

9.4 Model 210

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

Diagnosis - Diagnostic Trouble Code (DTC) Memory

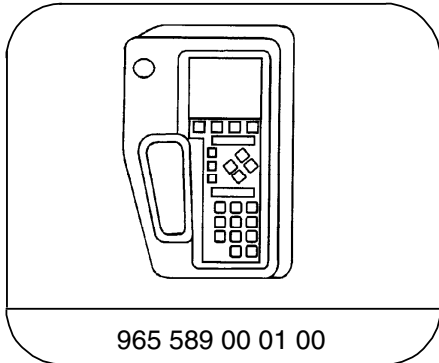
Preparation for DTC Readout

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.



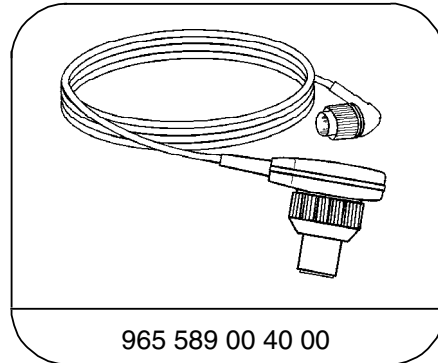
It is important to read out the DTC's from the BAS system **first**, since the DTC's from the other systems are stored in BAS during the diagnostic process.

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.

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

Diagnosis - Diagnostic Trouble Code (DTC) Memory


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.

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

Diagnosis - Diagnostic Trouble Code (DTC) Memory


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

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.

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


Diagnosis - Diagnostic Trouble Code (DTC) Memory

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)

¹⁾ Observe Preparation for Test, see 22.

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

Diagnosis - Diagnostic Trouble Code (DTC) Memory

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.

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.

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

Diagnosis – Complaint Related Diagnostic Chart

Preparation for Test

1. Review 21

Complaint/Problem	Possible cause	Test step/Remedy ¹⁾
ETS MIL (A1e35) or ABS MIL (A1e17) illuminates when engine is running.		Read out DTC's, using HHT.
ETS MIL (A1e35) or ABS MIL (A1e17) illuminates while driving and does not go out.		Read out DTC's, using HHT.
ETS MIL (A1e35) and ABS MIL (A1e17) illuminates while driving and then goes out.	Vehicle system voltage < 11 V, too many electrical consumers in use.	Check generator (G2), Read out DTC's, using HHT.
Brake pad wear indicator lamp (A1e6), low brake fluid/parking brake indicator lamp (A1e7), ETS warning lamp (A1e36), ABS MIL (A1e17), ETS MIL (A1e35) will not illuminate when turning ignition on.	CAN data line.	23 ⇒ 3.0, Read out DTC's for instrument cluster
ABS MIL (A1e17) illuminates with engine running after brake test or dynamometer use.	Nonplausible rpm signal due to different rpm at front and rear axles.	Read out DTC's, erase using HHT.
ETS MIL (A1e35) illuminates while driving and then after a while goes out (DTC code \square 1512 is stored).	Rear brakes were overloaded at one time.	Read out DTC's, erase using HHT.

¹⁾ Observe Preparation for Test,

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

Electrical Test Program – ETS Component Locations

Model 210

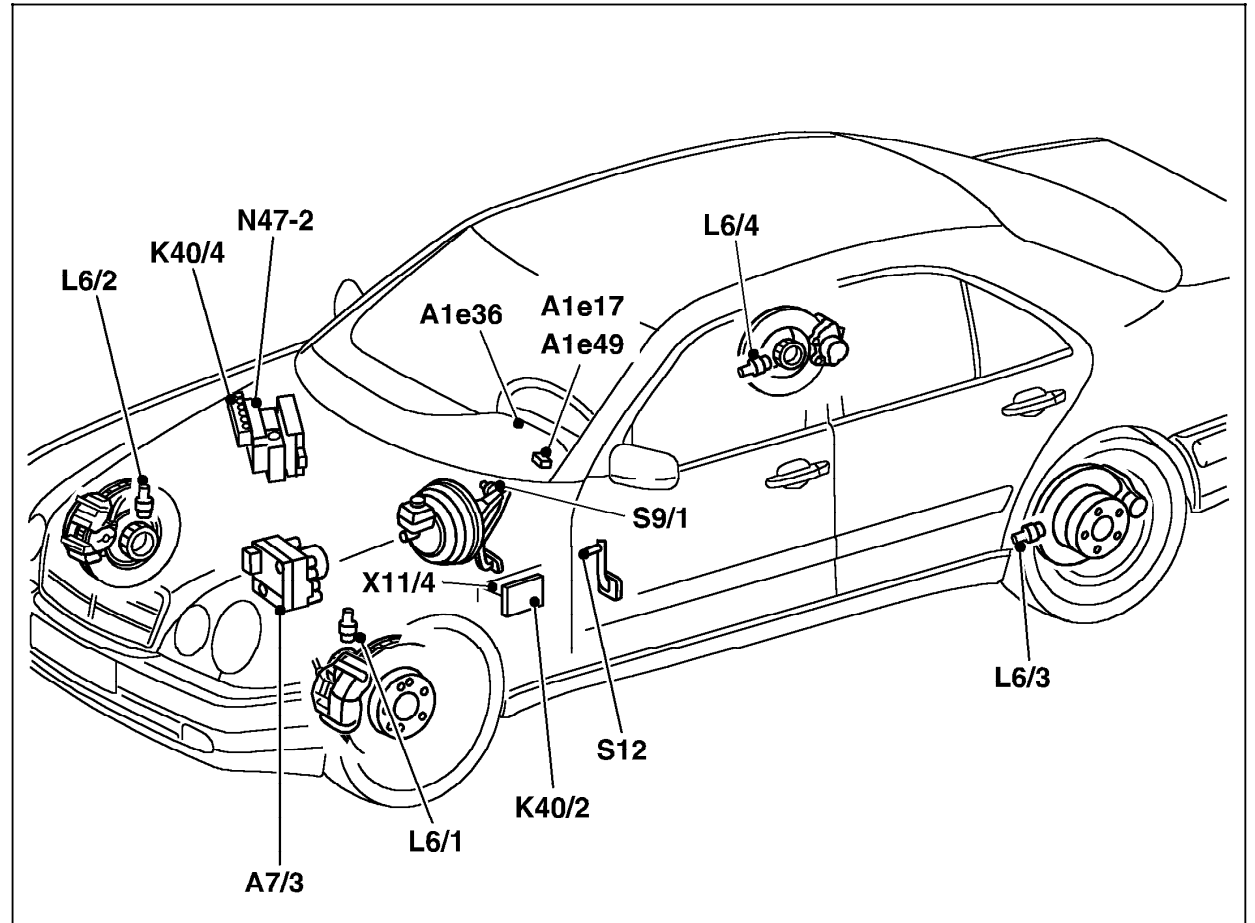


Figure 1

- A1e17 ABS MIL
- A1e49 BAS/ETS MIL
- A1e36 ETS warning lamp
- A7/3 ASR/ETS/ESP hydraulic unit
- K40/2 Driver-side fuse and relay module box
- K40/4 Passenger-side fuse and relay module box
- L6/1 Left front axle VSS sensor
- L6/2 Left front axle VSS sensor
- L6/3 Left rear axle VSS sensor
- L6/4 Right rear axle VSS sensor
- N47-2 ETS/SPS control module
- S9/1 Stop lamp switch (4-pole)
- S12 Parking brake switch
- X11/4 Data link connector (DTC readout)

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

Electrical Test Program – Preparation for Test

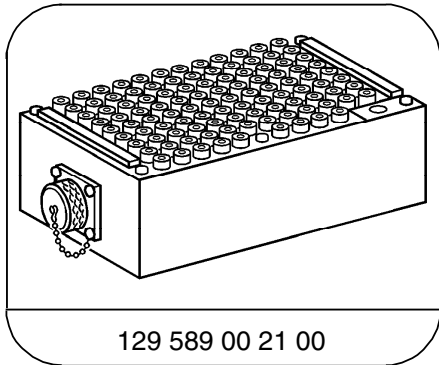
1. Review section 0 and 21
2. Review electrical wiring diagram: PE42.00-P-1100A
3. Additionally review 22 and 23 (connector connections).
4. Ignition: **OFF**
5. Disconnect ET/SPS control module (N47-2).
6. Connect socket box with test cable as per connection diagram (Figure 1).

Electrical Wiring Diagrams:

(location of grounds and connectors).

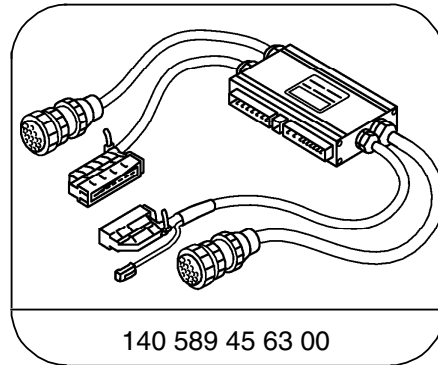
Electrical Troubleshooting Manual, Model 210, Group 42 and 00

Special Tools



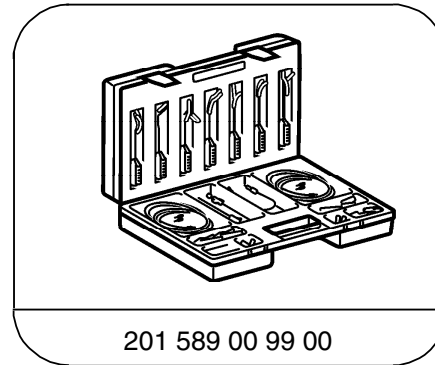
129 589 00 21 00

126-pin socket box



140 589 45 63 00

80-pin test cable



201 589 00 99 00

Electrical connecting set

Test equipment; See MBUSA Standard Service Equipment Program

Description	Brand, model, etc.
Digital multimeter	Fluke models 23, 77 III, 83, 85, 87

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

Electrical Test Program – Preparation for Test

Connection Diagram – Socket Box

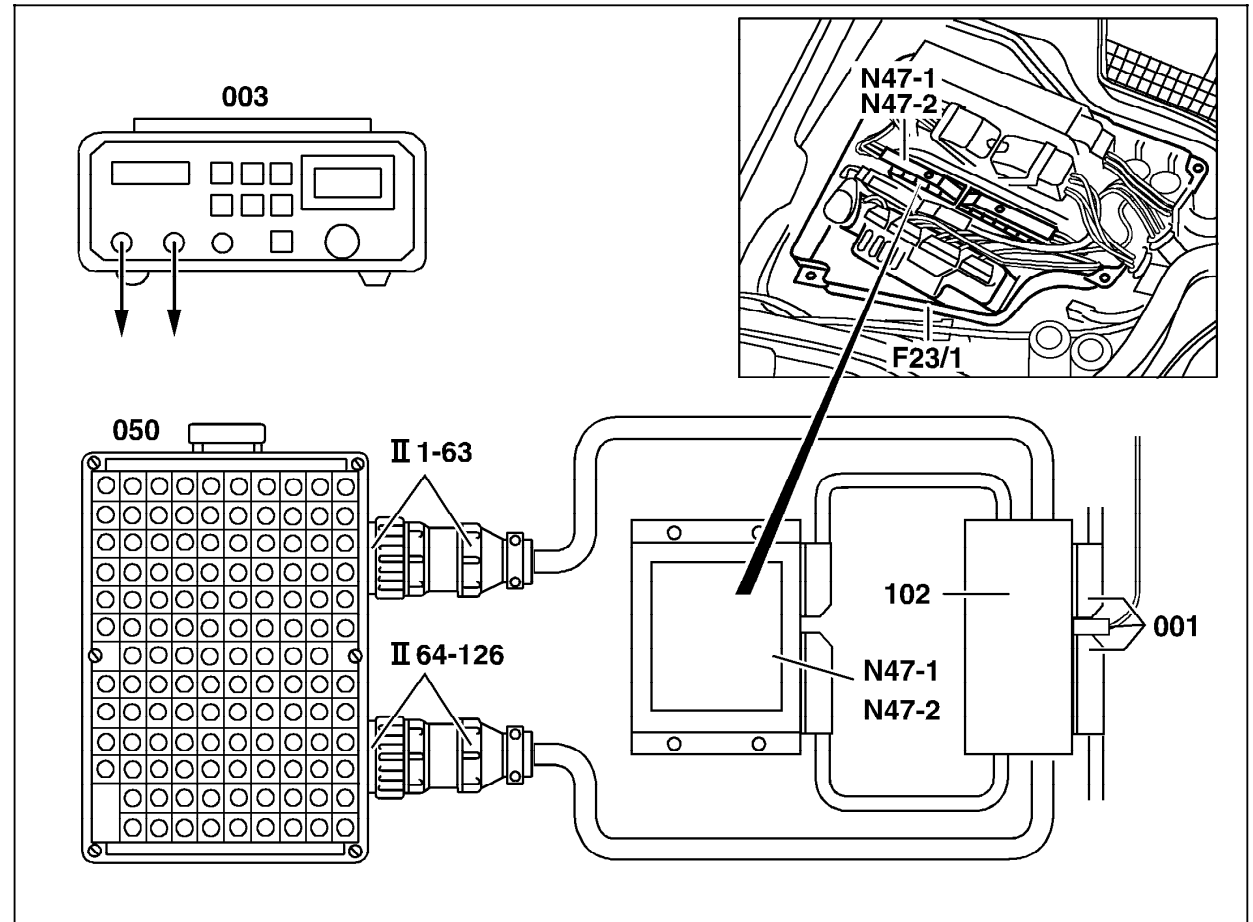





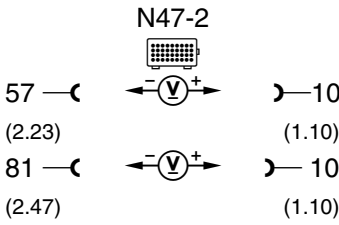
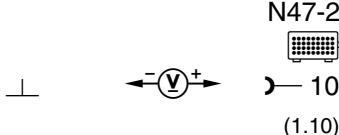
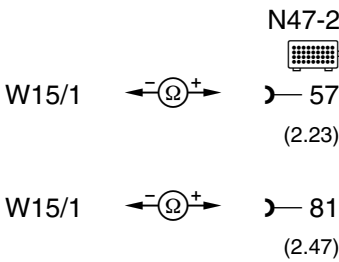


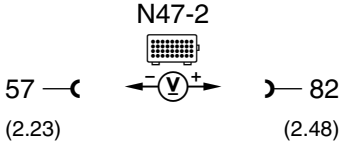
Figure 1

- 001 Control module connector
- 003 Digital multimeter
- 050 Socket box, 126-pole
- 102 Test cable
- F23/1 Control module box
- N47-2 ETS/SPS control module

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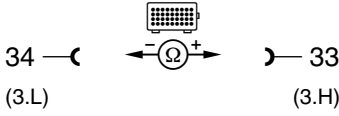
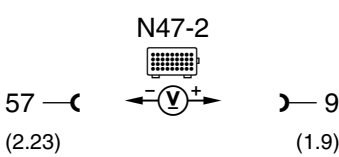

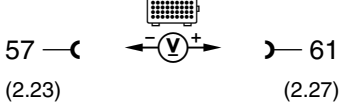
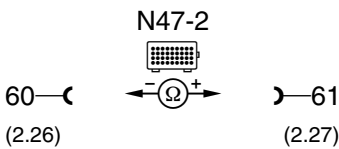
9.4 Traction Systems (ETS) (4MATIC) and SPS

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0	 	ETS/SPS control module (N47-2) Circuit 87 Voltage supply		Ignition: ON	11 – 14 V	⇒ 1.1, ⇒ 1.2
1.1		Voltage supply from: Passenger-side fuse and relay module box (K40/4)		Ignition: ON	11 – 14 V	Fuse (F2) on K40/4, Wiring.
1.2		Ground wire		Ignition: OFF Disconnect ETS/SPS control module (N47-2).	< 1 Ω	Wiring, Ground (output ground - component compartment - left) (W16/3).
2.0	 	ETS/SPS control module (N47-2) Circuit 30 Voltage supply		Ignition: OFF	11 – 14 V	Wiring.



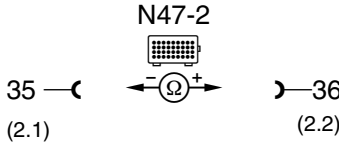

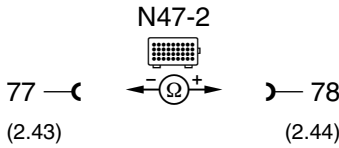
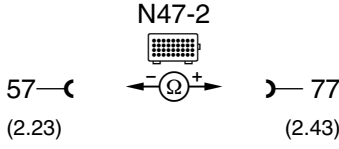
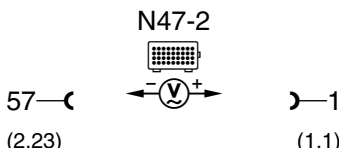
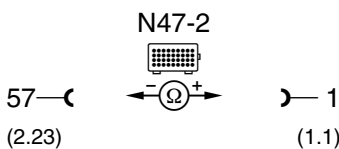
9.4 Traction Systems (ETS) (4MATIC) and SPS

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
3.0		CAN databus	<p>N47-2</p>  <p>34 — (3.L) 33 — (3.H)</p>	Ignition: ON	55 – 65 Ω	Wiring, End resistors in ME and RCL control modules, see D.M., Engines, Body and Accessories.
4.0		Diagnostic output	<p>N47-2</p>  <p>57 — (2.23) 9 — (1.9)</p>	Ignition: ON	10 – 14 V	Wiring, ETS/SPS control module (N47-2).
5.0		High pressure/return pump relay module (K40/2k4) Voltage supply	<p>N47-2</p>  <p>57 — (2.23) 61 — (2.27)</p>	Ignition: ON	11 – 14 V	Wiring, ⇒ 5.1
5.1		Coil resistance	<p>N47-2</p>  <p>60 — (2.26) 61 — (2.27)</p>	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	40 – 80 Ω	Wiring, High pressure/return pump relay module (K40/2k4).



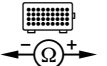



9.4 Traction Systems (ETS) (4MATIC) and SPS

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0		SPS P-valve (Y10) Coil resistance	N47-2 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	3 - 8 Ω	Wiring, SPS P-valve (Y10).
7.0		Left front axle VSS sensor (L6/1) Internal resistance	N47-2 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	0.8 - 2.3 kΩ	⇒7.1, Wiring, L6/1
7.1		Insulation resistance	N47-2 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	>20 kΩ	Wiring, L6/1
8.0		Left front axle VSS sensor (L6/1) Output	N47-2 	Raise front of vehicle Ignition: ON Rotate left front tire by hand (> 1 rev./sec.)	>3 V~	Wiring, ⇒8.1, ETS/SPS control module (N47-2)
8.1		Load with control modules connected	N47-2 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	> 5 kΩ	Wiring, Connected control modules, ⇒ 7.0



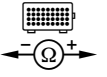



9.4 Traction Systems (ETS) (4MATIC) and SPS

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0		Right front axle VSS sensor (L6/2) Internal resistance	<p>N47-2</p>  <p>52 — (2.18) 51 — (2.17)</p>	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	0.8 – 2.3 kΩ	⇒ 9.1, Wiring, L6/2
9.1		Insulation resistance	<p>N47-2</p>  <p>57 — (2.23) 52 — (2.18)</p>	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	> 20 kΩ	Wiring, L6/2
10.0		Right front axle VSS sensor (L6/2) Output	<p>N47-2</p>  <p>57 — (2.23) 2 — (1.2)</p>	Raise front of vehicle Ignition: ON Rotate right front tire by hand (> 1 rev./sec.)	> 3 V ~	Wiring, ⇒ 10.1, ETS/SPS control module (N47-2).
10.1		Load with control modules connected	<p>N47-2</p>  <p>57 — (2.23) 2 — (1.2)</p>	Ignition: OFF Disconnect control module (N47).	> 5 kΩ	Wiring, Connected control modules, ⇒ 9.0

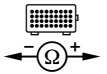
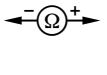
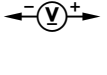
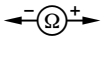
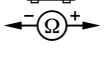
9.4 Traction Systems (ETS) (4MATIC) and SPS

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
11.0		Left rear axle VSS sensor (L6/3) Internal resistance	N47-2 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	0.6 – 1.8 kΩ	⇒ 11.1 Wiring, L6/3
11.1		Insulation resistance	N47-2 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	> 20 kΩ	Wiring, L6/3
12.0		Left rear axle VSS sensor (L6/3) Output	N47-2 	Raise front of vehicle Ignition: ON Rotate right front tire by hand (> 1 rev./sec.)	> 3 V ~	Wiring, ⇒ 12.1, ETS/SPS control module (N47-2).
12.1		Load with control modules connected	N47 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	> 5 kΩ	Wiring, Connected control modules, ⇒ 11.0





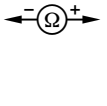

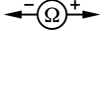

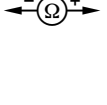

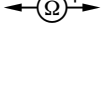
9.4 Traction Systems (ETS) (4MATIC) and SPS

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
13.0	[1103 [1107 [1500	Right rear axle VSS sensor (L6/4) Internal resistance	N47-2  15 — (1.15) — 14 (1.14)	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	0.6 – 1.8 kΩ	⇒ 13.1, Wiring, L6/4
13.1		Insulation resistance	N47-2  57 — (2.23) — 15 (1.15)	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	> 20 kΩ	Wiring, L6/4
14.0	[1314	ASR/ETS/ESP hydraulic unit (A7/3) Solenoid valve voltage supply	N47-2  57 — (2.23) — 80 (2.46)	Ignition: OFF	11 – 14 V	Wiring, ETS/SPS control module (N47-2).
15.0	[1300	Left front axle solenoid valve (hold) (A7/3y6) Internal resistance	N47-2  73 — (2.39) — 80 (2.46)	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	5.4 – 12.6 Ω	Wiring, A7/3
16.0	[1301	ASR/ETS hydraulic unit, left front axle solenoid valve (release) (A7/3y7) Internal resistance	N47-2  72 — (2.38) — 80 (2.46)	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	2.8 – 6.6 Ω	Wiring, A7/3



























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

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
17.0		Right front axle solenoid valve (hold) (A7/3y8) Internal resistance	<p>N47-2</p> 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	5.4 – 12.6 Ω	Wiring, A7/3
18.0		Right front axle solenoid valve (release) (A7/3y9) Internal resistance	<p>N47-2</p> 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	2.8 – 6.6 Ω	Wiring, A7/3
19.0		Left rear axle solenoid valve (hold) (A7/3y10) Internal resistance	<p>N47-2</p> 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	5.4 – 12.6 Ω	Wiring, A7/3
20.0		Left rear axle solenoid valve (release) (A7/3y11) Internal resistance	<p>N47-2</p> 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	2.8 – 6.6 Ω	Wiring, A7/3
21.0		Right rear axle solenoid valve (hold) (A7/3y12) Internal resistance	<p>N47</p> 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	5.4 – 12.6 Ω	Wiring, A7/3

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

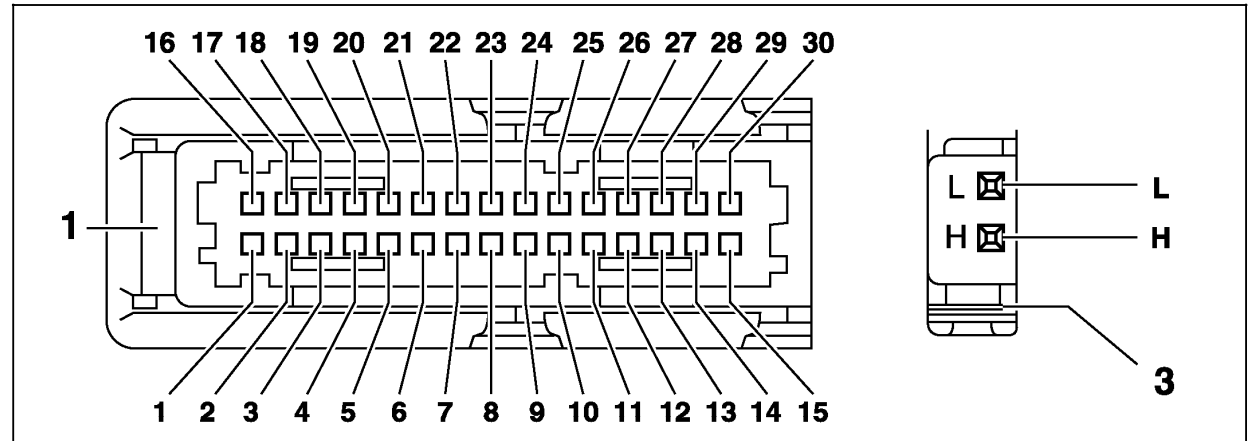
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
22.0		Right rear axle solenoid valve (release) (A7/3y13) Internal resistance	65 —  (2.31)  N47  80 (2.46) 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	2.8 – 6.6 Ω	Wiring, A7/3
23.0		Front axle switchover valve (A7/3y18) Internal resistance	44 —  (2.10)  N47  80 (2.46) 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	5.4 – 12.6 Ω	Wiring, A7/3
24.0		Rear axle switchover valve (A7/3y19) Internal resistance	62 —  (2.28)  N47-2  80 (2.46) 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	5.4 – 12.6 Ω	Wiring, A7/3
25.0		Front axle inlet solenoid valve (A7/3y22) Internal resistance	45 —  (2.11)  N47-2  80 (2.46) 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	5.4 – 12.6 Ω	Wiring, A7/3
26.0		Rear axle inlet solenoid valve (A7/3y23) Internal resistance	63 —  (2.29)  N47-2  80 (2.46) 	Ignition: OFF Disconnect ETS/SPS control module (N47-2).	5.4 – 12.6 Ω	Wiring, A7/3

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

Electrical Test Program – Test

Connector Layout - Connector 1 (interior harness) and connector 3 (CAN data bus), ETS/ SPS control module (N47-2)



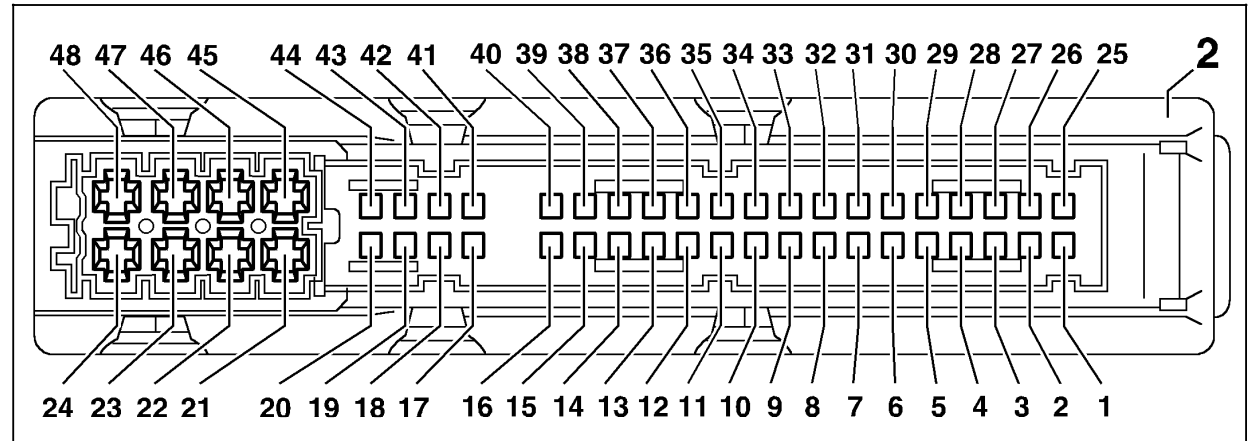
P42.45-0227-04

Connector 1				Connector 3	
1	Left front axle VSS sensor (L6/1) output	10	Circuit 87, voltage supply, ABS	H	CAN data bus (+)
2	Right front axle VSS sensor (L6/2) output	11	Stop lamp switch (4 pole) (S9/1) N.C. contact	L	CAN data bus (-)
3	Left rear axle VSS sensor (L6/3) output	12	Left rear axle VSS sensor (L6/3) (+)		
4	Stop lamp switch (4 pole) (S9/1) N.O. contact	13	Left rear axle VSS sensor (L6/3) (-)		
5	—	14	Right rear axle VSS sensor (L6/4) (+)		
6	Parking brake switch (S12)	15	Right rear axle VSS sensor (L6/4) (-)		
7	—	16-28	—		
8	—	29-30	Right rear brake pad wear sensor (S10/4)		
9	Diagnostic output				

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

Electrical Test Program – Test

Connector Layout - Connector 2 (engine harness), ETS/SPS control module (N47-2)



P42.45-0226-04

Connector 2			
1	SPS P-valve (Y10) (-)	25	High pressure/return pump relay module (N65k4) (+) monitoring
2	SPS P-valve (Y10) (+)	26	High pressure/return pump relay module (K40/2k4) (+)
3-9	—	27	High pressure/return pump relay module (K40/2k4) (-)
10	Front axle switchover valve (A7/3y18) (-)	28	Rear axle switch over valve (A7/3y19) (-)
11	Front axle inlet solenoid valve (A7/3y22) (-)	29	Rear axle inlet solenoid valve (A7/3y23) (-)
12-16	—	30	Right rear axle solenoid valve (A7/3y12) (hold) (-)
17	Right front axle VSS sensor (L6/2) (+)	31	Right rear axle solenoid valve (A7/3y13) (release) (-)
18	Right front axle VSS sensor (L6/2) (-)	32-34	—
19-20	Right front brake pad wear sensor (S10/2)	35	Left rear axle solenoid valve (A7/3y10) (hold) (-)
21-22	—	36	Left rear axle solenoid valve (A7/3y11) (release) (-)
23	Ground (W15/1)	37	Right front axle solenoid valve (A7/3y9) (release) (-)
24	—	38	Left front axle solenoid valve (A7/3y7) (release) (-)
		39	Left front axle solenoid valve (A7/3y6) (release) (-)
		40	Right front axle solenoid valve (A7/3y8) (release) (-)
		41-42	Left front brake pad wear wear sensor (S10/1), contact
		43	Left front axle VSS sensor (-)
		44	Left front axle VSS sensor (+)
		45	—
		46	Solenoid valves, voltage supply
		47	Ground (W15/1)
		48	Circuit 30, voltage