

P1128

360 Oxygen Sensing Adaptation, Idle Range, Bank 1 - Below Limit

Diagnosis conditions

- Oxygen sensing system active
- Time elapsed after engine start-up: 250 to 350 seconds (USA)
- Time elapsed after engine start-up: 302 to 402 seconds (RoW)
- Engine temperature greater than 60 °C

Possible fault cause

- ◆ Incorrect signal from MAF sensor
- ◆ Fuel pressure too high
- ◆ Fuel injector leaking
- ◆ EVAP canister purge valve open

Affected terminals

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Diagnosis/Troubleshooting



Note!

- ◆ If DTC P0445 (fuel tank vent valve - short to ground) is stored, correct this fault first. An open EVAP canister purge valve can lead to the lean threshold being reached.
- ◆ For vehicles in the USA, the upper load range will probably not be reached. The only case in which a fault could be stored is during driving while towing a trailer or caravan on a hill.
- ◆ Contrary adaptation values in connection with misfiring point to incorrectly adjusted control times ⇒ check control times and adjust if necessary.
- ◆ If the fuel tank reserve light is switched on, no fault is entered.

Work instruction		Display OK	If not OK
1	Check signal from MAF sensor.	◆ Connect special tool 9637. ◆ Measure voltage at pin III/23 and ground ◆ Switch on the ignition.	0.9 to 1.1 V.
		◆ Start the engine.	Approx. 1,4 V
2	Check fuel pressure		

Work instruction		Display OK	If not OK
3	Check fuel pressure regulator, vacuum connection and fuel return line	<ul style="list-style-type: none"> ◆ Remove vacuum hose from fuel pressure regulator ◆ Connect special tool 9103/2 to vacuum hose ◆ Start the engine. ◆ 	0.4 - 0.6 bar Check the intake air system for leaks and check vacuum line to fuel pressure regulator for restrictions.
		<ul style="list-style-type: none"> ◆ Check housing of fuel pressure regulator for damage and deformation 	Replace the fuel pressure regulator if it is damaged with the result that the spring pre-tensioning is increased
4	Check EVAP canister purge valve	<ul style="list-style-type: none"> ◆ Disconnect hose from EVAP canister purge valve to intake system at EVAP canister purge valve ◆ Remove connector of EVAP canister purge valve ◆ Connect special tool 9160/1 to EVAP canister purge valve ◆ Generate vacuum of approx. 0.7 bar 	The vacuum must not fall below 0 bar after 10 minutes
5	Check fuel injectors for leaks		

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Possible fault cause

- ◆ Incorrect signal from MAF sensor
- ◆ Intake air system leaking
- ◆ Fuel pressure too low
- ◆ Volume supply of fuel pump too low
- ◆ Fuel injectors fouled

- ◆ PCV valve leaks
- ◆ Cap of oil filler neck not closed correctly or seal is damaged

Affected terminals

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Diagnosis/Troubleshooting



Note!

- ◆ *Air leaks ahead of the oxygen sensors can lead to a fault in adaptation ⇒ Check exhaust system for leaks.*
- ◆ *Contrary adaptation values in connection with misfiring point to incorrectly adjusted control times ⇒ check control times and adjust if necessary.*
- ◆ *If the fuel tank reserve light is switched on, no fault is entered.*

Work instruction		Display OK	If not OK
1	Close cap of oil filler neck properly or replace the seal		
2	Check signal from MAF sensor.	◆ Connect special tool 9637. ◆ Measure voltage at pin III/23 and ground ◆ Switch on the ignition.	0.9 to 1.1 V.
		◆ Start the engine.	Approx. 1,4 V
3	Check exhaust system for leaks		
4	Check for air leaks in intake air system		
5	Check PCV valve for leaks		
6	Check fuel pressure		
7	Check volume supply of fuel pump		
8	Fuel injectors fouled	◆ If preceding Check Points were negative, the fuel injectors may be fouled ◆ Clean fuel injectors (ultrasonic cleaning device) or replace them	

P1130

361 Oxygen Sensing Adaptation, Idle Range, Bank 2 - Below Limit

Diagnosis conditions

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- Time elapsed after engine start-up: 250 to 350 seconds (USA)
- Time elapsed after engine start-up: 302 to 402 seconds (RoW)
- Engine temperature greater than 60 °C

Possible fault cause

- ◆ Incorrect signal from MAF sensor
- ◆ Fuel pressure too high
- ◆ Fuel injector leaking
- ◆ EVAP canister purge valve open

Affected terminals

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Diagnosis/Troubleshooting



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1	Check signal from MAF sensor.	◆ Connect special tool 9637. ◆ Measure voltage at pin III/23 and ground ◆ Switch on the ignition.	0.9 to 1.1 V.
		◆ Start the engine.	Approx. 1,4 V
2	Check fuel pressure		Replace MAF sensor

Work instruction		Display OK	If not OK	
3	Check fuel pressure regulator, vacuum connection and fuel return line	<ul style="list-style-type: none"> ◆ Remove vacuum hose from fuel pressure regulator ◆ Connect special tool 9103/2 to vacuum hose ◆ Start the engine. ◆ 	0.4 - 0.6 bar	Check the intake air system for leaks and check vacuum line to fuel pressure regulator for restrictions.
		<ul style="list-style-type: none"> ◆ Check housing of fuel pressure regulator for damage and deformation 		Replace the fuel pressure regulator if it is damaged with the result that the spring pre-tensioning is increased
4	Check EVAP canister purge valve	<ul style="list-style-type: none"> ◆ Disconnect hose from EVAP canister purge valve to intake system at EVAP canister purge valve ◆ Remove connector of EVAP canister purge valve ◆ Connect special tool 9160/1 to EVAP canister purge valve ◆ Generate vacuum of approx. 0.7 bar 	The vacuum must not fall below 0.5 bar after 10 minutes	
5	Check fuel injectors for leaks			

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