approx. 8 VDC in defrost mode.	Feed from N10 pin 1.18 See also pin 2.3
1.7	Voltage output, supplies refrigerant pressure sensor.	Ignition on, 5 VDC.	Leads to B12 via X85/1
1.11	Circuit 15x, power input.	Ignition on, 12 VDC.	Feed from F3f21 via Z3/8
1.12	Emission sensor signal input, sets automatic recirculation mode.	No reliable test. Ignition on, wait at least 60 seconds. Approx. 5 VAC.	Depending on outside air CO and NOx content
1.13	Refrigerant temperature sensor signal input, used to protect A/C compressor when temperature raises.	NTC. Decreasing resistance with increasing temperature. Approx. 13 kOhms at 20 °C, approx. 2 kOhms at 70 °C.	Note 1
1.14	Heater core signal input, right side.	NTC. Decreasing resistance with increasing temperature. Approx. 20 kOhms at 0 °C, approx. 4.5 kOhms at 45 °C.	Note 1
1.15	Sun sensor signal input, affects blower speed and influences inside temperature.	Test conditions: sunshine approx. 2.5 VDC darkness approx. 4.3 VDC	Note 1
1.16	Refrigerant pressure sensor signal input, used to protect A/C compressor when pressure drops.	Approx. 0-5 VDC depending on actual pressure value.	Feed from B12 pin 2
1.17	VSS signal input	Ignition on, lift front of vehicle. Turn left front wheel > 1 rev/sec by hand > 3 VAC or with vehicle moving	As of MY 97 pin 1.17 not used
1.18	Serial port I, receives Rx - ambient temperature - ECT - speed - rpm data from Instrument Cluster (IC). Rx signals come from other ETM via CAN-Bus. A1 internally linked to serial port I.	No reliable test. Approx. 5 VAC when data transmission active.	Note 1 See also pin 2.10
1.20	In-car temperature signal input, controls aspirator blower.	NTC. Decreasing resistance with increasing temperature. Approx. 20 kOhms at 10 °C, approx. 4.5 kOhms at 45 °C.	Note 1
1.21	Outside temperature signal input.	NTC. Decreasing resistance with increasing temperature. Approx. 5.5 kOhms at 10 °C, approx. 1.5 kOhms at 45 °C.	Note 1 pin 1.21 not used

1.22	Evaporator temperature signal input.	NTC. Decreasing resistance with increasing temperature. Approx. 9 kOhms at 0 °C, approx. 1.2 kOhms at 45 °C.	Note 1
1.23	Heater core signal input, left side.	NTC. Decreasing resistance with increasing temperature. Approx. 20 kOhms at 10 °C, approx. 4.5 kOhms at 45 °C.	Note 1
1.24	ECT signal input.	NTC. Decreasing resistance with increasing temperature. Approx. 6.5 kOhms at 20 °C, approx. 200 Ohms at 120 °C.	Note 1 pin 1.24 not used
1.25	RPM signal input.	Engine running at idle speed. Approx. 5-7.5 VDC.	Note 1 pin 1.25 not used
1.2, 1.8-10, 1.19, 1.26-30,	Pins not used.		
2.1	Signal output, blower speed control.	Ignition on. > 0.7 VDC with blower set to "min". > 5.0 VDC with blower set to "max".	
2.3	Defrost switch signal output, initializes power relay K13/1 via N10.	Ignition on, approx. 7 VDC with defrost switch held in depressed position (0 VDC in rest position).	See PE67.29 See also pin 1.6
2.6	Serial data line output to control flaps via Y11, depending on setting of A/C pushbutton module.	Ignition on. < 3 VDC	Note 1
2.8	Circuit 30, main power input.	12 VDC all times.	Feed from F3f18
2.9	Circuit 15, power input.	Ignition on, 12 VDC.	Feed from F3f20 via Z3/11
2.10	Up to MY 96 RPM increase signal output. Idle speed increases with A/C compressor on. As of MY 97 Serial port II, transmits data Tx - refrigerant pressure - rpm increase to Instrument Cluster (IC). Tx signals are linked on CAN-Bus inside of IC and sent to other ECM.	Engine running. 12 VDC with A/C compressor on (defrost mode), 0 VDC with A/C compressor off (defrost "off"). No reliable test. Approx. 5 VAC when data transmission active.	Engine 120 only Note 1
2.12	Switched ground signal output (logic level), activates right side water valve.	Approx. 12 VDC when valve closed, approx. 0 VDC when valve opened.	Note 1
2.13	Signal output, sets charcoal filter actuator open/close depending on B31 sensor signal.	50-80 Ohms between pin 2.13 and 2.22. Checks motor.	Note 1 See also pin 2.22
2.14	CAN-Bus data transfer bus input and output.	No reliable test.	Note 1
2.15	CAN-Bus data transfer bus input and output. Shares data with N22/3 rear climate control module, if so equipped.	Approx. 5 VAC (pin 2.14 - 2.15) when data is on bus.	
2.16	Signal output, activates auxiliary fan.	Ignition on, both AUTO switches depressed for more than 10 sec. > 2 VDC, fan is running.	Fan controlled via N65/1 AIR control module
2.17	Up to MY 96 Circuit 58d input, "Dimmed Instrument Illumination" voltage.	Varies up to 12 VDC, depending on setting of dimming value or ambient brightness.	Short protected, current decoupled from circ. 58k
2.19	Main ground to W1.	Approx. 0 Ohms to ground.	

2.20	Switched ground signal output, activates circulation pump.	Ignition off. Approx. 2-4 Ohms between pin 2.20 and 2.28. Check motor. Pump runs when grounded (Ignition on)	
2.21	Switched ground signal output (logic level), activates left side water valve.	Approx. 12 VDC when valve closed, approx. 0 VDC when valve opened.	Note 1
2.22	Signal output, sets charcoal filter actuator open/close depending on B31 sensor signal.	50-80 Ohms between pin 2.13 and 2.22. Checks motor.	Note 1 See also pin 2.13
2.25	Voltage output, activates A/C compressor.	A/C system on: Defrost on, EC off. 12 VDC with A/C compressor on. 0 VDC with A/C compressor off.	
2.28	Switched circuit 30 output.	Ignition on. 12 VDC.	Feed from F3f18 via A/C pushbutton module
2.29	Sensors common ground, in A/C system.	Approx. 12 VDC to pin 2.8.	Feed from Z6/16
2.2, 4, 5 2.7, 11 2.18, 23 2.24, 26 2.27	Pins not used.		
<u>A32</u>			
1.1	Main ground to W36.	Approx 0 Ohms to ground.	
1.2	Circuit 30, main power input.	12 VDC all times.	Feed from X4/10.
1.3	Signal input blower speed control. Affects low side of blower motor, varies resistance to ground to control motor speed.	Ignition on. > 0.7 VDC at min blower speed, 5A current draw. > 5.0 VDC at max blower speed, 30A current draw.	Feed from N22 pin 2.1
1.4	Switched power input, circuit 30.	Ignition on. 12 VDC.	Feed from N22 pin 2.28 via Z3/1
2.1	Power input to control charcoal filter actuator.	0 VDC in quiescent condition (no smog mode).	Feed from N22 pin 2.13 and 2.22
2.2	Polarity reversible to set open/close mode.		
Note 1	Refer to D. M. Climate Control Vol. 1, 3.2		

