

Volkswagen > A4 Platform > 1999 - 2005

1.9 Liter 4-Cyl. 2V TDI Fuel Injection & Glow Plug, Engine Code(s): ALH
from m.y. 2002

23 - Diesel Fuel Injection

Mass Air Flow (MAF) sensor -G70-, checking

The MAF sensor -G70- signal is used by the ECM to calculate the quantity injected and to control the required exhaust gas recirculation. The smaller the signal from MAF sensor -G70- the smaller the quantity of fuel injected.

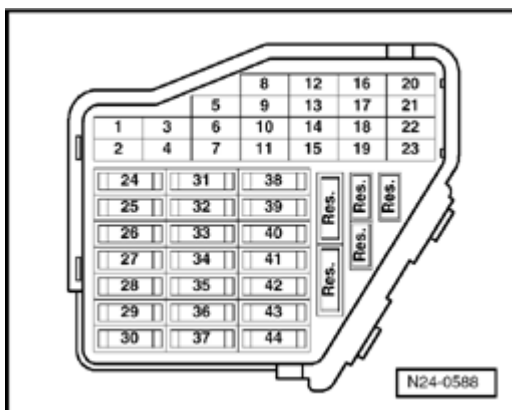
Note:

Only gold-plated contacts must be used to repair the terminals in the connector for the MAF sensor.

Special tools and equipment

- ◆ VAG 1551/1552 Scan tool with adapter cable VAG 1551/3
- ◆ Test box VAG 1598/31
- ◆ Hand multimeter VAG 1526 or multimeter VAG 1715
- ◆ Adapter set VAG 1594
- ◆ Wiring diagram

Check conditions



- The fuses must be OK.
- The battery voltage must be at least 11.5 V.

Test sequence

- Connect Scan Tool VAG 1551 (VAG 1552) and select engine electronics control unit. Run engine at idle speed and press buttons -0- and -1- to select "Engine electronics" address word 01. (Connecting Scan Tool and selecting engine electronics control unit => Page [01-10](#).)

Warning!

Secure Scan Tool to rear seat and operate from this position (second technician required).

Rapid data transfer HELP
Select function XX

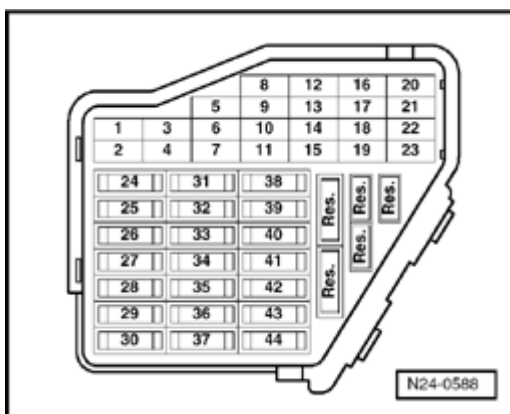
Indicated on display:

- Press buttons -0- and -8- for the function "Read measured value block" and confirm entry with -Q- button.

Read measured value block
Enter display group number XXX

Indicated on display:

- Press buttons -0-, -1- and -0- for "Display group number 10" and confirm entry with -Q- button.
- Observe display in display field 1.



- Specification: 230 to 370 mg/H

If the specification is not obtained:

- Check exhaust gas recirculation:

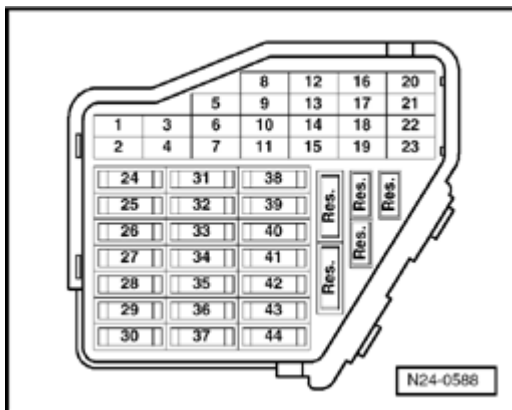
=> Repair Manual, 1.9 Liter 4-Cyl. 2V TDI Engine Mechanical, Engine Code(s): ALH, Repair Group 26

If the specification is obtained:

- Road test vehicle with a 2nd technician to observe display.

Observe valid safety precautions when road testing => page [23-2](#).

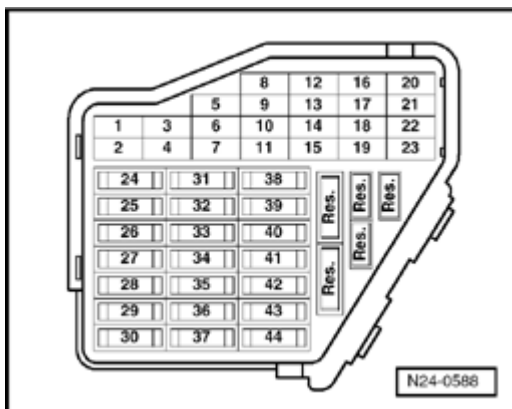
- Accelerate vehicle in 3rd gear (vehicles with manual transmission) or 2nd gear (vehicles with automatic transmission) from about 1500 rpm using wide open throttle.
- Press PRINT button on VAG 1551 at approx. 3000 rpm. The accelerator pedal must be fully depressed at this moment in time.



- Specification in display field 4: 100% (accelerator pedal position/throttle)

If the specification is not obtained:

- Repeat test and accelerate vehicle at wide open throttle.



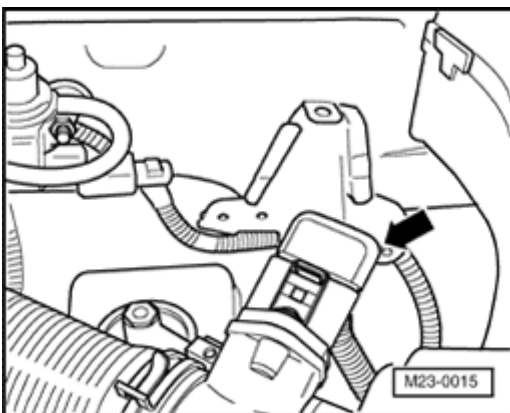
- Specification in display field 1: above 800 mg/H (mass air flow drawn in).

If the specification is not obtained:

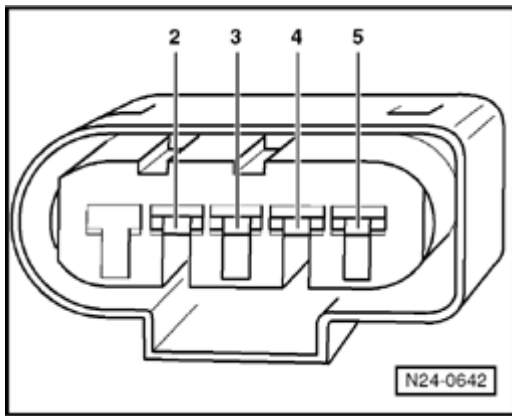
- Press the → button.
- Press buttons -0- and -6- to select "End output" function 06 and confirm entry with the -Q- button.
- Switch off ignition.
- Replace MAF sensor.
- Check DTC memory and, if necessary, repair any malfunctions and then erase => page [01-21](#).
- Read readiness code => Page [01-89](#). If the DTC memory has been erased or the Diesel Direct Fuel Injection Engine Control Module -J248- was disconnected from permanent battery positive (B+), the readiness code must be generated again => page [01-92](#).

If a constant 550 mg/H (predetermined replacement value) is displayed in display field 1.

- Press the → button.
- Press buttons -0- and -6- for the function "End output" and confirm entry with the -Q- button.
- Switch off ignition.



- Pull 5-pin connector off MAF sensor -arrow-.
- Switch on ignition.

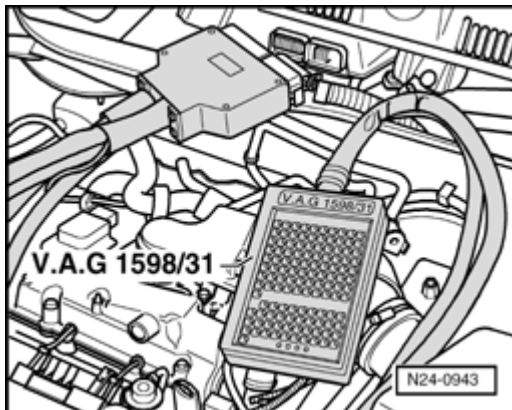


- Measure MAF sensor voltage supply between following connector contacts:

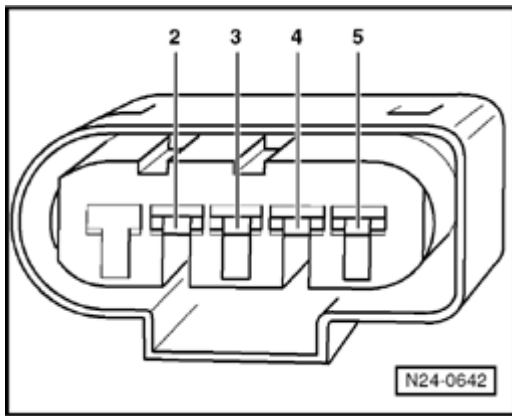
Terminal on -G70	Specification
2 + Ground	App. battery voltage
2 + 3	App. battery voltage
4 + Ground	Approx. 5 V
4 + 3	Approx. 5 V

If the specifications are not obtained:

- Switch off ignition.
 - Remove wiper arms and plenum cover:
- => Repair Manual, Electrical Equipment, Repair Group 92



- Connect test box VAG 1598/31 to control module wiring harness.



- Check wiring between test box and connector for open circuit using wiring diagram.

Terminal 2+ socket 1 and 2

Terminal 3+ socket 49

Terminal 4+ socket 30

Terminal 5+ socket 68

Wire resistance: max. 1.5 Ω

- Check wires for short to one another, to vehicle Ground and to battery positive (B+).

Specification: $\infty \Omega$

If no malfunction is detected in the wiring:

- Replace Diesel Direct Fuel Injection (DFI) Engine Control Module (ECM) -J248- => Page [23-121](#).