

Wydruk

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Performing self-diagnosis**Reading measured value block, vehicles with control unit, 88-pin (MY 96 >; gradual introduction)****Note:**

- ◆ If displayed values are to be read out while moving, a second operator is required.
- ◆ Observe safety precautions=> Page [01-29](#)
- ◆ The display group numbers are extended to 001 ... 011.
- ◆ Under adverse conditions and at high engine speeds, the function "Read measured value block" may be terminated due to the increased data transfer rate to V.A.G 1551.
- ◆ In this case, after reading measured value block, interrogate engine and gearbox control unit fault memories and erase if necessary. Interrogate fault memory =>Page [01-97](#).

– Connect fault reader V.A.G 1551, enter address word "02 Gearbox electronics" and switch further until "Select function XX" is displayed => from Page [01-30](#).

→ Indicated on display:

```
Rapid data transfer  HELP
Select function XX
```

– Press buttons 0 and 8 to read "Measured value block".

→ Indicated on display:

```
Rapid data transfer  Q
08 - Reading measured value block
```

– Confirm entry with Q key.

→ Indicated on display:

```
Reading measured value block  Q
Enter display group number XXX
```

– Enter display group number => Page [01-143](#).
– Confirm entry with Q key.

→ Indicated on display (example):

```
Reading measured value block  1  =>
1  2  3  4
```

For reading measured value block, the display appears in 4 display zones (if necessary, in physical values).

Note:

- ◆ Decoding of values in the individual display zones => Test table, Page [01-146](#).
- ◆ If the printer is switched on, the current display will be printed out on the record slip.

– If the specified values are achieved in all display zones, press the → key.
– The V.A.G 1551 returns to the following starting position:

→ Indicated on display:

```
Rapid data transfer  HELP
Select function XX
```

List of Display Group numbers for selection

Indicated on display (example):	Display group no.	Display zone	Designation
Reading measured value block 1 → 900 rpm 0.850 50 rpm 1 A	001	1 2 3 4	Engine speed Pressure control current -N91 Gearbox speed Selected gear
Reading measured value block 2 → 1 12 % 50 rpm 1	002	1 2 3 4	Current shift map Accelerator pedal value Gearbox speed Selected gear
Reading measured value block 3 → Brake PN 0 km/h 11.7 V deactivated	003	1 2 3 4	Brake light switch -F Selector lever lock solenoid -N110 Road speed Supply voltage

Indicated on display (example):	Display group no.	Display zone	Designation
Reading measured value block 4 → 45 °C D 011 -	004	1 2 3 4	ATF temperature Selector lever position Position of multifunction switch -F125 Torque reduction
Reading measured value block 5 → M1 M2 M 3	005	1 2 3 4	Solenoid valve 1 -N88 Solenoid valve 2 -N89 Solenoid valve 3 -N90 Selected gear
Reading measured value block 6 →		1 2	Kickdown switch -F8 Accelerator pedal value

Kickdown 100 %	82 % -	006	3 4	Accelerator pedal value-duty cycle Overrun / traction operation
Reading measured value block	7 ⇒ 8 % 4 ms	007	1 2 3 4	Engine torque Engine speed Accelerator pedal value Fuel consumption signal

Indicated on display (example):	Display group no.	Display zone	Designation	
Reading measured value block 2.57 900 rpm	8 ⇒ 1 -	008	1 2 3 4	Torque increase in converter Engine speed Selected gear Traction control system
Reading measured value block D 80 km/h	9 ⇒ version Compr. CCS off	009	1 2 3 4	Selector lever position Road speed Voltage supply for cruise control system Air conditioner kickdown
Reading measured value block 5 rpm 5 rpm	10 ⇒ 5 rpm 5 rpm	010	1 2 3 4	Wheel speed front left Wheel speed front right Wheel speed rear right Wheel speed rear left
Reading measured value block	11 ⇒	011		Currently not applicable

Test table

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
001	1	Engine speed	With engine running	...rpm (min: 30 rpm) Value increasing evenly and analogously to engine speed	- Carry out electrical test => as of Page => Motronic injection and ignition system (5-cylinder); Repair group 01; Self-diagnosis of Motronic system; Interrogating fault memory
(cont.) ▼					

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
001	1	Engine speed	With engine running	...rpm (min: 30 rpm) Value increasing evenly and analogously to engine speed	- Interrogate the fault memory for engine control unit => MPI fuel injection and ignition system (6-cyl.) 06.94 ä; Repair Group 01; Self-diagnosis for Multi-Point-Injection (MPI);
(cont.) ▼					

					Interrogating fault memory
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Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
001	2	Pressure control current -N91	with engine running	min: 0.1 A	- Perform final control diagnosis => Page 01-89 - Check wiring and components => Electrical test as of Page 01-40 , fault code 00264
(cont.) ▼			at stall speed:	approx. 0.8 A max: 1.1 A	

Notes on pressure control current -N91:

- ◆ High current = low modulation pressure (e.g. when driving at a low engine speed and with low engine torque).
- ◆ High current = high modulation pressure (e.g. when driving at a high engine speed and high engine torque).

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
001					* Value must increase evenly and analogously to driving speed Carry out electrical test => as of Page 01-40 , fault code 00297
(cont.) ▼	3	Gearbox speed	in driving operation, with engine running	...rpm	

Notes on gearbox speed:

- ◆ For gearbox 01F, the mean value of the four speed sensors is displayed.
- ◆ For gearbox 01K, the detected speed from gearbox speed sender -G38 is displayed.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
001	4	Selected gear	during driving Selector lever position		* Substitute programs initiated by the gearbox control unit may prevent gear changing * If gears do not change but the selected changes are displayed, then there may be a defect in the gearbox hydraulics: - Perform
			D	1 2 3 4	

			3	1 2 3	final control diagnosis => Page 01-89
			2	1 2	- Carry out electrical test => as of Page 01-169
			1	1	- => Fault table as of Page 01-40 , fault code for relevant solenoid valves
			R	R	- Check selector lever position => Display group number 004, display zone 2

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
002	1	Current shift map S1 = reserved driving style S5 = sporty driving style S6 = warm-up phase	during driving, with engine running	1 ... 5 6	• The warm-up program S6 is activated for each engine start at gearbox oil temperatures below 71 °C. After approx. 1 minute, the program switches to a shift map S1 ... S5
	2	Accelerator pedal value	Stationary Accelerator pedal in idling position Depress accelerator pedal to full throttle position	0 ... 1 % ≤ 100 %	• When accelerating from idling to full throttle the % value is continually increased -> Fault table as of Page 01-40 , fault codes 00518 and 00638
(cont.) ▼					

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
002	3	Gearbox speed	during driving, with engine running	...rpm	• Value must increase evenly and analogously to driving speed Carry out electrical test => as of Page 01-40 , fault code 00297
	4	Selected gear	=> Display group number 001, display zone 4		

Notes on gearbox speed:

- ◆ For gearbox 01F, the mean value of the four speed sensors is displayed.
- ◆ For gearbox 01K, the detected speed from gearbox speed sender -G38 is displayed.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
003	1	Brake light switch -F	Brake operated	Brake	- => Fault table as of Page 01-40 , fault code 00526 - Check brake light switch -F => Perform electrical testing as of Page 01-169
			not actuated	-	
(cont.) ▼	2	Selector lever lock solenoid - N110	Stationary active	P N active	- => Fault table as of Page 01-40 , fault code 01236 - Check selector lever lock solenoid - N110 => Electrical test as of Page 01-169
			not active	P N non active	

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
003	3	Road speed	during driving	... km/h	• Display of speedometer and values at V.A.G 1551 may differ slightly. Check gearbox speed or wheel speeds => display group no. 001, display zone 3, or display group no. 010, display zone 1 ... 4 - Check voltage supply for gearbox control unit and solenoid valve, => Electrical test as of Page 01-40 , fault code 00532
			Ignition switched on	approx. battery voltage	

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
004 (cont.) ▼	1	ATF temperature	stationary with engine running	...°C	- Check wiring and components => Electrical test as of Page 01-40 , fault code 00300

Notes on ATF temperature:

- ◆ A continuously displayed temperature below - 50 °C indicates a short circuit to earth in the wiring for the gearbox oil temperature (ATF) sender -G93.
- ◆ A continuously displayed temperature above + 180 °C indicates open circuit or short circuit to positive in the wiring for the gearbox oil temperature (ATF) sender -G93.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
004	2	Selector lever position	Stationary Selector lever in gear: P	P	- Check multifunction switch -F125 => display zone 2 Check wiring and components => Electrical test as of Page 01-169 Check correspondence with display in dash panel insert - If necessary, Adjust selector lever cable
				R	
(cont.) ▼					

Note on selector lever adjustment:

The gear engaged via the selector lever is determined by the multifunction switch -F125.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
004	2	Selector lever position	Stationary Selector lever in gear: N	N	- Check multifunction switch -F125 => display zone 2 Check wiring and components => Electrical test as of Page 01-169 Check correspondence with display in dash panel insert - If necessary, Adjust selector lever cable
				D	
(cont.) ▼					

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
004	2	Selector lever position	Stationary Selector lever in gear: 3	3	- Check multifunction switch -F125 => display zone 3 Check wiring and components => Electrical test as of Page 01-169 Check correspondence with display in dash panel

				2	2	insert - If necessary, Adjust selector lever cable
(cont.) ▼				1	1	=> Automatic gearbox 01F four-wheel drive. ; Repair Group 37; Servicing shift mechanism; Adjusting selector lever cable

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value	
004	3	Multi-function switch -F125	Stationary	Selector lever position	2 3 4 1)	- Check wiring and components => Electrical test as of Page 01-169
				P	1 0 0	- Check selector lever position Check correspondence with display in dash panel insert
				R	1 1 0	- If necessary, Adjust selector lever cable
(cont.) ▼						

1) Connector contacts of multifunction switch -F125. Contact assignment => Fig., Page [01-228](#).

Note on multifunction switch -F125:

The input signals from the multi-function switch -F125 can be tested via the gearbox control unit.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value	
004	3	Multi-function switch -F125	Stationary	Selector lever position	2 3 4 1)	- Check wiring and components => Electrical test as of Page 01-169
				N	0 1 0	- Check correspondence with display in dash panel insert Check selector lever position
				D	0 1 1	- If necessary, Adjust selector lever cable
(cont.) ▼						

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
		Multi-function	Selector lever		- Check wiring and components => Electrical test as of Page 01-169

004	3	switch -F125	position 3	1 1 1	Check selector lever position Check correspondence with display in dash panel insert <u>- If necessary, Adjust selector lever cable</u> => Automatic gearbox 01K front-wheel drive. ; Repair Group 37; Servicing shift mechanism; Adjusting selector lever cable - => Fault table as of Page 01-40 , fault code 00293	
			Stationary			
			2	1 0 1		
			1	0 0 1		
(cont.) ▼			in event of fault	0 0 0		

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
004	4	Torque reduction	during driving		- => Fault table as of Page 01-40 , fault code 00545 - Check wiring according to current flow diagram, contact assignment => Electrical test as of Page 01-169
			is switched on (output low)	Torque reduction	
			is switched off (output high)	-	

Notes on torque reduction:

Torque reduction (retardation of engine timing or reduction of injection quantity) is only activated during gear changing. Depending on the driving situation, engine torque reduction may only be active for a very brief period, i.e. as the data transmission to the V.A.G 1551 is relatively slow, the unit may not register short-term torque reduction under certain circumstances.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
005	1	Solenoid valve 1 -N88	during driving		- => Fault table as of Page 01-40 , fault code 00258 - Carry out electrical test => as of Page 01-169 • Data on incorrectly actuated solenoid valves is stored in the fault memory
			-N88 active.	M1	
	-N88 inactive	M			
	2	Solenoid valve 2 -N89	during driving		
			-N89 active	M2	
	-N89 inactive	M			
3	Solenoid valve 3 -N90	during driving			
		-N90 active.	M3		

			inactive	M	
4	Selected gear	=> Display group number 001, display zone 4			

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
006	1	Kickdown switch -F8	Kickdown actuated not actuated	Kickdown -	- Check kickdown switch -F8 => Electrical test as of Page 01-169
	2	Accelerator pedal value	=> Display group number 002, display zone 2		
	3	Throttle valve duty cycle	Stationary Idling Full throttle	approx. 12% 1) ...approx. 85% 1)	<ul style="list-style-type: none"> When accelerating from idling to full throttle the % value is continually increased Carry out electrical test => as of Page 01-40, fault codes 00518 and 00638
	4	Overrun/traction signal	during driving 1 Traction operation	Overrun -	<ul style="list-style-type: none"> When driving downhill or deceleration (engine brake) During normal driving operation, engine provides power

1) Specified values are only reference values.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
007	1	Engine torque	during driving	... Nm	<ul style="list-style-type: none"> The gearbox control unit calculates the engine torque from the fuel consumption and engine speed signals
	2	Engine speed	=> Display group number 001, display zone 1		
	3	Accelerator pedal value	=> Display group number 002, display zone 2		
	4	Fuel consumption signal 1)	during driving	0.00 ... 10.00 ms 2)	- Carry out electrical test => as of Page 01-40 , fault code 00549

1) Signal corresponds to opening time of injectors in milliseconds.

2) Specified values are only reference values. Displayed values should increase or decrease analogously to the engine load.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value
008	1	Torque increase in converter	during driving	1 ... 2.6 1)	<ul style="list-style-type: none"> Calculated by gearbox control unit from engine speed, engaged gear and gearbox output speed
	2	Engine speed	=> Display group number 001, display zone 1		
	3	Selected gear	=> Display group number 001, display zone 4		
					<ul style="list-style-type: none"> The TCS control

	4	Traction control system	during driving	activated	ASR activated	unit prevents a gear change if necessary
				not activated	-	

1) Specified values are only reference values. Displayed values are dependent upon the respective torque converter.

Notes on torque increase in converter:

The resultant engine torque from the speed difference between pump gear and turbine gear in the torque converter is increased by this value.

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 nominal value	Action in the event of deviation from specified value	
009	1	Selector lever position	=> Display group number 004, display zone 2			
	2	Road speed	=> Display group number 003, display zone 3			
	3	Cruise Control System (CCS)	during driving	Power supply connected	CCS version	<ul style="list-style-type: none"> The CCS is supplied with power after switching on the ignition and reaching a speed of over 30 km/h.
				Power supply not connected	-	
4	Air conditioner kickdown	during driving	activated	Compr. OFF	<ul style="list-style-type: none"> Change down is only activated if necessary with kickdown 	
			not activated	-		

Display group no.	Display zone	Designation	Test conditions	Display at V.A.G 1551 specification	Action in the event of deviation from specification
010	1	Wheel speed Front left	during driving	...rpm (min.: 0 rpm)	<ul style="list-style-type: none"> The speeds must increase or decrease evenly and analogously to the road speed - Test wiring connections, carry out electrical test => Page 01-169 - => Fault table from Page 01-40, fault codes 00283, 00285, 00287 and 00290
	2	Wheel speed Front right			
	3	Wheel speed Rear right			
	4	Wheel speed Rear left			
011	Currently not applicable				

Note on wheel speed:

For gearbox 01K, the gearbox speed from gearbox speed sender -G38 is displayed in this display group number.