

Diagnosis – Recalling Actual Values with HHT

The following tests and activations are possible **via the Hand-Held Tester**.

Preparation for Test:

1. Fuses OK.
2. Ignition: **ON**
3. Connect Hand-Held Tester (HHT) according to connection diagram shown in section 0.
4. Voltage supply to control modules and CAN data lines ok, see 23.
5. All CAN data lines must be connected.

Abbreviations:

- OCP Over-head control panel control module (N70)
- ESA L Left seat adjustment
- ESA R Right seat adjustment
- EIS Electronic ignition switch (N73)
- PSE Pneumatic system control module, combined function (A37)
- DCM 1 Front driver-side door control module (N69/1)
- DCM 2 Front passenger-side door control module (N69/2)
- SAM Signal pick-up and activation module (N10/1)
- LCP Lower control panel control module (N72)

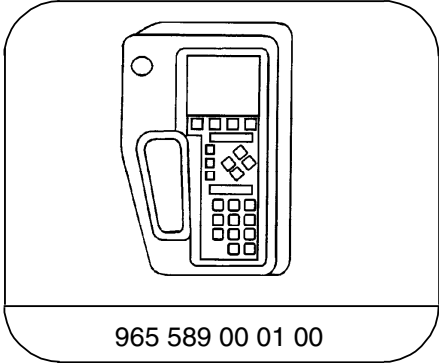
The above noted abbreviations are in the second column of the following actual values tables in **bold type** to advise of hints (regarding in which of the control modules the actual values or activations are stored).



Actual values for the system being checked may be located in other control modules, therefore it is important to check the DTC memory on all control modules that are relevant to the system being checked.

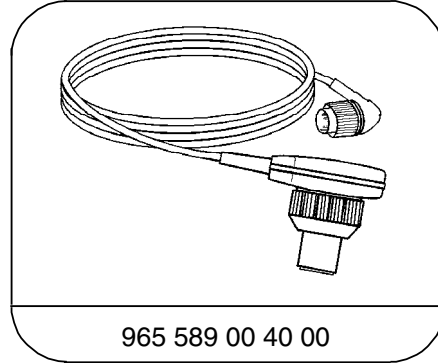
When calling up actual values, all actual values will appear for that particular control module.

Special Tools



965 589 00 01 00








Hand-Held-Tester



965 589 00 40 00

Test cable

Electrical Test Program – Test Actual Values






⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
1.0	EIS	Circuit 15R		Ignition key in position 1: Ignition: ON Ignition: OFF	YES NO	23 ⇒ 3.0, 23 ⇒ 105.0
2.0	EIS	Circuit 15		Ignition key in position 2: Ignition: ON Ignition: OFF	YES NO	23 ⇒ 2.0,
3.0	OCP	Low voltage			9.5 – 15.5	23 ⇒ 1.0
4.0	OCP	Excessive voltage			9.5 – 15.5	23 ⇒ 1.0
5.0	EIS	Interval Wipe Activation of electronic ignition switch control module (N73) by combination switch (S4).		Ignition: ON Set combination switch (S4) to: Interval wipe	Interval	23 ⇒ 110.0
6.0	EIS	Windshield wiper stage 1 Activation of electronic ignition switch control module (N73) by combination switch (S4).		Ignition: ON Set combination switch (S4) to: Wipe stage 1	Stage 1	23 ⇒ 110.0

1) Observe Preparation for Test, see 22.

7.1 Networked Systems (NS) (CAN)






Models 202, 208, 210 as of M.Y. 1998

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
7.0	EIS	Windshield wiper stage 2 Activation of electronic ignition switch control module (N73) by combination switch (S4).		Ignition: ON Set combination switch (S4) to: Wipe stage 2	Stage 2	23 ⇒ 110.0
8.0	EIS	Windshield wiper wash Activation of electronic ignition switch control module (N73) by combination switch (S4).		Ignition: ON Set combination switch (S4) to wash Wash ON : Wash OFF :	YES NO	23 ⇒ 111.0
9.0	SAM	Activation of: Wiper stage 1 relay (K40/2k1) by signal pick-up and activation module (SAM) (N10/1)		Ignition: ON HHT: Activation Menu Press button F2:	Stage 1 Wiper motor runs.	23 ⇒ 106.0, 107.0
10.0	SAM	Activation of: Wiper stage 2 relay (K40/2k2) by signal pick-up and activation module (SAM) (N10/1)		Ignition: ON HHT: Activation Menu Press button F2:	Stage 2 Wiper motor runs.	23 ⇒ 107.0, 108.0





¹⁾ Observe Preparation for Test, see 22.

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
11.0	SAM	Activation of: Washer stage 1 relay (K40/2k3) by signal pick-up and activation module (SAM) (N10/1)		Ignition: ON HHT: Activation Menu Press button F2:	ON OFF Washer pump runs.	23 ⇒ 109.0
12.0	SAM	Tailgate window wiper switch (S6/1s4) (Model 210 wagon only)		Ignition: ON Switch (S6/1s4): Press "wipe" : Not pressed:	ON OFF	23 ⇒ 116.0
13.0	SAM	Tailgate window wiper switch (S6/1s4) (Model 210 wagon only)		Ignition: ON Switch (S6/1s4): Press "wash" : Not pressed:	ON OFF	23 ⇒ 116.0
14.0	PSE	Rear window wiper motor (M6/4) (Model 210 wagon only)		Ignition: ON HHT: Activation Menu Press button F2: Press button F3	ON OFF Rear window wiper motor runs.	23 ⇒ 115.0






1) Observe Preparation for Test, see 22.

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
15.0	SAM	Activation of: Windshield washer relay (K40/2k3) by signal pick-up and activation module (SAM) (N10/1) (Model 210 wagon: washer pump M5/1)		Ignition: ON HHT: Activation Menu Press button F2:	ON OFF Washer pump runs.	23 ⇒ 117.0
16.0	SAM	Headlamp cleaning system (HCS) Activation of: Signal pick-up and activation module (SAM) (N10/1) by HCS switch (S4/1)		Ignition: ON HCS switch (S4/1): ON:	ON OFF	23 ⇒ 114.0
17.0	SAM	Headlamp cleaning system (HCS) Activation of: HCS pump (K40/2k5) by Signal pick-up and activation module (SAM) (N10/1)		Ignition: ON HCS switch (S4/1): Press ON :	ON OFF	23 ⇒ 120.0






1) Observe Preparation for Test, see 22.

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
18.0	SAM	Headlamp washer pump (M5/2)		Ignition: ON HHT: Activation Menu Press button F2:	ON OFF Washer pump runs.	23 ⇒ 120.0
19.0	OCP	Rear dome lamp switch on/off (N70s2) Except Model 208.4		Ignition: ON Switch (N70s2): Press ON :	✓ □	Roof control panel control module (N70)
20.0	OCP	Door switch on/off (N70s3)		Ignition: ON Switch (N70s3): Press ON :	ON OFF	(N70)
21.0	OCP	Dome lamp switch on/off (N70s4)		Ignition: ON Switch (N70s4): Press ON :	ON OFF	(N70)
















1) Observe Preparation for Test, see 22.

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
22.0	QCP	Work lamp switch (N70s5) Model 208.4 only: Work lamp switch (N70s6) Work lamp switch (N70s7)		Ignition: ON Switch (N70s5): Press ON :	ON OFF	Roof control panel control module (N70)
23.0	QCP	Activation of: Dome lamp		Dome lamp switch on/off (N70s4): OFF HHT: Activation Menu Press button F2:	ON OFF	(N70)
24.0	QCP	Activation of: Work lamp (n70s5) Model 208.4 only: Work lamp (N70s6) Work lamp (N70s7)		Work lamp switch on/off (N70s5): OFF HHT: Activation Menu Press button F2:	ON OFF	(N70)
25.0	QCFM	Activation of: Entrance/exit lamp (driver's side)		HHT: Activation Menu Press button F2: Press button F3:	ON OFF	23 ⇒ 127.0, Front driver-side door control module (N69/1).


















1) Observe Preparation for Test, see 22.

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
26.0		Activation of: Entrance/exit lamp (passenger- side)		HHT: Activation Menu Press button F2: Press button F3:	 OFF	23 ⇒ 127.0, Front passenger-side door control module (N69/2).
27.0	DCM3	Activation of: Entrance/exit lamp (left rear)		HHT: Activation Menu Press button F2: Press button F3:	 OFF	23 ⇒ 128.0, Rear driver-side door control module (N69/3).
28.0		Activation of: Entrance/exit lamp (right rear)		HHT: Activation Menu Press button F2: Press button F3:	 OFF	23 ⇒ 128.0, Rear passenger-side door control module (N69/4).
29.0		Entrance/exit lamp (driver's side)		Ignition: ON Open driver's door: Close driver's door:	 OFF	23 ⇒ 127.0, DM, B&A, Vol. 1, 3.4 PSE 23 Front driver-side door control module (N69/1).
30.0		Entrance/exit lamp (passenger- side)		Ignition: ON Open passenger-side door: Close passenger-side door:	 OFF	23 ⇒ 127.0, DM, B&A, Vol. 1, 3.4 PSE 23 Front passenger-side door control module (N69/2).






1) Observe Preparation for Test, see 22.

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
31.0		Entrance/exit lamp (left rear)		Ignition: ON Open left rear door: Close left rear door:	 	23 ⇒ 128.0, DM, B&A, Vol. 1, 3.4 PSE 23 Rear driver-side door control module (N69/3).
32.0		Entrance/exit lamp (right rear)		Ignition: ON Open right rear door: Close right rear door:	 	23 ⇒ 128.0, DM, B&A, Vol. 1, 3.4 PSE 23 Rear passenger-side door control module (N69/4).
33.0		Activation of: Signal tone N70h1 Model 208.4 only		Ignition: ON HHT: Activation Menu Press button F2: Press button F3:	 	Roof control panel control module (N70)
34.0		Heated rear window switch (in N22)		Heated rear window switch: Press on: Press OFF:	 	23 ⇒ 121.0








¹⁾ Observe Preparation for Test, see 22.

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
34.0	PSE	Heated rear window relay located in PSE control module (A37)		Ignition: ON HHT: Activation Menu Press button F2: Press button F3:	ON OFF Relay in PSE can be heard switching audibly.	
35.0		Activation of: LED in heated rear window switch (located in N22)		Ignition: ON HHT: activation menu Press button F2: Press button F3:	LED: ON OFF	Wiring, Signal pick-up and activation module (SAM) (N10/1), A/C pushbutton control module (Automatic A/C) (N22).
36.0	EIS	CAN low			✓ F	23
37.0	EIS	CAN high			✓ F	23

¹⁾ Observe Preparation for Test, see 22.

Electrical Test Program – Test Actual Values








⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
38.0	EIS	Electronic ignition switch (N73) coded			YES NO	Necessary to code N73
39.0	EIS	PSE control module (A37) coded			YES NO	Necessary to code A37
40.0	EIS	Signal pick-up and activation module (SAM) (N10/1) coded			YES NO	Necessary to code N10/1
41.0	EIS	Lower control field control module (N72) coded			YES NO	Necessary to code N72
42.0	EIS	Roof control panel control module (N70) coded			YES NO	Necessary to code N70
43.0	EIS	Front driver-side door control module (N69/1) coded			YES NO	Necessary to code N69/1
44.0	EIS	Front passenger-side door control module (N69/2) coded			YES NO	Necessary to code N69/2

1) Observe Preparation for Test, see 22.

7.1 Networked Systems (NS) (CAN)

Models 202, 208, 210 as of M.Y. 1998

Electrical Test Program – Test Actual Values

⇒		Test scope	Test connection	Test condition	Nominal value	Possible cause/remedy ¹⁾
45.0	EIS	Rear driver-side door control module (N69/3) coded			YES NO	Necessary to code N69/3
46.0	EIS	Rear passenger-side door control module (N69/4) coded			YES NO	Necessary to code N69/4
47.0	EIS	Left front ESA control module (N32/1) (with memory)			YES NO	Necessary to code N32/1
48.0	EIS	Right front ESA control module (N32/2) (with memory)			YES NO	Necessary to code N32/2
49.0	EIS	<i>Non-USA vehicles only</i>				
50.0	EIS	Roll bar/power soft top control module (N52)				Necessary to code N52

¹⁾ Observe Preparation for Test, see 22.