

# Volkswagen B3 Passat

## Diagnosis, Fault Memory - Passat Syncro

### D4 Diagnosis, Fault Memory (Page GR-D4)

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#### Anti-lock brake system (ABS) with electronic differential lock (EDL)

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## Volkswagen B3 Passat

### Diagnosis, Fault Memory - Passat Syncro

#### Anti-lock brake system (ABS) with electronic differential lock (EDL) self diagnosis (Page D4-10-1)

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#### **Note**

Look under **General** for information about the test equipment, how to hook it up and how to use it. To use the information in this manual you need the right wiring diagram. See wiring diagrams.

The control unit recognizes faults and malfunctions of electrically monitored sensors and components during ABS/EDL operation and stores them in a permanent memory. The faults can be read at any time even if there has been an interruption of the battery voltage.

Intermittent (sporadic) faults can be recognized at speeds under 40 km/in (25 mph) and are stored in a non-permanent memory.

The control unit (**J 104**) for ABS/EDL is located under the left rear seat. Self-diagnosis is activated via diagnostic connectors under the shift lever boot using the **VAG 1551** diagnostic tester. ABS/EDL operation is automatically switched off during the diagnosis procedure.

Faults and malfunctions have different priorities. Solenoid faults have the highest priority and are displayed on the **VAG 1551** first. Intermittent (sporadic) faults have the lowest priority and are displayed last.

#### **Function**

A maximum of 60 seconds after the ignition has been switched on, the hydraulic pump (**V 64**) will have built up the necessary operating pressure in the accumulator. The ABS warning light (**K 47**) then lights up for 2 to 20 seconds, depending on the operating pressure, and a test sequence is initiated in the ABS/EDL control unit (**J 104**).

If a fault is stored the ABS will be shut off partially or completely depending on the priority of the fault. The conventional braking system remains effective but the ABS warning light (**K 47**) remains on.

If an EDL fault is stored the EDL system will completely shut off. The ABS warning light (**K 47**) does not stay lit with EDL faults.

In case of an ABS or EDL system fault, the self-diagnosis procedure must be performed and the stored faults read using **VAG 1551**.

The fault display can also be read using the fault table/blink codes in [section D4-30](#).

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## Diagnosis, Fault Memory - Passat Syncro

### Tester VAG 1551, connecting (Page D4-20-1)

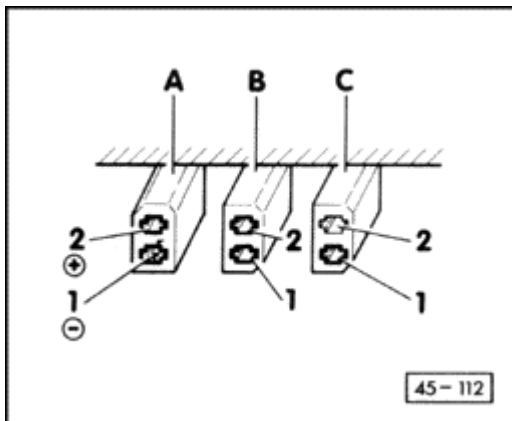
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### **CAUTION!**

**Do NOT use any wiring or adaptors during the self-diagnosis that are not expressly mentioned.**

#### Test requirements

- fuses S16, S21, S53, S54 **OK** (see wiring diagram for ABS/EDL)
- switch ignition **OFF**
- remove shift knob and shift lever boot
- connect diagnostic cable **VAG 1551/1** for the tester **VAG 1551**



- black connector (voltage supply) into black terminal **A** in vehicle
- white connector into white terminal **B** in vehicle
- blue connector into blue terminal **C** in vehicle (if wire in terminal **C** is in position **2**, reconnect it to position **1**)

VAG Self Diagnosis	HELP
1 Rapid data transfer	

- read display

VAG Self Diagnosis	HELP
2 Blink code output	

#### **Note**

*The operating modes 1 and 2 appear alternately.*

If no display appears, check the voltage supply to the tester.

For additional operating instructions push the **HELP** key.

The **➡** key steps through the program sequence.

## Volkswagen B3 Passat

### Diagnosis, Fault Memory - Passat Syncro

#### ABS/EDL Fault memory, reading (Page D4-30-1)

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- press key 2 to select "blink code output"

Blink code output	HELP
Start with ➡ key!	

- read display

#### **Note**

*Press the "Print" button for a printout of fault functions.*

- press ➡ key and hold down

Blink code output is being initiated!
--

- read display

Blink code output Permanent ground on exciter wire
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- after approx. 2.5 seconds read display
- release ➡ key
- switch ignition **ON**
  - ABS warning light comes on
- press ➡ key

Blink code 1241 Speed sensor front right - G 45
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If a fault is stored it will appear via the ABS warning light (blinks) and in the tester **VAG 1551** display.

Blink code 4444 No fault recognized!
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The diagnosis has ended when this display appears:

- switch ignition **OFF**

Eliminate faults and continue diagnosis with Electrical Test Steps, if necessary.

Blink code output No blink code received!
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If display shows that no Fault code was received, check the connector for the **VAG 1551** tester. If a fault is indicated and no further Fault codes can be read, the identified fault has switched off the ABS. Repair the indicated fault and repeat the diagnosis.

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Blink code 0000  
Output ended

- continue reading fault codes until display appears as shown
- switch ignition **OFF**
- see fault table/blink codes [section D4-30](#) and eliminate faults

## Volkswagen B3 Passat

### Diagnosis, Fault Memory - Passat Syncro

Reading fault memory, using VAG 1551 Diagnostic Tester (Page D4-30-2)

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Blink code 0000  
End of output

- continue fault code call-up until display appears as shown:  
and then:

Blink code output  
is completed!

- switch ignition **OFF**
- see fault table/blink code, [section D4-50](#) and eliminate faults
- after repairs, switch ignition **ON** for approximately four seconds

If indicator light (**K 47**) goes out, ABS is free of faults

- erase Fault memory (see [section D4-40](#))

If indicator light (**K 47**) does not go out

- read Fault memory again

#### **Note**

*If more than one fault was displayed, faults which have been eliminated will also be shown again.*

## Volkswagen B3 Passat

### Diagnosis, Fault Memory - Passat Syncro

#### Erasing Fault memory using VAG 1551 (Page D4-40-1)

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#### Requirements

- Fault memory read until blink code **0000** appears
- ignition switched **OFF** and all faults eliminated
- vehicle is test driven and a speed of at least 20 mph is attained

#### Note

*The Fault memory is erased after attaining a speed of 20 mph or more.*

#### **CAUTION!**

***Do not have the VAG 1551 diagnostic tester or any of its adaptor harnesses connected during the test drive.***

- read Fault memory, [section D4-30](#)
- after Blink code **0000** is displayed, Fault memory is erased
- repeat self-diagnosis after erasing Fault memory; diagnosis is complete only after fault code **4444** is displayed

**Volkswagen B3 Passat**  
**Diagnosis, Fault Memory - Passat Syncro**  
**Fault code, troubleshooting chart (Page D4-45-1)**

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**ABS/EDL fault memory, reading**

<b>Blink code</b>	<b>VAG 1551 display</b>	<b>Possible cause</b>	<b>Repair</b>
<b>0000</b>	"End of output" response during initial fault retrieval, with indicator light (K 47) constantly "ON"	Inadequate battery voltage Defective control unit (J 104)	Check battery voltage and charge as required Replace control unit, as necessary
<b>1111</b>	Control unit (J 104), defective	Electrical interference from outside sources Poor ground connection Control unit defective	Check wires, plug-type terminals, and ground wire to control unit Repair/replace as necessary Check battery voltage and charge as required If necessary, replace control unit
<b>1112</b>	ABS inlet valve, front left (N 101)	Circuit, plug-type terminal, or valve coil defective Malfunction at terminal 3 of control unit Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, and valve coil (Steps 22, 40, 4). Repair/replace, as necessary If all tests are negative, replace control unit
<b>1114</b>	ABS inlet valve, front right (N 99)	Circuit, plug-type terminal or valve coil defective Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, and valve coil (Steps 21, 39). Repair/replace as necessary If all tests are negative, replace control unit

<sup>1</sup> Refer to Electrical Test Steps, [Section D4-50](#).

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**Diagnosis, Fault Memory - Passat Syncro**  
**Fault code, troubleshooting chart (Page D4-45-2)**

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<b>Blink code</b>	<b>VAG 1551 display</b>	<b>Possible cause</b>	<b>Repair</b>
<b>1122</b>	ABS inlet valve, rear <b>(N 103)</b>	Circuit, plug-type terminal or valve coil defective  Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, and valve coil (Steps 20, 38). Repair/replace as necessary  If all tests are negative, replace control unit
<b>1132</b>	ABS outlet valve, front left <b>(N 102)</b>	Circuit, plug-type terminal or valve coil defective  Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, and valve coil (Steps 25, 40). Repair/replace as necessary  If all tests are negative, replace control unit
<b>1134</b>	ABS outlet valve, front right <b>(N 100)</b>	Circuit, plug-type terminal or valve coil defective  Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, and valve coil (Steps 24, 39). Repair/replace as necessary  If all tests are negative, replace control unit
<b>1142</b>	ABS outlet valve, rear <b>(N 104)</b>	Circuit, plug-type terminal or valve coil defective  Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, and valve coil (Steps 23, 38). Repair/replace as necessary  If all tests are negative, replace control unit

<sup>1</sup> Refer to Electrical Test Steps, [Section D4-50](#).

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**Fault code, troubleshooting chart (Page D2-45-3)**

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**Fault code, troubleshooting chart**

<b>Blink code</b>	<b>VAG 1551 display</b>	<b>Possible cause</b>	<b>Repair</b>
<b>1222</b>	Main ABS valve ( <b>N 105</b> )	Circuit, plug-type terminal or valve coil defective	Test <sup>1</sup> : circuits; plug-type terminals on main valve and inlet/outlet valves ( <b>T 7</b> ); and valve coil (Steps 19, 36). Repair/replace as necessary  If all tests are negative, replace control unit
<b>1223</b>	Valve 1 for differential lock ( <b>N 125</b> )	Wiring, connector or valve coil defective  Control unit defective	Test <sup>1</sup> : wiring, connectors, valve coil (Steps 26, 41)  If all tests are negative, replace control unit
<b>1224</b>	Valve 2 for differential lock ( <b>N 126</b> )	Wiring, connector or valve coil defective  Control unit defective	Test <sup>1</sup> : wiring, connectors ( <b>T 5a</b> on EDL valve block) and valve coil (Steps 27, 42)  If all tests are negative, replace control unit
<b>1233</b>	Wheel speed sensor, front left ( <b>G 47</b> )	Short circuit, open circuit, loose connection in: speed sensor line, plug-type terminal, speed sensor coil  Wrong air gap between speed sensor and pulse wheel (signal inaccurate)  Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, speed sensor, and ground wire to control unit (Steps 10, 14, 18)  Check speed sensor/pulse wheel installation; clean as necessary  If all tests are negative, replace control unit
<b>1241</b>	Wheel speed sensor, front right ( <b>G 45</b> )	Short circuit, open circuit, loose connection in: speed sensor line, plug-type terminal, speed sensor coil  Wrong air gap between speed sensor and pulse wheel (signal inaccurate)  Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, speed sensor, and ground wire to control unit (Steps 9, 13, 17)  Check speed sensor/pulse wheel installation; clean as necessary  If all tests are negative, replace control unit

**Volkswagen B3 Passat**  
**Diagnosis, Fault Memory - Passat Syncro**  
**Fault code, troubleshooting chart (Page D4-45-4)**

<b>Blink code</b>	<b>VAG 1551 display</b>	<b>Possible cause</b>	<b>Repair</b>
<b>1243</b>	Wheel speed sensor, rear right ( <b>G 44</b> )	Short circuit, open circuit, loose connection in: speed sensor line, plug-type terminal, speed sensor coil  Wrong air gap between speed sensor and pulse wheel (signal inaccurate)  Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, speed sensor, and ground wire to control unit (Steps 7, 11, 15)  Check installation of speed sensor/pulse wheel; clean as necessary  If all tests are negative, replace control unit
<b>1311</b>	Wheel speed sensor, rear left ( <b>G 46</b> )	Short circuit, open circuit, loose connection in: speed sensor line, plug-type terminal, speed sensor coil  Wrong air gap between speed sensor and pulse wheel (signal inaccurate)  Control unit defective	Test <sup>1</sup> : circuits, plug-type terminals, speed sensor, and ground wire to control unit (Steps 8, 12, 16)  Check installation of speed sensor/pulse wheel; clean as necessary  If all tests are negative, replace control unit
<b>1312</b>	Low pressure warning switch ( <b>F 116</b> )  Low fluid level switch ( <b>F 117</b> )	ABS control unit circuit drawing excess battery voltage between terminals <b>8</b> and <b>51</b>	Inspect/connect wiring routing between terminals <b>8</b> and <b>51</b> . Connect multi-pin terminal from ABS control unit to <b>VAG 1598</b> and multi-meter <b>US 1119</b> . Check voltage between terminals <b>8</b> and <b>1</b> , and <b>51</b> and <b>1</b>  ● must be: MAX. 0.1V  Additional test steps <sup>1</sup> : 33, 35  Repair/replace as necessary

<sup>1</sup> Refer to Electrical Test Steps, [Section D4-50](#).

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**Fault code, troubleshooting chart (Page D4-45-5)**

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<b>Blink code</b>	<b>VAG 1551 display</b>	<b>Possible cause</b>	<b>Repair</b>
<b>2133</b>	Pressure indicator switch for ABS (F 137)	ABS control unit circuit drawing excess battery voltage between terminals <b>13</b> and <b>26</b>	<p>Inspect/connect wiring routing between terminals <b>13</b> and <b>26</b></p> <p>Connect multi-pin terminal from ABS control unit to <b>VAG 1598</b> and multimeter <b>US 1119</b>. Check voltage between terminals <b>13</b> and <b>1</b>, and <b>26</b> and <b>1</b></p> <ul style="list-style-type: none"> <li>● must be: MAX. 0.1V</li> </ul> <p>Additional test steps<sup>1</sup>: 32</p> <p>Repair/replace as necessary</p>
<b>4444</b>	"No fault recognized" readout, despite ABS problems		Continue troubleshooting, using ABS Electrical Tests <sup>1</sup>

<sup>1</sup> Refer to Electrical Test Steps, [Section D4-50](#).

# Volkswagen B3 Passat

## Diagnosis, Fault Memory - Passat Syncro

### ABS/EDL troubleshooting, electrical test steps (Page D4-50-1)

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#### General notes

When performing electrical diagnostic work, refer to the wiring diagrams and the test steps which follow. These test steps apply to:

**1** - Vehicles in which the ABS warning light (**K 47**) and/or the **VAG 1551** did not react to attempts at initiating the self diagnosis.

- perform test steps 1 through 59 and repeat self diagnosis with **VAG 1551**

**2** - Vehicles in which the self-diagnosis procedure gives no indication of the fault source.

- perform test steps 1 through 40 in sequence
- perform only those procedures in the last column marked with a "■". Those steps marked "◆" have already been performed

**3** - Vehicles with self-diagnosis

- perform only those test steps recommended in the fault table/Blink code charts
- perform all procedures in the last column marked "■" and "◆"

#### Testing equipment

- **VAG 1598**, with adaptor **VAG 1598/10**
- **VAG 1594**, connector test kit
- **US 1119**, multimeter
- hoist for raising/supporting vehicle

#### Test requirements

- fuses S16, S21, S53, S54 **OK**
- ground wire near control unit **OK**
- switch **OFF** ignition and all electrical consumers (lights, fan, etc.)

## Volkswagen B3 Passat

### Diagnosis, Fault Memory - Passat Syncro

#### ABS/EDL troubleshooting, electrical test steps (Page D4-50-2)

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- disconnect multi-pin connector from control unit (**J 104**) and connect Test box **VAG 1598** with adaptor **VAG 1598/10**

#### **Note**

*The terminal numbering on the **VAG 1598** Test box is identical to the terminal numbering of the control unit.*

*Specified test values are verified for **US 1119** only and are not necessarily applicable to other testing equipment.*

## Volkswagen B3 Passat

### Diagnosis, Fault Memory - Passat Syncro

#### ABS/EDL troubleshooting, electrical test steps (Page D4-50-3)

Test step	VAG 1598 terminals	Component being tested:	• Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
1	35 + 19	Voltage supply at control unit (J 104)	<ul style="list-style-type: none"> <li>• switch ignition <b>OFF</b></li> </ul>	Approx. battery voltage	<ul style="list-style-type: none"> <li>■ check wire from terminal <b>19</b> to ground</li> <li>■ check wiring from terminal <b>35</b> via (J 102) and (S 54) to battery</li> </ul>
2	53 + 1	Voltage supply at control unit (J 104)	<ul style="list-style-type: none"> <li>• switch ignition <b>OFF</b></li> </ul>	After ignition <b>ON</b> : approx. battery voltage	<ul style="list-style-type: none"> <li>■ check wiring from terminal <b>1</b> to ground</li> <li>■ check wiring of terminal <b>53</b> to terminal <b>D/7</b> (relay board)</li> </ul>
3	33 + 1	Relay for ABS (J 102)	<ul style="list-style-type: none"> <li>• ignition <b>ON</b></li> <li>– remove fuse <b>S 16</b></li> <li>– bridge terminals <b>1 &amp; 34</b> on <b>VAG 1598</b>: Relay (J 102) activates</li> </ul>	Approx. battery voltage	<ul style="list-style-type: none"> <li>■ check wire from terminal <b>33</b> via (J 102) and (S 54) to battery</li> </ul> <p>If (J 102) does not activate, check control: Check wiring from terminal <b>34</b> to (J 102/4) and relay (J 102)</p>
4	3 + 1	Relay for ABS (J 102)	<ul style="list-style-type: none"> <li>• ignition <b>ON</b></li> <li>• remove fuse <b>S 16</b></li> <li>– bridge terminals <b>1 &amp; 34</b> on <b>VAG 1598</b>: (J 102) activates</li> </ul> <p>After measurement:</p> <ul style="list-style-type: none"> <li>– separate test connections from terminals <b>1 &amp; 34</b> (J 102/4) and relay (J 102)</li> <li>– install fuse <b>S 16</b></li> </ul>	Approx. battery voltage	<ul style="list-style-type: none"> <li>■ check wire from terminal <b>33</b> via (J 102) and (S 54) to battery</li> <li>◆ check wiring from terminal <b>1</b> to ground</li> </ul> <p>If J 102 does not activate, check control: Check wiring of terminal <b>34</b> to (J 102/4) and check relay (J 102)</p>

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## Diagnosis, Fault Memory - Passat Syncro

### ABS/EDL troubleshooting, electrical test steps (Page D4-50-4)

Test step	VAG 1598 terminals	Component being tested:	● Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
5	50 + 1	ABS hydraulic pump relay (J 185)	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b></li> <li>– disconnect plug connector <b>T 2</b> to hydraulic pump (V 64)</li> <li>– bridge terminals <b>1 &amp; 14</b> on <b>VAG 1598</b></li> <li>– switch ignition <b>ON: (J 185)</b> activates</li> </ul> After measuring, re-connect plug connector <b>T 2</b> and separate sockets <b>1 &amp; 14</b>	Approx. battery voltage	<ul style="list-style-type: none"> <li>■ check wiring from terminal <b>50</b> via (J 185) and fuse <b>S 53</b> to battery</li> <li>If (J 185) does not activate, check control:</li> <li>Check wiring from terminal <b>14</b> to (J 185/6) and relay (J 185)</li> </ul>
6	32 + 1	Brake light switch (F)	<ul style="list-style-type: none"> <li>● ignition <b>ON</b></li> <li>– operate brake pedal</li> </ul>	After operating brake light switch, approx. battery voltage	<ul style="list-style-type: none"> <li>■ check fuse <b>S 20</b> and brake light switch (F)</li> <li>■ check wiring from terminal <b>32</b> to terminal <b>W/4</b> (relay panel)</li> </ul>
7	45 + 27	Speed sensor, right rear (G 44), voltage signal	<ul style="list-style-type: none"> <li>● vehicle raised</li> <li>● ignition <b>OFF</b></li> <li>– turn right rear wheel at approx. 1 rev./sec.</li> </ul>	Min. 75 mV (fluctuating)	<ul style="list-style-type: none"> <li>■ check plug connector <b>T 2</b> and installation of speed sensor</li> <li>◆ test step 11</li> <li>◆ test step 15</li> </ul>
8	46 + 28	Speed sensor, left rear (G 46), voltage signal	<ul style="list-style-type: none"> <li>● vehicle raised</li> <li>● ignition <b>OFF</b></li> <li>– turn left rear wheel at approx. 1 rev./sec.</li> </ul>	Min. 75 mV (fluctuating)	<ul style="list-style-type: none"> <li>■ check plug connector <b>T 2</b> and speed sensor installation</li> <li>◆ test step 12</li> <li>◆ test step 16</li> </ul>
9	47 + 29	Speed sensor, right front (G 45), voltage signal	<ul style="list-style-type: none"> <li>● vehicle raised</li> <li>● ignition <b>OFF</b></li> <li>– turn right front wheel at approx. 1 rev./sec.</li> </ul>	Min. 75 mV (fluctuating)	<ul style="list-style-type: none"> <li>■ check plug connector <b>T 2</b> and speed sensor installation</li> <li>◆ test step 13</li> <li>◆ test step 17</li> </ul>

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### Diagnosis, Fault Memory - Passat Syncro

#### ABS/EDL troubleshooting, electrical test steps (Page D4-50-5)

Test step	VAG 1598 terminals	Component being tested:	● Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
10	48 + 30	Speed sensor, left front (G 47), voltage signal	<ul style="list-style-type: none"> <li>● vehicle raised</li> <li>● ignition <b>OFF</b></li> <li>– turn right front wheel at approx. 1 rev./sec.</li> </ul>	Min. 75 mV (fluctuating)	<ul style="list-style-type: none"> <li>■ check plug connector T 2 and speed sensor installation</li> <li>◆ test step 14</li> <li>◆ test step 18</li> </ul>
11	45 + 27	Speed sensor, right rear (G 44), resistance	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b></li> </ul>	0.8 - 1.4 kOhms	<ul style="list-style-type: none"> <li>◆ check plug connector T 2</li> <li>■ check speed sensor resistance (0.8-1.4 kOhm)</li> <li>■ check wiring to speed sensor</li> <li>◆ test step 15</li> </ul>
12	46 + 28	Speed sensor, left rear (G 46), resistance	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b></li> </ul>	0.8 - 1.4 kOhms	<ul style="list-style-type: none"> <li>◆ check plug connector T 2</li> <li>■ check speed sensor resistance (0.8-1.4 kOhm)</li> <li>■ check wiring to speed sensor</li> <li>◆ test step 16</li> </ul>
13	47 + 29	Speed sensor, right front (G 45), resistance	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b></li> </ul>	0.8 - 1.4 kOhms	<ul style="list-style-type: none"> <li>◆ check plug connector T 2</li> <li>■ check speed sensor resistance (0.8-1.4 kOhm)</li> <li>■ check wiring to speed sensor</li> <li>◆ test step 17</li> </ul>
14	48 + 30	Speed sensor, left front (G 47), resistance	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b></li> </ul>	0.8 - 1.4 kOhms	<ul style="list-style-type: none"> <li>◆ check plug connector T 2</li> <li>■ check speed sensor resistance (0.8-1.4 kOhm)</li> <li>■ check wiring to speed sensor</li> <li>◆ test step 18</li> </ul>
15	1 + 27	Shielded wire to right rear speed sensor (G 44), insulation resistance	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b></li> </ul>	Min. 2 Meg Ohms	<ul style="list-style-type: none"> <li>■ check wiring for damage (abrasion)</li> </ul>
16	1 + 28	Shielded wire to left rear sensor (G 46), insulation resistance	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b></li> </ul>	Min. 2 Meg Ohms	<ul style="list-style-type: none"> <li>■ check wiring for damage (abrasion)</li> </ul>

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**Diagnosis, Fault Memory - Passat Syncro**  
**ABS/EDL troubleshooting, electrical test steps (Page D4-50-6)**

Test step	VAG 1598 terminals	Component being tested:	• Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
17	1 + 29	Shielded wire to right front speed sensor (G 45), insulation resistance	• ignition OFF	Min. 2 Meg Ohms	■ check wiring for damage (abrasion)
18	1 + 30	Shielded wire to left front speed sensor (G 47), insulation resistance	• ignition OFF	Min. 2 Meg Ohms	■ check wiring for damage (abrasion)
19	39 + 3	Main valve (N 105) resistance	• ignition OFF	3-6 Ohms	■ check wiring from terminal 39 via (N 105) to terminal 3 ■ check resistance of (N 105) (3.7-5 Ohms), if defective, replace booster with tandem master brake cylinder ♦ test step 36
20	54 + 3	Intake valve (N 103), resistance	• ignition OFF	5-8 Ohms	■ check wiring from terminal 54 via (N 103) to terminal 3 ■ check resistance of (N 103) (5.4-6.8 Ohms), if defective, replace valve block ♦ test step 38
21	38 + 3	Intake valve, right front (N 99), resistance	• ignition OFF	5-8 Ohms	■ check wiring from terminal 38 via (N 99) to terminal 3 ■ check resistance of (N 99) (5.4-6.8 Ohms), if defective, replace valve block ♦ test step 39
22	20 + 3	Intake valve left front (N 101), resistance	• ignition OFF	5-8 Ohms	■ check wiring from terminal 20 via (N 101) to terminal 3 ■ check resistance of (N 101) (5.4-6.8 Ohms), if defective, replace valve block ♦ test step 40

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**ABS/EDL troubleshooting, electrical test steps (Page D4-50-7)**

Test step	VAG 1598 terminals	Component being tested:	• Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
23	36 + 3	Exhaust valve, rear (N 104), resistance	• ignition OFF	3-6 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 36 via (N 104) to terminal 3</li> <li>■ check resistance of (N 104) (3-4.2 Ohm), if defective, replace valve block</li> <li>◆ test step 38</li> </ul>
24	21 + 3	Exhaust valve, right front (N 100), resistance	• ignition OFF	3-6 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 21 via (N 100) to terminal 3</li> <li>■ check resistance of (N 100) (3-4.2 Ohm), if defective, replace valve block</li> <li>◆ test step 39</li> </ul>
25	2 + 3	Exhaust valve, left front (N 102), resistance	• ignition OFF	3-6 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 2 via (N 102) to terminal 3</li> <li>■ check resistance of (N 102) (3-4.2 Ohm), if defective, replace valve block</li> <li>◆ test step 40</li> </ul>
26	37 + 3	Valve 1 for differential lock (N 125), resistance	• ignition OFF	6-9 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 37 via (N 125) to terminal 3</li> <li>■ check resistance of (N 125) (6-8 Ohm), if defective, replace EDL valve block</li> <li>◆ test step 41</li> </ul>
27	40 + 3	Valve 2 for differential lock (N 126), resistance	• ignition OFF	6-8 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 40 via (N 126) to terminal 3</li> <li>■ check resistance of (N 126) (6-8 Ohm), if defective, replace EDL valve block</li> <li>◆ test step 42</li> </ul>

**Volkswagen B3 Passat**  
**Diagnosis, Fault Memory - Passat Syncro**  
**ABS/EDL troubleshooting, electrical test steps (Page D4-50-8)**

Test step	VAG 1598 terminals	Component being tested:	● Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
28	53 + 34	ABS relay (J 102), coil resistance	● ignition OFF	50-100 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 53 via (J 102) to terminal 34</li> <li>■ check coil resistance (50-100 Ohms), if necessary replace (J 102)</li> </ul>
29	53 + 14	Relay for ABS hydraulic pump (J 185), coil resistance	● ignition OFF	50-100 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 53 via (J 185) to terminal 14</li> <li>■ check coil resistance (50-100 Ohms), if necessary replace (J 185)</li> </ul>
30	1 + 3 1 + 33  1 + 19	ABS relay (J 102), continuity/ground  ground connection	● ignition OFF	Max. 1.5 Ohms	<ul style="list-style-type: none"> <li>■ check wire from terminal 3 and terminal 33 via (J 102) to ground</li> <li>■ if no break in wiring present, replace (J 102)</li> <li>■ check wiring from terminal 1 and terminal 19</li> </ul>
31	1 + 14	Relay for ABS hydraulic pump (J 185), ground via high pressure switch (F 109)	● ignition OFF – press brake pedal down to stop 20 times	Max. 1.5 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 14 to (J 185/6) and via (F 109) to ground</li> <li>■ check continuity to (F 109)</li> </ul>
32	13 + 26	ABS Pressure control switch (F 137)	– switch ignition ON – wait until pump (V 64) shuts OFF – switch ignition OFF – press brake pedal down to stop 20 times	Min. 2 Meg Ohms  After operation, max. 1.5 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 13 via (F 137) to terminal 26</li> <li>■ if a break in wiring is present, replace EDL valve block</li> </ul>
33	8 + 51	Warning pressure switch (G 116) and warning float for ABS brake fluid level (F 117), continuity	● brake fluid level OK – switch ignition ON – wait until pump shuts OFF (accumulator full)	After pump runs: max. 1.5 Ohms	<ul style="list-style-type: none"> <li>■ check wiring from terminal 8 via (F 117) and (F 116) to terminal 51</li> <li>◆ test step 34</li> <li>◆ test step 35</li> </ul>

# Volkswagen B3 Passat

## Diagnosis, Fault Memory - Passat Syncro

### ABS/EDL troubleshooting, electrical test steps (Page D4-50-9)

Test step	VAG 1598 terminals	Component being tested:	● Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
34	8 + 51	Warning pressure switch (F 116)	<ul style="list-style-type: none"> <li>● brake fluid level <b>OK</b></li> <li>● ignition <b>OFF</b> <ul style="list-style-type: none"> <li>– press brake pedal down to stop 20 times (accumulator empty)</li> </ul> </li> </ul>	After operation: 2 Meg Ohms	<ul style="list-style-type: none"> <li>■ if (F 116) has continuity between terminals 3 and 5 of the 5-pin connector on the hydraulic unit, (F 116) defective replace (F 116)</li> <li>◆ Test step 35</li> </ul>
35	8 + 51	Warning float for ABS brake fluid level (F 117)	<ul style="list-style-type: none"> <li>– switch ignition <b>ON</b> and wait until pump shuts <b>OFF</b> (reservoir filled)</li> <li>– switch ignition <b>OFF</b></li> <li>– pull warning contact for brake fluid level out of brake fluid reservoir</li> </ul>	Min. 2 Meg Ohms	<ul style="list-style-type: none"> <li>■ if (F 117) has continuity outside brake fluid, (F 117): defective warning float for brake fluid level (F 34)</li> </ul>
36	Bridge 39, 34 and 1	Main valve (N 105)	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b> <ul style="list-style-type: none"> <li>– press brake pedal down to stop</li> <li>– leave foot on pedal</li> <li>– switch ignition <b>ON</b></li> <li>– after test, remove bridge</li> </ul> </li> </ul>	When ignition switched <b>ON</b> the brake pedal must resist force of foot	<ul style="list-style-type: none"> <li>■ (N 105) defective, replace hydraulic unit</li> </ul>
37	—	ABS hydraulic pump (V 64)	<ul style="list-style-type: none"> <li>● ignition <b>OFF</b> <ul style="list-style-type: none"> <li>– operate brake pedal 20 times (accumulator empty)</li> <li>– mark fluid level on reservoir</li> <li>– switch ignition <b>ON</b></li> </ul> </li> </ul>	Fluid level in reservoir drops by approx. 1.0 cm (3/8 in.)	<ul style="list-style-type: none"> <li>■ check wiring from battery (+) via fuse S 53, (J 185) and (V 64) to battery (–) if no break in wiring, replace (V 64)</li> </ul>

# Volkswagen B3 Passat

## Diagnosis, Fault Memory - Passat Syncro

### ABS/EDL troubleshooting, electrical test steps (Page D4-50-10)

Test step	VAG 1598 terminals	Components being tested:	• Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
38	Bridge 54, 36, 34 and 1	Inlet and outlet valve, rear (N 103/N 104)	<ul style="list-style-type: none"> <li>• vehicle raised</li> <li>• ignition <b>OFF</b></li> <li>• operate brake pedal</li> </ul>	Rear wheels must be locked	■ valve block defective, replace
			<ul style="list-style-type: none"> <li>– switch ignition <b>ON</b></li> <li>– operate brake pedal</li> <li>– after test, remove bridge wires</li> </ul>	Rear wheels must turn freely	
39	Bridge 38, 21, 34 and 1	Inlet and outlet valve, right front (N 99/N 100)	<ul style="list-style-type: none"> <li>• vehicle raised</li> <li>• ignition <b>OFF</b></li> <li>– push down brake pedal</li> </ul>	Right front wheel must be locked	■ valve block defective, replace
			<ul style="list-style-type: none"> <li>– switch ignition <b>ON</b></li> <li>– push down brake pedal</li> <li>– after testing, remove bridge</li> </ul>	Right front wheel must turn freely	
40	Bridge 20, 2, 34 and 1	Inlet and outlet valve, Left front (N 101/N 102)	<ul style="list-style-type: none"> <li>• vehicle raised</li> <li>• ignition <b>OFF</b></li> <li>– push down brake pedal</li> </ul>	Left front wheel must be locked	■ valve block defective, replace
			<ul style="list-style-type: none"> <li>– switch ignition <b>ON</b></li> <li>– push down brake pedal</li> <li>– after testing, remove bridge</li> </ul>	Left front wheel must turn freely	
41	Bridge 40, 37, 34 and 1	Valve 1 for differential lock (N 125)	<ul style="list-style-type: none"> <li>• ignition <b>OFF</b></li> <li>– switch ignition <b>ON</b></li> <li>– disconnect connector and terminal 37 briefly 2-3 times</li> <li>– after testing, remove bridge wires</li> </ul>	After ignition <b>ON</b> , pump (V 64) starts, valve 1 switching sound audible and pump (V 64) runs until accumulator is filled	■ check wiring from contact 37 via (N 125), relay (J 102) and fuse S 54 to battery, if <b>OK</b> , then valve 1 defective, replace EDL valve block

## Volkswagen B3 Passat

### Diagnosis, Fault Memory - Passat Syncro

#### ABS/EDL troubleshooting, electrical test steps (Page D4-50-11)

Test step	VAG 1598 terminals	Component being tested:	• Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
42	Bridge 40, 37, 34 and 1	Valve 2 for differential lock (N 126)	<ul style="list-style-type: none"> <li>• ignition <b>OFF</b></li> <li>– switch ignition <b>ON</b></li> <li>– disconnect and connect terminal <b>40</b> briefly</li> <li>– after testing, remove bridge wires</li> </ul>	After ignition <b>ON</b> , pump (V 64) starts, valve <b>2</b> switching must be audible	<ul style="list-style-type: none"> <li>■ check wiring from terminal <b>40</b> via (N 125), relay (J 102) and fuse S 54 to battery, if <b>OK</b>, then valve <b>2</b> is defective, replace EDL valve block</li> </ul>
43	—	Voltage supply for VAG 1551, plug connector (T 2x) (black)	<ul style="list-style-type: none"> <li>– connect multimeter to black connector terminal <b>1</b> – ground</li> <li>terminal <b>2</b> – positive</li> </ul>	Approx. battery voltage	<ul style="list-style-type: none"> <li>■ check wiring from terminal <b>1</b> to ground</li> <li>■ check wiring from terminal <b>2</b> via S 21 to terminal <b>30</b></li> </ul>
44	—	Indicator lamp for ABS (K 47)	<ul style="list-style-type: none"> <li>• ignition <b>OFF</b></li> </ul>	Warning light (K 47) lights up when ignition switched <b>ON</b>	<ul style="list-style-type: none"> <li>■ check wiring from terminal <b>W/2</b> (relay panel) via relay (J 102) (diode) to ground</li> <li>■ check wiring from terminal <b>X/8</b> (relay panel) via (K 47) terminal <b>X/4</b> (relay panel)</li> </ul>
			<ul style="list-style-type: none"> <li>– bridge terminals <b>1</b> and <b>34</b> on VAG 1598 (J 102) activates</li> </ul>	Warning light goes out	<ul style="list-style-type: none"> <li>■ if necessary replace (K 47) (12 V, 1.2 W)</li> <li>■ check wiring from terminal <b>1</b> to ground</li> <li>■ test step 3</li> </ul>
			<ul style="list-style-type: none"> <li>– bridge terminals <b>1</b> and <b>52</b> on VAG 1598</li> <li>– remove bridge wires after testing</li> </ul>	Warning light (K 47) lights up	<ul style="list-style-type: none"> <li>■ check wiring from terminal <b>52</b> to terminal <b>W/2</b> (relay panel)</li> </ul>

# Volkswagen B3 Passat

## Diagnosis, Fault Memory - Passat Syncro

### ABS/EDL troubleshooting, electrical test steps (Page D4-50-12)

Test step	VAG 1598 terminals	Component being tested:	• Test conditions – additional operations	Specified value	Measures to take if deviation from specified value
45	Bridge 34 and 1	Diagnostic connector T2y/1 (blue) (self-diagnosis)	<ul style="list-style-type: none"> <li>• ignition ON</li> <li>– bridge to connector T2x (black) terminal 1 - T2y (blue), terminal 1</li> <li>– remove bridge after testing</li> </ul>	Warning light (K 47) lights up when terminals T2x/1 and T2y/1 are bridged	<ul style="list-style-type: none"> <li>■ check wiring from T2y/1 to terminal 52</li> <li>◆ check wiring from T2x/1 to ground</li> </ul>
46	Bridge 34, 23 and 1	Diagnostic connector T2z/1 (white) (self-diagnosis)	<ul style="list-style-type: none"> <li>• ignition ON</li> <li>– bridge to connector T2x (blue) terminal 1 - T2y (white), terminal 1</li> <li>– remove bridge after testing</li> </ul>	Warning light (K 47) lights up when terminals T2z/1 and T2y/1 are bridged	<ul style="list-style-type: none"> <li>■ check wiring from T2z/1 to terminal 23</li> </ul>
47	Bridge 42, 34 and 1	Diagnostic connector T2z/2 (white) (self-diagnosis)	<ul style="list-style-type: none"> <li>• ignition ON</li> <li>– bridge to connector T2y (blue) terminal 1 - T2z (white), terminal 2</li> <li>– remove bridge after testing</li> </ul>	Warning light (K 47) lights up when terminals T2z/2 and T2y/1 are bridged	<ul style="list-style-type: none"> <li>■ check wiring from T2z/2 to terminal 42</li> </ul>