



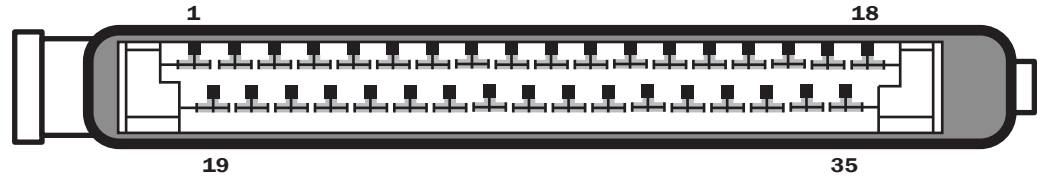
SPECIALIZED ECU REPAIR

1-800-328-1425
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Diagnose Follow-up Procedures

DME Harness Pin Assignment

*This 35 Pin Assignment sheet will help you identify the correct pin location and signals necessary for the right function of your DME.



Pin	Signal	Component / Function	Signal
1	output	Ignition Coil	Primary signal, ignition coil
2	input	Idle switch	Ground while throttle closed
3	input	Full Throttle switch	Ground while throttle fully open
4	input	Starter terminal 50	Battery voltage (+) during cranking
5		Ground	Shielding for reference sensor
6	input	Volume Air flow sensor	Intake Air Temperature (IAT) sensor signal
7	input	Volume Air flow sensor	Air flow sensor Potentiometer
8	input	Crankshaft speed (rpm) sensor	Crankshaft speed sensor (-)
9	output	Volume Air flow sensor	Reference signal (5 volts) to Volume Air flow sensor
10		Bridge to ground (California cars only)	DME ground to intake manifold runner
11		Tachometer/up-shift indicator	Terminal 1up-shift indicator light
12		Test connector A	Terminal A in test connector
13	output	Cylinder head temperature sensor	Reference signal (5 volts) to cylinder head temperature
14	output	Injection time signal	Ground pulse with engine running (Injectors 1,2 and 3)
15	output	Injection time signal	Ground pulse with engine running (Injectors 4,5 and 6)
16		Ground	DME ground to intake manifold runner
17		Ground	DME ground to intake manifold runner
18	input	DME main/fuel pump relay terminal 87	Battery voltage (+) from main/fuel pump relay to ECM
19		Ground	DME ground connection on # 1 intake manifold runner
20	output	DME relay terminal 85b	Ground signal to terminal 85b of main/fuel pump relay
21	output	Tachometer/up-shift indicator	Up-shift indicator light (term 2), where applicable
22	output	Volume Air flow sensor (terminal 1)	Variable voltage signal (0-5 volts) when vane door moves
23		Oxygen sensor wire shield	Shielded ground for oxygen sensor and speed sensor
24	input	Oxygen sensor	Variable voltage signal with engine running (0-1 volt)
25	output	Reference sensor	Reference sensor (-)
26	input	Reference sensor	Reference sensor (+), voltage signal (variable) with engine
27	input	Crankshaft speed (rpm) sensor	Crankshaft speed sensor (+), voltage variable with engine
28	input	High altitude switch	Ground signal from altitude switch when switch is closed
29	input	Air conditioner on/off	A/C temperature switch
30		Vacant	Open
31		Vacant	Open
32		Vacant	Open
33	output	Idle speed control valve	Idle speed control valve(open signal)
34	output	Idle speed control valve	Idle speed control valve(Closed signal)
35	input	Main/fuel pump relay terminal 87	Battery voltage (+) from terminal 87 main/fuel pump relay



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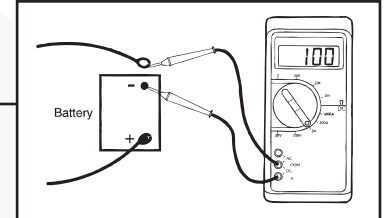
Diagnose Follow-up Procedures

DME Harness Electrical Tests

*It is the sole responsibility of the user to perform these tests. Please inform yourself on how to operate your testing equipment before attempting any diagnostics. Not following these guidelines will result in damages to your sensors, harness or DME on your car.

Tools Needed

- Digital Multimeter: capable of measuring VDC - OHM - Diode Continuity



Component or Circuit	Test Terminals	Test Conditions	Correct Test Value
Voltage supply to ECM	18 and Ground 35 and Ground	Ignition ON	Battery Voltage (approximately 12 volts)
Main Grounds	5 and Ground 10 and Ground 16 and Ground 17 and Ground 19 and Ground	Ignition OFF	Continuity
Fuel pump relay control	20 and Ground	Ignition ON	Fuel pump runs (audibly) when terminal 20 is touched to ground
Ignition coil	1 and Ground	Key in Start Position	Pulse voltage signal
Starter input (terminal 50)	4 and Ground	Actuate Starter	8 volts minimum
Full Throttle switch	3 and Ground 3 and Ground	Throttle closed or opened partially. Throttle fully open	No continuity Continuity
Idle switch	2 and Ground	Throttle closed Open throttle 1mm	No continuity Continuity
Air temperature sensor	6 and 22	Ignition OFF	Resistance varies with temp.: 20°C (68°F) 2000-3000 ohms 80°C (176°F) 250-400 ohms
Idle speed control valve	34 and 33	Ignition OFF	40 Ω
Tachometer/up-shift light	11 and 21	Ignition OFF	Continuity
Crankshaft speed (rpm) sensor	8 and 27	Ignition OFF	0.6 to 1.6 kΩ
Reference (TDC) sensor	25 and 26	Ignition OFF	0.6 to 1.6 kΩ
Cylinder head temperature sensor	13 and Ground	Ignition OFF	Resistance varies with temp.: 0°C (32°F):4.4 – 6.8 kΩ 15° - 30°C (60° - 85°F):1.4 – 3.6 kΩ 40°C (105°F):1.0 – 1.3 kΩ 80°C (175°F):250 – 390 Ω 100°C (212°F):160 – 210 Ω 130°C (265°F):90 Ω
Fuel Injector control (Injectors 1,2 and 3)	14 and Ground	Ignition ON	Fuel injectors must click when terminal 14 is touched to ground
Fuel Injector control (Injectors 4,5 and 6)	15 and Ground	Ignition ON	Fuel injectors must click when terminal 15 is touched to ground
Volume Air flow sensor	7 and 9	Move sensor vane by hand or actuate starter	Resistance must fluctuate
Volume Air flow sensor	22 and Ground	Ignition ON	Variable voltage signal (0-5 volts)
High altitude switch	28 and Ground	Ignition OFF	Continuity
Oxygen sensor	24 and Ground	Connect green oxygen sensor wire to ground	Continuity
Air conditioner ON Signal	29 and Ground	Ignition ON A/C switch ON	Battery voltage