

**Electronic Stability Program (ESP) - Diagnostic Trouble Code (DTC) Memory**

**Preparation for DTC Readout**



**WARNING!**

Life threatening injuries possible due to vehicle slipping or toppling off while on lift. Prior to lift vehicle completely (wheels still in contact with floor), ensure that the vehicle is centered within the lift columns and lift arm supports are correctly placed onto the vehicle contact points.



**Control Module Adaption:**

After the swap of the ESP/SPS/BAS or ESP/BAS control module (N47-5), it is important to perform the adaption procedure, since the control module must learn the values for the steering ratio. See HHT menu.

Additionally, after replacing either the ESP/SPS control module (N47-5) or the brake booster (A777), it is absolutely necessary to perform an adaption of the ESP/SPS control module (N47-5) as well.

The ESP/SPS control module (N47-5) has to learn the values for the BAS solenoid valve (A77y1), see HHT menu.

1. Review: □ 11, □ 21, □ 22, □ 23 (connector connections).
2. Connect Hand-Held Tester (HHT) to data link connector (X11/4) according to connection diagram (see section 0) and read out DTC memory.
3. Ignition: **ON**



The BAS control module is integrated into the ESP control module.

Read out DTC memory for the BAS, ETS, ME and ETC systems.



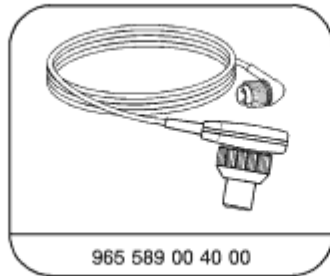
The replacement or swap of the **ABS Lateral Acceleration sensor (B43)** and/or the **Rotating Speed Sensor for ESP (B45)**, requires that a driving test is to be performed, see □ 11

**Special Tools**



965 589 00 01 00

Hand-Held-Tester



965 589 00 40 00

Test cable

| DTC                     | Possible cause   | Test step/Remedy 1)  |
|-------------------------|--|--|
| -                       | No fault in system   | In case of complaint: □ 23 (entire test).                            |
| C 1000 ESP/BAS          | ESP/BAS control module (N47-5) 2)  | N47-5  |
| C 1010 ESP/BAS          | Battery voltage too low  | □ 23 ⇒ 1.0   |
| C 1012 ESP/BAS          | Battery voltage too high   | □ 23 ⇒ 1.0   |
| C 1020 ESP              | CAN communication overall faulty   | Check version coding,<br>□ 23 ⇒ 31.0                                 |
| C 1022 ESP/BAS          | CAN communication with engine control module (ME-SFI) (N3/10) interrupted.   | Check version coding,<br>Read out DTC's from (N3/10),<br>□ 23 ⇒ 31.0 |
| C 1024 ESP              | CAN communication with transmission control module (N15/3) interrupted.  | Read out DTC's from (N15/3).   |
| C 1025 BAS<br>C1029 ETS | CAN communication with BAS control module (N47-5) interrupted 2).  | N47-5  |
| C 1030 ESP              | CAN communication with transfer case control module (N78) interrupted.   | Read out DTC's from (N78).   |
| C 1032 ESP              | CAN communication with instrument cluster (A1) interrupted.  | Read-out DTC memory for instrument cluster (A1).                     |
| C 1100 ESP              | Left front axle VSS sensor (L6/1), open circuit<br>Left front axle VSS sensor (L6/1), loose connection<br>Left front axle VSS sensor (L6/1), implausible 2)    | □ 23 ⇒ 9.0   |
| C 1101 ESP              | Right front axle VSS sensor (L6/2), open circuit<br>Right front axle VSS sensor (L6/2), loose connection<br>Right front axle VSS sensor (L6/2), implausible 2) | □ 23 ⇒ 10.0  |

|                                  |   |   |
|----------------------------------|---|---|
| C 1102 ESP                       | Left rear axle VSS sensor (L6/3), open circuit<br>Left rear axle VSS sensor (L6/3), loose connection<br>Left rear axle VSS sensor (L6/3), implausible 2)    | □ 23 ⇒ 11.0   |
| C 1103 ESP                       | Right rear axle VSS sensor (L6/4), open circuit<br>Right rear axle VSS sensor (L6/4), loose connection<br>Right rear axle VSS sensor (L6/4), implausible 2) | □ 23 ⇒ 12.0   |
| C 1120 ESP                       | Rotationing speed sensor for ESP (B45), <b>Yaw Rate</b><br>Wiring: Signal, open circuit/short circuit<br>Wiring: Reference, open circuit/short circuit      | □ 23 ⇒ 28.0   |
| C 1140 ESP                       | Steering angle sensor (N49),<br>Initialization, open circuit/short circuit  | Turn steering wheel from lock to lock stop, in order to perform initialization.<br>□ 23 ⇒ 4.0 |
| C 1141 ESP                       | ESP brake pressure sensor 1 (N34/1) or<br>ESP brake pressure sensor 2 (N34/2)<br>Open circuit/short circuit, implausible 2)                                 | □ 23 ⇒ 27.0   |
| C 1142 ESP                       | ABS lateral acceleration sensor (B43)<br>Open circuit/short circuit, voltage supply, implausible 2)   | □ 23 ⇒ 26.0   |
| C 1200 ESP                       | Stop lamp switch (4-pole) (S9/1)<br>Plausibility  | □ 23 ⇒ 6.0  |
| C 1201 BAS                       | Release switch (BAS) (A7/7s1)<br>Open circuit/short circuit   | Readout HHT Actual values,<br>Wiring,<br>A7/7s1   |
| C 1202 BAS                       | Release switch (BAS) (A7/7s1)<br>Plausibility   | Readout HHT Actual values,<br>Wiring,<br>A7/7s1   |
| C 1203 BAS                       | Release switch (BAS) (A7/7s1)<br>Redundency   | Readout HHT Actual values,<br>Wiring,<br>A7/7s1   |
| C 1204 BAS                       | Membrane travel sensor (BAS) (A7/7b1)<br>Open circuit/short circuit   | Readout HHT Actual values,<br>□ 23 ⇒ 29.0   |
| C 1205 BAS                       | Membrane travel sensor (BAS) (A7/7b1)<br>Plausibility   | Readout HHT Actual values,<br>□ 23 ⇒ 29.0   |
| C 1206 BAS                       | Membrane travel sensor (BAS) (A7/7b1)<br>Membrane speed   | Readout HHT Actual values,<br>□ 23 ⇒ 29.0   |
| C 1207 BAS                       | Stop lamp switch (4-pole) (S9/1)<br>Plausibility  | □ 23 ⇒ 6.0  |
| C 1210 ESP                       | Brake fluid level switch (S11)<br>open/short circuit  | Readout HHT Actual values   |
| C 1300 ESP                       | Left front axle solenoid valve (hold) (A7/3y6),<br>short/open circuit   | □ 23 ⇒ 14.0   |
| C 1301 ESP                       | Left front axle solenoid valve (release) (A7/3y7),<br>short/open circuit  | □ 23 ⇒ 15.0   |
| C 1302 ESP                       | Right front axle solenoid valve (hold) (A7/3y8),<br>short/open circuit  | □ 23 ⇒ 16.0   |
| C 1303 ESP                       | Right front axle solenoid valve (release) (A7/3y9),<br>short/open circuit   | □ 23 ⇒ 17.0   |
| C 1304 ESP                       | Left rear axle solenoid valve (hold) (A7/3y10),<br>short/open circuit   | □ 23 ⇒ 18.0   |
| C 1305 ESP                       | Left rear axle solenoid valve (release) (A7/3y11),<br>short/open circuit  | □ 23 ⇒ 19.0   |
| C 1306 ESP                       | Right rear axle solenoid valve (hold) (A7/3y12),<br>short/open circuit  | □ 23 ⇒ 20.0   |
| C 1307 ESP                       | Right rear axle solenoid valve (release) (A7/3y13),<br>short/open circuit   | □ 23 ⇒ 21.0   |
| C 1314 ESP                       | Solenoid valves, voltage supply, open or short circuit of wiring  | □ 23 ⇒ 1.0, 13.0  |
| C 1316 ESP                       | Pressure circuit 1 switchover solenoid valve (A7/3y24),<br>open/short circuit   | □ 23 ⇒ 24.0   |
| C 1317 ESP                       | Pressure circuit 1 vacuum solenoid valve (A7/3y26),<br>open/short circuit   | □ 23 ⇒ 22.0   |
| C 1318 ESP                       | Pressure circuit 2 switchover solenoid valve (A7/3y25),<br>open/short circuit   | □ 23 ⇒ 25.0   |
| C 1319 ESP<br>C1320 see pdf code | Pressure circuit 2 vacuum solenoid valve (A7/3y27),<br>open/short circuit   | □ 23 ⇒ 23.0   |

Brake lt. switch is internal in the booster 2003 and up ML's

|                   |  |   |
|-------------------|--|---|
| <b>C 1332 BAS</b> | Solenoid valve (BAS) (A7/7y1) 2), open/short circuit   | <input type="checkbox"/> 23 ⇒ 30.0  |
| <b>C 1401</b>     | High pressure return pump (A7/3m1) short/open circuit, will not shut off, or shuts off too soon. | <input type="checkbox"/> 23 ⇒ 3.0   |
| <b>C 1511 BAS</b> | BAS version coding improper.   | Perform version coding using HHT.   |
| <b>C 1512 ESP</b> | Brakes overheated  | Brakes were momentarily overloaded, erase DTC.                            |
| <b>C 1528 ESP</b> | ESP stop lamp suppression (F1k6) 2)  | <input type="checkbox"/> 23 ⇒ 5.0   |
| <b>C 1529 ESP</b> | Pressurization of system via solenoid valve (A7/7y1) for BAS not possible 2).                    | Readout DTC for BAS control module,<br><input type="checkbox"/> 23 ⇒ 30.0 |

1) Observe Preparation for Test, see  22.

2) After the swap of the ESP/SPS/BAS or ESP/BAS control module (N47-5), it is important to perform the adaption procedure.