









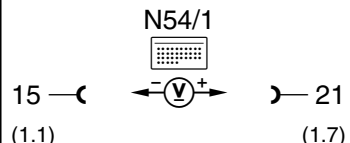

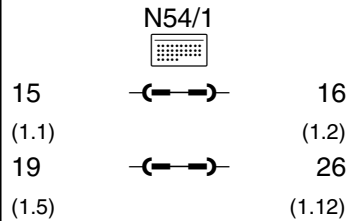








Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
1.0		IR DAS control module (N54/1) Voltage supply  Circuit 		Ignition: ON	✓ F	Wiring, Battery.
2.0		IR DAS control module (N54/1) Voltage supply Circuit 15	 15 —((1.1) ←(V)→)— 23 (1.9)	Ignition: OFF Ignition: ON	< 1 V 11 – 14 V	Wiring, Circuit 31, ⇒ 2.1
2.1		Circuit 15	  ←(V)→)— 23 (1.9)	Ignition: OFF Ignition: ON	< 1 V 11 – 14 V	Wiring, Circuit 15.
3.0		RCL receiver (interior rear view mirror) (A26/7) Voltage supply	 16 —((1.2) ←(V)→)— 25 (1.11)	–	4.5 – 5.5 V	Wiring, A26/7, N54/1, ⇒ 3.1
3.1		(A26/7) Voltage supply	 7 —(←(V)→)— 8	Remove A26/7.	4.5 – 5.5 V	Wiring, N54/1

Electrical Test Program – Test


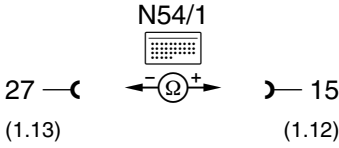

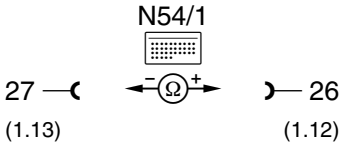


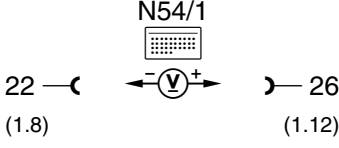
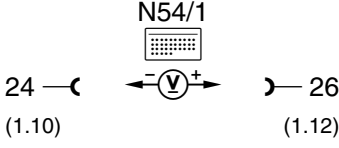

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
4.0		RCL receiver (interior rear view mirror) (A26/7) IR signal control line		Lock vehicle by pointing IR transmitter at RCL receiver (interior rear view mirror), keep IR transmitter button pressed. After vehicle completes locking process, read value. Afterwards, release button and read second value.	Difference of values between button depressed and button released approx. 0.3 – 1.0 V	Wiring, A26/7, IR transmitter.
5.0		RCL receiver (interior rear-view mirror) (A26/7) Red indicator lamps		Disconnect N54/1 from  . No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	Red indicator lamps off. Red indicator lamps light.	Wiring, A26/7

Electrical Test Program – Test


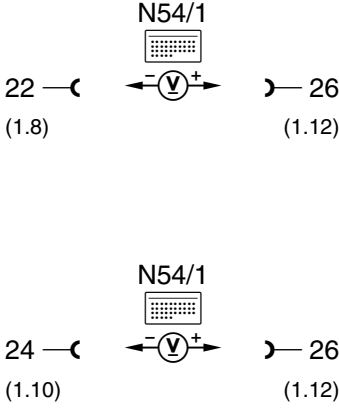

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
6.0	B1104	RCL receiver (interior rear-view mirror) (A26/7) Green indicator lamps	N54/1  15 ←→ 16 (1.1) (1.2) 20 ←→ 26 (1.6) (1.12)	Disconnect N54/1 from  No or only 1 bridge (part no. 124 589 37 63 00) connected. Both bridges connected.	Green indicator lamps off. Green indicator lamps light.	Wiring, A26/7
7.0 ¹⁾		Locking confirmation relay module (K54), activation turn signal system Locking	N54/1  27 ←(←(V)→)→ 26 (1.13) (1.12)	Lock vehicle via infrared remote central locking.	11 – 14 V voltage intermittent for approx. 2 seconds.	Wiring, N54/1
8.0 ¹⁾		Locking confirmation relay module (K54), activation turn signal system Unlocking	N54/1  27 ←(←(V)→)→ 26 (1.13) (1.12)	Unlock vehicle via infrared remote central locking.	11 – 14 V for approx. 0.5 seconds.	Wiring, N54/1

¹⁾ Test step not valid if lock/unlock verification via turn signal system has been deactivated via HHT.


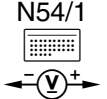
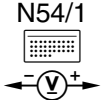
Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
9.0	B1705	Locking confirmation relay module (K54), activation wiring Γ1-		Disconnect N54/1 from  Disconnect K54.	> 20 kΩ	Wiring.
10.0	B1705	Locking confirmation relay module (K54), activation or combination control module (N10-1) wiring Γ1+		Disconnect N54/1 from  Disconnect ground wire from  Disconnect K54.	> 20 kΩ	Wiring.
11.0		Left front door lock switch (S86/1)	 	Disconnect N54/1 from  Disconnect trunk lid lock switch (S88/2) (CF). S86/1: Rest position S86/1: Hold: unlock S86/1: Rest position S86/1: Hold: lock	< 1V 11 – 14 V < 1V 11 – 14 V	Wiring, S86/1



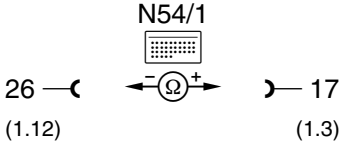


Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
12.0		Trunk lid lock switch (S88/2)		Disconnect N54/1 from  . Separate left front door separation point (X35/1). S88/2: Rest position S88/2: Hold: unlock S88/2: Rest position S88/2: Hold: unlock	 < 1V 11 – 14 V < 1V 11 – 14 V	Wiring, S88/2



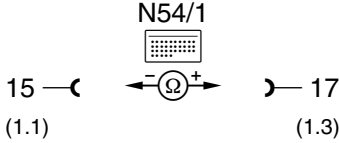

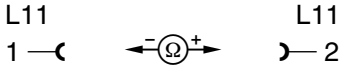
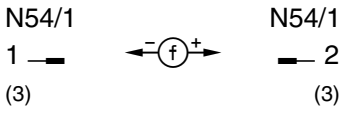
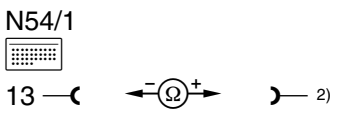

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
13.0		Non-USA vehicles only, continue to next test step.				
14.0		IR DAS control module (N54/1), output deactivation (PSE/CL, CF, ATA)		<p>All doors closed and locked.</p> <p>Unlock vehicle by pointing IR transmitter at RCL receiver (interior rearview mirror) (A26/7), keeping IR transmitter button pressed.</p>	<p>< 1V</p> <p>6 – 8 V Green indicator lamps blink, vehicle unlocks.</p>	<p>Wiring, N54/1, Combination control module (N10-1).</p> <p>Wiring, ⇒ 3.0–5.0, N54/1</p>
15.0		IR DAS control module (N54/1), output activation (PSE/CL, CF, ATA)		<p>All doors closed and unlocked.</p> <p>Lock vehicle by pointing IR transmitter at RCL receiver (interior rearview mirror) (A26/7), keeping IR transmitter button pressed.</p>	<p>< 1V</p> <p>11 – 14 V Red indicator lamps blink, vehicle locks.</p>	<p>Wiring, N54/1, Combination control module (N10-1).</p> <p>Wiring, ⇒ 3.0–5.0, N54/1</p>

Electrical Test Program – Test


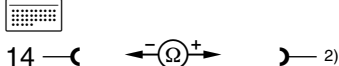








⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
16.0		Non-USA vehicles only, continue to next test step.				
17.0		Non-USA vehicles only, continue to next test step.		.		
18.0		Non-USA vehicles only, continue to next test step.		.		
19.0		Non-USA vehicles only, continue to next test step.		.		
20.0		Non-USA vehicles only, continue to next test step.		.		
21.0		Control line deactivation/ activation (PSE/CL, CF, ATA) Γ1+		Disconnect N54/1 from  Disconnect combination control module (N10-1). Disconnect ground wire from  .	>20 kΩ	Wiring.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
22.0	 B1100 B1101	Control line deactivation/activation (PSE/CL, CF, ATA) Γ1-		Disconnect N54/1 from  Disconnect combination control module (N10-1).	>20 kΩ	Wiring.
23.0		Coil for transponder (L11)		Disconnect connector 3 from N54/1	4 – 6 Ω	L11.
24.0		Coil for transponder (L11) activation		Disconnect connector 3 from N54/1 Ignition: ON	125 kHz for approx. 0.2 – 0.8 seconds. (values measurable by using Fluke 83, 88).	N54/1.
25.0		CAN L data line Motor electronics activation -//- (CAN only)		Disconnect N54/1 from  Disconnect engine control module.	<1 Ω	Wiring.




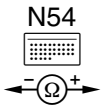

2) Prior to testing, please see appropriate ETM (group 7) to determine control module harness socket number.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
26.0		CAN H data line Motor electronics activation -//- (CAN only)	N54/1  14 — 2)	Disconnect N54/1 from  Disconnect engine control module.	<1 Ω	Wiring.
27.0		CAN L data line Motor electronics activation Γ1+ (CAN only)	N54/1  13 — 26 (1.12)	Disconnect N54/1 from  Disconnect engine control module.	>20 kΩ	Wiring.
28.0		CAN H data line Motor electronics activation Γ1+ (CAN only)	N54/1  14 — 26 (1.12)	Disconnect N54/1 from  Disconnect ground wire from  Disconnect engine control module.	>20 kΩ	Wiring.
29.0		CAN L data line Motor electronics activation Γ1- (CAN only)	N54/1  15 — 13 (1.1)	Disconnect N54/1 from  Disconnect engine control module.	>20 kΩ	Wiring.

2) Prior to testing, please see appropriate ETM (group 7) to determine control module harness socket number.

Electrical Test Program – Test

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/Remedy
30.0		CAN H data line Motor electronics activation Γ1- (CAN only)	 <p>15 —(— Ω —) — 14 (1.1)</p>	Disconnect N54/1 from  Disconnect engine control module.	>20 kΩ	Wiring.
31.0		CAN H/CAN L data line Motor electronics activation Γ1 to each other (CAN only)	 <p>13 —(— Ω —) — 14</p>	Disconnect N54/1 from  Disconnect engine control module.	>20 kΩ	Wiring.