Servicing Motronic injection system Checking air mass meter -G70

Test conditions

- Coolant temperature at least 80 °C.
- Electrical consumers switched off (radiator fan must not run during the check)
- Air conditioner switched off
- Fuse for air mass meter OK

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Checking function

Connect the vehicle diagnostic, testing and information system VAS 5051 or fault reader V.A.G 1551 and select engine electronics control unit 1 with "Address word" 01 => Page 01-15.
 For this purpose, the engine must be running at idling speed.

 \rightarrow Indicated on display:

- Press keys 0 and 4 for the function "Initiate basic setting" and confirm entry with Q key.

Note:

During basic setting, the solenoid valve for the activated charcoal filter (ACF valve -N80) is closed and the air conditioning compressor is switched off by the engine control unit.

\rightarrow Indicated on display:

- Press keys 0, 0 and 2 for "display group number 2" and confirm entry with Q key.
- \rightarrow Indicated on display:
 - Check specified results for recorded load.

	Display zones				
	1	2	3	4	
Display group 2: Intake air mass at idle and operating temperature					
Display	xxx rpm	xx.x %	x.x ms	xxx.x g/s	
Display	Engine speed (in steps of 40 rpm)	Load	Average injection period	Air mass	
Range	min.: 550 rpm max.: 7200 rpm	min.: 0 % max.: 110 %			
Specified value	600820 rpm	14.024.0 %	1.05.0 ms	3.57.0 g/s	
Note			If specified value is not attained: Evaluation, display zone 3 =>Page 24- 68.	If specified value is not attained: Evaluation, display zone 4 =>Page 24- 69.	

If specified value is attained:

- Press keys 0 and 6 for the "End output" function and press the Q key to confirm entry.

vw-wi://rl/A.en-GB.4D-MG-MGAQG.wi::20840962.xml?xsl=2

Basic setting Q Enter display group number XXX

System in basic setting 2 \Rightarrow 1 2 3 4

⁻ Press \Rightarrow key.

- Switch ignition off.

Evaluation of display group 002

Display zone: 3	Possible causes of fault	Fault remedy
Less than 1.0 ms	 Lower values can only occur when vehicle is on overrun 	
Greater than 5.0 ms	- Engine load from ancillaries	- Eliminate load (air conditioner system/ power steering/alternator)
	- Poor idling (not running on all cylinders)	 Test spark plugs Check injectors =>Page 24-48
	- Throttle valve control part - J338 defective	- Check throttle valve control part =>Page 24-168.

Evaluation of display group 002

Display zone: 4	Possible causes of fault	Fault remedy
Less than 3.5 g/s	 Large quantity of unmetered air between intake manifold and air mass meter Voltage supply to air mass meter or wiring to engine control unit 	- Test for leaks (unmetered air) in intake air system => Page 24-70
Greater than 7.0 g/s	- Engine load from ancillaries	- Eliminate load (air conditioner system/ power steering/alternator)
	 Voltage supply to air mass meter or wiring to engine control unit 	- Check voltage supply and/or wiring => Page 24-70

Testing voltage supply to air mass meter

- Detach connector from air mass meter.
- \rightarrow Connect hand-held multimeter for voltage measuring to
- socket 2 of connector and engine earth.
- Operate the starter briefly.

Specified value: approx. battery voltage

Note:

Voltage supply to air mass meter is from fuel pump relay.

If battery voltage is not present.

- Test wiring from socket 2 on connector via fuse to fuel pump relay for open circuit or short to earth. Rectify, if necessary.

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If the specified value is achieved.

- Check earth connection to engine control unit => Page 24-71.

Checking earth connection

- \rightarrow Connect hand-held multimeter for voltage measuring to sockets 2 and 3 of the connector.
- Operate the starter briefly.

Specified value: approx. battery voltage



Motronic Injection and Ignition System (8-cylinder)

Note:

Engine control unit earth is present at socket 3 of the connector.

If specified value is not attained:

- Check the wiring connections =>Page 24-72.





- → Connect hand-held multimeter for voltage measuring to sockets 3 and 4 of the connector.
- Switch the ignition on.

Specified value: approx. 5 V.

If specified value is not attained:

- Check the wiring connections =>Page 24-72.

Checking wiring to air mass meter

Note:

The signal wire is also checked during the wiring check.

- Connect test box V.A.G 1598/31 to wiring harness for engine control unit; the engine control unit must not be connected => Page 24-12.
- \rightarrow Check for open circuit and short to positive or earth in the following wiring connections:

Connector for air mass meter -G70, socket	Test box V.A.G 1598/31 socket
3	27
4	53
5 (signal wire)	29

Wire resistance: max. 1.5 Ohm

- Rectify any open/short circuit as necessary.

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- Additionally check all wires for short to one another.

Connector for air mass meter -G70, socket	Test box V.A.G 1598/31 socket
3	53 and 29
4	27 and 29
5 (signal wire)	27 and 53

Specified value: infinite resistance (no continuity)

- If the voltage supply and the wiring are OK, renew the air mass meter -G70.