Engine speed (RPM) sensor - G28-, checking

The engine speed (RPM) sensor - G28- is a speed and reference mark sensor. The engine will not start if there is no speed signal. If the speed signal fails when the engine is running, it will cause the engine to stall immediately.

Special tools and equipment

♦ VAG1551 Scan Tool (ST) or VAG1552 mobile scan tool with VAG1551/3 adapter cable

♦ VAG1598/31 test box

♦ Multimeter (Fluke 83 or equivalent)

♦ VW1594 adapter set
Wiring diagram

Test sequence

- Disconnect grey 3-pin harness connector (arrow) from engine speed sensor.
- Measure sensor resistance between terminals 2 + 3 of harness connector to sensor.
  Specified value: 480-1000 Ω
- Check sensor for short between terminals 1 + 2 as well as -1- + -3-.
  Specified value: ∞ Ω

If the specified values are not obtained:

- Replace engine speed (RPM) sensor -G28- ⇒ Page 24-13 , item 25 .
- Check DTC memory. If necessary, repair any malfunctions and erase DTC memory ⇒ Page 01-32 .
- Display readiness code ⇒ Page 01-93 .
  If DTC memory has been erased or the Engine Control Module (ECM) was disconnected from permanent battery (B+) voltage, the readiness code must be generated again ⇒ Page 01-95 .

If no sensor malfunction is detected:
- Remove wiper arms and plenum chamber cover.

⇒ Repair Manual, Electrical Equipment, Repair Group 92
- Connect VAG1598/31 test box to Engine Control Module (ECM) wiring harness. Engine Control Module (ECM) is not connected by this action.

- Check wiring between test box and 3-pin harness connector for open circuit according to wiring diagram.
  - Terminal -1- + socket 108
  - Terminal -2- + socket 90
  - Terminal -3- + socket 82
  - Wire resistance: max. 1.5 Ω
- Additionally check wires for short to one another.

If no malfunction is found in the wiring:

- Remove sensor and check sensor wheel for secure fit, damage and run-out.

**Note:**

*There is a larger gap on the sensor wheel. This gap is the reference mark and does not mean that the sensor wheel is damaged.*

If no malfunction is detected on sensor wheel:

- Replace Engine Control Module (ECM) ⇒ Page 24-161.