

J - PIN VOLTAGE CHARTS - 4-CYL

Article Text

1993 Volkswagen Passat

For Volkswagen Technical Site: <http://vw.belcom.ru>

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Wednesday, March 22, 2000 10:18PM

ARTICLE BEGINNING

1993 ENGINE PERFORMANCE
Volkswagen Pin Voltage Charts

Passat GL

INTRODUCTION

Pin voltage charts are supplied to reduce diagnostic time. Checking pin voltages at ECU/ECM determines whether ECU/ECM is receiving and transmitting proper voltage signals. Charts may also help determine if ECU/ECM harness has an electrical short or open.

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.

ECU PIN VOLTAGES (PASSAT GL - CIS-E MOTRONIC)

ECU PIN VOLTAGES (PASSAT GL - CIS-E MOTRONIC)

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Component/Circuit (VAG 1598 Terminal No.)	(1) Test Conditions & Additional Steps	Specified Value Or Test Result
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ECU NOT CONNECTED TO VAG 1598/18

Voltage Supply -		
Control Unit (18 & 19) Ignition Off Battery Voltage

Voltage Supply -		
Control Unit (14 & 35)	.... Ignition On	..... Battery Voltage

Idle Stabilizer Valve		
(17 & 35)	..... Ignition On	..... Battery Voltage

A/C Compressor On		
(19 & 33 - Briefly Jumper)	..... (2)	..... Compressor Clutch Must Operate

Ground To Terminal No. 34 -		
M/T (19 & 34)	..... Ignition Off	..... Battery Voltage

Wiring To Starter		
Lockout Relay -		
A/T (34 & 35)	..... Select "P", Crank Engine	..... 2 Volts Below Battery Voltage

Differential Pressure		
Regulator (4 & 5)	..... Ignition Off	..... 15-20 Ohms

Coolant Temperature		
Sensor (3 & 35) (3) (3)

Idle Switch (28 & 35) Throttle Closed 1 Ohm Max. (Continuity)
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Idle Switch (28 & 35) Throttle Open Infinity (Open)
Full Throttle Switch -		

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If Equipped (32 & 35)	...	Throttle Closed	Infinity (Open)
Full Throttle Switch -				
If Equipped (32 & 35)	..	Throttle Wide Open	1 Ohm Max. (Continuity)
Cold Start Valve				
(14 & 16)	.....	Ignition Off	.....	8-13 Ohms
Carbon Canister Solenoid				
Valve I (14 & 15)	.....	Ignition Off	.....	30-60 Ohms
Wiring To Hall Effect				
Sensor (30 & 35)	.....	Disconnect Sensor		
		Connector	.....	Infinity (Open)
Wiring To Hall Effect				
Sensor (30 & 35)	.....	At Distributor		
		Jumper Terminals		
		No. 1 & 2	.....	1 Ohm Max. (Continuity)
Wiring To Hall Effect				
Sensor (30 & 21)	.....	Jumper Terminals		
		No. 2 & 3	.....	1 Ohm Max. (Continuity)
Wiring To Ignition Coil				
Output Stage (11 & 14)	....	Disconnect		
		Output Stage		
		Connector	.....	Infinity (Open)
Wiring To Ignition Coil				
Output Stage (11 & 14)	..	Jumper Terminals		
		No. 1 & 2	.....	1 Ohm Max. (Continuity)
Wiring To Ignition Coil				
Output Stage (11 & 18)	..	Jumper Terminals		
		No. 2 & 3	.....	1 Ohm Max. (Continuity)
Wiring To Knock Sensor II -				
Cyl. 3 & 4 (6 & 8)	.....	Disconnect		
		Sensor Connector		
		Near Distributor	....	Infinity (Open)
Wiring To Knock Sensor II -				
Cyl. 3 & 4 (6 & 8)	.....	Jumper Terminals		
		No. 1 & 2	.....	1 Ohm Max. (Continuity)
Wiring To Knock Sensor I -				
Cyl. 1 & 2 (8 & 24)	.....	Disconnect		
		Sensor Connector		
		Near Oil Filter	....	Infinity (Open)
Wiring To Knock Sensor I -				
Cyl. 1 & 2 (8 & 24)	.....	Jumper Terminals		
		No. 1 & 2	.....	1 Ohm Max. (Continuity)
Wiring To O2 Sensor				
(7 & 35)	Disconnect Connector		
		& Ground	1 Ohm Max. (Continuity)

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Ignition Timing
Sensor (27 & 29) Ignition Off 2 Ohms Max.

Airflow Sensor
Potentiometer
(23 & 26) Sensor Plate In
Rest Position 4500-5500 Ohms

Airflow Sensor
Potentiometer
(26 & 35) Ignition Off 3800-4200 Ohms

Wiring To Fuel Pump
Relay, Relay Connected
(12 & 35 - Jumper) ... Ignition On Fuel Pumps
Must Operate

Wiring To Diagnostic
Connectors (1 & 22) ... Jumper White
Connector Terminals 1 Ohm Max.
(Continuity)

Wiring To Diagnostic
Connectors (22 & 13) (4) 1 Ohm Max.
(Continuity)

EGR Temp. Sensor -
California (9 & 35) (3) (3)

ECU CONNECTED TO VAG 1598/18

Hall Effect Sensor -
Power (21 & 35) Ignition On 10 Volts Min.

Vehicle Speed Sensor -
Signal (2 & 35) (5) Zero To 10 Volts

Coolant Temperature
Sensor Resistance
Curve (3 & 35) Start Cold Engine
& Allow To Warm,
Observe Multimeter Voltage Must
Uniformly
Become Lower

Hall Effect Sensor -
Signal (30 & 35) (6) .. Operate Starter LED Must Flicker

(1) - TESTING CONDITIONS: Disconnect harness connector from ECU.
Connect Test Box (VAG 1598) to ECU harness connector using
Adaptor Cable (VAG 1598/3), leaving ECU disconnected.

(2) - Jumper terminals with jumper wire. DO NOT use multimeter.

(3) - Refer to I - SYS/COMP TESTS article.

(4) - Connect White connector lower terminal to Blue connector upper
terminal.

(5) - With ignition on and left wheel rotated very slowly,
approximately every 10 degrees of rotation, voltage will switch
from near zero to roughly 10 volts. This is an on/off signal
and exact voltages are not critical.

(6) - Perform test only if engine will not start. Turn ignition off.
Instead of using multimeter, connect LED Tester (US 1115) to
test box terminals No. 30 and No. 35 with Adapter Kit (VW

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1594). Disconnect wiring harness from ignition coil power
output stage.

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END OF ARTICLE