


Cold start driveability problems, overview

The time interval between cold start (open loop) and oxygen sensor control (closed-loop), which requires an oxygen sensor temperature of approx. 300 ° C (572 ° F), is influenced by the following variables:

- ◆ Ambient temperature (summer/winter)
- ◆ Operating conditions after start
- ◆ Proper function of the oxygen sensor heater

If driveability difficulties occur during cold start, determine whether the problem occurred during the open- or closed-loop phase of the startup as follows (under cold-start conditions):

- Connect VAG 1551 scan tool ⇒ Repair Group 01.
- Switch ignition ON but do not start engine.
- Select "Read Measuring Value Block" function 08 and advance until display shows "Read measuring value block 10" (display group 010) ⇒ Repair Group 01.

Read measuring value block 10 
1 2 0.4V 0.4V

 Indicated on display

Display fields 3 and 4 show signal voltage for oxygen sensors before the three way catalytic converters (vehicle cold; oxygen sensor control does not function; values = 0.350 to 0.450 volts).

CAUTION!***Use a second technician to operate the VAG 1551 scan tool.***

- Start engine (without previously switching ignition off), drive and record voltage signal (display field 3 shows bank 1; display field 4 shows bank 2).

- ◆ When oxygen sensor control starts, the voltage signal fluctuates between 0.0 and 0.9 volts (the voltage signals of both banks do not need to be synchronous with one another).

- ◆ If driveability difficulties occur before the start of oxygen sensor control, oxygen sensor control can not be the cause of the problem.

- ◆ If driveability difficulties occur after the start of oxygen sensor control, check function of heated oxygen sensor ⇒ [page 24-45](#) .

- ◆ If driveability improves after the start of closed-loop oxygen sensor control, the cause (e.g. air leak, faulty fuel injector) works against the improvement by interrupting control. This can be recognized by reading the oxygen sensor learned values ⇒ Repair Group 01, "Read Measuring Value Block" function 08, display

group 005 or 006.

Note:

For troubleshooting driveability problems, oxygen sensor control can be programmed to switch ON or OFF using display group 099. By pushing buttons -4- and -8- on the VAG 1551 scan tool (selecting between "Basic Setting" function 04 and "Read Measuring Value Block" function 08), oxygen sensor control can be switched ON and OFF.