

Checking components

Checking intake air temperature sender

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 1551/3
- ☐ Test box V.A.G 1598/31
- ☐ Hand multimeter V.A.G 1526 or multimeter V.A.G 1715
- ☐ Adapter set V.A.G 1594
- ☐ Current flow diagram
- ☐ Chilling spray (commercially available)

Test sequence

- 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 [01-12](#).)

→ 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 HELP
 Input display group number XXX

- Press keys 0, 0 and 4 for "Display group number 4" and confirm entry with Q key.

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

Read measured value block 4 ☐
 1 2 3 4

- Observe intake air temperature in display zone 4 for at least 60 seconds:
Specification: approx. ambient temperature

If the specification is not obtained:

- Perform check according to following table:

Display	Cause	Continuation of check
Approx. ambient temperature1)	---	=> Page 24-45
9 °C or 30 °C constant2)	Open circuit or short to positive or earth	=> Page 24-46

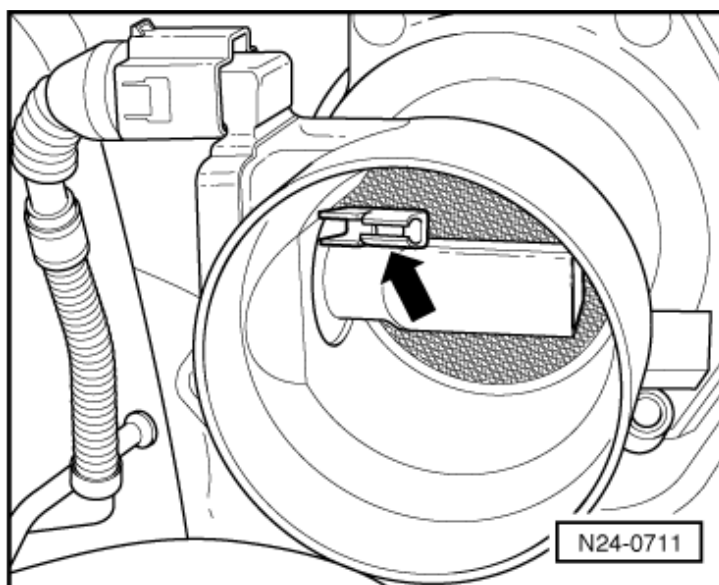
1) If a temperature is displayed which is

below the ambient air temperature of the sender, check sender wiring for transfer resistances. Note when doing this that sender is heated from external sources, e.g. radiated heat when engine is not running.

2) If the engine control unit detects a fault in G42, a constant temperature of 9°C or 30°C will be displayed with a time delay depending on whether the coolant temperature is below or above 70°C. For example, in the case of an open circuit ($\infty\omega$), -42.5°C will be displayed. After about 60 seconds the display will change to 9 °C or 30°C.

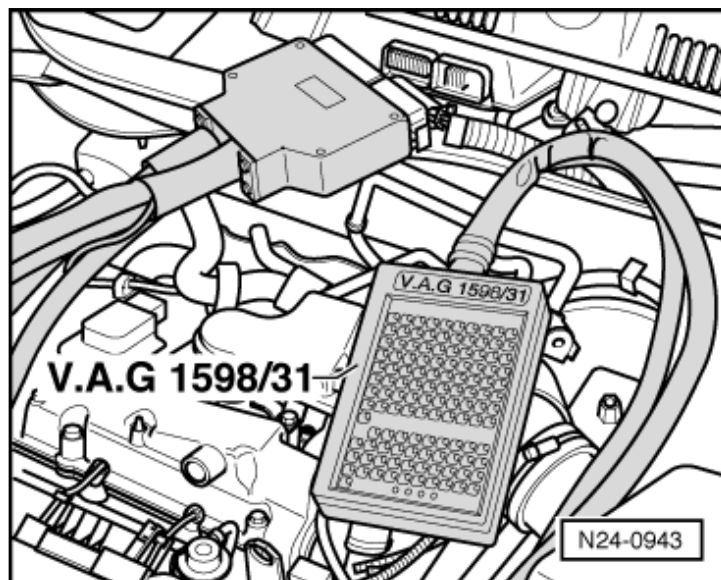
Continuation of check when display = ambient temperature:

- Switch off ignition.
- Remove intake hose between air mass meter and throttle valve control part.
- Switch ignition on and select measured value block 4 again.
- Note intake air temperature value in display zone 4.
- → Spray sender -arrow- with commercial chilling agent whilst observing the temperature value. The temperature value must decrease.
- Press ☐ key.
- Press keys 0 and 6 for the function "End output" and confirm entry with the Q key.



Continuation of test if 9 °C or 30 °C is displayed:

- Switch off ignition.
- → Connect test box V.A.G 1598/31 to control unit wiring harness. The engine control unit remains disconnected.

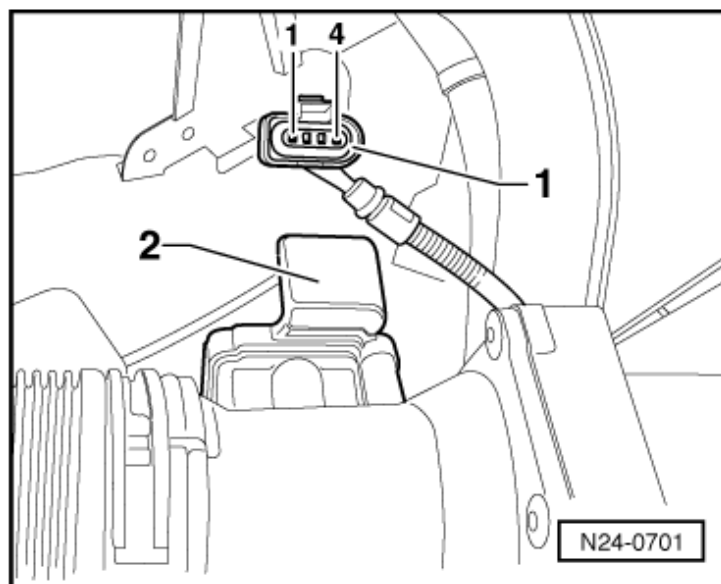


- → Pull 4 pin connector -1- off air mass meter -2-.
- Check wiring between test box and 4-pin connector for open circuit using current flow diagram.
 - Contact 2 and test box socket 11
 - Contact 4 and test box socket 44
 - Wire resistance: max. 1.5 ω
- Additionally check wires for short to one another and to positive and earth.
 - Specification: $\infty \omega$

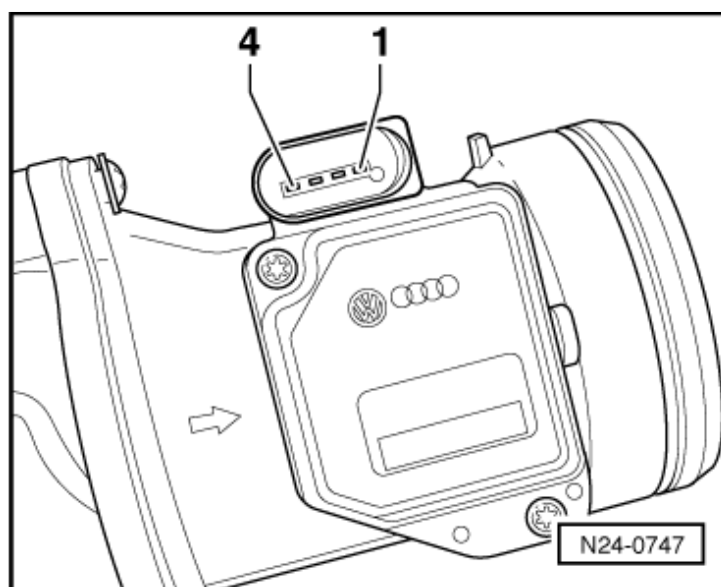
Note:

When servicing connectors only gold-plated contacts are to be used.

If no wiring fault is detected:



- → Test resistance between contacts 2 and 4 of sender.



→ Scale A shows resistance values for temperature range 0...50 °C and scale B the values for temperature range 50...100 °C.

Examples:

- 30 °C is in range A and corresponds to a resistance of 1.5...2.0 kΩ
- 80 °C is in range B and corresponds to a resistance of 275...375 Ω

If the specification is not obtained:

- Renew air mass meter with intake air temperature sender (G42).

If there is no fault in the wiring and the resistance measurement values are OK.:

- Renew engine control unit => Page [24-120](#).

