

Checking functions

Checking Lambda probe and Lambda control

Note:

Only gold-plated contacts may be used when servicing Lambda probe connector contacts 3 and 4.

Special tools, workshop equipment, testers, measuring instruments and auxiliary items required

- ◆ Fault reader V.A.G 1551 or vehicle system tester V.A.G 1552 with cable V.A.G 1551/3A
- ◆ Test box V.A.G 1598/22
- ◆ Hand multimeter V.A.G 1526 or multimeter V.A.G 1715
- ◆ Adapter set V.A.G 1594
- ◆ Current flow diagram

Check conditions

- The engine control unit must be matched to the throttle valve control part=> Page [24-112](#)
- Coolant temperature must be at least 80 °C, =>display group 1, display zone 2.
- Exhaust system between catalyst and cylinder head must be free of leaks

Functional check

- Connect fault reader V.A.G 1551 (V.A.G 1552). Start engine and select "Address word" 01 of engine control unit. When doing this the engine must be running at idling speed.
(Connecting fault reader and selecting engine control unit => Page [01-5](#).)

→ Indicated on display:

Rapid data transfer
HELP
Select function XX

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

→ Indicated on display:

Read measured value block
Input display group number
XXX

- Press keys 0, 0 and 1 for "Display group number 1" and confirm entry with Q key.

→ Indicated on display:
(1...4 = Display zones)

Read measured value block
1 →
1 2 3 4

Only continue with the test when

- The coolant temperature is above 80 °C
–Display zone 2-
- The engine has then run for a further 2 minutes at idling speed
- Note Lambda probe voltage in display zone 3. The voltage must fluctuate
at least 30 times per minute
in range of
0.000...1.000 V.

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

If the Lambda regulation does not fluctuate as stated:

- Carry out road test and burn Lambda probes clean and repeat check.

If the specifications are not obtained again:

- Switch off ignition.
- Check the Lambda probe heating
=> Page [24-32](#) .

If the voltage change is slower, determine cause of fault. => Page [24-95](#) .

If the displayed figure remains constant:

- Continue check according to following table.

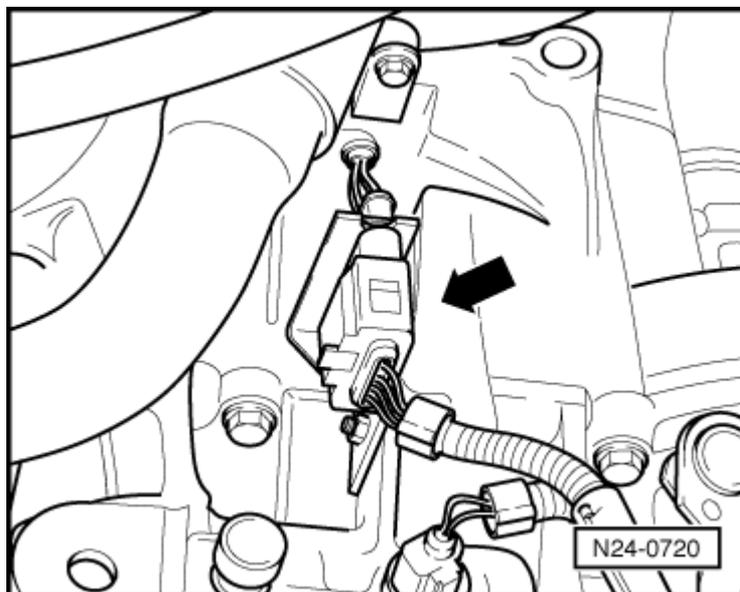
Display	Cause	Continuation of check
Between 0.040... 0.050 V	Open circuit	Checking basic voltage => Page 24-97
0.000 V	Short to earth	
1.200 V	Short to positive	

Possible causes of fault if probe control frequency is too slow:

- ◆ The slots or holes in probe body are blocked
- ◆ The probe vent hole in area of connecting wire is blocked
- ◆ The probe has been overheated (glazed)
- ◆ The probe has been damaged by leaded fuel

Checking basic voltage

- → Separate 4 pin connector to
Lambda probe (G39) -1-.



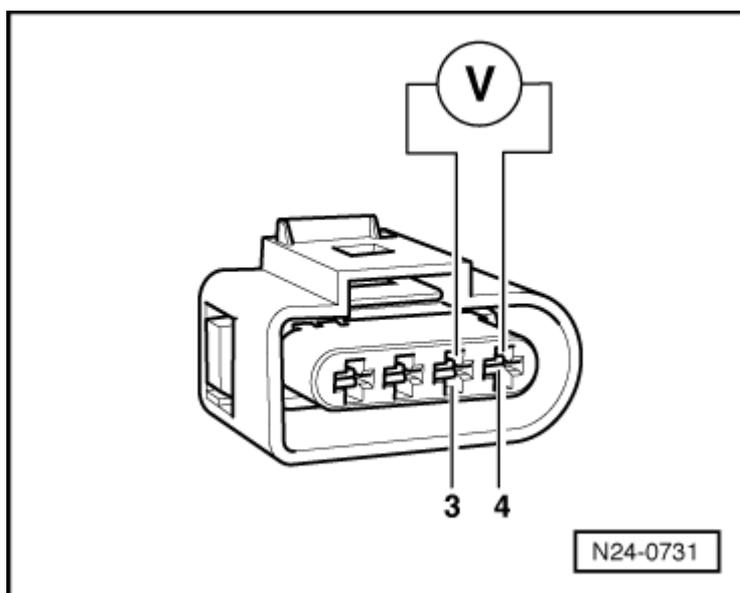
- → Connect multimeter with aux. cables from V.A.G 1594 to measure voltage at contacts 3+4 (connector to engine control unit).
- Switch on ignition and measure basic voltage.
Specification: 0.040...0.050 V
- Switch off ignition.

If the specification is not obtained:

- Check Lambda probe wiring
=> Page [24-97](#)

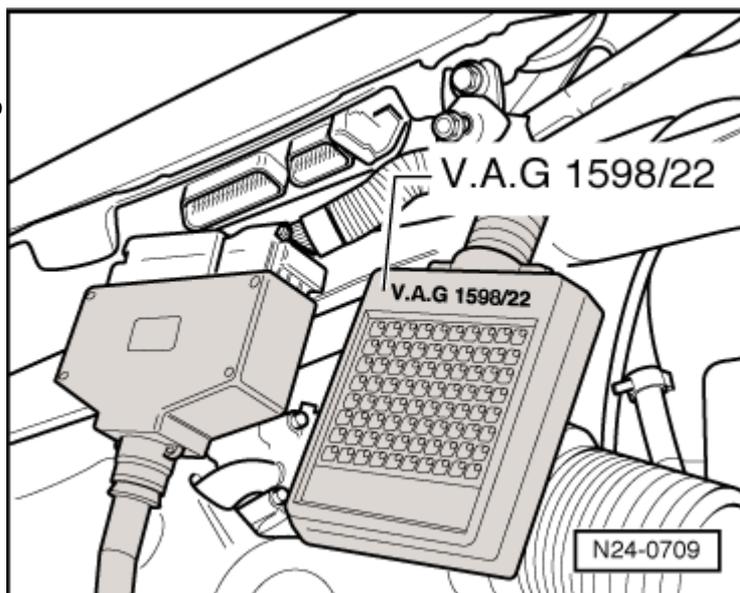
If the specification is obtained:

- Renew Lambda probe (G39)
=>Page [24-11](#) , item [15](#) .



Checking Lambda probe wiring

- → Connect test box V.A.G 1598/22 to control unit wiring harness.



- → Check wiring between test box and 4 pin connector (to control unit) for open circuit according to current flow diagram.

Contact 3+socket 25

Contact 4+socket 26

Wire resistance: Max. 1.5 ω

- Check wiring at connector contacts 3+4 for short circuit to contacts 1+2 according to current flow diagram.

Specification: $\infty\omega$

If no wiring fault is detected:

- Renew Lambda probe (G39)
=>Page [24-11](#) , item [15](#) .

