

J - PIN VOLTAGE CHARTS - TURBO

1995 Volvo 850

1995 ENGINE PERFORMANCE
Volvo - Pin Voltage Charts

850 - Turbo

* PLEASE READ THIS FIRST *

NOTE: Unless stated otherwise in testing procedures, perform all voltage tests using a Digital Volt-Ohmmeter (DVOM) with a minimum 10-megohm input impedance. Voltage readings may vary slightly due to battery condition or charging rate.

INTRODUCTION

Pin voltage charts are supplied to reduce diagnostic time. Checking pin voltages at Powertrain Control Module (PCM) determines whether it is receiving and transmitting proper input and output signals. Charts may also help determine if PCM wiring harness is shorted or open.

TESTING

To read values requires the use of a OBD-II scan tester, DVOM, Breakout Box (981-3190) and Adapter (951-1351). Manufacturer does not recommend checking values directly at PCM connectors, as damage to wiring harness or PCM harness connector could occur. Unless otherwise specified, values specified in table are with ignition on and engine at normal operating temperature. Unless otherwise specified, use terminal A42 for ground if testing PCM "A" connector or terminal B28 for ground if testing PCM "B" connector. See POWERTRAIN CONTROL MODULE (PCM) PIN VALUES table.

POWERTRAIN CONTROL MODULE (PCM) PIN VALUES

POWERTRAIN CONTROL MODULE (PCM) PIN VALUES TABLE

PCM Terminal (1)	Circuit (Condition)	Voltage
A1		
A2	Front Knock Sensor (Ignition On)	Zero
A3	Mass Airflow Sensor Power Ground (Ignition On)	Zero
A4	Mass Airflow Sensor Signal (Ignition On)	Zero
	Mass Airflow Sensor Signal (Engine Idling)	1
A5	Mass Airflow Sensor Signal Ground (Ignition On)	Zero
A6	RPM Sensor Signal Ground (Ignition On)	Zero
A7	Low Speed Cooling Fan (Fan Off)	Battery
	Low Speed Cooling Fan (Fan On)	Less Than

		0.3
A8		
A9	Injector No. 5 (Ignition On)	Battery
	Injector No. 5 (Engine Idling)	(2)
A10	Injector No. 1 (Ignition On)	Battery
	Injector No. 1 (Engine Idling)	(2)
A11	Idle Air Control Valve Opening Signal (Ignition On) IAC Valve Opening Signal (Engine Idling)	(3) (4)
A12	Power Supply (Ignition On)	Battery
A13	Power Ground (Ignition On)	Zero
A14	Front Oxygen Sensor Heating Signal (Ignition On)	Battery
A15	Throttle Position Sensor Power (Ignition On)	4.8
A16	Throttle Position Sensor Signal (Ignition On & Closed Throttle)	0.5
	Throttle Position Sensor Signal (Ignition On & Wide Open Throttle)	4.2
A17	Front & Rear Knock Sensor Negative Signal (Ignition On)	Zero
A18	Sensor Ground Signal (Ignition On)	Zero
A19	Rear Heated Oxygen Sensor (Ignition On)	0.7
A20	RPM Sensor Signal (Ignition On)	Zero
	RPM Sensor Signal (Engine Idling)	(5) 1.5
A21	Crankshaft Position Sensor Signal (Ignition On)	Zero Or 5
A22	High Speed Cooling Fan (Fan Off)	Battery
	High Speed Cooling Fan (Fan On)	Less Than 0.3
A23	Injector No. 4 (Ignition On)	Battery
	Injector No. 4 (Engine Idling)	(2)
A24	Injector No. 3 (Ignition On)	Battery
	Injector No. 3 (Engine Idling)	(2)
A25	Idle Air Control Valve Closing Signal (Ignition On) IAC Valve Closing Signal (Engine Idling)	(6) (7)
A26	Power Supply From Battery (Ignition On)	Battery
A27	Power Supply From Main Relay (Ignition On)	Battery

A28	PCM Power Ground (Ignition On)	Zero
A29	Rear Heated Oxygen Sensor Control Signal (Ignition On)	Battery
A30	Rear Knock Sensor Positive Signal (Ignition On)	Zero
A31	Engine Coolant Temperature Sensor Signal (Ignition On)	(8)
A32	Front Heated Oxygen Sensor Positive Signal (Ignition On)	(9) 1.1 -1.2
	Front Heated Oxygen Sensor Positive Signal (Engine Idling)	0-0.9 (Fluctuates)
A33	Front Heated Oxygen Sensor Negative Signal (Ignition On)	0.7
A34	Rear Heated Oxygen Sensor Positive Signal (Ignition On)	(9) Zero
A35	EGR Temperature Sensor Signal (Ignition On)	(10)
A36	Crankshaft Position Sensor Power Supply (Ignition On)	1 Volt < Battery
A37		
A38	Injector No. 2 (Ignition On)	Battery
	Injector No. 2 (Engine Idling)	(2)
A39	EVAP Valve Control Signal (Ignition On)	Battery
	EVAP Valve Control Signal (Engine Idling)	(11)
A40	EGR Vacuum Controller (Ignition On)	Battery
A41	Main Relay Control Signal (Ignition On)	0.2
A42	PCM Signal Ground (Ignition On)	(12) Zero
B1	Acceleration Sensor Power Supply (Ignition On)	5
B2	Torque Reduction Signal From Transmission Control Module (Ignition On)	1-2 Volts < Battery
B3	Torque Reduction Signal From Transmission Control Module (Ignition On)	1-2 < Volts Battery
B4	Torque Reduction Signal To Transmission Control Module (Ignition On)	2 Volts < Battery
B5	Diagnostic Test Lead (Ignition On)	1 Volt <

		Battery
B6	A/C Compressor Status Signal (Ignition On)	Zero
B7	Malfunction Indicator Light Control Signal (MIL On)	0.8
	MIL Control Signal (MIL Off)	Battery
B8		
B9	A/C Pressure Sensor Signal (Ignition On)	0.9
B10		
B11	Power Stage Control Signal (Ignition On)	0.11
B12	Load Signal To Transmission Control Module (Ignition On)	0.8
B13-B17		
B18	Vehicle Speed Sensor Signal (Ignition On & Drive Wheel Turning)	0.5 Or Battery (Fluctuates)
B19		
B20	Throttle Position Sensor Signal (Ignition On & Closed Throttle)	0.5
	Throttle Position Sensor Signal (Ignition On & Wide Open Throttle)	4.2
B21	Tachometer Signal (Ignition On)	0.8
B22		
B23	Engine Coolant Temperature Sensor Signal (Ignition On & Closed Throttle)	(13)
B24	PNP Idle Compensation Signal (Ignition On, In Park Or Neutral)	1 Volt < Battery
	PNP Idle Compensation Signal (Ignition On, Except In Park Or Neutral)	0.2
B25	A/C Relay Status Signal (Ignition On)	Zero
B26	MIL Operation Request Signal (Ignition On)	0-1
B27	Fuel Pump Control Signal (Ignition On)	1
B28	Sensor Signal Ground (Ignition On)	Zero
B29	A/C Pressure Sensor Power Supply (Ignition On)	5
B30		
B31		
B32	Acceleration Sensor Signal (Ignition On)	2.5

B33-B35		
B36	Diagnostic Test Lead (Ignition On)	1-2 Volts < Battery
B37		
B38		
B39	Fuel Consumption Signal (Ignition On)	0.2
B40	A/C Relay Control Signal (Ignition On)	9
B41	Turbo Control Valve Signal (Ignition On)	(14) Battery
B42	Boost Pressure Limitation Signal (Ignition On)	1.2 Volts < Battery
	Boost Pressure Limitation Signal (Engine Idling)	0.3
B43		

- (1) - Check pin value between specified terminal and PCM terminal A42 (ground) if testing PCM "A" connector, or terminal B28 (ground) if testing PCM "B" connector.
- (2) - Injector "On" time is 2.2-3.6 milliseconds. "On" time increases with engine speed and load.
- (3) - 26 percent duty cycle. Duty cycle increases with engine load.
- (4) - Specification is 21-32 percent duty cycle. Duty cycle increases with engine speed and load.
- (5) - A/C voltage.
- (6) - Specification is 74 percent duty cycle.
- (7) - Specification is 68-77 percent duty cycle. Duty cycle increases with engine speed and load.
- (8) - Voltage is 1.6 volts with sensor temperature at 68°F (20°C) or 0.15 volt with sensor temperature at 212°F (100°C).
- (9) - Measured with negative lead connected to terminal A42.
- (10) - Voltage is 4 volts with sensor temperature at 68°F (20°C) or 1.2 volts with sensor temperature at 212°F (100°C).
- (11) - Zero-33 percent duty cycle.
- (12) - Measured with negative lead connected to negative battery terminal.
- (13) - Specification is measured in Hertz (Hz). Specification is 40 Hz with sensor temperature at 68°F (20°C) or 21.2 Hz with sensor temperature at 212°F (100°C).
- (14) - Voltage decreases as pulsing of valve increases.