

9.4 Traction Systems (ETS) (4MATIC) and SPS

Diagnosis - Diagnostic Trouble Code (DTC) Memory

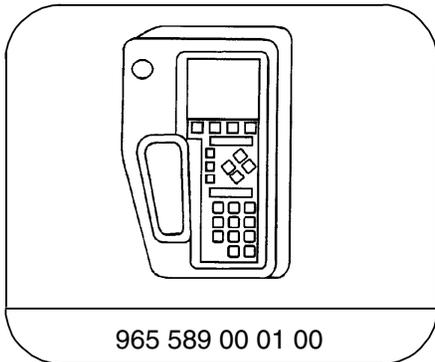
Preparation for DTC Readout

1. Review section 0
2. Additionally review 21, 22, 23 (connector connections).
3. Connect Hand-Held Tester (HHT) to data link connector (X11/4) according to connection diagram (see section 0).
4. Ignition: **ON**
5. Read out DTC memory for the BAS,ETS, ME and ETC systems.



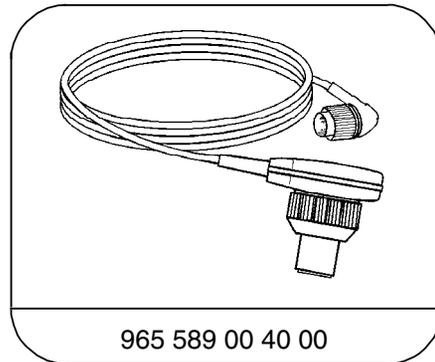
It is important to read out the DTC's from the BAS system **first**, since the DTC's from the other systems are stored in BAS during the diagnostic process.

Special Tools



965 589 00 01 00

Hand-Held-Tester



965 589 00 40 00

Test cable

6. Perform actual/nominal values comparison.
7. Perform activations.
8. Follow-up and repair displayed DTCs.
9. After successful repairs, erase all DTCs.



DTC readout is no longer possible using the impulse counter scan tool.

In case of complaint, and no fault is present in system, perform 23 in its entirety.

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DTC 	Possible cause	Test step/Remedy ¹⁾
–	No fault in system	In case of complaint: 23 (entire test).
C 1000	ETS/SPS control module (N47-2)	ETS/SPS control module (N47-2).
C 1010	Battery voltage too low, circuit 87	23 ⇒ 1.0
C 1011	Voltage supply for ASR/ETS/ESP hydraulic unit (A7/3) solenoid valves, short/open circuit	23 ⇒ 14.0, 2.0
C 1012	Battery voltage too high, circuit 87	23 ⇒ 1.0
C 1020	CAN communication overall faulty	Wiring, 23 ⇒ 3.0
C 1021	CAN communication with EA/CC/ISC control module (N4/1) interrupted	Read out DTC's from (N4/1).
C 1022	CAN communication with engine control module (ME-SFI) (N3/10) interrupted	Read out DTC's from (N3/10).
C 1024	CAN communication with transmission control module (N15/3) interrupted	Read out DTC's from (N15/3).
C 1100	Left front axle VSS sensor (L6/1), open circuit Left front axle VSS sensor (L6/1), loose connection Left front axle VSS sensor (L6/1), implausible ²⁾	23 ⇒ 7.0
C 1101	Right front axle VSS sensor (L6/2), open circuit Right front axle VSS sensor (L6/2), loose connection Right front axle VSS sensor (L6/2), implausible ²⁾	23 ⇒ 9.0

¹⁾ Observe Preparation for Test, see 22.

²⁾ Rotor with incorrect tooth count, dirt accumulation on or damaged rotor, incorrect rear axle ratio, wrong wheel or tire size.
If DTC appears only after repair work, it was caused by applying the brakes or driving vehicle on a dynamometer, erase DTC.

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DTC 	Possible cause	Test step/Remedy ¹⁾
C 1102	Left rear axle VSS sensor (L6/3), open circuit Left rear axle VSS sensor (L6/3), loose connection Left rear axle VSS sensor (L6/3), implausible ²⁾	23 ⇒ 11.0
C 1103	Right rear axle VSS sensor (L6/4), open circuit Right rear axle VSS sensor (L6/4), loose connection Right rear axle VSS sensor (L6/4), implausible ²⁾	23 ⇒ 13.0
C 1104	Left front axle VSS sensor (L6/1), implausible ²⁾	23 ⇒ 7.0
C 1105	Right front axle VSS sensor (L6/2), implausible ²⁾	23 ⇒ 9.0
C 1106	Left rear axle VSS sensor (L6/3), implausible ²⁾	23 ⇒ 11.0
C 1107	Right rear axle VSS sensor (L6/4), implausible ²⁾	23 ⇒ 13.0
C 1200	Stop lamp switch (S9/1) short/open circuit Stop lamp switch (S9/1) implausible	Wiring, S/91
C 1300	Left front axle solenoid valve (hold) (A7/3y6), short/open circuit	23 ⇒ 15.0
C 1301	Left front axle solenoid valve (release) (A7/3y7), short/open circuit	23 ⇒ 16.0
C 1302	Right front axle solenoid valve (hold) (A7/3y8), short/open circuit	23 ⇒ 17.0

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DTC 	Possible cause	Test step/Remedy ¹⁾
C 1303	Right front axle solenoid valve (release) (A7/3y9), short/open circuit	23 ⇒ 18.0
C 1304	Left rear axle solenoid valve (hold) (A7/3y10), short/open circuit	23 ⇒ 19.0
C 1305	Left rear axle solenoid valve (release) (A7/3y11), short/open circuit	23 ⇒ 20.0
C 1306	Right rear axle solenoid valve (hold) (A7/3y12), short/open circuit	23 ⇒ 21.0
C 1307	Right rear axle solenoid valve (release) (A7/3y13), short/open circuit	23 ⇒ 22.0
C 1310	Front axle switchover valve (A7/3y18), short/open circuit	23 ⇒ 23.0
C 1311	Rear axle switchover valve (A7/3y19), short/open circuit	23 ⇒ 24.0
C 1313	Solenoid valve relay (A7/3k1)	ETS/SPS control module (N47-2)

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DTC 	Possible cause	Test step/Remedy ¹⁾
C 1314	Solenoid valve relay (A7/3k1), voltage supply	23 ⇒ 14.0, 1.0
C 1315	Rear axle inlet solenoid valve (A7/3y23)	23 ⇒ 26.0
C 1342	Front axle inlet solenoid valve (A7/3y22)	23 ⇒ 25.0
C 1401	High pressure return pump (A7/3m1) short/open circuit High pressure return pump (A7/3m1) will not shut off	23 ⇒ 5.0
C 1500	VSS sensor implausible ²⁾	23 ⇒ 7.0, 9.0, 11.0, 13.0
C 1501	SPS P-valve (Y10)	23 ⇒ 6.0
C 1511	ETS/SPS control module (N47-2) not version coded	ETS/SPS control module (N47-2)
C 1512	Brakes overheated	Brakes were momentarily overloaded, erase DTC.
C 1513	ME-SFI (N3/10) engine control module, version coding incorrect	N3/10
C 1514	SPS P-valve (Y10) adjustment data	23 ⇒ 6.0 ETS/SPS control module (N47-2)
C 1515	Version coding SPS	ETS/SPS control module (N47-2)
C 1600	Temperature after engine is turned off	ETS/SPS control module (N47-2)

¹⁾ Observe Preparation for Test, see 2.

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If DTC appears only after repair work, it was caused by applying the brakes or driving vehicle on a dynamometer, erase DTC.